INTERNATIONAL YEAR OF MILLETS 2023

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Price Policy for Copra

2024 Season

सत्यमेव जयते

Commission for Agricultural Costs & Prices
Department of Agriculture & Farmers Welfare
Ministry of Agriculture & Farmers Welfare
Government of India, New Delhi
September 2023

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Preface and Acknowledgements

It is my honour and privilege to submit the report of **"Price Policy for Copra: 2024 Season"**. The report contains recommendations on Minimum Support Price (MSP) of copra and a set of non-price policy measures. I hope these recommendations will incentivise coconut farmers to adopt modern technologies and scientific practices to improve productivity as well as encourage coconut-based industries to diversify into value-added products and help in improving efficiency and competitiveness of the Indian coconut sector.

Summary of Recommendations is followed by an overview of coconut economy in Chapter 1. Chapter 2 discusses demand-supply situation in domestic and world markets, price trends and procurement operations of copra. Trends in productivity growth are presented in Chapter 3. The trade patterns and domestic and world price trends are discussed in Chapter 4. Costs, returns and inter-crop parity issues are analysed in Chapter 5. Chapter 6 discusses major considerations and presents price and non-price policy recommendations.

Many people have assisted in the preparation of this report. First and foremost, I would like to express my sincere gratitude and thanks to coconut farmers, farmers' associations/groups, coconut-based industries, Coconut Development Board (CDB), officers from the Central and State Governments, research institutions and other stakeholders for providing valuable inputs in preparation of this report. I wish to express my sincere thanks and appreciation to the Government of Kerala and Government of Tamil Nadu for organizing meetings of the Commission with various stakeholders in Thrissur and Chennai. Special thanks to the Economics and Statistics Division, Ministry of Agriculture and Farmers Welfare, Government of India for providing data on cost estimates for coconut production.

My sincere appreciation and gratitude to the officers and staff of the Commission, who contributed in different ways to the report. I would like to thank and acknowledge contributions of Dr. Naveen P. Singh, Member (Official) and Sh. Ratan Lal Daga, Member (Non-official) in preparation of this report. Special thanks to Sh. Anupam Mitra, Member Secretary, for his contribution and coordination support in timely completion of the report. I deeply appreciate and acknowledge the contributions from advisors, Dr. Seema and Sh. Vivek Shukla and Sh. D. K. Pandey (Consultant). The report would not have been possible without active support and contributions of Mrs. Divya Sharma, Dr. Sadhana Srivastava, Shri

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7th September 2023 **(Vijay Paul Sharma)**

Contents

List of Tables

List of Charts

List of Annex Tables

Acronyms

Acronym	Description
A_2	Actual paid out cost
A_2+FL	Actual paid out cost plus imputed value of family labour
AIC	Agriculture Insurance Company
AIDC	Agriculture Infrastructure Development Cess
AIF	Agriculture Infrastructure Fund
ASC	Agro Service Centres
ASEAN	Association of Southeast Asian Nations
C_2	Actual paid out cost plus imputed value of family labour plus rental value of own land (Net of land revenue) and interest on value of own fixed capital assets (excluding land)
CACP	Commission for Agricultural Costs & Prices
CAGR	Compound Annual Growth Rate
CDB	Coconut Development Board
CDC	Coconut Development Council
CHC	Custom Hiring Centres
CIF	Cost, Insurance and Freight
CIPI	Composite Input Price Index
CNAs	Central Nodal Agencies
CoC	Cost of Cultivation
CoP	Cost of Production
CPCs	Coconut Producer Companies
CPSs	Coconut Producer Societies
CPFs	Coconut Producer Federations
CPIS	Coconut Palm Insurance Scheme

Acronym	Description
CPO	Crude Palm Oil
CPS	Coconut Producer Societies
CS	Comprehensive Scheme
DA&FW	Department of Agriculture and Farmers Welfare
DGCIS	Directorate General of Commercial Intelligence and Statistics
DIPP	Department of Industrial Policy & Promotion
DPIIT	Department for Promotion of Industry and Internal Trade
EKSC	*Eravipuram Krishi Sree* Centre
ES Division	Economics and Statistics Division
EU	European Union
FAI	Fertilizers Association of India
FAQ	Fair Average Quality
FFPs	Farmers First Programmes
FFSs	Farmers Field Schools
FoCT	Friends of Coconut Tree
FPO	Farmer Producer Organizations
FTA	Free Trade Agreement
GVO	Gross Value of Output
HDMSCS	High-Density Multi-Species Cropping System
HSD	High Speed Diesel
ICAR-CPCRI	Indian Council of Agricultural Research - Central Plantation Crops Research Institute
ICC	International Coconut Community

Acronym	Description
INM	Integrated Nutrient Management
IPDM	Integrated Pest and Disease Management
KSIS	*Kera Suraksha* Insurance Scheme
MEP	Minimum Export Price
MSP	Minimum Support Price
MT	Metric Tonnes
NAFED	National Agricultural Cooperative Marketing Federation of India Ltd.
NCCF	National Cooperative Consumers' Federation
PHCs	Plant Health Clinics
PMKSY - PDMC	*Pradhan Mantri Krishi Sinchayee Yojana* - Per Drop More Crop
PSS	Price Support Scheme
QR code	Quick Response Code
R&R	Replanting and Rejuvenation Programme
RBD	Refined Bleached Deodorized
RTA	Regional Trade Agreement
SAARC	South Asian Association for Regional Cooperation
SAFTA	South Asian Free Trade Agreement
SCAR	Sequence Characterized Amplified Region
SHGs	Self Help Groups
STE	State Trading Enterprise
SUR	Stock to Use Ratio
TE	Triennium Ending

Acronym	Description
TMOC	Technology Mission on Coconut
UAE	United Arab Emirates
USA	United States of America
USDA	United States Department of Agriculture
VAIGA	Value Addition for Income Generation in Agriculture
WPI	Wholesale Price Index

Summary of Recommendations

Price Policy Recommendations

S.1 The Commission as per its mandate has duly considered cost of production, demand-supply and price situation in domestic and world market, inter-crop parity in returns, likely impact of the price policy on consumers and user industries, and a minimum of 50 percent as margin over the cost of production while recommending Minimum Support Price (MSP) for copra. The Commission recommends that MSP of milling copra be fixed at ₹11,160 per quintal and ball copra at ₹12,000 per quintal for the 2024 season. The recommended MSP of milling copra would give gross margin of 51.8 percent over cost of production.

Non-Price Policy Recommendations

Higher and Stable Yield

S.2 Productivity of coconut has been low and unstable due to old and senile coconut trees, poor agronomical and management practices, incidence of pests and diseases, natural calamities, etc. The large variation in yield levels within and across States is also a matter of concern. The Commission, thus, recommends that the old and senile coconut gardens should be replaced through replanting and rejuvenation in mission mode on priority basis. States should formulate State-specific strategies to improve and stabilize the yield of coconut.

Coconut Replanting and Rejuvenation Programme

S.3 The Commission is of the view that there is a need to scale up resources and funding under "Replanting and Rejuvenation of Gardens" Scheme to make a significant impact on productivity. Therefore, the Commission reiterates its earlier recommendation to scale up the Scheme. Efforts should also be made to ensure adequate availability of quality seedlings and planting material to farmers. State Governments should make special efforts in collaboration with various research institutions, related departments, local Self-Government Institutions, etc. to expand the reach of the Scheme.

Improved Water Management Practices

S.4 Scarcity of water is one the major constraints affecting the yield of coconut palms. The Commission recommends that the State Governments should sensitize farmers about the need for efficient water use and encourage them for adopting micro-irrigation and soil moisture conservation measures in coconut farming.

Effective Pest and Disease Control

S.5 Insect pests and diseases remain as key threats to coconut production and productivity in the country. The Commission recommends that concerted efforts should be made to promote holistic "Integrated Pest and Disease Management (IPDM)" practices among coconut farmers for the efficient control of pests and diseases of coconut.

Coconut-Based Integrated Farming Systems

S.6 Despite coconut-based cropping systems involving cultivation of compatible crops with coconut and integration with other enterprises like dairy, poultry, etc. having considerable scope for increasing production and productivity and efficient utilization of resources, adoption of coconut based integrated farming system by farmers is low. The Commission recommends that research institutions, State Governments and local self-Governments should play a proactive role in encouraging farmers to take-up coconut based integrated farming system.

Farm Mechanization

S.7 The high labour cost and scarcity of labour are major problems faced by all coconut producing States. The 'Friends of Coconut Tree' programme is being implemented by CDB under which youth are trained for palm climbing using a mechanical device for nut harvesting, crown cleaning and pest and disease management. The available palm climbing devices are not user-friendly and improvements in machines are needed to make such devices more user-friendly and affordable. The Commission recommends that the research institutions should be provided with the necessary support to develop farmer-friendly devices for easy harvesting of nuts, better maintenance and disease management of the palms.

Strengthen Procurement Infrastructure and Operations

S.8 One of the major issues that requires attention of the Government is constraints in the procurement operations of copra at the ground level. Procurement of de-husked coconut has

been a long-standing demand of farmers from various coconut growing States. Since majority of coconut farmers are small and marginal and do not have facilities for processing coconut into copra, procurement under PSS does not directly benefit the farmers. Farmers generally sell raw coconuts to traders due to low volumes and lack of required facilities for conversion of coconut into copra.

S.9 Farmers' collectives can help in overcoming these challenges. Therefore, the Commission recommends that famers' collectives including CPS/CPF/CPC, cooperatives, local self-government institutions, etc. should be strengthened and provided assistance under Agriculture Infrastructure Fund (AIF) for setting up de-husking, de-shelling, drying, storage and processing facilities. The Commission also recommends that due to the perennial nature of the crop and market arrivals of copra are well distributed throughout the year, procurement period of six months should be reviewed.

S.10 To help coconut farmers and give boost to coconut economy in Andaman & Nicobar Islands, the Commission recommends that a special Scheme for development of infrastructure facilities for coconut value-addition, scientific storage etc., should be formulated for A&N Islands.

Encourage Value-addition and Entrepreneurship

S.11 Coconut oil is the major value-added product from coconut. The price of coconut oil is relatively higher compared to other edible oils and is not able to compete with other vegetable oils. It is, therefore, important to diversify to other value-added products to fully utilize coconut and coconut by-products to make coconut sector competitive and profitable. The Commission recommends that coconut value chains should be developed by attracting private sector investment in setting up processing facilities to exploit export opportunities for value-added coconut products.

Coconut Palm Insurance Scheme

S.12 The performance of Coconut Palm Insurance Scheme (CPIS) is not satisfactory in most States as number of farmers/palms covered under the Scheme is low. The Commission recommends that the State Governments in collaboration with CDB and AIC should launch intensive awareness and publicity campaigns about the Scheme among coconut farmers using electronic and print media to improve its coverage. The capacity building programmes should be organized for various stakeholders for effective implementation of the Scheme.

Import Policy of Coconut Oil Cake

S.13 India imports large quantities of coconut oil cake and is used for extraction of oil through solvent extraction technique. This oil is used for adulteration of edible coconut oil, which adversely affects domestic coconut oil sector. The Commission, thus, recommends that import policy of coconut oil cake may be reviewed.

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CHAPTER 1

Overview

1.1 India, Philippines and Indonesia accounted for 73.7 percent of the world's coconut production of about 65.7 billion nuts in 2022 (Table 1.1). India is the largest producer of coconut in the world, followed by the Philippines and Indonesia. The total area under coconut in the world was 12.1 million hectares in 2022, with Philippines having the largest area (3.59 million ha), followed by Indonesia at 3.33 million hectares and India at 2.11 million hectares. The top three producers of coconut accounted for nearly three-fourth of the global coconut area and production in 2022. The world coconut production declined by about 1.5 percent in 2022 compared with 2021, while area planted under coconut declined by about 1.3 percent during the period. Among top three producers, India recorded the highest yield of 9,122 nuts per hectare, followed by Indonesia (4,274 nuts/ha) and the Philippines (4,156 nuts/ha) against the world average of 5,429 nuts per hectare in 2022. During the last five years, share of India in global coconut production has declined from 34.3 percent in 2018 to 29.3 percent in 2022, while share of Philippines has increased from 21.2 percent to 22.7 percent and Indonesia's share has improved from 20.5 percent to 21.7 percent during the corresponding period. Sri Lanka has also improved its share in world coconut production.

Table 1.1: World Coconut Production and Area by Major Producing Countries, 2022 [e]

Country	Production		Area		Yield (nuts/ha)
	Million nuts	*Share (%)*	*Million ha*	*Share (%)*	
India	19247	29.3	2.11	17.4	9122
Philippines	14931	22.7	3.59	29.7	4156
Indonesia	14232	21.7	3.33	27.5	4274
World	**65673**	**-**	**12.10**	**-**	**5429**

Note: [e]: estimated figure
Source: International Coconut Community (ICC),Quarterly Bulletin, April 2023

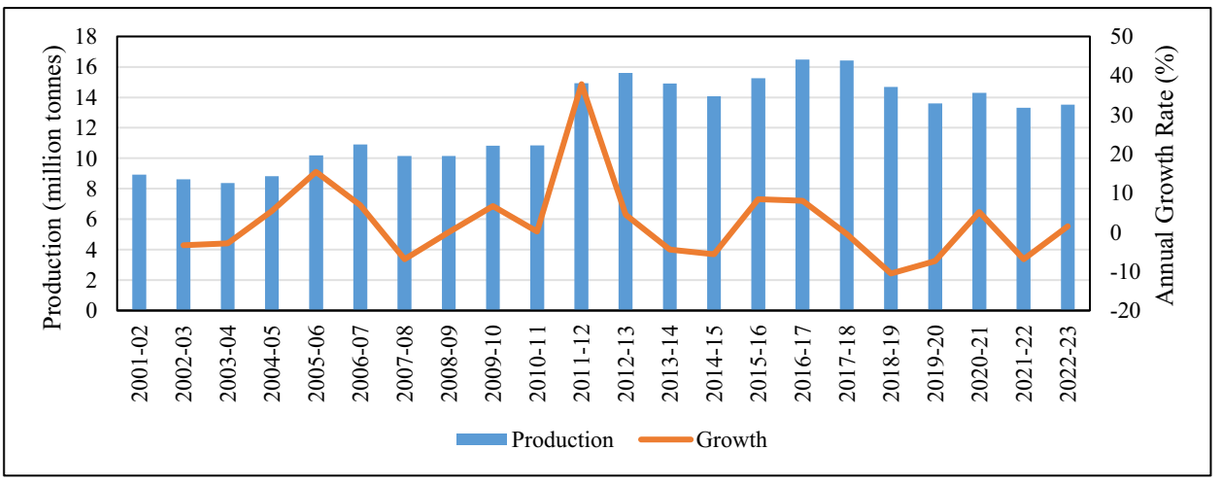
Domestic Production Scenario

Coconut

1.2 Coconut is an important plantation crop of India, occupying about 2.2 million hectare area, and has great potential for generating employment and enhancing farmers' income due to multiple uses of coconut and value-added products. As per the First Advance Estimates of 2022-23, coconut production in the country is estimated at 13.5 million tonnes during 2022-23, about 1.5 percent higher than in 2021-22 but significantly lower (-18%) than the record high of about 16.5 million tonnes in 2016-17.

1.3 The coconut production in India is concentrated in Southern States, and Kerala, Karnataka, Tamil Nadu and Andhra Pradesh accounted for 89.4 percent of coconut area and 90.9 percent of coconut production during the TE2022-23. The trend and growth in coconut production from 2001-02 to 2022-23 are presented in Chart 1.1. At all-India level, coconut production increased at Compound Annual Growth Rate (CAGR) of about 2.9 percent during 2001-02 to 2022-23 and more than three-fourth of this growth was contributed by yield improvements. During the period 2011-12 to 2022-23, coconut production registered a negative growth rate (-1.1%) and productivity CAGR was (-)1.5 percent. The highest coconut production achieved was about 16.5 million tonnes in 2016-17, which was followed by a declining trend and reached the lowest level (13.3 million tonnes) of the decade in 2021-22.

Chart 1.1: Trend in Coconut Production and Growth Rate in India, 2001-02 to 2022-23



Source: Horticulture Statistics Division, Ministry of Agriculture and Farmers Welfare

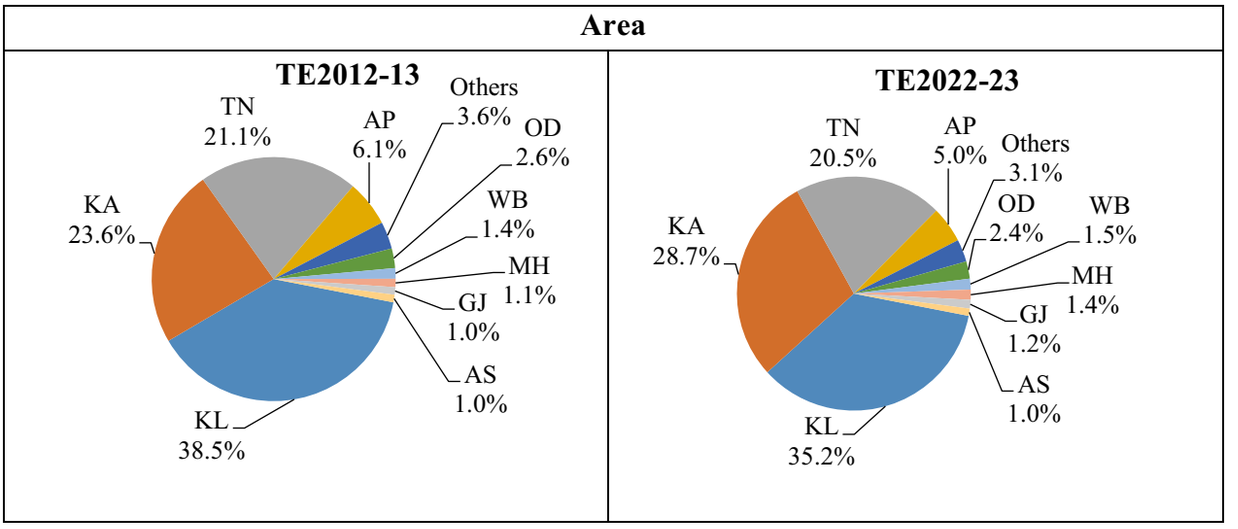
1.4 During the last two decades, production of coconut has exhibited cyclical fluctuations due to adverse climatic events and other abiotic and biotic stresses. The country faced major cyclones in both eastern and western coasts, which resulted in uprooting of many coconut

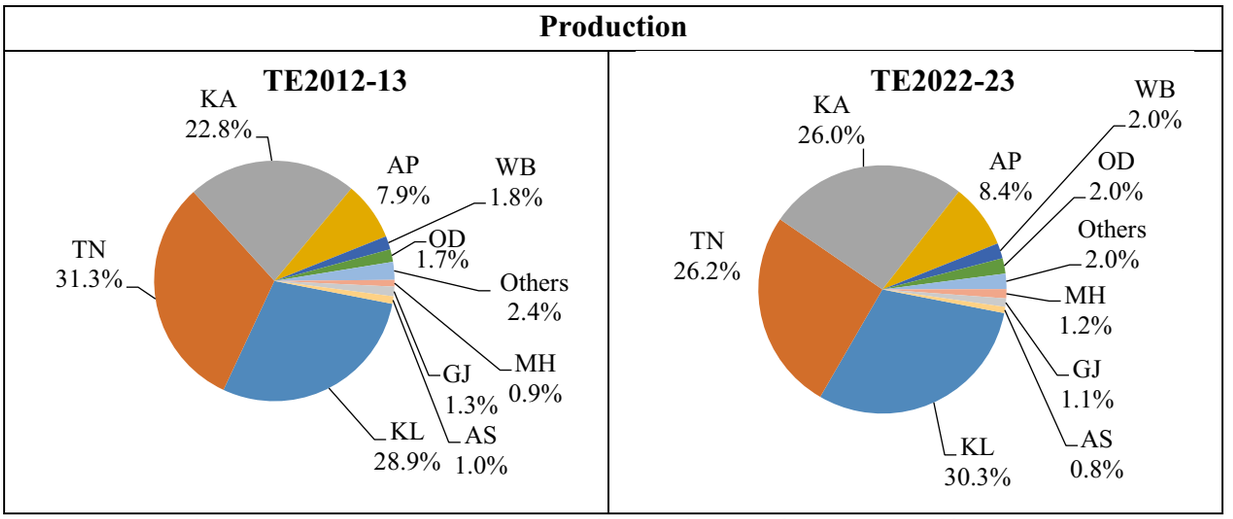
palms especially in Tamil Nadu, Odisha and Andhra Pradesh. Small landholding, low irrigation coverage in some States, drought conditions in Karnataka and Tamil Nadu, senile and unproductive palms, poor management, rising costs due to high wages and input prices, and volatile price of coconut and coconut-based products have contributed to fall in coconut cultivation in the country during the last decade.

1.5 The productivity of coconut was 6.21 tonnes per hectare during 2022-23, registering a marginal increase over 2020-21 level (6.18 tonnes/ha) but much lower than the record yield of 7.92 tonnes per hectare in 2016-17. The highest productivity was recorded in Andhra Pradesh (11.01 tonnes/ha) followed by West Bengal (8.58 tonnes/ha) and Tamil Nadu (7.87 tonnes/ha) in 2022-23. However, major producers such as Karnataka (5.91 tonnes/ha) and Kerala (5.04 tonnes/ha) had productivity lower than the national average in 2022-23.

1.6 Chart 1.2 presents the share of major coconut producing States in total area and production of coconut during TE2012-13 and TE2022-23. Among the major States, share of Kerala, Tamil Nadu and Andhra Pradesh in coconut acreage declined between TE2012-23 and TE2022-23, while share of Karnataka showed a significant jump from 23.6 percent to 28.7 percent during the period. In case of production, Kerala, Karnataka and Andhra Pradesh increased their share between TE2012-13 and TE2022-23, while Tamil Nadu lost its share in total coconut production in the country. The area, production and yield of coconut in major producing States for the period 2001-02 to 2022-23 are given in Annex Tables 1.1 to 1.3.

Chart 1.2: Share of Major States in Coconut Acreage and Production





Source: Horticulture Statistics Division, Ministry of Agriculture and Farmers Welfare

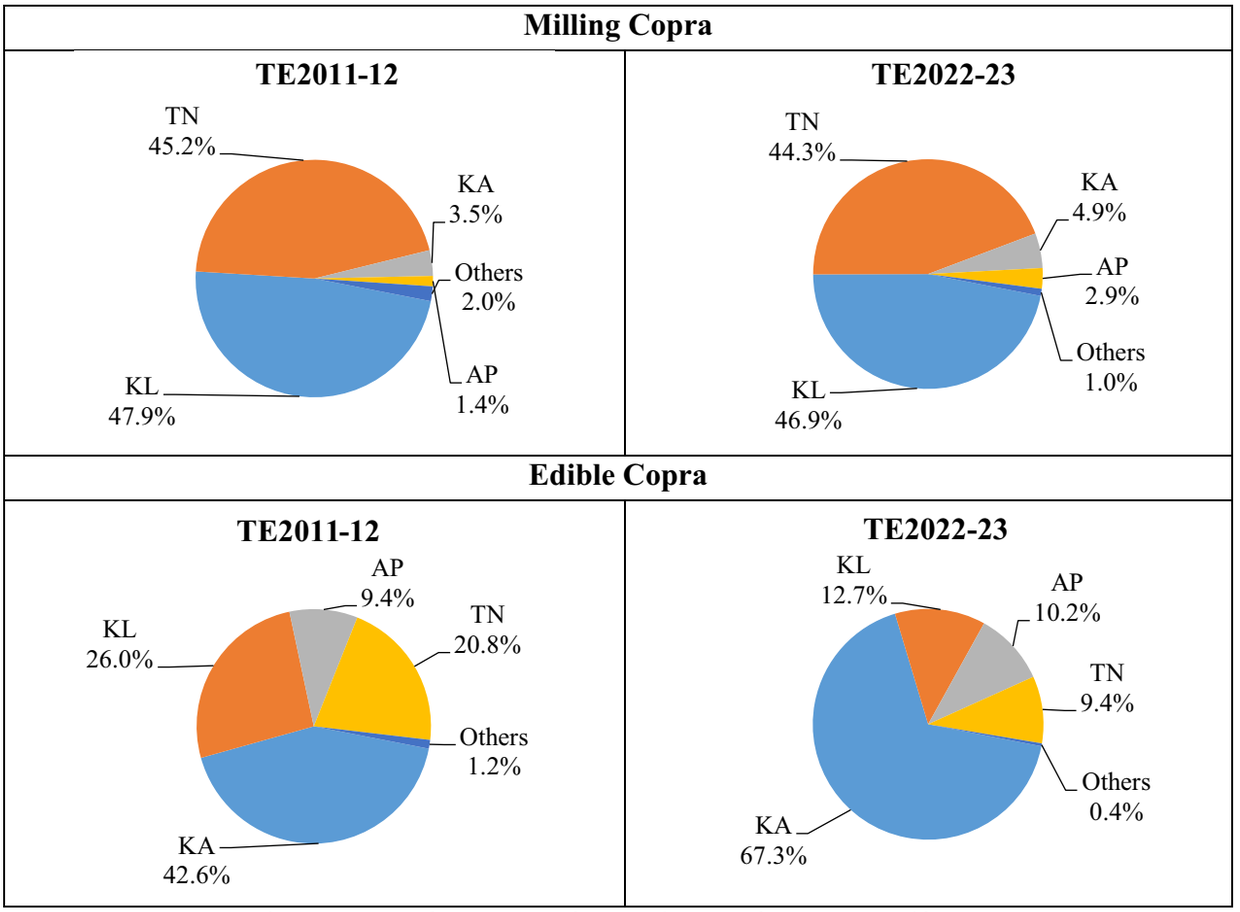
Milling and Ball Copra

Overview

1.7 Two types of copra are produced in India, milling copra and ball copra. Milling copra is used to extract oil, while ball/edible copra is consumed as a dry fruit and used for religious purposes. According to Coconut Development Board (CDB) estimates, out of total production of coconut in India about 45.8 percent is used for making copra, about 33 percent for milling copra and 12.8 percent for ball copra. Milling copra production is mainly concentrated in Kerala and Tamil Nadu. During TE2022-23, Kerala had the largest share, contributing 46.9 percent to total milling copra production in the country, while, Tamil Nadu accounted for 44.3 percent (Chart 1.3). In case of edible/ball copra, Karnataka has dominant position with 67.3 percent share in total production, followed by Kerala (12.7%), Andhra Pradesh (10.2%) and Tamil Nadu (9.4%). There have been significant changes in share of States in edible copra production during the last decade. Karnataka increased its share from 42.6 percent in TE2011-12 to 67.3 percent in TE2022-23, while share of Kerala declined from 26 percent to 12.7 percent and Tamil Nadu from 20.8 percent to 9.4 percent during the period. In case of milling copra, the share of Kerala and Tamil Nadu declined marginally while share of Karnataka and Andhra Pradesh marginally rose between TE2011-12 and TE2022-23.

1.8 During TE2022-23, the top milling copra producing States were Kerala and Tamil Nadu, accounting for 91.2 percent of the total production in the country, while top three edible copra producers, Karnataka, Kerala and Andhra Pradesh, comprise more than 90 percent of total production.

Chart 1.3: Changing Share of Major States in Milling and Edible Copra Production in India



Source: Coconut Development Board, Ministry of Agriculture and Farmers Welfare

Utilization Pattern of Coconut

1.9 The usage of coconuts has evolved over the past decades. According to Coconut Development Board (CDB), of the total production of coconuts, about 12 percent is consumed in the tender form for drinking purposes and remaining is used as mature coconuts for domestic and industrial purpose. Although there was some decline in share of tender coconut caused by disruptions in supply chain and logistics due to COVID-19 pandemic, demand has rebounded but still lower than pre-pandemic level. Less than 15 percent of coconut is used for value-added products such as desiccated coconut, virgin coconut oil, coconut milk, coconut water, etc. The market for coconut value-added products is expected to increase further, especially with development of the downstream industries for coconut value-added products such as coconut water, activated carbon, coir pith, virgin coconut oil, etc. and changing consumption patterns especially due to popularity of functional and plant-based drinks.

Issues and Challenges in Coconut Sector

1.10 The coconut sector has been facing several challenges such as low and fluctuating productivity, biotic and abiotic stresses, scarcity of labour and high wages, constraints in marketing and value addition, large fluctuations in coconut prices, etc. In order to address these challenges, a multi-pronged strategy for reducing cost of production, setting target for increasing productivity by introducing new varieties, bridging yield gap through effective extension services and promoting value-addition and diversification in coconut products needs to be pursued vigorously. Some major challenges facing the Indian coconut sector are discussed in this section.

Low and Fluctuating Yield

1.11 Over the years, coconut farmers have suffered from low and unstable productivity due to old and senile coconut trees, lack of irrigation facilities, poor agronomical and management practices, incidence of pests and diseases, natural calamities, etc.

Old and Senile Palms

1.12 The prevalence of old and senile palms and poor genetic base of the planting material under cultivation are the major reasons for the low productivity. The Central Government has been implementing "Replanting and Rejuvenation of Coconut Gardens (R&R)" Scheme to enhance production and productivity of coconut by removal of disease advanced, old, and senile palms, replanting with quality seedlings and rejuvenating remaining palms through an integrated package of practices. Government of Kerala has set up Kerala Coconut Development Council (CDC) in 2018-19 and launched a programme for the rehabilitation and rejuvenation of coconut palms in the State and set a target of replanting 3 lakh hectares of old and senile plantations in the State over a period of 10 years. However, non-availability of good quality coconut seedlings and planting material is a major constraint. The coverage under "Replanting and Rejuvenation of Coconut Gardens" Scheme has been very slow as only about 60.2 thousand hectares area has been covered during 2016-17 and 2022-23. Therefore, efforts should be made to improve availability of quality planting material of high-yielding varieties and hybrids, as well as upscale replanting and rejuvenation of coconut gardens.

Diseases and Pests

1.13 Coconut is affected by a wide array of insects, pests and diseases and crop productivity loss due to the incidence of pests and diseases is a major concern in coconut cultivation. To help farmers control coconut pests and diseases, an integrated pest and disease management approach should be promoted among farmers. The CDB has launched a training programme,

"Friends of Coconut Tree", under which unemployed youths are imparted training on crown cleaning, which helps in managing pest and disease outbreaks. Government of Kerala has established Plant Health Clinics (PHC) for providing adequate diagnostic and advisory facilities to farmers on time and Farmers Field Schools (FFS) based on agro-ecosystem analysis to promote environmentally sustainable scientific plant health and pest management strategies with the participation of farmers. There is a need to develop and popularize coconut varieties/hybrids resistant or tolerant to key pests and diseases.

Irrigation

1.14 Soil moisture stress caused by drought often limits the growth and nut yields of the coconut as evident from low irrigation coverage in Kerala (20.5%) and Karnataka (57.4%). Growing water scarcity, climate change, climate variability and extreme weather events will significantly affect productivity of coconut and adversely affect the livelihood of coconut cultivating community. In view of scarcity of irrigation water, it would be prudent to adopt micro-irrigation and soil moisture conservation measures in coconut farming. The Government of India has been implementing Centrally Sponsored Scheme "*Pradhan Mantri Krishi Sinchayee Yojana* Per Drop More Crop (PMKSY-PDMC)", with the objective to enhance water use efficiency by promoting appropriate technological interventions like drip and sprinkler irrigation and encourage the farmers to use water saving and conservation technologies. Government of Kerala has initiated a project to establish community irrigation units in the State under Community Irrigation Initiative. Special efforts should be made by the Central and State Governments to create awareness and encourage farmers to adopt such technological interventions in coconut farming.

Nutrient Management

1.15 Various studies suggest that low productivity in coconut is mainly due to poor soil fertility and management. Majority of small and marginal coconut farmers do not adopt proper nutrient and crop management practices, which adversely affect crop productivity. Since crop nutrition management is essential to improve productivity and production of coconut, efforts should be made to promote Integrated Nutrient Management (INM) practices among farmers.

High Labour Costs

1.16 The availability and cost of human labour is a major concern for the coconut sector in the country. In 2021-22, the share of labour cost in total operating cost was 73.5 percent in coconut production at all-India level and ranged from 65.8 percent in Tamil Nadu to 78.6 percent in Kerala, primarily due to high agricultural labour wages in the State.

Mechanization is an option for farmers facing high-cost labour and unpredictable skilled labour supplies. However, lack of suitable machinery, particularly for harvesting nuts from coconut palms, poses more challenges. The inherent occupational risks and the physically demanding nature of climbing tall coconut trees deter individuals from entering the profession of coconut harvesting.

1.17 In order to train aspiring young climbers and address the issue of labour shortage for harvesting of nuts, the CDB has launched a training program "Friends of Coconut Tree" in 2011 for providing training on palm climbing using a mechanical device that reduces physical strain for the climber. As of 31st March 2023, 66,814 persons have been trained under this Scheme in association with Farmer Producer Organizations (FPOs). However, this initiative has not resulted in desired increase in the number of labourers needed for the coconut sector. Government of Kerala has established Agro Service Centres at Block level and *"Karshika Karma Sena"* at Panchayat level to address labour shortage and to promote mechanization and a special group for coconut harvesting has been created in selected Agro Service Centres. There is a pressing need to develop cost-effective and user-friendly machinery or technology specifically designed for harvesting of nuts. Government support for research on mechanization can speed up the development and diffusion of labour-saving machine harvesting of coconut nuts.

Value-Addition

1.18 In India, coconut is mainly consumed in the form of fresh nuts, tender coconuts, and coconut oil. The value-addition in coconut is less than 15 percent of the total coconut production but demand for coconut based value-added products like virgin coconut oil, coconut water, coconut milk, coconut cream, coconut chips, desiccated coconut powder, etc. is rising. Growing domestic and international market for coconut value-added products has opened up new opportunities for diversification and exports. There is a need to promote development of the coconut value chain, with the investment in a state-of-the-art processing plants for export of high value-added coconut products.

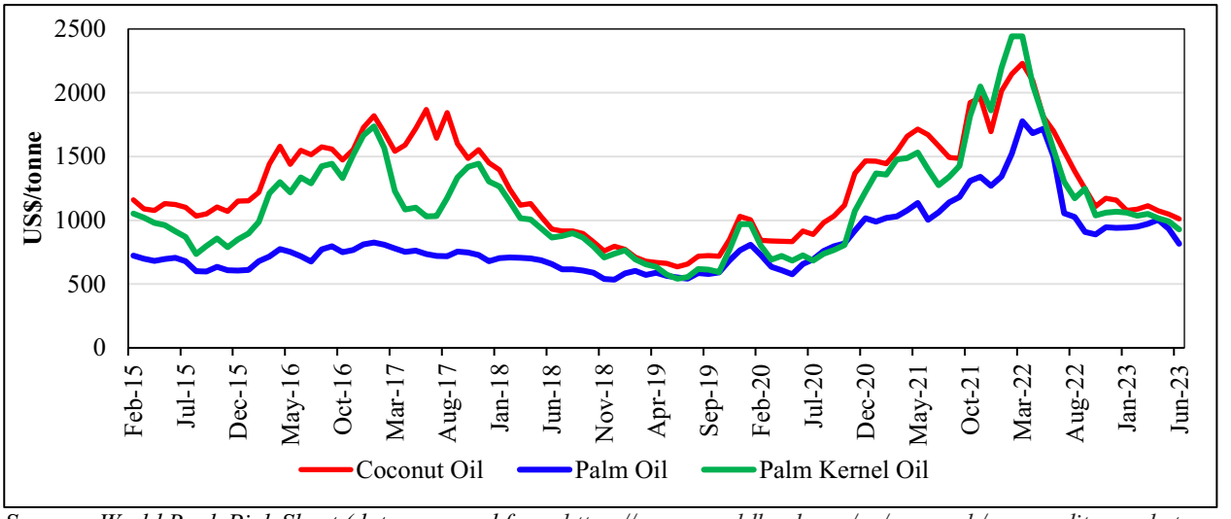
1.19 Government of India has been implementing “Technology Mission on Coconut (TMOC)” since 2001-02 for development and adoption of technologies for processing and product diversification as well as market promotion. About 550 coconut processing units with capacity of about 3,688 million nuts per year have been set up under the TMOC during the last two decades. State Governments have also taken various initiatives to promote value-addition in coconut. Government of Kerala has launched “Value Addition of Agriculture for Income Generation (VAIGA)” programme and set up an Agro Park in Kozhikode district to promote value-addition and attract youth towards agriculture-based entrepreneurship. To fully capitalize on domestic and export opportunities and realize the sector's potential, there is a need for comprehensive and integrated strategy for promoting value-addition.

Coconut Oil versus Other Vegetable Oils

1.20 In recent decades, the global edible vegetable oil industry has undergone significant changes in response to shifts in supply and demand factors. Rising income, changing tastes and preferences and demographic factors have led to substantial rise in the demand for oils used in food, fuel and industrial applications, while advancement in production technologies has led to higher supply through improved yields. The non-food sector of oils has been on the rise due to growth of oleochemical industry and increased production of biodiesel. Globally, nearly 20 percent of vegetable oils go into biodiesel, while Europe's production of biodiesel is mainly based on vegetable oils.

1.21 The global production of vegetable oils is dominated by four major crops: oil palm, soybean, rapeseed/canola, and sunflower. Coconut oil constitutes a smaller share (<2%) of the world total vegetable oil production. About half of the coconut oil production is used for industrial purposes, while the other half is consumed domestically for household needs and in various edible applications. Coconut oil and palm kernel oil hold significant importance as lauric oils and are main raw materials for production of surfactants, soaps, detergents, cleaning, personal care and lubricant products. Due to their similar properties and substitutability, the prices of both coconut oil and palm kernel oil are highly correlated.

Chart 1.4: Price Trends in Coconut Oil, Palm Kernel Oil and Palm Oil



Source: World Bank Pink Sheet (data accessed from https://www.worldbank.org/en/research/commodity-markets on 1st August 2023)

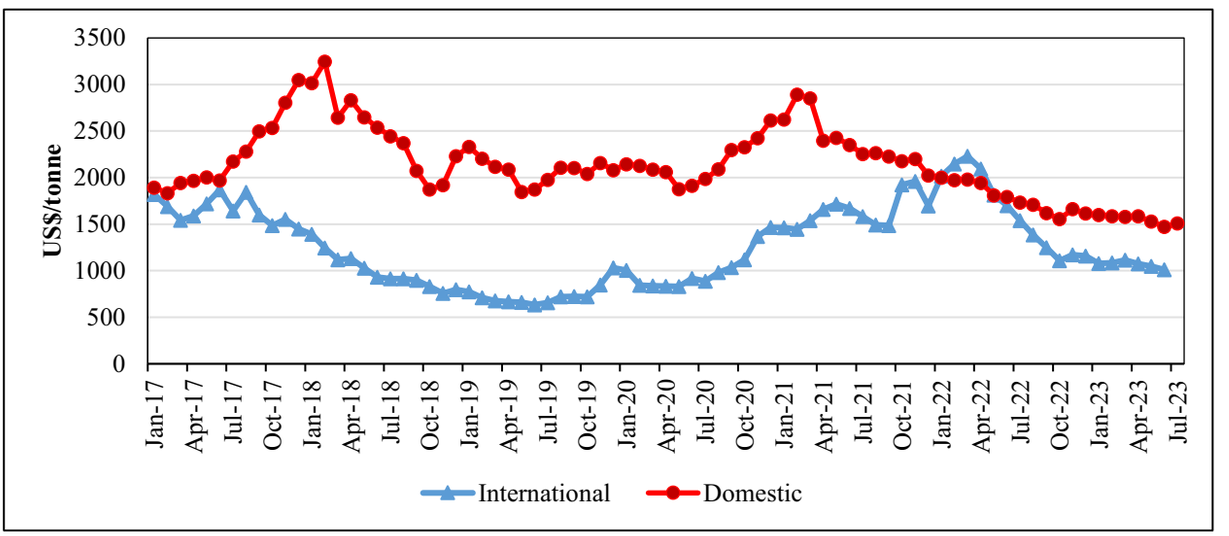
1.22 Chart 1.4 shows price trends of lauric oils from 2015 to 2023. Historically, coconut oil prices have been consistently higher than palm kernel oil price with the widest price gap of 28 percent in 2017. However, a notable shift took place between November 2021 and March 2022 when palm kernel oil price surpassed coconut oil price. In February 2022, the price premium of palm kernel oil over coconut oil reached an all-time high of US$295. However,

both coconut oil and palm kernel oil prices witnessed a declining trend from April 2022 and prices of both coconut oil and palm kernel in June 2023 were more than 40 percent lower compared with the corresponding month last year. Coconut oil prices have remained marginally higher than palm kernel oil in 2023. The price differential between lauric (coconut and palm kernel) oil and palm oil has also narrowed in 2023 but is expected to increase in the coming months and coconut oil is expected to widen its premium over palm kernel oil.

High Domestic Prices

1.23 India is the largest producer of coconut in the world but has relatively small share in the export market. As is evident from Chart 1.5, domestic prices of coconut oil have generally remained higher than international prices. However, the average domestic price of coconut oil was lower than the international price during January-May 2022, making Indian exports competitive. The domestic prices moved above world prices from June 2022 and have remained above the global prices. India's exports of coconut oil showed an increasing trend during the last three years, from ₹255.9 crore in 2020-21 to ₹429.9 crore in 2021-22 and ₹453.4 crore in 2022-23, while in volume terms it rose from 12.3 thousand tonnes to 20.8 thousand tonnes and 23.4 thousand tonnes during the period.

Chart 1.5: Domestic and International Prices of Coconut Oil



Source: 1. World Bank for international price
2. Economics and Statistics Division, Ministry of Agriculture and Farmers Welfare for domestic prices in Cochin, Kerala

1.24 The domestic market for coconut oil is influenced by palm oil and soybean oil, which are major competing oils. The import of palm oils (Refined and Crude) in India increased by more than 20 percent during 2022-23 compared to the previous year, while total import of

vegetable oils (in volume) increased by 10.3 percent in 2022-23 but value of imports rose by 18.2 percent due to high international prices. High imports of edible oils particularly palm oil and soybean oil adversely affect the price of coconut oil in the domestic market as there is high substitutability between vegetable oils and fats. Adulteration of coconut oil with cheaper palm oil, palm kernel oil and solvent extracted oil has emerged as a major issue as coconut oil prices are significantly higher than other edible oils and the issue needs to be addressed.

Coconut Procurement and Farmers' Collectives

1.25 To ensure remunerative price to coconut farmers, the Minimum Support Price (MSP) for milling and ball copra has been introduced since 1986 and National Agricultural Cooperative Marketing Federation of India Ltd. (NAFED) and National Cooperative Consumers' Federation (NCCF) are Central Nodal Agencies (CNAs) for procurement of copra and de-husked coconut under Price Support Scheme (PSS). As market prices of both milling copra and ball copra were higher than the MSP during the period 2014-2021, there was not much procurement of copra. However, as market prices fell below the MSP for milling copra in 2022 and 2023 and ball copra in 2023, significant quantity of copra was procured during the last two years.

1.26 One major issue, which requires attention of the Government, is the constraints in the procurement operations of copra at the ground level and shortage of scientific storage facilities at local level. Procurement of de-husked coconut has been a long-standing demand of farmers from various coconut growing States. Since majority of famers have no facilities for converting coconut into copra, procurement under PSS does not directly benefit the farmers. Farmers generally sell raw coconuts to traders due to low volumes and lack of required facilities for conversion of coconut into copra. In 2008, Government of India announced MSP for de-husked coconut for the first time but procurement of de-husked coconut has not been successful due to non-availability of infrastructure at the ground level.

1.27 Since majority of coconut farmers are small and marginal, it is not viable for individual farmer to purchase deshelling machines and dryers, construct sheds for dryer, storage facilities, etc. Farmers' collectives can help in overcoming these challenges. The CDB has been supporting the establishment of Coconut Producer Societies (CPS), Coconut Producers Federations (CPF), and Coconut Producers Companies (CPC) to help in collective marketing, value-addition, and product diversification. As on 31st March 2023, a total of 9,790 CPSs, 747 CPFs, and 69 CPCs have been formed and registered across nine coconut-producing States in India. These farmers' collectives as well as other institutions including cooperatives do not have required infrastructure for conversion of coconut into copra and undertaking procurement operations. Therefore, these institutions should be provided assistance under Agriculture Infrastructure Fund (AIF) for purchase of coconut deshelling machines, drying units, storage facilities and other infrastructure on a cluster basis. This will

enable aggregation of produce of small and marginal farmers and process coconut into copra and farmers would benefit directly from procurement under the PSS operations. Government of India, in collaboration with concerned State Governments, NAFED and Coconut Development Board should also streamline and strengthen the procurement operations of copra at the ground level.

Coconut Production Risks

1.28 Coconut cultivation is subjected to risks from climate change, natural calamities, weather variability, pests, diseases etc. In order to protect coconut growers against such risks, Government of India has been implementing a Centrally Sponsored Scheme, Coconut Palm Insurance Scheme (CPIS) in all major coconut producing States since 2009-10 through Agriculture Insurance Company of India (AIC). The Scheme covers perils leading to death/loss of palm or palm becoming unproductive due to storm, hailstorm, cyclone typhoon, tornado, heavy rains, flood and inundation, pest and diseases of widespread nature causing irreparable damages to palm, accidental fire, including forest fire and bush fire, lightening, earthquake, landslide and tsunami and severe drought and consequential total loss. The premium is shared between the Central Government, State Government, and individual farmers in a ratio of 50:25:25. Kerala has been implementing State Crop Insurance Scheme covering 25 major crops including coconuts since 1995 and the Scheme was restructured in 2017-18. Crop Insurance Fund is operated with contributions from the participating farmers through registration fee and premium and Government contribution. There was more than 2.5 times increase in the number of coconut farmers enrolled (33,820 farmers) under the State Scheme in 2019-20 due to devastation caused by floods in the State during 2018 and 2019 but there has been a continuous decline in the number of farmers enrolled under the Scheme during the last four years and only 4,381 farmers enrolled during 2022-23.

1.29 The performance of CPIS has not been very encouraging and progress has been uneven across States. During the last 15 years (2009-2023) only 47 lakh coconut palms covering 30.9 thousand hectares and 77,045 farmers have been covered under the CPIS. In order to popularize the Scheme among coconut farmers, the State Government in collaboration with CDB and AIC should create adequate awareness and publicity of the Scheme among coconut farmers and organize capacity building programmes for various stakeholders for effective implementation of the Scheme.

Outlook of Coconut Sector

1.30 According to the USDA Oilseeds World Markets and Trade Report (July 2023), the projected world copra and coconut oil production and exports of copra for the year 2023-24 are expected to be slightly higher than the previous year. As per the World Bank's Commodity

Markets Outlook Report (April 2023), prices for coconut oil are predicted to undergo significant changes in the coming years. In 2023, the price is forecast to decline by 32.7 percent compared with 2022 and touch US$1,100 per tonne. However, prices are expected to recover in 2024 and reach US$1,300 per tonne.

Structure of the Report

1.31 The report consists of six chapters. Chapter 2 discusses demand-supply situation, price trends and procurement operations of copra. Trends in yield and drivers of productivity of coconut are analyzed in Chapter 3. The trade patterns and performance, domestic and world price trends and recent trade policy developments in the sector are discussed in Chapter 4. Costs, returns and profitability of copra are analyzed in Chapter 5. After careful analysis of these factors, the Commission has made price and non-price policy recommendations for copra for 2024 season in Chapter 6.

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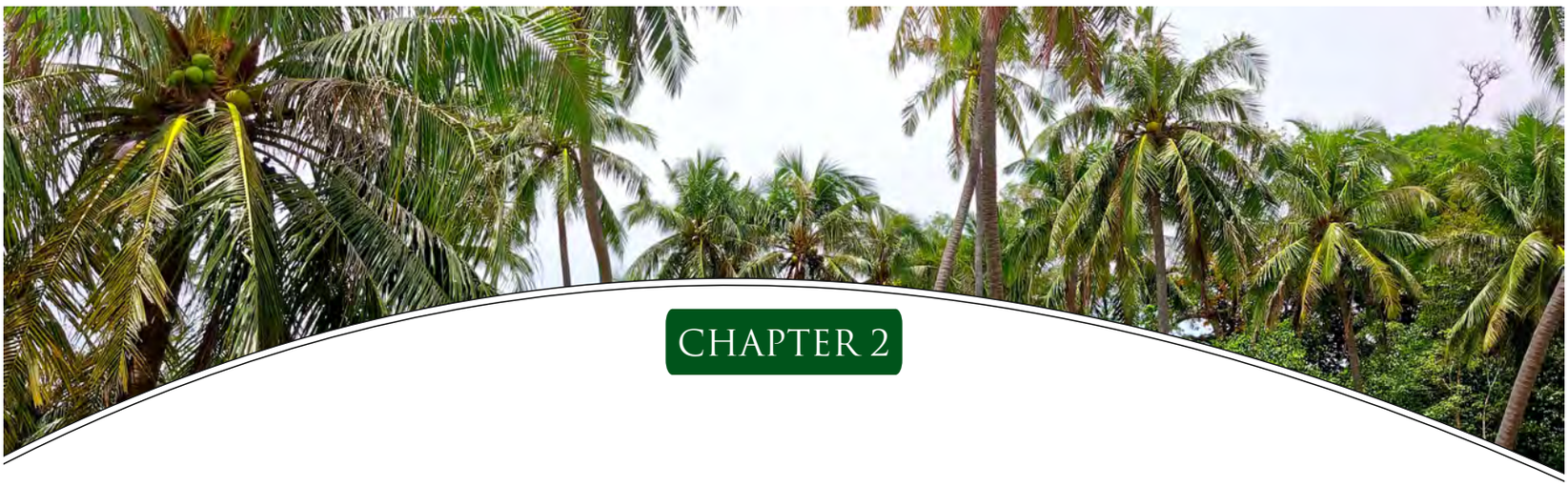


CHAPTER 2

Demand-Supply, Price Trends and Procurement Operations

2.1 Coconut is a versatile crop and provides a diverse range of products but copra is the main commercial product, from which coconut oil is produced. On account of evolving dietary patterns, demand for coconut products such as desiccated coconut, virgin coconut oil, tender coconut water, coconut milk-based products etc. is on the rise. In this context, the global and domestic demand-supply scenario of coconut oil, trends in prices of copra, MSP and procurement operations have been discussed in this chapter.

Global Market Scenario – Vegetable Oils

2.2 The United States Department for Agriculture (USDA) data for 2023-24 global production of vegetable oils shows that palm oil, soybean oil and rapeseed oil are the major oils with a combined share of 72.3 percent in world production. Coconut oil is a minor player in the world vegetable oil market accounting for only 1.6 percent of production share (Table 2.1). Philippines, Indonesia and India together account for 88.6 percent of global coconut oil production. Further, it is evident from Table 2.1 that top three producing countries account for more than 70 percent of all vegetable oils except cottonseed oil (67.7%), rapeseed oil (65.6%) and soybean oil (64.5%).

Table 2.1: Estimated Production Share of Major Global Vegetable Oils, 2023-24

Oil	Production (Million MT)	Share (%)	Top 3 Producing Countries	Share (%) of Top 3 Countries
Coconut (Copra)	3.76	1.6	Philippines, Indonesia, India	88.6
Soybean (Local)	18.19	7.5	Brazil, Argentina	100.0
Palm	79.46	32.9	Indonesia, Malaysia, Thailand	87.4
Palm Kernel	9.03	3.7	Indonesia, Malaysia, Nigeria	86.5
Olive	3.25	1.3	European Union, Turkey, Tunisia	82.2
Sunflower Seed	21.19	8.8	Russia, Ukraine, European Union	75.3
Peanut	6.46	2.7	China, India, Sudan	73.3
Cotton seed	5.04	2.1	China, India, Brazil	67.7
Rapeseed	33.00	13.7	European Union, China, Canada	65.6
Soybean	62.07	25.7	China, United States, Brazil	64.5
Total	**241.46**	**100**	-	-

Source: USDA, Production, Supply and Distribution (PS&D) Database (As on 27th July 2023)

Demand-Supply Situation

2.3 Table 2.2 shows the global supply, demand and stocks scenario of coconut oil. Global production of coconut oil, which fell by about 0.8 percent in 2022-23, is estimated to go up by about 1.6 percent in 2023-24, and global consumption is forecast to marginally increase by about 0.5 percent in 2023-24 over 2022-23. It is expected that world stock-to-use ratio (SUR) will contract to 10.5 percent in 2023-24 as compared to 11.7 percent in 2022-23.

Table 2.2: World Supply and Distribution of Coconut Oil

(in million tonnes)

Particulars	2019-20	2020-21	2021-22	2022-23	2023-24*
Production	3.61	3.58	3.73	3.70	3.76
Imports	1.84	1.94	2.19	1.96	1.99
Exports	1.88	1.71	2.27	2.01	1.99
Domestic Consumption	3.63	3.66	3.59	3.82	3.84
Ending Stocks	0.64	0.80	0.85	0.68	0.61
Stocks-to-Use Ratio	11.62	14.90	14.51	11.66	10.46

*Note: *estimated as on July 2023, #Stocks-to-Use Ratio (SUR) = Stocks/(Exports + Domestic Consumption)*100*

Source: Foreign Agricultural Service/USDA Global Market Analysis

2.4 Table 2.3 presents the domestic supply, demand and stocks scenario of coconut oil. According to the Coconut Development Board (CDB) estimates, both production and consumption of coconut oil are estimated to fall in 2022-23 over 2021-22. However, the rate of decrease in consumption was higher (9.1%) than the rate of decrease in production (4%). This led to an increase in ending stocks from 29.1 thousand tonnes in 2021-22 to 32.4 thousand tonnes in 2022-23.The stock-to-use ratio, an indicator of anticipated price movements, is forecast to increase from 5 percent in 2021-22 to 6.1 percent in 2022-23.

Table 2.3: Domestic Supply, Demand and Stocks of Coconut Oil

(in '000 tonnes)

Sl. No.	Particulars	2018-19	2019-20	2020-21	2021-22^{e}	2022-23^{e}
1	Opening Stock	26.4	27.9	29.7	46.5	29.1
2	Production	530.0	564.2	567.5	556.4	534.3
3	Imports	7.5	10.4	8.5	5.7	0.1
4	Total Supply (1+2+3)	563.9	602.5	605.7	608.6	563.5
5	Exports	6.8	7.9	12.3	20.8	23.4
6	Consumption/Crushing	529.2	564.9	551.9	558.8	507.7
7	Total Use (5+6)	536.0	572.7	564.1	579.5	531.1
8	Ending stock (4-7)	27.9	29.7	46.5	29.1	32.4
9	SUR	5.2	5.2	8.2	5.0	6.1

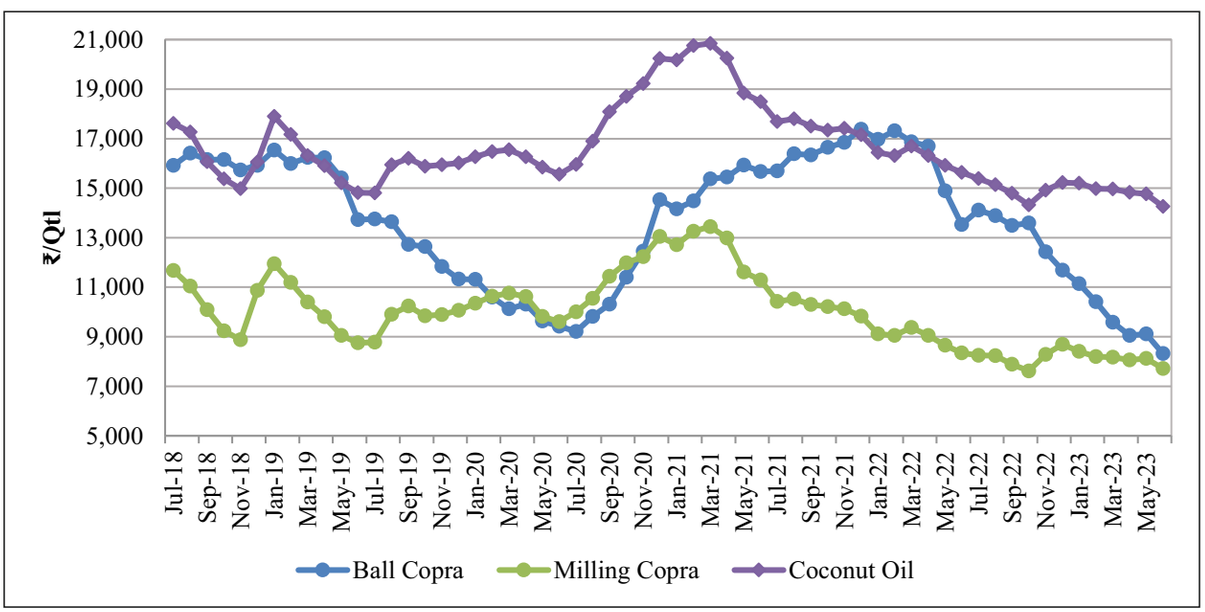
Note: 1. e – Estimated, 2. Consumption/Crushing of coconut oil estimated based on the details collected through various Offices of the Board and in consultation with industry sources.

Source: Coconut Development Board, Ministry of Agriculture and Farmers Welfare

Domestic Wholesale Price Trends

2.5 Chart 2.1 illustrates monthly wholesale prices of ball copra, milling copra and coconut oil for the period July 2018 to June 2023. Prices of copra and coconut oil exhibited volatility over the years. It is observed that prices of milling copra and coconut oil have followed a similar pattern and are highly correlated. Wholesale prices of copra and coconut oil which fell during 2019 picked up from mid-2020 onwards. Milling copra and coconut oil attained 5-year high prices during March 2021 and started decelerating thereafter. On the contrary, prices of ball copra showed an increasing trend from July 2020 onwards, peaked in February 2022 and recorded a downward slide thereafter.

Chart 2.1: Trends in Wholesale Prices of Ball Copra, Milling Copra and Coconut Oil

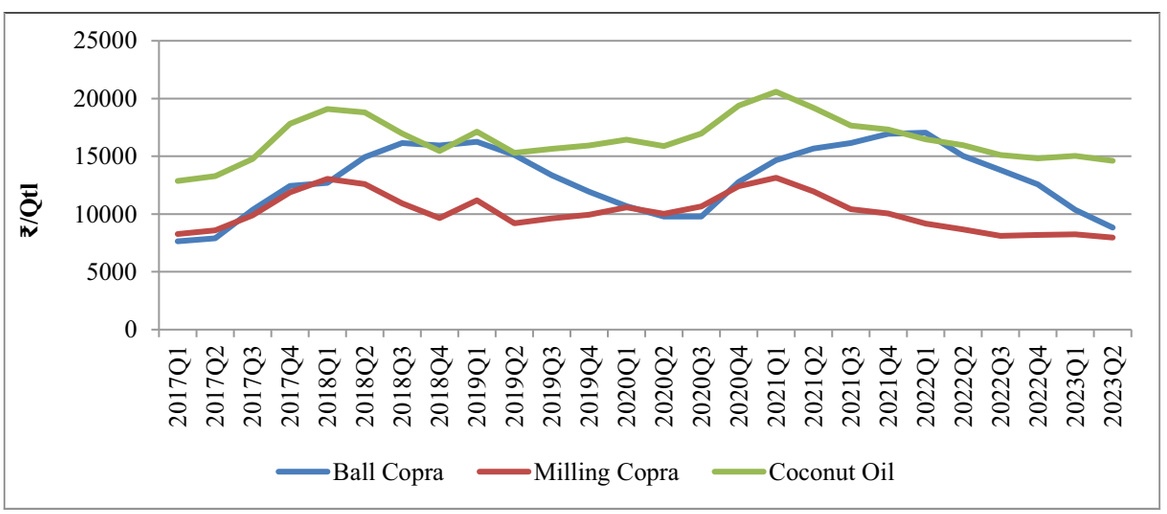


Source: Coconut Development Board, Ministry of Agriculture and Farmers Welfare

2.6 The wholesale price of milling copra was ₹9,614 per quintal (qtl) in June 2020 and thereafter started rising and touched ₹13,450 per qtl in March 2021. Subsequently, prices of milling copra started falling and plummeted to a low of ₹7,621 per qtl in October 2022 before exhibiting a rising trend. A similar price trend has been observed in case of coconut oil. In June 2020, the wholesale price of coconut oil was ₹15,559 per qtl and touched a high of ₹20,845 per qtl in March 2021. In the remaining months of 2021 and most of 2022, prices of coconut oil witnessed gradual deceleration and touched ₹14,917 per qtl in November 2022. Prices of coconut oil picked up thereafter in December 2022 and were ₹14,257 per qtl in June 2023. From a high of ₹16,536 per qtl in January 2019, wholesale prices of ball copra crashed to ₹9,208 per qtl in July 2020. Thereafter, prices of ball copra gathered pace and peaked at ₹17,376 per qtl in December 2021. The first half of 2022 saw moderation in prices of ball copra and was ₹14,116 per qtl in July 2022 before demonstrating a downward trajectory and falling to ₹8,316 per qtl in June 2023.

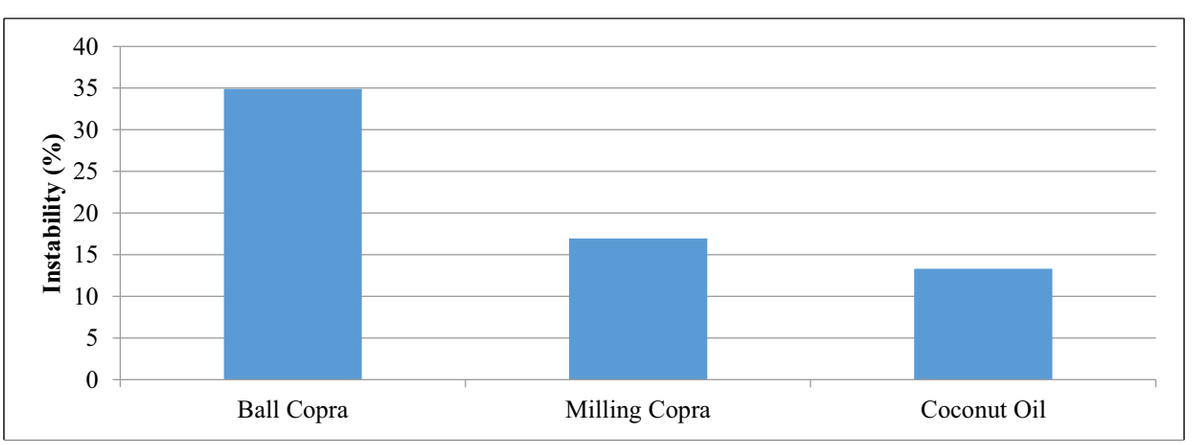
2.7 Chart 2.1 (A) depicts seasonality in prices of copra and coconut oil. For instance, it is observed that rise in prices of ball copra during 2017Q1 to 2018Q3 are followed by a fall in prices during 2018Q4 to 2020Q3. Thereafter, prices of ball copra again rse during 2020Q4 to 2022Q1. This is followed by a decreasing trend in prices of ball copra during 2022Q2 to 2023Q2. Seasonality patterns are also discernable in case of milling copra and coconut oil. Further, from Chart 2.1 (B), it is evident that instability in prices of ball copra is significantly higher compared with milling copra and coconut oil..

Chart 2.1 (A): Seasonality in Ball Copra, Milling Copra and Coconut Oil



Source: Coconut Development Board, Ministry of Agriculture and Farmers Welfare

Chart 2.1 (B): Price Instability Index (%) of Copra and Coconut Oil during 2017-23



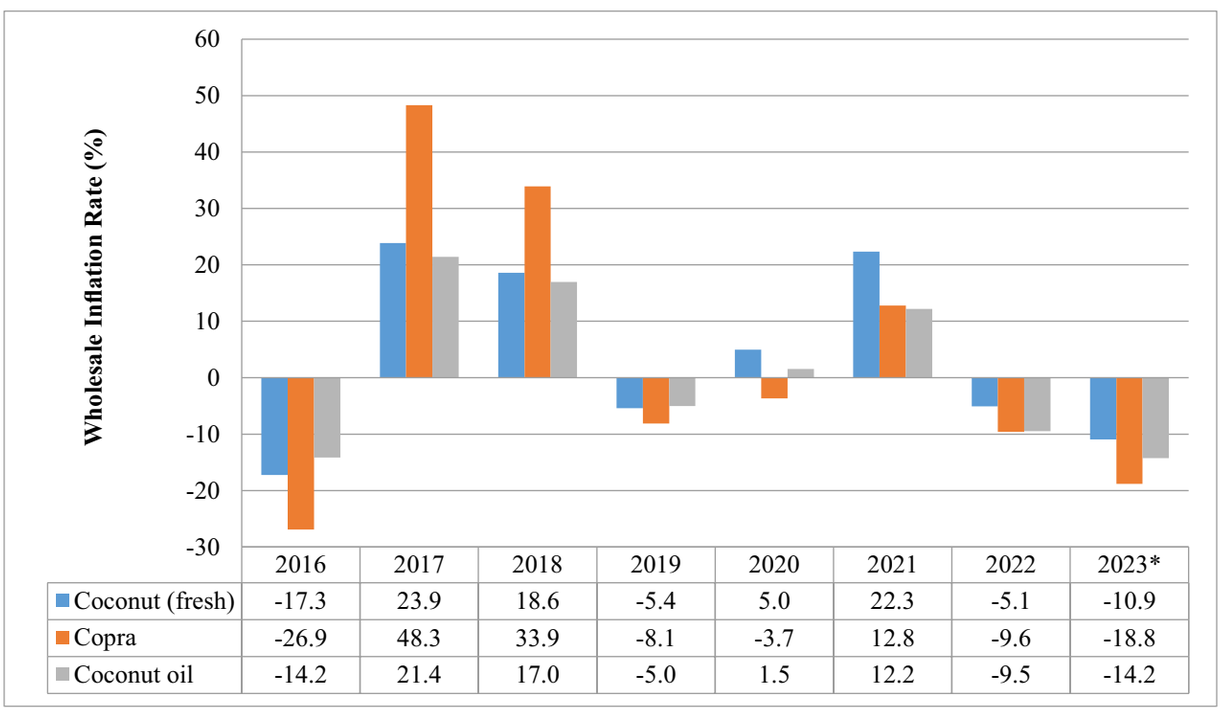
*Note: Price Instability Index = (standard deviation of natural logarithm of Y_t/Y_{t-1})*100*

Source: Coconut Development Board, Ministry of Agriculture and Farmers Welfare

Wholesale Inflation Trends in Copra and Coconut Oil

2.8 Coconut farmers and industry are impacted by cyclicity in production and prices caused by climatic factors, insects, pests, diseases etc. The annual WPI inflation rates for the period 2016 to 2023 (up to June) for coconut (fresh), copra and coconut oil have been graphically represented in Chart 2.2. It is observed that the wholesale inflation rates for coconut and coconut products exhibit volatility. The wholesale inflation rate for copra has been declining since 2017 and fell from 48.3 percent in 2017 to (-)3.7 percent in 2020, after which inflation rose to 12.8 percent in 2021. Subsequently, wholesale inflation rate of copra fell to (-)9.6 percent in 2022. In case of coconut (fresh), wholesale inflation rate declined from 23.9 percent in 2017 to (-)5.4 percent in 2019 before rising to 22.3 percent in 2021. Thereafter, wholesale inflation rate of coconut (fresh) fell to (-)5.1 percent in 2022. It is clear that wholesale inflation rates for coconut (fresh) and copra have shown intermittent cyclicity. Similarly, inflation rate for coconut oil declined from 21.4 percent in 2017 to (-)5 percent in 2019 before increasing to 12.2 percent in 2021. The wholesale inflation rate of coconut oil fell to (-)9.5 percent in 2022. Wholesale inflation rate in 2023 (upto June) was (-)10.9 percent for coconut (fresh), (-)18.8 percent for copra and (-)14.2 percent in case of coconut oil.

Chart 2.2: Annual Rate of Inflation, based on WPI (Base 2011-12=100), for Coconut (fresh), Copra and Coconut Oil



	2016	2017	2018	2019	2020	2021	2022	2023*
Coconut (fresh)	-17.3	23.9	18.6	-5.4	5.0	22.3	-5.1	-10.9
Copra	-26.9	48.3	33.9	-8.1	-3.7	12.8	-9.6	-18.8
Coconut oil	-14.2	21.4	17.0	-5.0	1.5	12.2	-9.5	-14.2

Note: ** up to June, 2023*

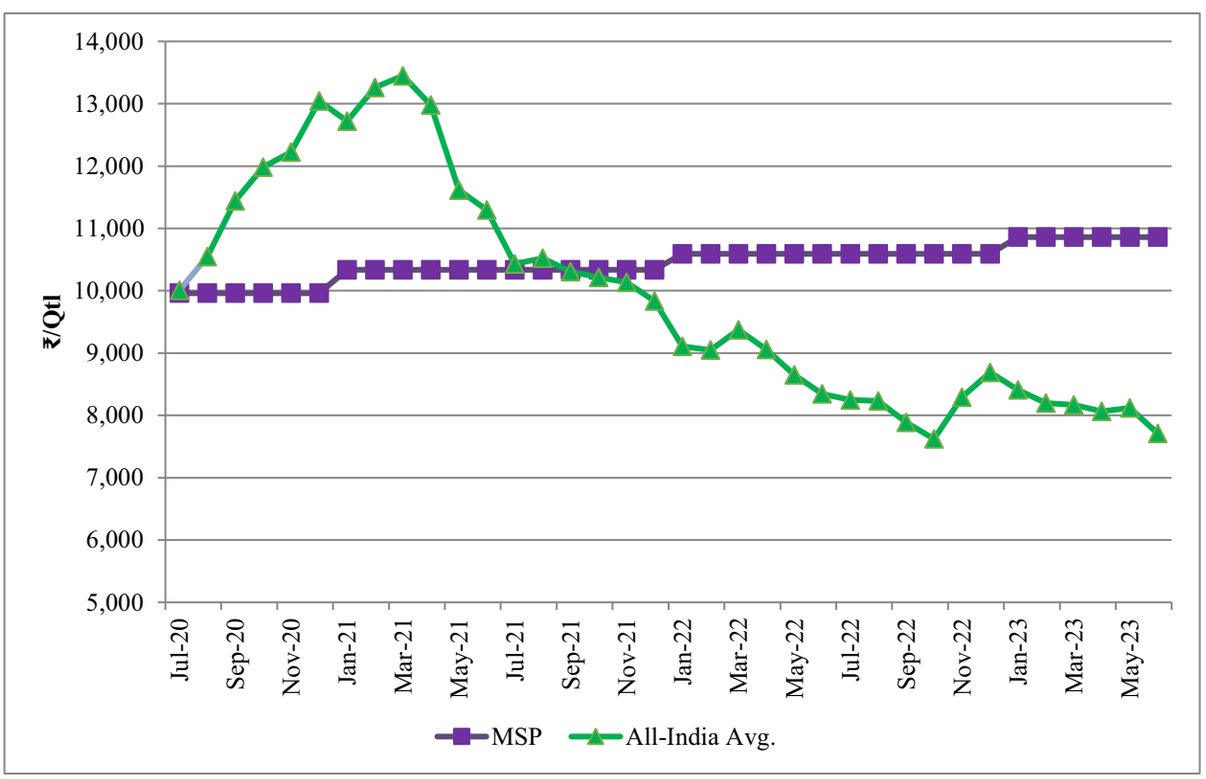
Source: Office of the Economic Advisor, Department for Promotion of Industry and Internal Trade (DPIIT), Ministry of Commerce and Industry

Comparison of Wholesale Prices and MSP of Copra

Milling Copra

2.9 Milling copra is used for extracting coconut oil. Kerala and Tamil Nadu are important milling copra producing States. Notwithstanding inter-State and inter-market variations in wholesale prices of copra, the general trend usually remains the same. Wholesale market prices are collected from key markets of Kerala (Kochi, Alappuzha and Kozhikode) and Tamil Nadu (Kangayam and Vellakoil). Comparison of wholesale prices of milling copra with MSP over the years has been depicted in Chart 2.3. The wholesale prices have shown an increasing trend from July 2020 (₹10,005/qtl) to March 2021 (₹13,450/qtl), thereby registering a 30 percent increase over MSP. In the following months, wholesale prices exhibited a deceleration and plummeted to ₹7,621 per qtl in October 2022, and remained below the MSP. The wholesale price of milling copra was ₹8,121 per qtl in May 2023, significantly lower the MSP.

Chart 2.3: MSP vis-à-vis Average Wholesale Price of Milling Copra



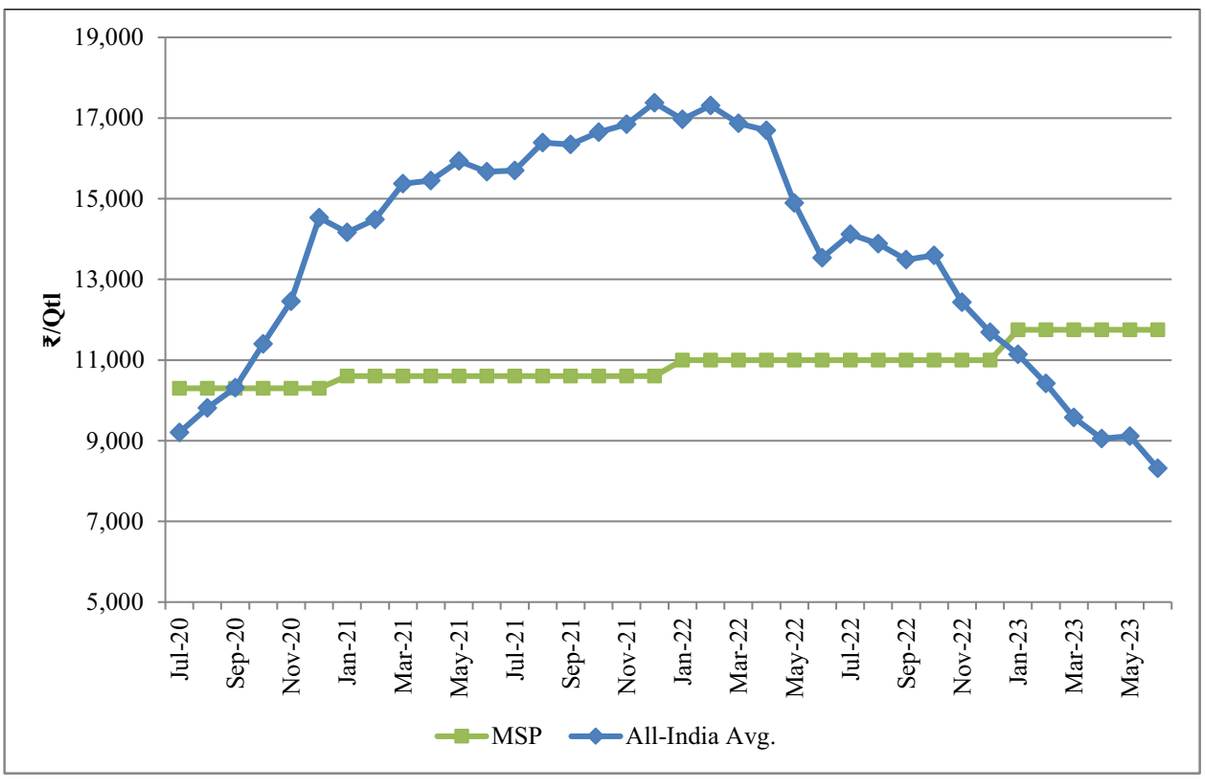
Source: Coconut Development Board, Ministry of Agriculture and Farmers Welfare

Ball Copra

2.10 Ball copra is a fine grade, well-dried whole of the coconut kernel and is commonly used in various food preparations. The largest wholesale market of ball copra is Karnataka and Tiptur & Arsikere are important markets from where wholesale prices are collected. A

graphical representation of the wholesale price and MSP in Chart 2.4 shows that, price of ball copra increased from ₹9,208 per qtl in July 2020 to ₹17,312 per qtl in February 2022 and consistently remained above the MSP during this period. Thereafter, prices started decreasing and stayed below the MSP from January 2023 onwards. The wholesale price of ball copra was ₹9,115 per qtl in May 2023.

Chart 2.4: MSP vis-à-vis Average Wholesale Price of Ball Copra

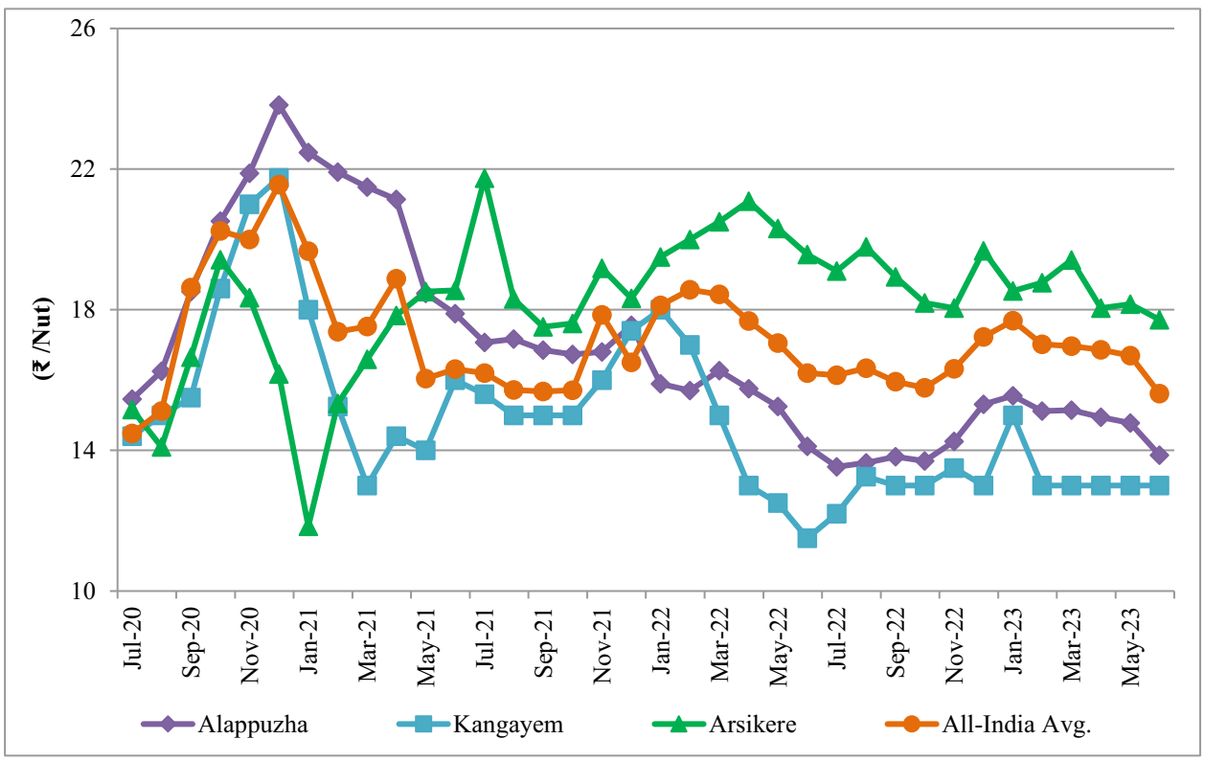


Source: Coconut Development Board, Ministry of Agriculture and Farmers Welfare

Raw Coconut

2.11 The biggest wholesale markets of raw coconut in India are found in Kerala, Tamil Nadu and Karnataka. Important markets from where wholesale prices are collected include Thiruvananthapuram, Alappuzha, Kangayem, Nagercoil, Mangalore and Arsikere. For visual representation, wholesale prices (₹/nut) of important markets of Kerala, Tamil Nadu and Karnataka are shown in Chart 2.5. After registering an all-time high in December 2020 (₹21.6 per nut), the all-India average wholesale prices of raw coconut started decreasing and reached a level of ₹15.7 per nut in October 2021. Subsequently, it showed an increasing trend and reached a level of ₹17.7 per nut in January 2023 but, exhibited a downward trajectory from February 2023 and touched ₹15.6 per nut in June 2023.

Chart 2.5: Trends in Price of Raw Coconut at Major Markets



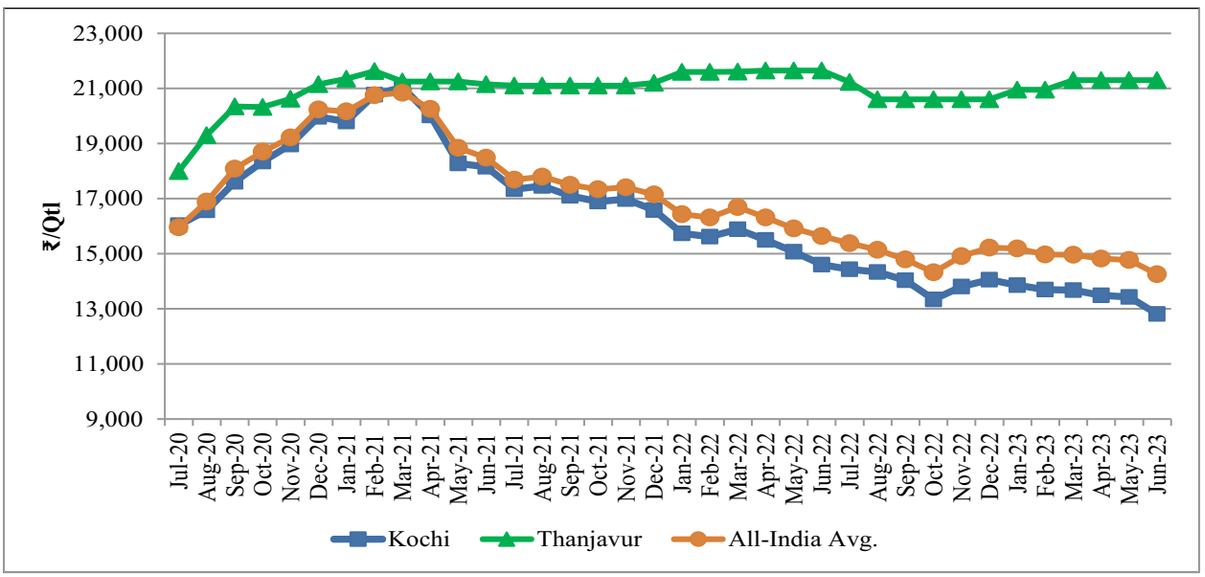
Note: All India Average wholesale price is worked out taking into account prices reported at Thiruvananthapuram (W), Alappuzha, Kangayem, Nagercoil, Mangalore and Arsikere

Source: Coconut Development Board, Ministry of Agriculture and Farmers Welfare

Coconut Oil

2.12 Kerala and Tamil Nadu are the major wholesale markets of coconut oil. For visual representation, prices of important markets from Kerala and Tamil Nadu have been shown in Chart 2.6 which shows that all-India average wholesale prices exhibited an increasing trend from July 2020 to March 2021 but April 2021 onwards, there is a secular decline in prices till October 2022. Thereafter, prices gained momentum and reached a level of ₹15,222 per qtl in December 2022 before declining to ₹14,257 per qtl in June 2023.

Chart 2.6: Trends in Prices of Coconut oil at Major Markets



Note: All India Average wholesale price is worked out taking into account prices reported at Kochi, Alappuzha, Kozhikode, Kangayam and Thanjavur

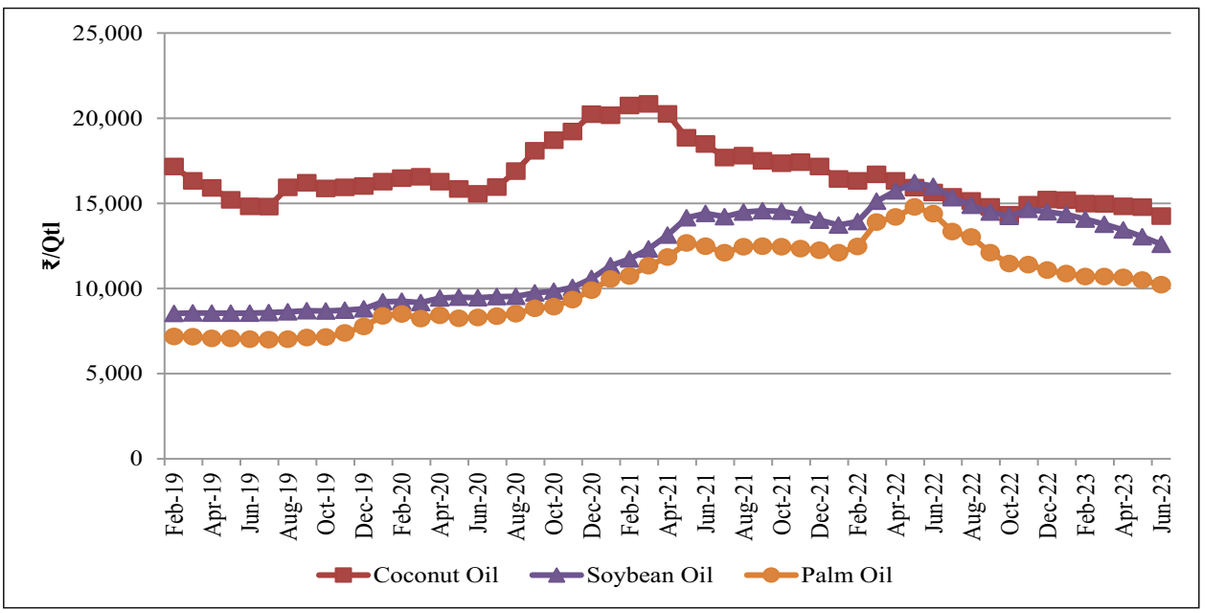
Source: Coconut Development Board, Ministry of Agriculture and Farmers Welfare

Comparison of Price of Coconut Oil and Other Competing Oils

2.13 Coconut oil prices in general are influenced by demand-supply, availability of other alternatives like palm oil, palm kernel oil, overall availability of other vegetable oils and trade policy. Coconut oil fetches a premium over other vegetable oils but higher prices have resulted in substitution in many end uses where coconut oil was once considered indispensable. Moreover, with the availability of palm oil and some soft oils at cheaper rates, many consumers have gradually shifted from coconut oil. Hence, it is important to understand trends in coconut oil prices and other main competing edible oils, viz. palm oil and soybean oil.

2.14 Chart 2.7 shows the relationship between wholesale prices of coconut oil, palm oil and soybean oil during February 2019 to June 2023. The chart shows that coconut oil fetches a premium over other oils under consideration due to dietary value, aroma, customary habitual taste and preference for coconut oil in the country. After attaining a high of ₹20,845 per qtl in March 2021, coconut oil prices exhibited a decreasing trend and reached ₹14,325 per qtl in October 2022. Thereafter, prices picked up slightly and touched ₹15,222 per qtl in December 2022 followed by a dip January 2023 onwards. The chart also shows that the gap between the price of coconut oil and soybean oil narrowed down between July 2022 and November 2022. However, in the months of May and June 2022, soybean oil prices were higher than the price of coconut oil. Further, it is observed that the gap between the price of coconut oil and palm oil narrowed down between January and June 2022. Thereafter, the price gap between coconut oil and palm oil gradually widened from July 2022 to January 2023.

Chart 2.7: Trends in Wholesale Prices of Oils - Coconut, Palm and Soybean in India



Source: 1. Coconut Development Board, Ministry of Agriculture and Farmers Welfare
2. Price Monitoring Cell, Department of Consumer Affairs, Ministry of Consumer Affairs, Food and Public Distribution

2.15 The price of coconut oil is also determined by the inter-relationship between all other vegetable oils due to high substitutability of a wide range of oils and fats. Coconut oil competes with palm, soybean, cotton, rapeseed, and sunflower oil in cooking, margarine, shortening, confectionary, baking, etc. while it competes with palm kernel oil in soap making and oleochemical industry. The correlation between the prices of coconut oil and palm kernel oil is very high among all vegetable oils, being 0.99 and 0.93 for the period 2001-10 and 2011-2023, while correlation between the prices of coconut oil and palm oil were 0.96 and 0.68, respectively. Price correlations between edible oils are quite high, indicating high substitutability among most edible oils.

Procurement Operations and Efficacy of Price Support Scheme

2.16 MSPs for milling copra and ball copra were introduced in 1986 to ensure remunerative prices to coconut farmers. National Agricultural Cooperative Marketing Federation of India Limited (NAFED) and National Cooperative Consumer Federation of India Limited (NCCF) are the Central Nodal Agencies (CNAs) for procurement of copra and de-husked coconut under Price Support Scheme (PSS). However, procurement of de-husked coconut generally does not take place as most of the societies/agencies involved in PSS operations do not have the requisite drying/processing facilities for conversion of de-husked coconut into copra. Therefore, there is a need to provide infrastructure facilities like processing unit to the societies/agencies involved in procurement operations so that benefits of MSP reach coconut farmers.

2.17 Trends in market prices and MSPs of ball copra and milling copra are given in Table 2.4. The price of milling copra varied from ₹4,215 per qtl in 2012 to ₹8,601 in 2023 while ball copra prices varied between ₹5,280 per qtl in 2012 to ₹9,622 in 2023. In the period between 2012-2023, milling copra prices peaked in 2018 at ₹12,261 per qtl while ball copra prices peaked in 2021 at ₹15,870 per qtl. In 2018, in case of milling copra, wholesale prices were 63.5 percent higher than the MSP whereas in 2021, in case of ball copra, wholesale prices were 49.7 percent higher than the MSP. In 2022 and 2023, in case of milling copra, market prices dipped below MSP. In case of ball copra, market prices went below the MSP in 2023. As on 10th August 2023, 54.8 thousand tonnes of milling copra and 49 thousand tonnes of ball copra has been procured by NAFED.

Table 2.4: Wholesale Prices, MSP and Procurement of Copra, 2012-2023

Year	Milling Copra (₹/qtl)		Ball Copra (₹/qtl)		Difference (%) in Wholesale Price and MSP		Procurement ('000 tonnes)	
	Market Price	*MSP*	*Market Price*	*MSP*	*Milling Copra*	*Ball Copra*	*Milling Copra*	*Ball Copra*
2012	4,215	5,100	5,280	5,350	-17.4	-1.3	66.4	9.2
2013	5,521	5,250	5,323	5,500	5.2	-3.2	4.3	29.5
2014	9,883	5,250	12,251	5,500	88.3	122.7	0	0
2015	8,521	5,550	11,435	5,830	53.5	96.1	0	0
2016	5,988	5,950	7,258	6,240	0.6	16.3	4.5	1.8
2017	9,835	6,500	9,396	6,785	51.3	38.5	0	0
2018	12,261	7,500	14,799	7,750	63.5	91.0	0	0
2019	10,402	9,521	14,152	9,920	9.3	42.7	0.3	0
2020	11,422	9,960	10,699	10,300	14.7	3.9	0	5.1
2021	11,788	10,335	15,870	10,600	14.1	49.7	0	0
2022	8,959	10,590	14,524	11,000	-15.4	32.0	40.8	0
2023*	8,601	10,860	9,622	11,750	-20.8	-18.1	54.8	49.0

*Note: 1. *As on 10th August 2023*
2. Wholesale Price of Ball Copra for Arsikere (Karnataka) and Milling Copra for Kozhikode (Kerala)
Source: 1. Coconut Development Board, Ministry of Agriculture and Farmers Welfare
2. National Agricultural Cooperative Marketing Federation of India Ltd. (NAFED)

2.18 The quantity and value of procurement of copra at MSP in major States is shown in Table 2.5. In 2023, about 54,597.6 tonnes (valued at ₹59,293 lakh) of milling copra was procured from Tamil Nadu and 49,016.9 tonnes (valued at ₹57,594.9 lakh) of ball copra was procured from Karnataka.

Table 2.5: Procurement of Copra under Price Support Scheme in Major States

Year	Milling Copra						Ball Copra	
	Tamil Nadu		*Kerala*		*Andaman & Nicobar Islands*		*Karnataka*	
	Quantity (tonnes)	*Value (₹ lakh)*	*Quantity (tonnes)*	*Value (₹ lakh)*	*Quantity (tonnes)*	*Value (₹ lakh)*	*Quantity (tonnes)*	*Value (₹ lakh)*
2021	33.0	34.1	0	0	0	0	0	0
2022	40,593.5	42,988.5	255.9	271	0	0	0	0
2023*	54,597.6	59,293	117.6	127.7	85.9	93.3	49,016.9	57,594.9

*Note: *As on 10th August 2023*
Source: National Agricultural Cooperative Marketing Federation of India Ltd. (NAFED)

Market Arrivals of Copra vis-à-vis Procurement Operations

2.19 The small and marginal coconut farmers should be able to reap the benefits of MSP operations and in order to achieve this objective, Government extended PSS operations from 90 days to six months in a calendar year during 2016. However, in view of the market arrival pattern in the country as shown in Table 2.6, the duration of procurement operations under PSS needs to be reviewed. Since market arrivals of coconut are fairly well distributed throughout the year in Kerala, Karnataka and Tamil Nadu, as is discernable from the data presented in the Table, the Commission reiterates its earlier recommendation that procurement operations need to be extended to the whole year, whenever market prices dip below the MSP. This will help make procurement operations more effective.

Table 2.6: Monthly Distribution (%) of Market Arrivals of Copra in Major Markets of Andhra Pradesh, Karnataka & Tamil Nadu, TE2022

Month	Milling Copra			Ball Copra
	*Andhra Pradesh**	*Kerala**	*Tamil Nadu*	*Karnataka*
January	8.3	9.5	8.6	8.6
February	7.3	8.3	8.9	8.6
March	6.9	7.7	9.1	8.6
April	6.1	7.3	8.9	8.6
May	4.1	8.2	8.1	8.2
June	4.8	7.8	8.0	7.8
July	6.3	8.9	7.8	7.9
August	15.0	7.2	7.9	8.1
September	12.2	8.7	8.0	8.1
October	11.5	9.3	8.2	8.4
November	8.5	7.9	8.2	8.4
December	9.1	9.3	8.4	8.8
Total	**100.0**	**100.0**	**100.0**	**100.0**

Source: 1. Coconut Development Board, Ministry of Agriculture & Farmers Welfare
2. State Government replies*

Formation of Farmer Producer Organization

2.20 The Coconut Development Board (CDB) has been facilitating formation of three-tier Farmer Producer Organizations (FPOs) comprising of Coconut Producer Societies (CPSs) consisting of 40-100 coconut growers at Tier-1, Coconut Producer Federations (CPFs) by combining 8-10 CPS at Tier-2 and Coconut Producer Companies (CPCs) at Tier-3. The formation of three-tier farmer collectives in coconut sector has gained momentum and the number of such farmers' collectives has increased in the country (Table 2.7).

2.21 There are 9790 CPSs, 747 CPFs and 69 CPCs registered in the country as on 31st March 2023. The maximum number of CPSs are registered in Kerala (7233), followed by Andhra Pradesh (1157), Tamil Nadu (697) and Karnataka (401). Kerala also has the highest number of CPFs

and CPCs in the country. There is a need to support and strengthen FPOs to help small and marginal coconut farmers to mitigate risks, improve market access and fetch remunerative prices through better bargaining for their produce.

Table 2.7: State-wise Distribution of Coconut Organizations

States	No. of CPSs	No. of CPFs	No. of CPCs
Kerala	7233	467	29
Andhra Pradesh	1157	82	8
Tamil Nadu	697	73	19
Karnataka	401	125	13
West Bengal	218	0	0
Odisha	40	0	0
Assam	29	0	0
Gujarat	14	0	0
Maharashtra	1	0	0
Total	**9790**	**747**	**69**

Note: As on 31st March 2023

Source: Coconut Development Board, Ministry of Agriculture and Farmers Welfare

2.22 The key objective of coconut producer organizations is to improve productivity, reduce cost, and create efficient collective marketing, processing and product diversification. Since majority of coconut farmers are small and marginal and do not have adequate basic infrastructure like copra dryer/conversion facilities and requisite storage facilities, they sell their produce as raw nuts and do not benefit from procurement operations. Active participation of farmers collectives/groups like cooperatives, Self Help Groups (SHGs), Coconut FPOs in procurement of de-husked mature coconuts and processing into copra can benefit member farmers. Such organizations need to be provided with adequate financial and technical assistance for copra dryers and coconut de-shelling machines for producing Fair Average Quality (FAQ) copra. Coconut FPOs should be involved in coconut procurement operations under PSS.

Recapitulation

2.23 Global production of coconut oil, which fell in 2022-23, is estimated to go up in 2023-24, and global consumption is forecast to marginally increase in 2023-24 over 2022-23. It is expected that world SUR will decrease to 10.5 percent in 2023-24 as compared to 11.7 percent in 2022-23. According to the CDB estimates, both production and consumption of coconut oil are estimated to fall in 2022-23 over 2021-22. The domestic SUR for coconut oil is forecast to increase from 5 percent in 2021-22 to 6.1 percent in 2022-23. The wholesale prices of milling copra have remained below the MSP during the last two years. In case of ball copra, the wholesale prices which were ruling above the MSP during 2021 and 2022 dipped below the MSP from January 2023 onwards. The three-tier Coconut Farmer Producer Organizations set up with the assistance of CDB need to be strengthened to help coconut farmers improve profitability, benefit from procurement operations and promote product diversification.

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CHAPTER 3

Yield Growth Trends and Drivers

3.1 Coconut cultivation is prime occupation of the tropical regions of India. It is versatile commercial crop which is grown under plantation as well as in homestead management system. Although there is a concentration of coconut plantations in the coastal regions of the country, it is also grown in the hinterlands where the agro-climatic conditions are favourable for coconut cultivation. India has significant position in the world with 30.5 percent production share and 17.7 percent coconut area share during TE2022 (ICC Quarterly Bulletin, April 2023). Kerala, Tamil Nadu, Karnataka and Andhra Pradesh are major coconut growing States contributing more than 90 percent of the total coconut production in the country.

3.2 This chapter discusses the scenario of coconut yield in India at the State and district level. It also compares coconut yield of India with leading coconut producing countries of the world and discusses several measures to increase coconut yield.

Growth in Area, Production and Yield

3.3 Table 3.1 displays decadal average, Compound Annual Growth Rate (CAGR) and instability index of area, production and productivity of coconut during the last four decades. It is evident from the Table that the area under coconut has increased gradually over the last four decades, while the yield of coconut has shown volatility during the same period. The growth in coconut production has been largely affected by the yield trend of coconut over these decades. For instance, coconut yield showed an improvement during 2010s, resulting in increased production while a decrease in coconut production was observed during 2020s due to decline in yield levels. Instability index also shows lower instability in area as compared to coconut yield and production over the decades under consideration. CAGR of area, production and yield of coconut were negative in the current decade, which is worrisome. Adverse climatic conditions such as droughts in Tamil Nadu and Karnataka, floods in Kerala and cyclones on both the east and west coasts in recent years have been main reasons for this decline.

Table 3.1: Decadal Average, CAGR and Instability Index of Area, Production and Yield of Coconut

Decades	Decadal Average			CAGR (%)			Instability Index (%)		
	Area (Million ha)	*Production (Million tonnes)*	*Yield (t/ha)*	*Area*	*Production*	*Yield*	*Area*	*Production*	*Yield*
1990s	1.7	12.0	7.0	2.4	2.7	0.2	3.8	5.4	5.6
2000s	1.9	10.0	5.2	0.1	0.8	0.7	2.1	13.3	14.5
2010s	2.1	14.7	7.1	0.7	1.6	0.9	4.5	12.3	9.7
2020s	2.2	13.7	6.3	-0.5	-2.8	-2.3	3.1	6.3	3.3

Notes : 1. 1990s, 2000s, 2010s and 2020s refer to the period 1990 - 91 to 1999-00, 2000-01 to 2009-10, 2010-11 to 2019-20 and 2020-21 to 2022-23, respectively

2. Instability Index=Standard deviation of Natural Logarithm (Y_t/Y_{t-1})

Source: Horticulture Statistics Division, Ministry of Agriculture and Farmers Welfare

3.4 Annual growth in area, production and yield of coconut from 2017-18 to 2022-23 has been depicted in Table 3.2. Area under coconut was almost stagnant as it varied in a narrow range of 2.1 to 2.2 million hectares during the period. On the contrary, coconut yield declined from 7.8 t/ha in 2017-18 to 6.2 t/ha in 2022-23, except in 2020-21, when it improved slightly. The resultant effect of fluctuations in coconut yield can be observed in coconut production, which declined in those years when coconut yield declined. Chart 3.1 reflects the variations in coconut area, yield and production for the last 10 years. It is evident from the Chart that volatility in coconut yield is significantly higher than area. It also shows close association between coconut yield and production volatility.

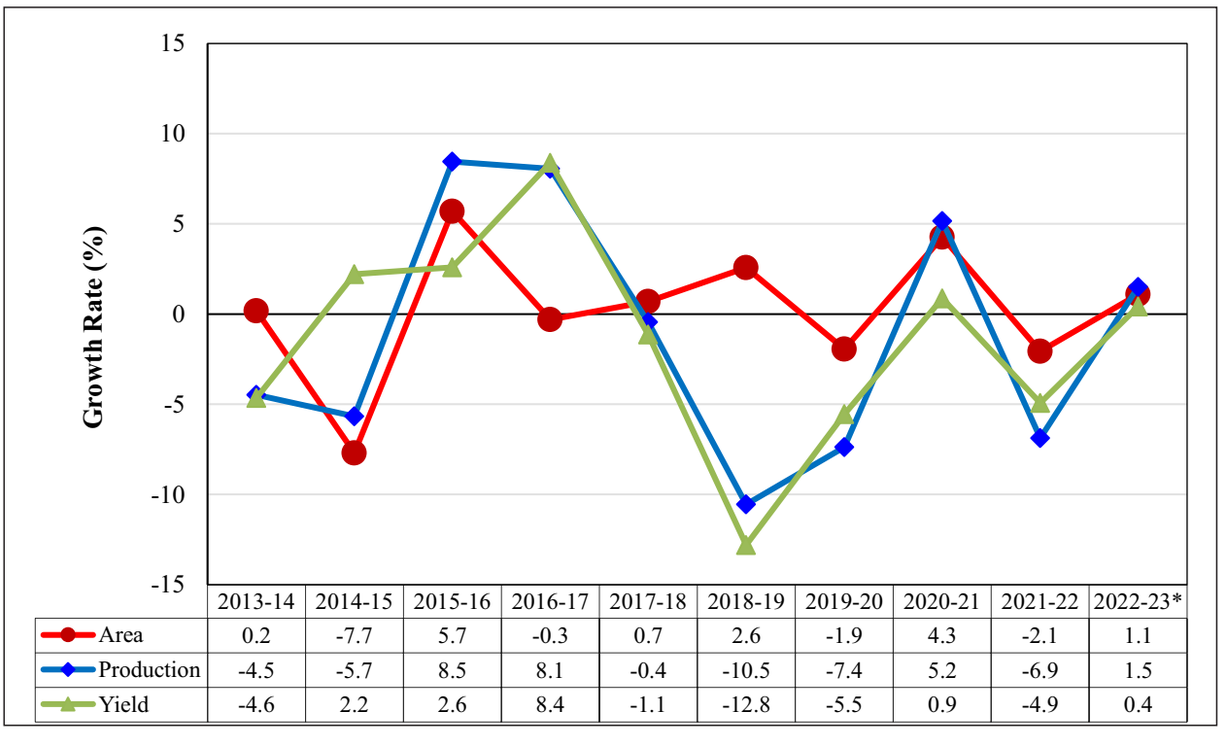
Table 3.2: Trends in Coconut Area, Production and Yield, 2017-18 to 2022-23

Year	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23*
Area (Million ha)	2.1	2.2	2.1	2.2	2.2	2.2
Production (Million tonnes)	16.4	14.7	13.6	14.3	13.3	13.5
Yield (t/ha)	7.8	6.8	6.4	6.5	6.2	6.2

*Note : *1st Advance Estimates*

Source: Horticulture Statistics Division, Department of Agriculture and Farmers Welfare

Chart 3.1: Volatility in Coconut Area, Production and Yield for Last 10 Years (2013-14 to 2022-23)



	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23*
Area	0.2	-7.7	5.7	-0.3	0.7	2.6	-1.9	4.3	-2.1	1.1
Production	-4.5	-5.7	8.5	8.1	-0.4	-10.5	-7.4	5.2	-6.9	1.5
Yield	-4.6	2.2	2.6	8.4	-1.1	-12.8	-5.5	0.9	-4.9	0.4

*Note :*1st Advance Estimates*

Source: Horticulture Statistics Division, Ministry of Agriculture and Farmers Welfare

Yield Trends in Major Coconut Producing States

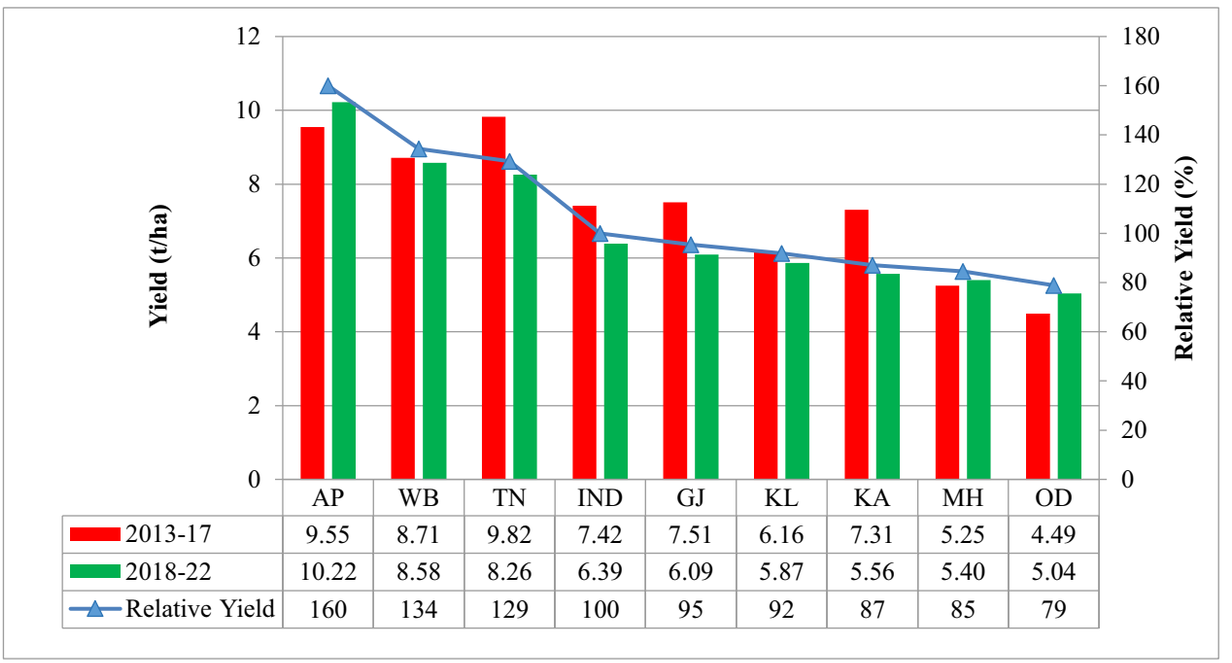
3.5 Coconut yield is largely affected by several factors like adverse weather conditions, infestation of pests and diseases, etc., resulting in high volatility in production. In order to understand the yield trends among major coconut producing States, 5-year Olympic average yield of coconut has been computed for this analysis. The Olympic average yield has been calculated by removing the highest and lowest yield and averaging the remaining three values. Olympic average yield in major coconut producing States for the periods between 2013-2017 and 2018-2022 have been compared in Chart 3.2.

3.6 During 2018-22, the average yield of coconut declined in most of the major coconut growing States except in Andhra Pradesh, Odisha and Maharashtra. The largest decline in average yield during the current period was observed in Karnataka (-23.9%), followed by Gujarat (-18.9%) and Tamil Nadu (-15.9%). The average yield of coconut also declined by (-)4.7 percent in Kerala, the largest coconut producing State. On account of reduction in average coconut yield in most of the major coconut producing States, average coconut yield at all-India basis also dropped significantly by (-)13.9 percent.

3.7 On the other hand, Odisha showed an impressive improvement in yield (12.2%) during the current period as compared to the previous period. The highest coconut yield (10.22 t/ha) was obtained in Andhra Pradesh, showing an increase of 7.02 percent over the previous period. In Maharashtra, there was marginal improvement (2.9%) in the yield of coconut during the current period.

3.8 The recent decline in coconut yield in major coconut producing States, especially Karnataka, Tamil Nadu and Kerala, which together account for more than 80 percent of coconut production, is a matter of serious concern. Since the livelihood of millions of people in these States depends on coconut cultivation, there is pressing need of policy interventions to improve the productivity and profitability of coconut in these States.

Chart 3.2: Average Yield of Coconut in Major States



	AP	WB	TN	IND	GJ	KL	KA	MH	OD
2013-17	9.55	8.71	9.82	7.42	7.51	6.16	7.31	5.25	4.49
2018-22	10.22	8.58	8.26	6.39	6.09	5.87	5.56	5.40	5.04
Relative Yield	160	134	129	100	95	92	87	85	79

Note : Relative Yield pertains to 2018-22 period
Source: Horticulture Statistics Division, Ministry of Agriculture and Farmers Welfare

3.9 Table 3.3 presents the distribution of major coconut producing States according to association between growth rate of area and yield during last 10 years. States have been classified into high, low and negative categories based on CAGR of area and positive and negative categories on the basis of CAGR of yield. It may be clearly observed that Maharashtra is the only State, which registered higher growth in both area and yield. In Odisha, growth in area was low while growth in yield was high. On the other hand, Kerala, the largest producing State, saw a marginal increase in area of 0.4 percent and negative growth in yield (0.6%) during the reference period.

Table 3.3: Classification of States Based on CAGR in Area and Yield of Coconut during Last 10 Years

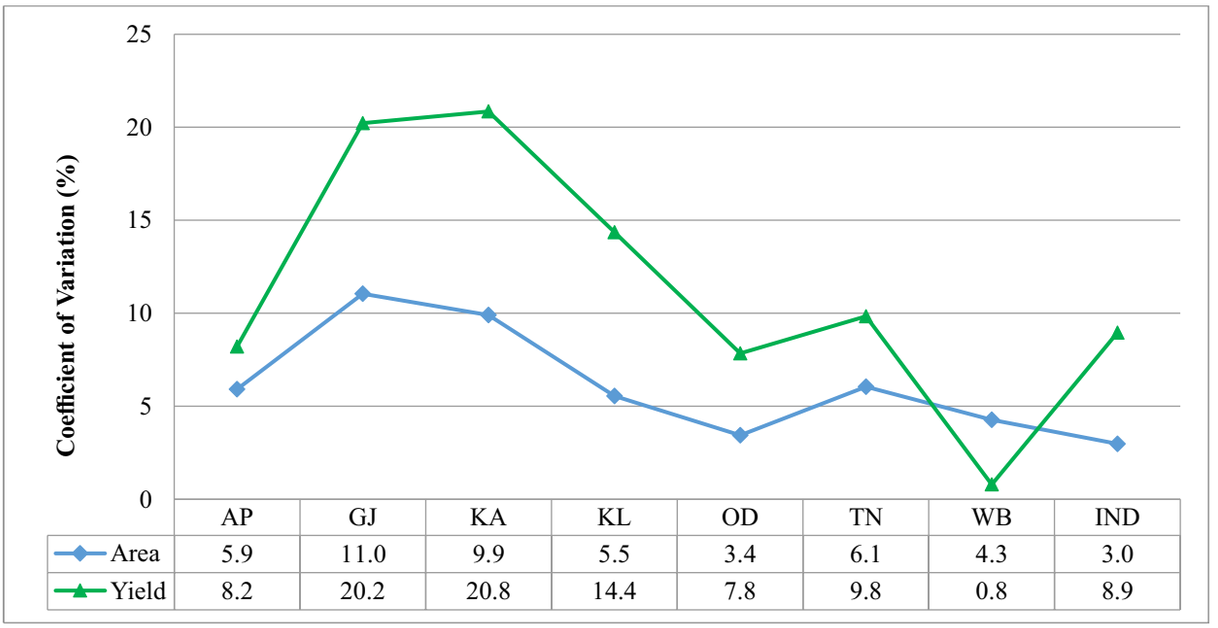
CAGR	Area [0.66%]			
		High	*Low*	*Negative*
Yield (-2.01%)	*Positive*	MH (2.25%), [1.65%]	OD (2.08%), [0.45%]	AP (1.43%), [-0.52%]
	Negative	KA (-3.42%), [2.84%] WB (-0.23%), [1.38%]	KL (-0.6%), [0.4%]	GJ (-3.13%), [-1.51%] TN (-3.03%), [-0.89%]

Note : States are classified on the basis of all-India CAGR in area and yield. The numbers shown in parenthesis are (Yield CAGR) and [Area CAGR]. Further, only States having a production share of 1 percent or more during TE2022-23 have been considered

Source: Horticulture Statistics Division, Ministry of Agriculture and Farmers Welfare

3.10 Chart 3.3 displays variability in area and yield of coconut in major producing States from 2013-14 to 2022-23. Among the major States, the highest variability in yield was observed in Karnataka while the lowest variability was observed in West Bengal. As far as variability in area is concerned, Gujarat recorded the highest among major States while it was the lowest in Odisha. The instability in yield under coconut was significantly higher than area instability in all States, except for West Bengal.

Chart 3.3: Variability in Area and Yield of Coconut in Major Producing States (From 2013-14 to 2022-23)



	AP	GJ	KA	KL	OD	TN	WB	IND
Area	5.9	11.0	9.9	5.5	3.4	6.1	4.3	3.0
Yield	8.2	20.2	20.8	14.4	7.8	9.8	0.8	8.9

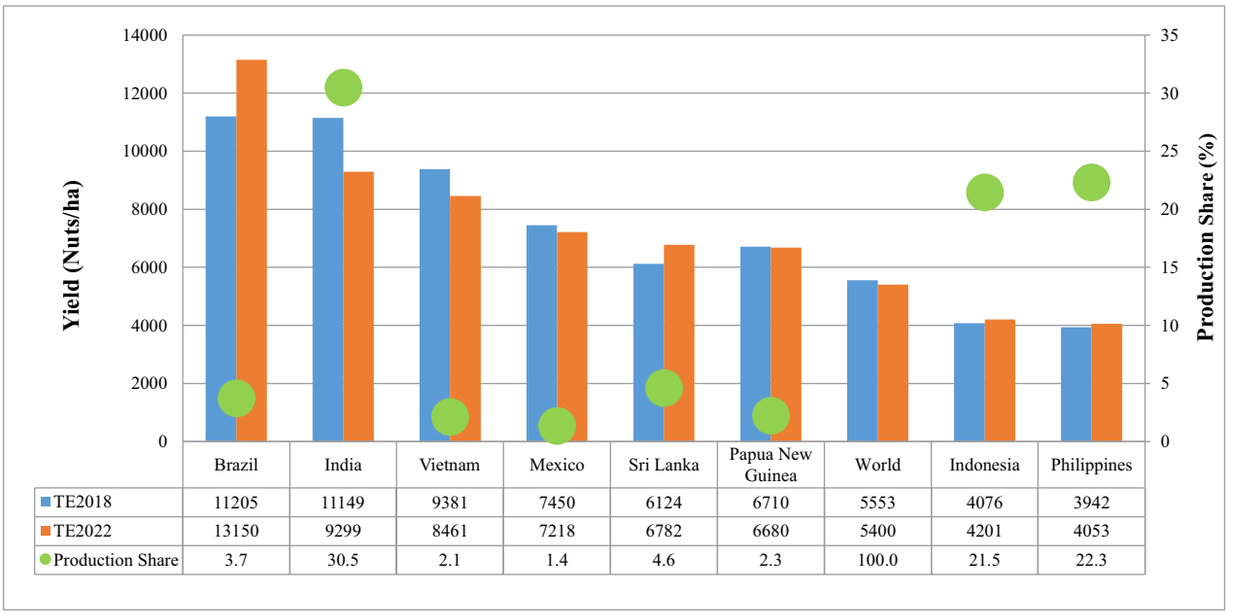
Source: Horticulture Statistics Division, Ministry of Agriculture and Farmers Welfare

Coconut Yield: International Comparison

3.11 Chart 3.4 compares the coconut yield in the country with that of major coconut producing countries between TE2018 and TE2022. During TE2018, among the major coconut producing countries, the highest average yield was recorded in Brazil (11,205 nuts/ha), followed by India (11,149 nuts/ha). Although, both Brazil and India retained their positions in the global ranking of coconut yield during TE2022, there was a huge difference in the performance of these countries. Brazil showed a significant improvement (17.4%) in yield during TE2022 as compared to TE2018, while India recorded a decline in yield (-16.6%) during the same period. As far as the yield performance of other coconut producing countries is concerned, the average yield of coconut in Vietnam, Mexico and Papua New Guinea also saw a decline in TE2022 as compared to TE2018. On the other hand, Sri Lanka, Indonesia and Philippines, major producers, showed improvement in yield during TE2022. A dip of 2.8 percent was observed in yield globally during TE2022 due to low or negative growth in the average yield in many major countries.

3.12 Although India has retained its second position in terms of average yield in the world in TE2022, the decline in yield is a matter of serious concern. Hence, more efforts are needed to improve the yield in the country. Farmers should be educated and motivated for using quality planting material, efficient management of pests and diseases, adoption of improved agricultural practices and technologies, efficient methods of irrigation, etc. for improving yield and thereby strengthening India's position at global level.

Chart 3.4: Average Coconut Yield in Major Producing Countries in World



	Brazil	India	Vietnam	Mexico	Sri Lanka	Papua New Guinea	World	Indonesia	Philippines
TE2018	11205	11149	9381	7450	6124	6710	5553	4076	3942
TE2022	13150	9299	8461	7218	6782	6680	5400	4201	4053
Production Share	3.7	30.5	2.1	1.4	4.6	2.3	100.0	21.5	22.3

Note : Relative Yield is w.r.t World in TE2022

Source: International Coconut Community, Quarterly Bulletin, April 2023

District Level Productivity Trends

3.13 In order to assess the performance of coconut productivity at district level in major coconut producing States at different time periods (TE2012-13 and TE2021-22), share of area under different productivity bands (<5,000, from 5,000 to 10,000 and ≥10,000 nuts per hectare) are analyzed in this section. Only the districts, which have more than one percent share in total production of the State, have been considered for this analysis. Table 3.4 exhibits the changes in area share under different yield bands in major coconut growing States i.e. Andhra Pradesh, Karnataka, Kerala and Tamil Nadu during two time periods. It is a matter of great concern that yield performance at the district level in major States has either remained stagnant or declined in TE2021-22 as compared to TE2012-13.

3.14 In Andhra Pradesh, the share of area in the highest yield band declined from 94.6 percent in TE2012-13 to 84.6 percent in TE2021-22, while the share of area in the middle yield band increased from 3.5 percent to 14.4 percent during the same period. In Karnataka and Tamil Nadu, the area share under the highest yield band has decreased while it has increased under the middle yield band during the current time period as compared to the previous period. A nearly identical trend is observed in Kerala, where the share of area in the middle yield band decreased from 98.7 percent to 89.3 percent, while the share of area in the lowest yield band increased from zero to 10.7 percent between the two time periods under consideration.

3.15 The district-level yield trends in major States clearly indicate that shifting of area towards lower yield bands was mainly due to decline in yield level. The decline in the yield levels of coconut is a matter of serious concern and requires immediate policy interventions. Therefore, the State Governments in partnership with other stakeholders should prepare a comprehensive roadmap to improve the level of coconut yield in the States. Moreover, concerted efforts should be made to encourage farmers to adopt modern technology and improve access to quality inputs, marketing, irrigation facilities and credit facilities to enhance yield level of coconut.

Table 3.4: Area and Its Share in Districts under Different Yield Bands in Major Coconut Producing States

Year	<5000 Nuts/ha	5000-10000 Nuts/ha	≥10000 Nuts/ha
Andhra Pradesh			
TE2012-13	-	3617 (3.5)	96618.7 (94.6)
TE2021-22	-	15158 (14.4)	89372.3 (84.6)
Karnataka			
TE2012-13	-	300609.3 (68)	122569 (27.7)
TE2021-22	-	530657.7 (88.1)	58044 (9.6)
Kerala			
TE2012-13	-	786316.1 (98.7)	-
TE2021-22	81882.5 (10.7)	683124.2 (89.3)	-
Tamil Nadu			
TE2012-13	-	40557 (9.7)	344168 (82.1)
TE2021-22	-	142633.7 (31.9)	266588.7 (59.7)

Note : 1. Only those districts, which have more than 1 percent share in State's total production have been considered for analysis
2. Figures in parenthesis show the area share
Source: 1. Economics and Statistics Division, Ministry of Agriculture and Farmers Welfare
2. Coconut Development Board, Ministry of Agriculture and Farmers Welfare (for 2021-22 Data only)

3.16 Table 3.5 presents the districts with highest and lowest yield in the selected States for two time periods i.e. TE2012-13 and TE2021-22. It is obvious from the Table that West Godavari of Andhra Pradesh has the highest yield in the State and shown notable improvement in coconut yield with increased production and area share and retained its top position during the current time period. On the contrary, in Karnataka, Chitradurga lost its top position and was replaced by Udupi during the current time period. Similar pattern was observed in Kerala, where Malappuram lost its top position to Kasaragod. In case of Tamil Nadu, Coimbatore replaced Thanjavur and got the highest position while Kanyakumari remained in the lowest category during both periods.

3.17 This analysis clearly shows that barring Andhra Pradesh, high performing districts in most of the States could not retain their position in terms of yield during TE2021-22. It may be noted that the highest yield in the district is about 2 to 2.5 times the average yield of the district with the lowest yield. Moreover, it is also inferred that there exists a huge variation in yield level within States. Therefore, there is a need to formulate a strategy at the State level to improve the yield of coconut, focusing on the yield performance of the districts. Position of districts under different productivity bands in major coconut producing States has been shown in Annex Table 3.1.

Table 3.5: District with Highest and Lowest Productivity in Major Coconut Producing States

States	TE2012-13		TE2021-22	
	Highest	*Lowest*	*Highest*	*Lowest*
Andhra Pradesh				
District	West Godavari	Chittoor	West Godavari	Srikakulam
Yield (Nuts/ha)	17020	8453	22943	9767
Area Share (%)	20.0	3.5	22.3	14.4
Production Share (%)	24.2	2.1	30.6	8.4
Karnataka				
District	Chitradurga	Chikmagalur	Udupi	Hassan
Yield (Nuts/ha)	13549	5482	12226	5848
Area Share (%)	9.6	8.9	4.1	16.6
Production Share (%)	13.3	5.0	6.0	11.7
Kerala				
District	Malappuram	Ernakulam	Kasaragod	Idukki
Yield (Nuts/ha)	9460	5043	8605	3549
Area Share (%)	13.2	5.6	8.4	1.9
Production Share (%)	17.5	3.9	10.9	1.0
Tamil Nadu				
District	Thanjavur	Kanyakumari	Coimbatore	Kanyakumari
Yield (Nuts/ha)	24415	6352	15149	6545
Area Share (%)	8.0	5.9	19.9	5.5
Production Share (%)	13.3	2.6	26.1	3.1

Note :Only those districts, which have more than 1 percent share in State's total production have been considered for this analysis

Source: 1. Economics and Statistics Division, Ministry of Agriculture and Farmers Welfare
2. Coconut Development Board, Ministry of Agriculture and Farmers Welfare (for 2021-22 Data only)

Improving Yield and Profitability: Drivers of Growth

3.18 As profitability of the farmers largely depends upon the enhanced yield levels, hence constant improvement in yield is imperative for further investment and improvement in coconut sector. Understanding the drivers of yield is important for prioritizing strategies for improving and stabilizing coconut yield. Development of improved varieties/hybrids resistant to biotic/abiotic stresses and suitable for different agro-climatic conditions, application of advanced technologies and efficient farming practices etc. are some of the important factors, which have the potential to improve productivity and thereby increase profitability of coconut cultivation. Apart from this, processing of coconut should also be encouraged to make high-value products. These strategies are greatly needed to encourage further investment in the coconut sector as well as increase productivity.

Quality Seedlings and Planting Materials

3.19 Coconut yield primarily depends upon the development and availability of quality seedlings and planting materials. Indian Council of Agricultural Research - Central Plantation Crops Research Institute (ICAR-CPCRI) is making continuous efforts with regard to developing high yielding varieties and quality planting material for coconut cultivation. The institute maintains the world's largest repository in coconut with 455 accessions (323 indigenous and 132 exotic genotypes) from 28 countries. Through intensive breeding and evaluation, 21 improved coconut varieties including six hybrids involving talls and dwarfs as parents have been released for commercial cultivation so far. The high yielding varieties are capable of yielding 3.12 to 6.28 tonnes of copra per hectare annually, as compared to 2.96 tonnes of copra per hectare in West Coast Tall local variety.

3.20 The hybrid '*Kalpa Vajra*', a tall variety, has been recommended by the institute for cultivation in root (wilt) disease prevalent tracts. The institute produces about 1.5 lakh planting materials annually for distribution to the farmers. In order to augment production of planting material, seed gardens of improved varieties have been established at the institute as well as in the farmers' fields. Quick Response (QR) code has been made mandatory for seedling distribution. The Institute has also developed a Sequence Characterized Amplified Region (SCAR) marker for hybridization confirmation at the seedling stage in coconut, which will ensure supply of genuine hybrid material to the farmers. Further, the implementation of a mandatory QR code for seedling distribution will certainly ensure supply of genuine planting material along with curbing spurious intermediaries. In addition, the State Governments have also taken several initiatives to improve the availability of quality seedlings and planting material. (Box 3.1)

Box 3.1: Initiatives by State Governments for Improving Availability of Quality Seedlings of Coconut

Several initiatives have been taken by the State Governments in order to improve availability of quality seedlings and planting materials. For instance, Kerala Government is making efforts to increase the production of quality coconut seedlings with the assistance of Kerala Agricultural University, CDB, CPCRI, Farmers Producers Organizations and Local Self Government Institutions. There are 64 farms functioning under the Department of Agriculture, which are contributing to make available quality seedlings and hybrids in the State. Moreover, as part of the initiative of the Coconut Development Council, the distribution of coconut seedlings at 50 percent subsidy has been launched from July 2019. In Tamil Nadu, there are 23 State Coconut Nurseries and State Coconut Crossing Centres, which annually produce around 15 lakh tall, T×D and D×T coconut seedlings apart from augmenting coconut seedlings from Coconut Research Stations at Veppankulam and Aliyar of Tamil Nadu Agricultural University for distribution to the farmers. Similarly, other States are also making efforts for improving the availability of quality seedlings/hybrids.

Source: State replies

Pest and Disease Management

3.21 The coconut palm is affected by a number of pests and diseases, some of which are fatal, while others reduce the vigour of palm trees, leading to a reduction in yield. Root rot, leaf rot, bud rot, stem bleeding, basal stem rot and coconut wilt are some of the prevalent diseases that cause heavy yield losses. Of the major diseases, root wilt disease alone can cause 35 percent yield loss, which can increase to 80 percent in severe cases. As far as pests of coconut are concerned, eriophyid mite, rhinoceros beetle, red palm weevil, leaf eating caterpillar, and rugose spiraling whitefly are major invasive pests affecting coconut plantations and causing heavy yield losses. The continuous presence of eriophyid mites can reduce the yield of coconut by 20-30 percent. In case of severely affected coconuts, yield loss may be 30-50 percent. Annex Table 3.2 displays the major pests and diseases in coconut producing States in the country.

3.22 Intermittent rainfall with frequent dry and wet spells makes pests and diseases at high stake calling for systematic interventions. Moreover, due to vagaries of nature, such problems increase and to deal with these problems, application of nutrients and timely treatment of these pests and diseases are required. These pests and diseases may be managed by adopting an 'Integrated Pest and Disease Management (IPDM)' approach, which is an effective mean of combating pests and diseases affecting coconut plantations. It is pertinent to mention that Plant Health Clinics (PHCs) in Kerala provide comprehensive diagnostic and advisory services related to plant health and pest control, thereby improving coconut productivity.

Integrated Nutrient Management

3.23 The importance of nutrient management for increasing yield in coconut plantations is well recognized. Integrated Nutrient Management (INM) refers to the maintenance of soil fertility and plant nutrient supply at an optimum level for sustaining the desired productivity through optimization of the benefits from all possible sources of organic, inorganic and biological components in an integrated manner. The farmers should be motivated to adopt a balanced use of fertilizers, organic manure, micro-nutrients, bio-fertilizers and bio-inoculants to obtain maximum yield of coconut. ICAR-CPCRI and various State Governments have been organizing active outreach and knowledge dissemination programmes through Farmer First Programmes (FFPs), Farmers Field Schools (FFSs), etc. about INM.

Replanting and Rejuvenation Programme

3.24 The Replanting and Rejuvenation Programme (R&R), a Centrally Sponsored scheme, is being implemented by the Coconut Development Board (CDB). The main objective of the scheme is to enhance coconut production as well as productivity by removal of disease advanced, unproductive, old and senile palms, replanting with quality seedlings and rejuvenating the remaining palms by giving compensation to farmers for cutting and rejuvenation. Initially, this programme was launched in 2009-10 on a pilot basis in some districts of Kerala, which was later extended to all the major coconut producing States. Financial assistance provided under various components of R&R scheme has been shown in Table 3.6.

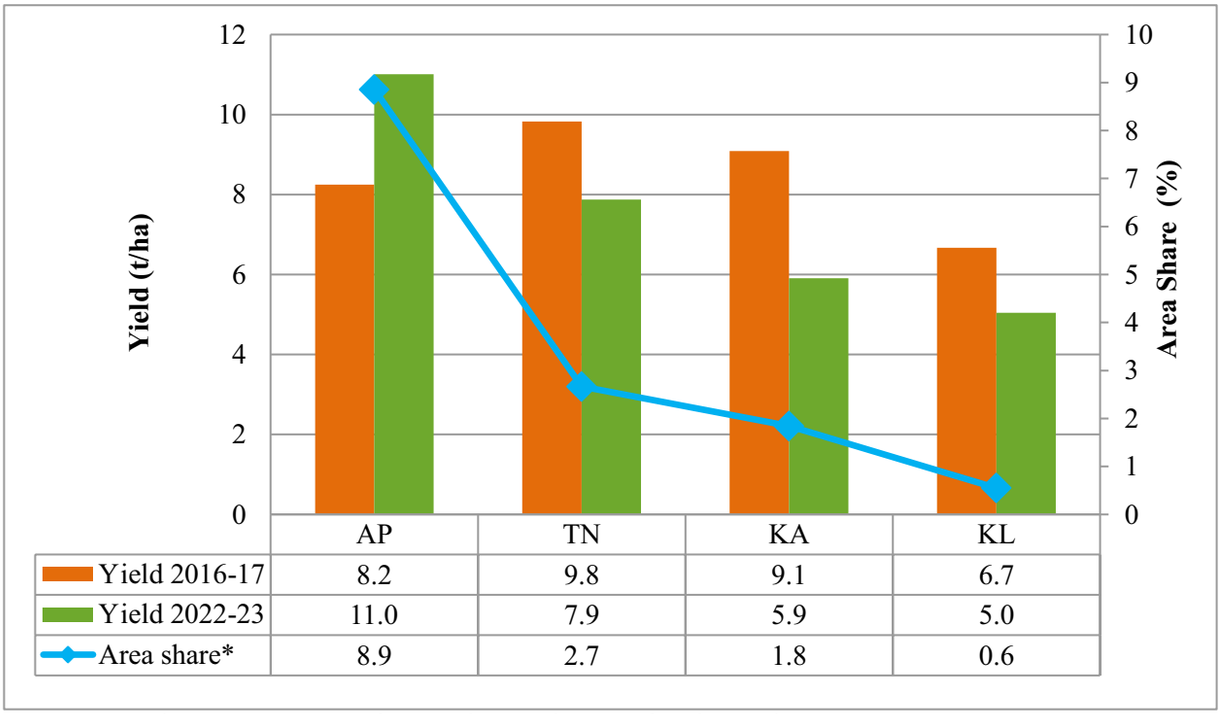
Table 3.6: Financial Assistance under Replanting and Rejuvenation Scheme

Scheme components	Scale of Assistance	Remarks
Cutting and removal of all old, senile, unproductive and disease advanced palms	Subsidy @ ₹1,000 per palm, subject to a maximum of ₹32,000/ha	Extended during the first year
Replanting	Subsidy of ₹40/- per seedling subject to a maximum of ₹4,000/ha	Extended during the first year
Rejuvenation of the existing coconut palms by integrated management	Subsidy of ₹17,500/ha	Extended in two annual installments of ₹8,750/- each.

Source: Coconut Development Board, Ministry of Agriculture and Farmers Welfare

3.25 Chart 3.5 shows the average coconut yield in major States for 2016-17 and 2022-23 along with area share under R&R scheme from 2016-17 to 2022-23. It can be clearly seen that Andhra Pradesh, which has the highest area under R&R scheme (8.9%) among other major States, has registered a significant increase of 34.1 percent in coconut yield during 2022-23 as compared to 2016-17. While no positive impact on yield was observed in case of other States. However, it is pertinent to note that yield stabilization in the new palms will take few years, so the overall effect will be visible in the years to come. Further, success of this programme largely depends upon the availability of quality seedlings and planting materials. Therefore, efforts should be made to ensure adequate availability of planting material to the farmers.

Chart 3.5: Impact of Replantation and Rejuvenation in Major Coconut Producing States (2016-17 to 2022-23)



	AP	TN	KA	KL
Yield 2016-17	8.2	9.8	9.1	6.7
Yield 2022-23	11.0	7.9	5.9	5.0
Area share*	8.9	2.7	1.8	0.6

Note : 1. Replanting component of R&R scheme is being undertaken in the same Rejuvenation area
*2. * Area Share is area Rejuvenated and Replanted (%) of total area (2022-23)*
Source: Coconut Development Board, Ministry of Agriculture and Farmers Welfare

Coconut-based Cropping Systems

3.26 The coconut cultivation is vulnerable to risks and uncertainties due to aberrant weather conditions, natural calamities, frequent attack of various pests & diseases and high price fluctuations. The coconut based cropping systems involving cultivation of compatible crops like tubers, flowers, medicinal and aromatic crops, fruits, vegetables and spices in the interspaces of coconut are considered economically superior to coconut mono-cropping. These systems help in better utilization of interspaces and improve the soil fertility and also help in realizing higher income. Coconut based mixed/inter cropping systems including dairy, poultry, rabbitry, sericulture, goatary and pisciculture have been successfully demonstrated by ICAR- CPCRI, Kasaragod. (Box 3.2)

Box 3.2: Coconut-based High-Density Multi-Species Cropping System (HDMSCS)

Coconut-based High-Density Multi-Species Cropping System is a viable alternative to make coconut farming sustainable and more profitable. It involves several species of seasonal, annual and perennial crops to achieve highly efficient use of resources. As per study conducted by ICAR-CPCRI at Kasaragod, comprising coconut, pepper (trailed on the coconut trunk), banana, kadali, robusta (inter row space of palms), cinnamon (inter row space of palms) and nutmeg (between 4 coconut palms) under different nutrient management practices along with recycling of biomass, bio-fertilizers application and green manuring, which resulted in 6.3 times higher net returns (₹6,17,162) in HDMSCS as compared to monocrop of coconut. In another study conducted by ICAR-CPCRI, coconut intercropping including banana and pepper as intercrops alongwith dairy, poultry and goatary realized a net return of ₹6.01 lakh from a unit area of one hectare. Thus, this system is beneficial for coconut grower as it promotes efficient use of resources and also provides additional income to the coconut growers.

Source: ICAR- Central Plantation Crops Research Institute, Kasaragod

Product Diversification, Value Addition and Entrepreneurship

3.27 Product diversification has substantial potential to enhance income of coconut farmers. There are various value added products available in coconut which can be easily taken up as micro or small scale enterprises. Various processing technologies for profitable utilization of products and by-products of coconut palm have been developed by research institutions in recent years. Product diversification of farm produce into high-value products with better price realization for farmers through competitive markets and value chains can be helpful to increase the profitability of coconut farming. However, in order to make coconut value chain and complex system successful, a clearly defined vision, a carefully designed strategy, adequate financial resources and a supporting mechanism is the need of the hour.

3.28 In order to promote value addition in coconut, various initiatives have been taken by the State Governments. For instance, the Government of Kerala has started a programme i.e. Value Addition for Income Generation in Agriculture (VAIGA), which has generated considerable interest among entrepreneurs to establish value addition units in the State. Establishment of Coconut Development Council (CDC) is another initiative of the State, which has been launched to bring effective and focused interventions for augmenting income of the coconut farmers from a long term perspective through the development of coconut farming, coconut based farming systems, agro-processing and value addition in the State. Though coconut value addition is at its initial stage in India, the recent innovations and the value chains developed in coconut can transform the farmers into entrepreneurs and can enhance their income.

Labour Scarcity and Mechanization

3.29 All major coconut growing States are facing serious issue of non-availability and high cost of labour. The occupational risk and drudgery involved in climbing the tall coconut trees is discouraging the youth from taking up the profession of coconut harvesting. On account of shortage of labour, it is difficult for farmers to carry out farming operations in time that resulted in lower yield and subsequently, revenue loss. In order to motivate youth into taking up coconut climbing, the CDB has initiated a training programme called 'Friends of Coconut Tree' (FoCT) wherein they are being trained for palm climbing using a mechanical device which reduces the strain for the climber. They are also trained for crown cleaning and pest and disease management. From 2011-12 to July 2023, a total expenditure to the tune of ₹35.2 crore has been incurred in order to train 66,814 youths by the board under the programme. However, machines like climbers need to be improved further in order to make it user friendly and cost effective.

3.30 Since climbing coconut tree for harvest/neera tapping is a risky profession, the CDB started an insurance scheme known as the '*Kera Suraksha* Insurance Scheme (KSIS)' with the objective of minimizing the risk of the tree climbers. It is a comprehensive group personal accident insurance scheme, implemented by CDB in association with public insurance companies. Under the scheme, annual premium is ₹375 and is shared between Board and beneficiary in the ratio of 75:25. The period of insurance is one year and needs to be renewed every year by paying ₹94. Further, for the trainees undergoing the skill development training of the Board viz. FoCT/Neera Technician Training Programme, first year premium is fully borne by the Board from the date of commencement of training. There is a provision of compensation of ₹5 lakh in the event of death or permanent total disability of tree climber, while ₹2.5 lakh is given for partial disability.

3.31 It is noteworthy to mention here that the Government of Kerala has also taken some important initiatives such as establishment of Agro Service Centres (ASC), *Kera Gramam*, *Krishi Sree* Centre etc. *Krishi Sree* Centre is the latest initiative of department of Agriculture, to provide service support and mechanization for farmers. The model Eravipuram *Krishi Sree* Centre (EKSC) established at Kollam is working successfully by integrating all the services related to farming. ASC and *Kera Gramam* have also played a significant role for managing the labour shortage problems and increasing the level of mechanization in coconut farming. Other States should also follow the suit to overcome the problem of shortage of labour and to increase the level of mechanization in their own States.

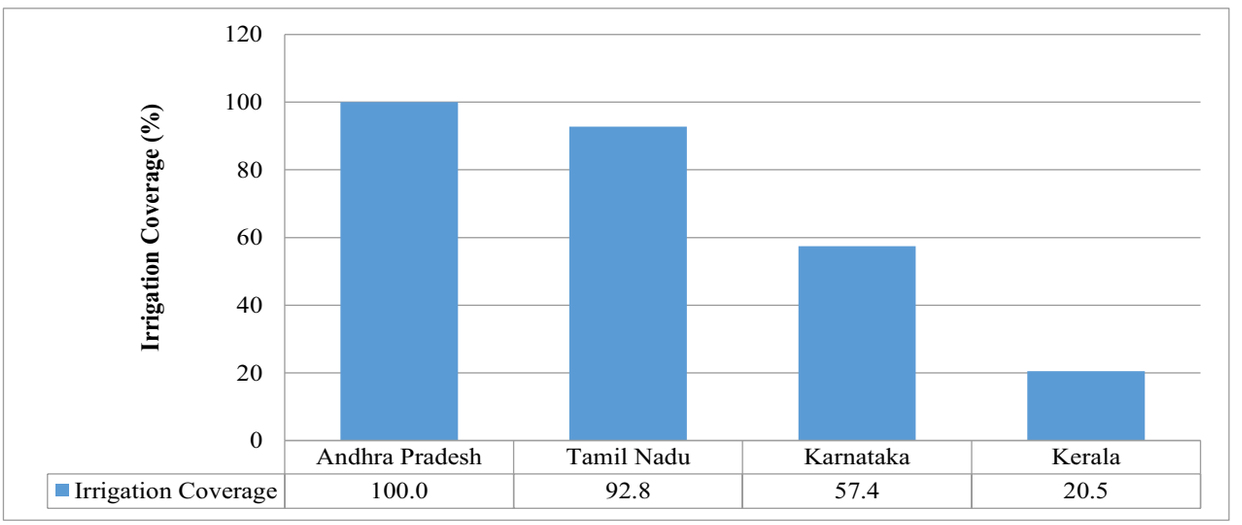
Irrigation

3.32 The coconut palm is found to grow under varying climatic and soil conditions. It is essentially a tropical plant, growing mostly between 20° N and 20° S latitudes. The ideal temperature for coconut growth and yield is 27 ± 5°C and humidity >60 percent. Soil moisture very often limits coconut production in those areas where long spell of dry weather

which necessitates irrigation during summer months. 600-1600 litres of water per palm in a basin of 1.8 m radius based on soil texture is required which can be efficiently utilized using drip irrigation. It saves water, energy, labour and increases plant growth and yield. Community Irrigation Initiative is one of such initiative by Kerala Government wherein the State establishes community irrigation units and thereafter maintenance of the unit will be the responsibility of the farmers after the establishment of three years.

3.33 Chart 3.6 displays the irrigation coverage under coconut plantation in major coconut producing States in TE2021-22. As irrigation coverage in Kerala is only 20.5 percent, so efforts should be made to increase the level of irrigation in the State in order to improve the coconut productivity.

Chart 3.6 : Irrigation Coverage in Major Coconut Producing States



Source: State Replies

Coconut Palm Insurance Scheme

3.34 Coconut Palm Insurance Scheme (CPIS) provides effective risk management support to coconut growers against non-preventable natural calamities and invasion of pests & diseases, etc. The scheme is being implemented through the Agriculture Insurance Company (AIC) and the State Governments in major coconut growing States. The premium is shared by the Coconut Development Board, State Government and farmers in the ratio of 50:25:25. All healthy nut-bearing palms within age groups of 4 to 60 years are covered under this scheme.

3.35 Table 3.7 exhibits the cumulative progress of CPIS from 2009 to 2023 across major coconut producing States. Since the inception of the scheme, around 47 lakh palm trees have been insured and an area of 30.9 thousand hectares has been covered under the scheme. A total of 77,045 farmers have been covered under this scheme from 2009 to 2023. Apart, a total

premium of ₹361.1 lakh has been paid under CPIS from 2009 to 2023, while claims of ₹574.4 lakh have been settled. It is clear from the Table that the progress of CPIS has remained limited in all States despite financial support from the Government. There are several reasons behind the slow progress of the scheme such as delays in obtaining administrative approvals from concerned State Governments, inadequate publicity, non-remittance of State share of premium to the Agricultural Insurance Company in advance and so on.

3.36 Since, CPIS is an important policy measure to protect coconut farmers in the event of natural calamities and diseases, concerted efforts are needed to make this scheme farmer-friendly and expand outreach of the scheme. Wide publicity with effective use of Information and Communication Technology tools can be helpful to increase the coverage of the farmers and area under this scheme.

Table 3.7: Coverage under Coconut Palm Insurance Scheme (from 2009 to 2023)

State	No. of Farmers	Area in (ha)	No. of Palms Insured (in Lakhs)	Total Insurance Premium (in ₹ Lakhs)	Claims Amount (in ₹ Lakhs)	No. of Beneficiaries
Kerala	52757	12253.7	21.0	126.5	341.3	7394.0
Maharashtra	14864	8279.1	10.8	91.9	34.3	616.0
Tamil Nadu	5745	7330.2	11.8	103.4	48.2	9.0
Andhra Pradesh	1217	1150.6	1.3	24.5	145.7	198.0
Odisha	826	140.5	0.3	3.2	0.2	0.0
Karnataka	704	958.3	1.0	6.1	3.2	58.0
West Bengal	692	205.2	0.3	1.8	0.0	0.0
Goa	240	625.3	0.6	3.7	1.6	16.0
Grand Total	**77045**	**30942.9**	**47.1**	**361.1**	**574.5**	**8291.0**

Source: Coconut Development Board, Ministry of Agriculture and Farmers Welfare

Recapitulation

3.37 The recent growth trends in coconut yield present a dismal picture as coconut yield has declined in most of the major coconut producing States including Tamil Nadu, Kerala and Karnataka. Besides this, significant variations have also been observed in the yield of coconut in major States. As a result, India's competitiveness and performance among major coconut producing countries has been adversely affected.

3.38 Although India is the leading producer of coconut in the world, there is a significant gap between the India's coconut yield and that of Brazil, indicating considerable scope for further improvement in the country's coconut yield. There is a pressing need to develop strategies in collaboration with various stakeholders to increase the yield of coconut, focusing on

adoption of improved production technologies, replanting and rejuvenation of old trees, efficient management of pests and diseases, integrated nutrient management, mechanization, efficient water use, etc. Further, promotion of coconut based cropping systems and product diversification towards high-value produce will increase profitability of coconut sector and enable farmers to further invest in improved production technologies. In view of growing shortage of labour as well as rising wages, more efforts are required to increase the level of mechanization in coconut cultivation. Coconut Palm Insurance Scheme has potential to protect the farmers against frequent incidences of natural calamities and pests and diseases attack but its coverage is low. Therefore, efforts should be made for expanding the coverage of scheme through wide publicity.

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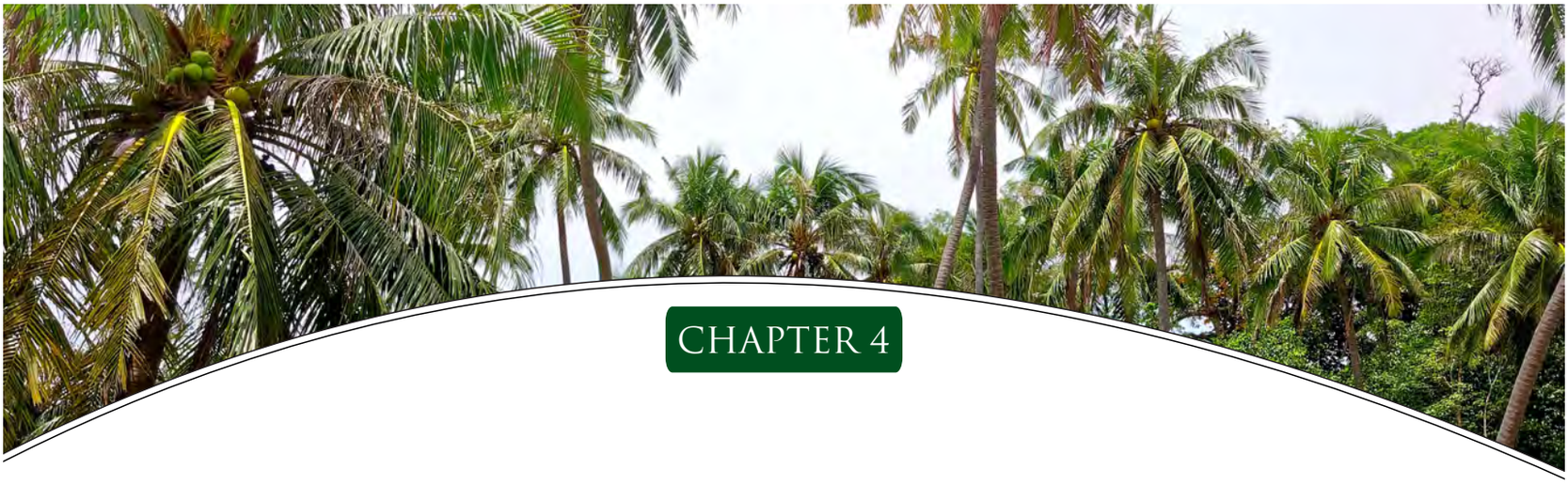


CHAPTER 4

Trade Performance and Outlook

4.1 Coconut is a tropical plant with high level of resilience to climate and one of the most extensively grown nut crops in the world. Coconut production is mostly concentrated in the coastal belts of Southeast Asia and India, Philippines and Indonesia are the major coconut producing countries accounting for about three-fourth of the world production. Coconut, being a commercial crop, is integral to the economy as well as livelihood of small and marginal farmers. From time immemorial, coconut oil has been the most important commercial derivative of coconut and international trade in coconut was driven by the demand for coconut oil. However, this has changed in recent decades and global demand for coconut-based products is growing. This chapter provides an overview of trade performance and outlook of global coconut economy as well as India's trade performance in coconut and its products. It also examines domestic and international price trends of major coconut products and reviews trade policy related to coconut sector.

World Production and Trade Performance

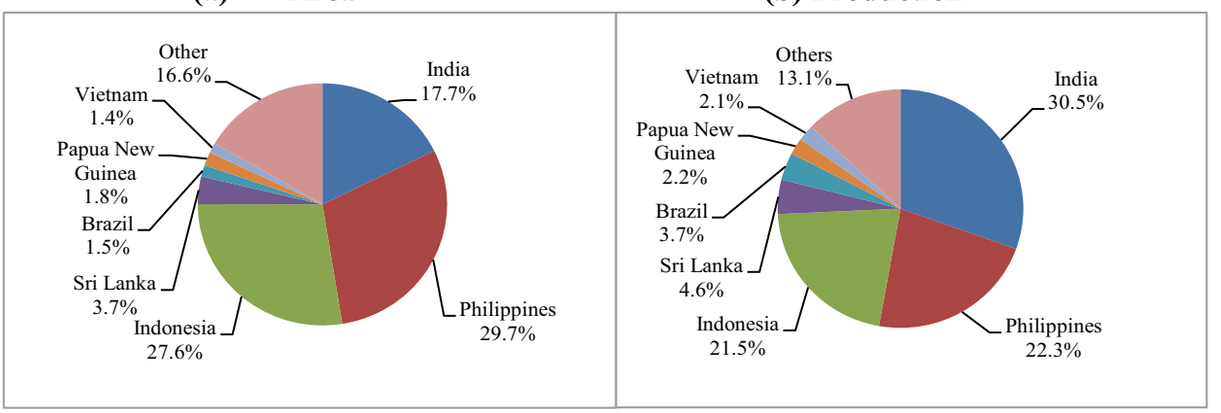
Coconut

4.2 As per International Coconut Community (ICC), the global coconut production is concentrated mostly in South-East Asia and was at record high in 2018 with production of 69,343 million nuts. However, subsequently it declined for two consecutive years to 66,991 million nuts in 2019 and 65,388 million nuts in 2020. In 2021, with an increase of 2 percent, coconut production was recorded at 66,674 million nuts but declined marginally to 65,673 million nuts in 2022. Chart 4.1(a) depicts the share of world area used for coconut plantation by major coconut producing countries in TE2022. It is observed that with a share of 29.7 percent, Philippines was the largest coconut growing nation, followed by Indonesia (27.6%), India(17.7%) and Sri Lanka(3.7%). Chart 4.1(b) depicts the relative shares of major coconut producing countries in world coconut production in TE2022. It is observed that with the share of 30.5 percent, India was the largest producer of coconut in the world in TE2022, followed by Philippines (22.3%) and Indonesia (21.5%). The top three producers account for about 74 percent of world coconut production. It is pertinent to note that although India ranks

third in area utilized for coconut plantation but it ranks first in share of coconut production in TE2022, indicating highest rate of productivity in the world. The comparative shares of major coconut producers in total production in TE2012 and TE2022 are given in Annex Table 4.1.

Chart 4.1: Major Producers of Coconut, TE2022

(a) Area **(b) Production**



Source: 1. International Coconut Community (ICC), Coconut Statistical Yearbook
2. Quarterly Bulletin Volume II No. I, April 2023, ICC

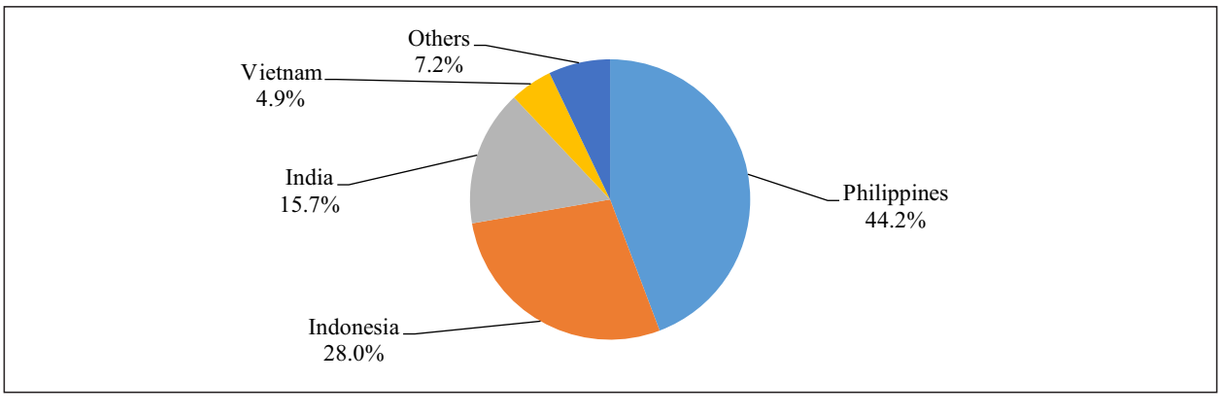
Coconut Oil

4.3 As per USDA, although global production of major vegetable oils has increased from 155.3 million tonnes in TE2012-13 to 210.5 million tonnes in TE2022-23, coconut oil production remained static at around 3.7 million tonnes during this period. Therefore, the share of coconut oil in global production of major vegetable oils contracted from 2.4 percent in TE2012-13 to 1.7 percent in TE2022-23. On the other hand, the shares of palm oil, soybean oil and sunflower oil in global production of major vegetable oils increased from 33.5 to 35.5 percent, 27.2 to 28 percent and 9 to 9.5 percent respectively between TE2012-13 and TE2022-23. The shares of major vegetable oils in global production in TE2012-13 and TE2022-23 are given in Annex Table 4.2.

Production

4.4 As per USDA, the global production of coconut oil recovered in 2021-22 to 3.73 million tonnes after falling for three consecutive years since 2018-19. However, in 2022-23, the global production of coconut oil marginally fell to 3.7 million tonnes. Chart 4.2 depicts the relative shares of major producers of coconut oil in the world in TE2022-23. Philippines continues to be the largest producer of coconut oil with a share of 44.2 percent, followed by Indonesia (28%), India (15.7%) and Vietnam (4.9%) in TE2022-23. Despite being the largest producer of coconut, India has a relatively lower share in global coconut oil production due to high domestic demand for fresh coconut and its products.

Chart 4.2: Major Producers of Coconut Oil, TE2022-23

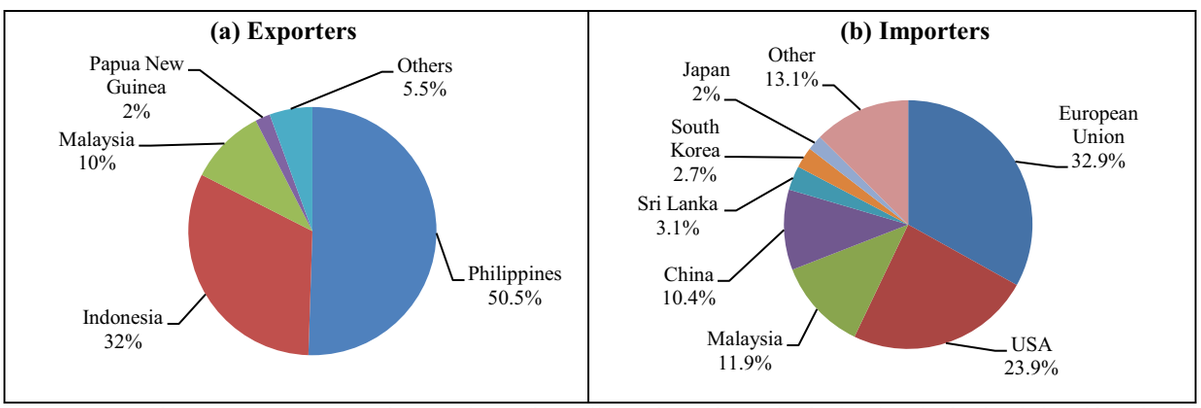


Source: United States Department of Agriculture

Exports

4.5 In TE2022-23, as per USDA, the global exports of coconut oil were recorded at two million tonnes. Philippines is the largest exporter of coconut oil with a share of 50.5 percent, followed by Indonesia (32%) and Malaysia (10%) (Chart 4.3(a)). With around 33 percent of total imports, European Union (EU) is the largest importer of coconut oil, followed by United States of America (USA) (23.9%), Malaysia (11.9%) and China (10.4%) (Chart 4.3(b)). The global exporters of coconut oil are highly concentrated, with the top three exporters accounting for 92.5 percent of global exports, while the share of top three importers in total imports of coconut oil stood at 68.7 percent. The changing shares of top exporters and importers of coconut oil in TE2012-13 and TE2022-23 are given in Annex Table 4.3.

Chart 4.3: Share of Major Exporters and Importers of Coconut Oil, TE2022-23 (in volume)



Source: United States Department of Agriculture (https://apps.fas.usda.gov/psdonline/app/index.html#/app/downloads)

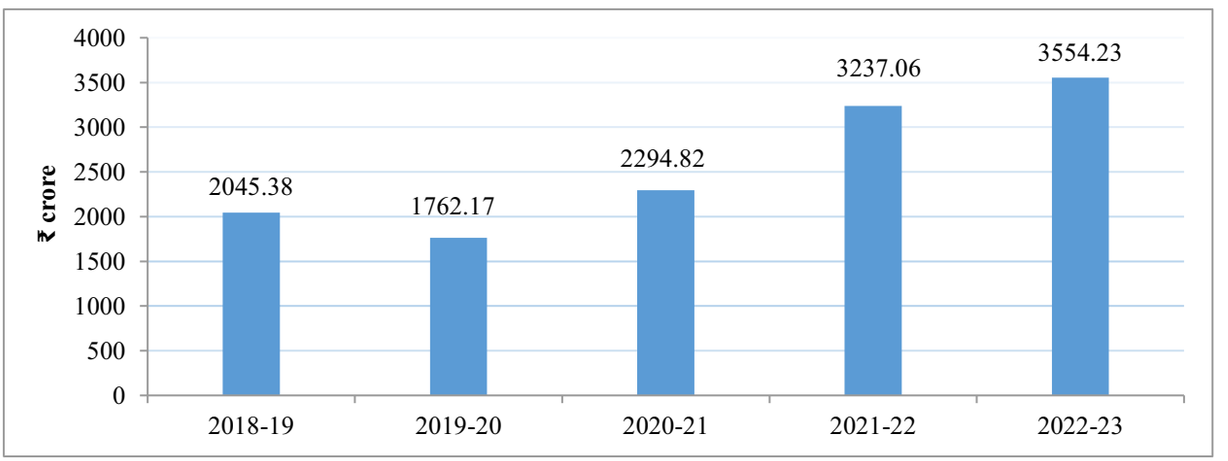
India's Trade in Coconut and Coconut Products

Exports

4.6 Exports of coconut products such as ball copra, milling copra, coconut oil, coconut shell products, coconut wood furniture fall under the jurisdiction of the Coconut Development Board (CDB) while promotion of exports of coir yarn and coir products comes under the ambit of Coir Board since April 2009.

4.7 The exports of coconut and its products from India have significantly increased during the last few years (Chart 4.4). As per the DGCIS, exports of coconut products (excluding coir and coir products) increased by 30.2 percent in 2020-21 to ₹2,294.8 crore from ₹1,762.2 crore in 2019-20. The export earnings further increased by over 41 percent to ₹3,237.1 crore in 2021-22 and by 9.8 percent to ₹3554.2 crore in 2022-23. It is notable that the uninterrupted growth in exports of coconut products in 2022-23 was due to increase in exports earnings from coconut (fresh), other coconut excluding (fresh/dried), coconut oil(crude), dried endocarp, other endocarp, activated carbon and copra in 2022-23 compared to previous year. Trends in India's exports of coconut and coconut products during last ten years are given in Annex Table 4.4.

Chart 4.4: Coconut Products exported from India, 2018-19 to 2022-23

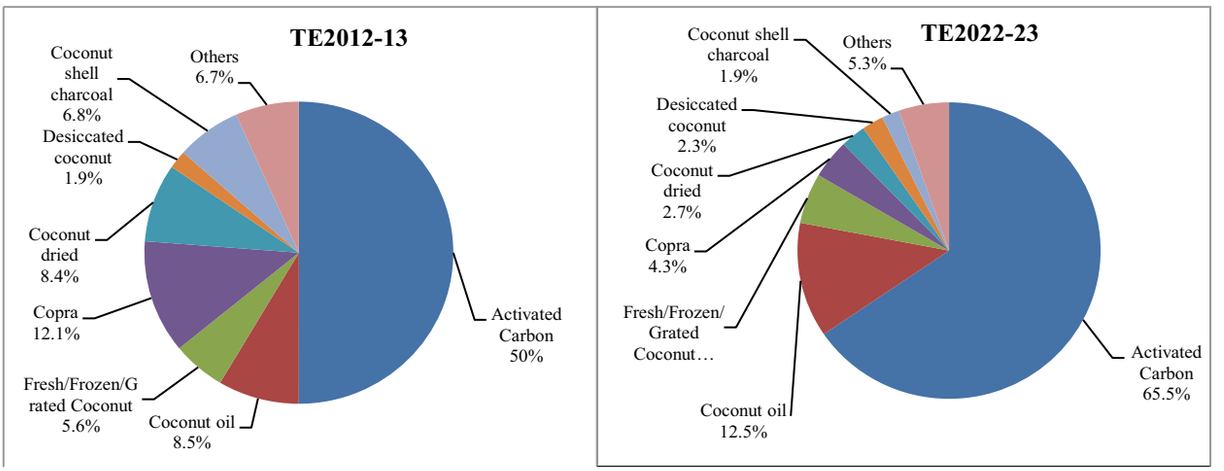


Source: Directorate General of Commercial Intelligence and Statistics (DGCIS), Ministry of Commerce and Industry

4.8 Chart 4.5 compares the composition of export-basket of coconut products exported from India in TE2012-13 and TE2022-23. It is pertinent to note that due to high demand in the international market, activated carbon continues to be the largest coconut shell charcoal based product exported in recent years from India. The export share of activated carbon

among coconut products has increased from 50 percent in TE2012-13 to 65.5 percent in TE2022-23. The second major export item among coconut based products is coconut oil, and its share in export earnings has increased from 8.5 percent in TE2012-13 to 12.5 percent in TE2022-23. Similarly, the share of desiccated coconut has increased from 1.9 percent to 2.3 percent during the period. In contrast, the shares of copra, coconut shell charcoal, coconut dried and fresh/frozen/grated coconut, in the export-basket of coconut products have declined during the period. Copra accounted for 4.3 percent of coconut exports from India in TE2022-23, down from 12.1 percent share in TE2012-13, while, the share of coconut shell charcoal declined from 6.8 percent to 1.9 percent. Trends in India's exports of coconut and coconut products during the last ten years are given in Annex Table 4.4.

Chart 4.5: Changing shares of Different Coconut Products exported from India TE2012-13 and TE2022-23 (in value)



Source: Directorate General of Commercial Intelligence and Statistics (DGCIS), Ministry of Commerce and Industry

4.9 The major export destinations of coconut and coconut products as well as their export earnings during 2012-13 and 2022-23 are presented in Table 4.1. USA remained the top export destination for activated carbon during 2012-13 and 2022-23, while Netherland and Russia, which were the other major export destinations for activated carbon in 2012-13, were replaced by Germany and Sri Lanka in 2022-23. In 2022-23, United Arab Emirates (UAE), Iran and United Kingdom (UK) emerged as top destinations for exports of fresh coconut from India with 68 percent share in export earnings. India exported bulk of dried coconut to Iran, UK and Hong Kong in 2022-23. More than 25 percent of India's coconut oil was exported to UAE, while Saudi Arabia and Netherland were the other export destinations in 2022-23. India's key export destinations for desiccated coconut in 2022-23 were UAE, Iraq and USA, while for copra, UAE, Afghanistan and Nepal have emerged as the top export destinations in 2022-23.

4.10 It is pertinent to note that except coconut dried, all other coconut products have recorded significant increase in export earnings between 2012-13 and 2022-23 but in case of activated carbon and coconut oil, more than four-fold jump in value of exports was recorded between 2012-13 and 2022-23 (Table 4.1).

Table 4.1: Major Exports Destinations of Coconut and Coconut Products, 2012-13 and 2022-23

Product	Total Exports (₹ crore)		Major Destinations	
	2012-13	*2022-23*	*2012-13*	*2022-23*
Activated Carbon	561.2	2369.8	USA (26.5%), Netherland (8.9%), Russia (7%)	USA (18.3%), Germany (6.7%), Sri Lanka (6.5%)
Coconut Oil	83.8	453.4	UAE (25.6%), Brazil (16.3%), Saudi Arabia (10.1%)	UAE (25.2%), Saudi Arabia (8.2%), Netherland (7.7%)
Coconut Fresh	58.1	168.7	UAE (70.3%), UK (5.8%), Saudi Arabia (3.7%)	UAE (52.9%), Iran (8.9%), UK (6.2%)
Copra	87.2	213.9	Bangladesh (93.2%), Nepal (4.8%), Pakistan (1.4%)	UAE (41.5%), Afghanistan (28.9%), Nepal (9.7%)
Desiccated Coconut	14.6	61.9	Kuwait (28.8%), Nepal (26.7%), Saudi Arabia (13%)	UAE (18.7%), Iraq (11.3%), USA (9%)
Coconut Dried	103.6	29.9	Pakistan (92.6%), Nepal (3.7%), UK (0.7%)	Iran (31.2%), UK (12.4%), Hong Kong (12.3%)

Note: Figures in parentheses show percent share in total exports

Source: Directorate General of Commercial Intelligence and Statistics (DGCIS), Ministry of Commerce and Industry

Imports

4.11 Imports of coconut and coconut products in India have declined from ₹1,174 crore in 2021-22 to ₹1,019 crore in 2022-23. As regards composition of imports of coconut products, activated carbon with the share of 55.1 percent is the largest coconut product imported by India in 2022-23 followed by solvent and expeller variety of copra oil cake (31.5%) and desiccated coconut (7.5%). Trends in imports of coconut products in India during the last ten years are presented in Annex Table 4.5.

4.12 Table 4.2 depicts the major origins of India's imports of major coconut products viz. copra oil cake, activated carbon and desiccated coconut in 2012-13 and 2022-23. It is noticed that during last decade, the major import origins of these coconut products have remained largely unchanged. Between 2012-13 and 2022-23, imports of copra oil cake have risen from ₹49 crore in 2012-13 to ₹321 crore in 2022-23 and bulk of these imports continue to be sourced

from Sri Lanka, Indonesia and Philippines. Similarly, import of activated carbon has increased by more than 4 times in last decade and China is the major import origin. As regards desiccated coconut, though import origins have remained same during the decade but Indonesia, which was the main source of imports in 2012-13, was replaced by Sri Lanka in 2022-23 due to freight advantage.

Table 4.2: Major Imports Origins of Coconut and Coconut Products, 2012-13 and 2022-23

Product	Total Imports (₹ crore)		Major Origins	
	2012-13	*2022-23*	*2012-13*	*2022-23*
Copra Oil cake	49.0	321	Philippines (46.1%), Indonesia (30.2%), Sri Lanka (19.5%)	Sri Lanka (33.7%), Indonesia (30.8%), Philippines (24.6%)
Activated Carbon	134.5	561.7	China (41.8%), France (13.8%), USA (11.9%)	China (50.7%), USA (13.8%), Japan (5.8%)
Desiccated Coconut	0.1	76.5	Indonesia (98%), Sri Lanka (2%)	Sri Lanka (98%), Philippines (1%), Indonesia (0.8%)

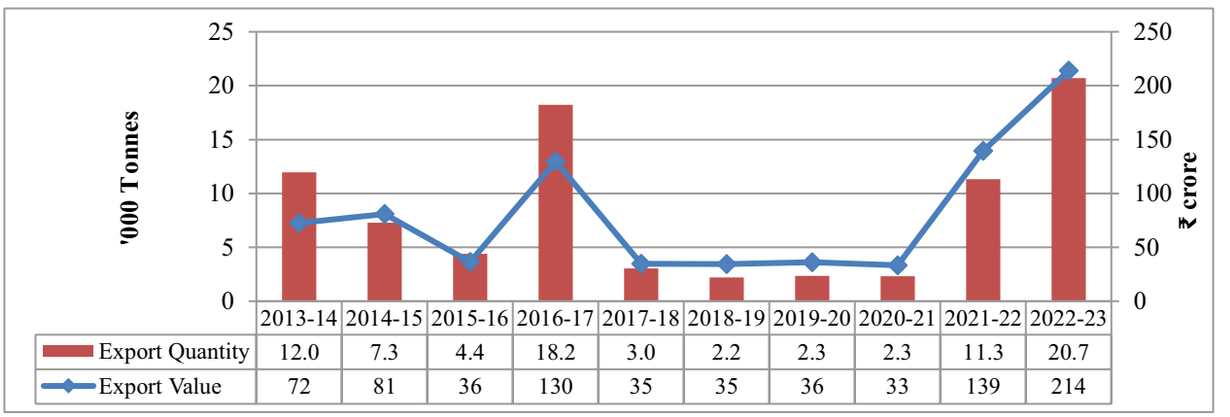
Note: Figures in parentheses show percent share in total exports

Source: Directorate General of Commercial Intelligence and Statistics (DGCIS), Ministry of Commerce and Industry

Copra

4.13 Chart 4.6 illustrates the trends in exports of copra from India during the period from 2013-14 to 2022-23. It is observed that, during 2013-14 to 2015-16, India exported significant volumes of copra, albeit these volumes witnessed a falling trend due to high domestic prices of copra resulting into uncompetitive exports. However, phenomenal jump in exports of copra was noticed in 2016-17 due to lower domestic prices. Subsequently, from 2017-18 to 2020-21, copra exports from India were almost static at an average of 2.5 thousand tonnes per annum. However, most impressive growth in copra exports from India was recorded in 2021-22 and 2022-23 with export volume hitting a new peak at 20.7 thousand tonnes in 2022-23.

Chart 4.6: India's Export of Copra, 2013-14 to 2022-23

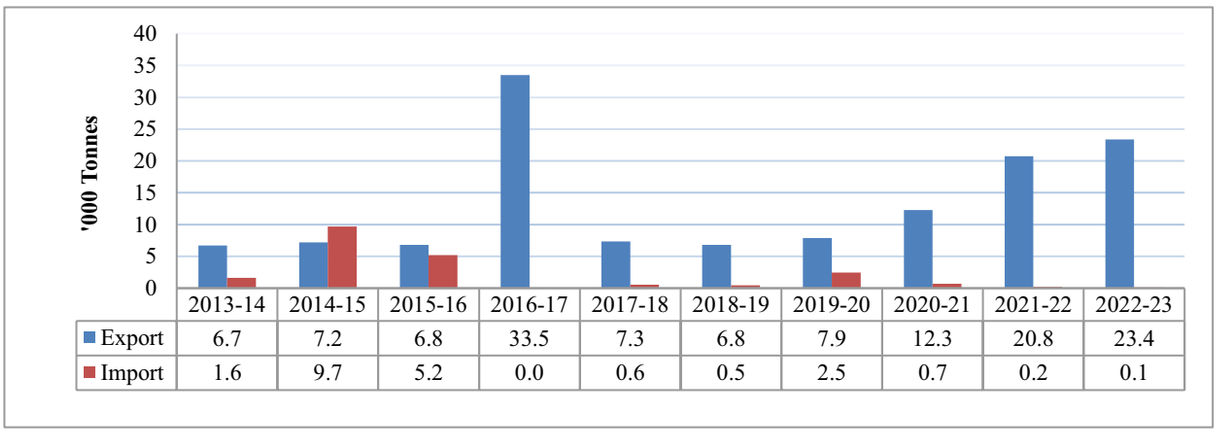


Source: Directorate General of Commercial Intelligence and Statistics (DGCIS), Ministry of Commerce and Industry

Coconut Oil

4.14 Chart 4.7 depicts the trends in volume of exports and imports of coconut oil during the period 2013-14 to 2022-23. It is observed that in the last decade, India has been the net exporter of coconut oil, except in 2014-15. India exported an average of 6.9 thousand tonnes of coconut oil between 2013-14 and 2015-16 but five-fold jump in exports of coconut oil (33.5 thousand tonnes) was witnessed in 2016-17 over 2015-16 on account of lower domestic prices compared to international prices. The exports of coconut oil decreased to 7.3 thousand tonnes in 2017-18, as the domestic prices of coconut oil increased. However, India's exports of coconut oil have recovered steadily since 2018-19 and the exports increased significantly by about 70 percent in 2021-22 over 2020-21. In 2022-23, India exported a record volume of 23.4 thousand tonnes of coconut oil and major export destinations were UAE, Netherland and Indonesia. Country wise exports of coconut oil during last three years are given in Annex Table 4.6.

Chart 4.7: India's Exports & Imports of Coconut Oil, 2013-14 to 2022-23 (in volume)

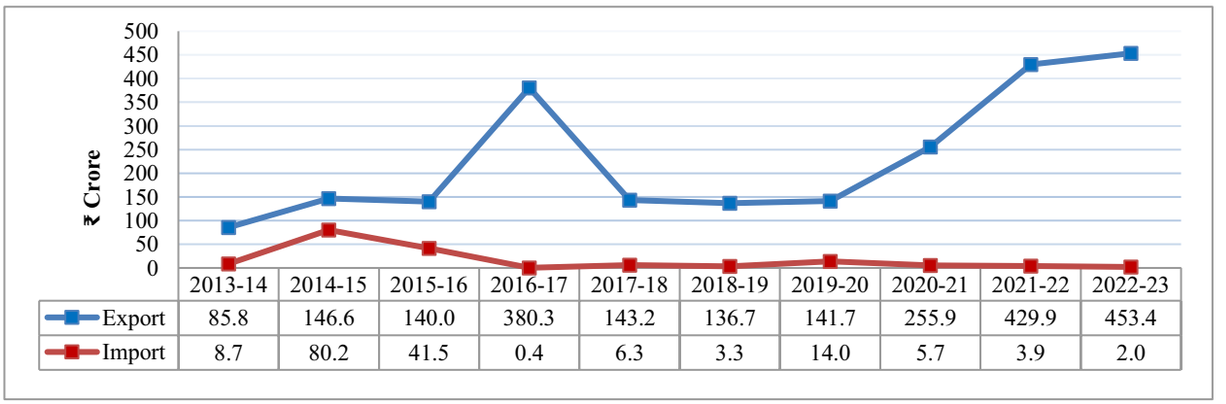


	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
Export	6.7	7.2	6.8	33.5	7.3	6.8	7.9	12.3	20.8	23.4
Import	1.6	9.7	5.2	0.0	0.6	0.5	2.5	0.7	0.2	0.1

Source: Directorate General of Commercial Intelligence and Statistics (DGCIS), Ministry of Commerce and Industry

4.15 Chart 4.8 presents the trends in export and import of coconut oil in value terms between 2013-14 and 2022-23. It is observed that the India's export earnings from coconut oil increased from ₹85.8 crore to ₹140 crore between 2013-14 and 2015-16, although record upsurge was noticed in 2016-17 at ₹380.3 crore on account of higher export volumes. In the following years, from 2017-18 to 2019-20, export value of coconut oil hovered around ₹140 crore. The export value of coconut oil witnessed most striking growth of 203 percent from 2019-20 and reached at ₹429.9 crore in 2021-22 due to high prices of vegetable oils in the world market. However, in 2022-23, export value of coconut oil registered a moderate growth of 5.5 percent as compared to previous year due to increase in competition consequent to fall in the world prices of other vegetable oils.

Chart 4.8: India's Exports and Imports of Coconut Oil, 2013-14 to 2022-23 (in value)



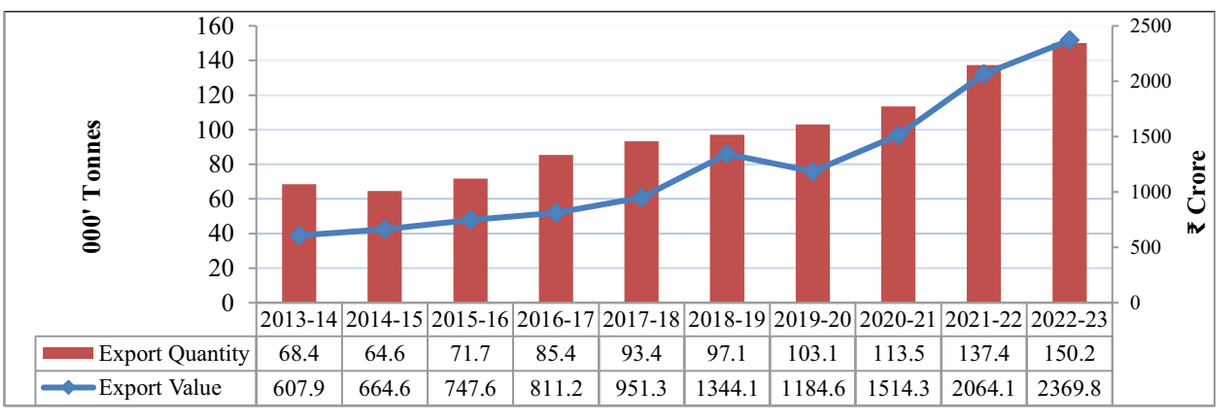
	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
Export	85.8	146.6	140.0	380.3	143.2	136.7	141.7	255.9	429.9	453.4
Import	8.7	80.2	41.5	0.4	6.3	3.3	14.0	5.7	3.9	2.0

Source: Directorate General of Commercial Intelligence and Statistics (DGCIS), Ministry of Commerce and Industry

Activated Carbon

4.16 Due to high global demand, activated carbon has emerged as a key coconut based product with great export potential in the international market. Chart 4.9 depicts the trends in volumes and value of exports of activated carbon from India during the period 2013-14 to 2022-23. India is a net exporter of activated carbon. The export volume of activated carbon registered a significant and steady growth during the last decade, from 68.4 thousand tonnes in 2013-14 to 150.2 thousand tonnes in 2022-23. Export earnings increased significantly from ₹607.9 crore in 2013-14 to ₹2,369.8 crore in 2022-23. USA has been the largest export-destination of activated carbon, followed by Germany and Sri Lanka.

Chart 4.9: India's Exports of Activated Carbon, 2013-14 to 2022-23

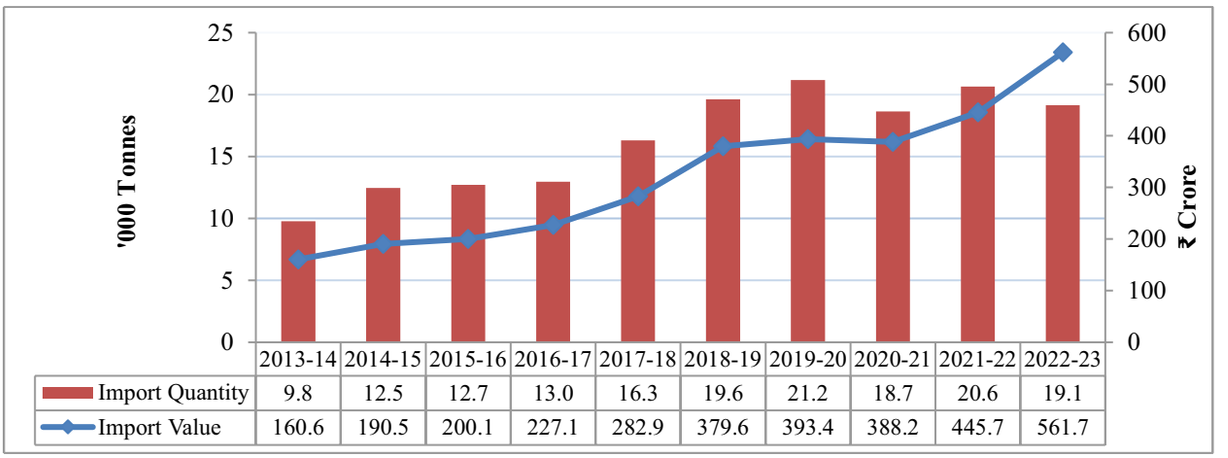


	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
Export Quantity	68.4	64.6	71.7	85.4	93.4	97.1	103.1	113.5	137.4	150.2
Export Value	607.9	664.6	747.6	811.2	951.3	1344.1	1184.6	1514.3	2064.1	2369.8

Source: Directorate General of Commercial Intelligence and Statistics (DGCIS), Ministry of Commerce and Industry

4.17 India also imports a modest quantity of activated carbon. Chart 4.10 depicts the trends in imports of activated carbon in India during the period 2013-14 to 2022-23. Similar to exports of activated carbon, growth trajectory of imports too followed an upward trend, from 9.8 thousand tonnes in 2013-14 to 20.6 thousand tonnes in 2021-22, except a dip in 2020-21. In 2022-23, although import volume of activated carbon slightly declined as compared to previous year but the import bill increased by 26 percent, indicating surge in world prices.

Chart 4.10: India's Imports of Activated Carbon, 2013-14 to 2022-23



	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
Import Quantity	9.8	12.5	12.7	13.0	16.3	19.6	21.2	18.7	20.6	19.1
Import Value	160.6	190.5	200.1	227.1	282.9	379.6	393.4	388.2	445.7	561.7

Source: Directorate General of Commercial Intelligence and Statistics (DGCIS), Ministry of Commerce and Industry

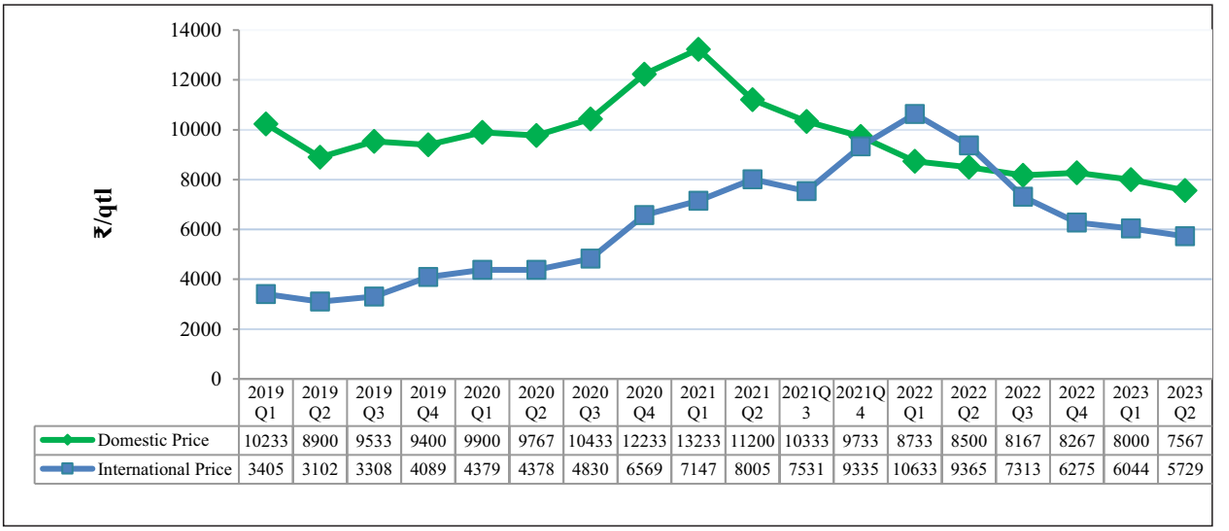
Coir and Coir Products

4.18 Coir Industry is a traditional, labour-intensive and agro-based cottage industry. Being the leading producer, coir products from India are being exported to more than 100 countries all over the world. Annex Table 4.7 depicts the trends in India's exports of coir and coir products during the period 2013-14 to 2022-23 (upto December 2022).The country recorded all-time high export earnings from coir and coir products in 2021-22 at ₹4,340 crore, an increase of 194 percent from 2013-14 at ₹1,476 crore. Further, in 2022-23 (up to December 2022) export earnings from coir and coir products have reached at₹2,452.2 crore. In India, among the coir products, coir pith, tufted mats and coir fibre have been the major export items during last ten years. In 2013-14, India exported tufted mats worth of ₹417.8 crore (28.3%) followed by coir pith of ₹341.7 crore (23.2%) and coir fibre of ₹328.8 crore (22.3%). However, in 2021-22, the coir pith worth of ₹2,259.2 crore was exported from India and its share among exports of coir products increased to 52.1%. Further exports of tufted mats increased to ₹1,001.2 crore but its share in total exports of coir products remained almost stagnant at 23.1%. On the contrary, the share of coir fibre declined to 14.7%. Moreover, in 2022-23 (upto December 2022), among coir products, coir pith remains the key export item followed by tufted mats.

Domestic and International Prices of Copra and Coconut Oil

4.19 In order to assess the competitiveness of India's exports of coconut and its products, it is imperative to examine the comparative trends in domestic and international prices of these products during recent times and the same is depicted in Chart 4.11. It is observed that except 2021(Q4) and 2022(Q1&Q2), domestic wholesale prices of copra have remained higher than international prices throughout the period between 2019 and 2023(Q2) but gap between domestic and international prices has been gradually narrowing over the years. It is observed that the average mark-up between domestic and international prices of copra, which was ₹5,544 per quintal in 2020, reduced significantly to ₹3,121 per quintal in 2021 and was ₹20 in 2022. The high domestic prices of copra in the country reduced its export potential in the global market. However, domestic prices of copra have remained almost stagnant since 2022(Q2) but were higher than international prices.

Chart 4.11: Domestic and International Prices of Copra



	2019 Q1	2019 Q2	2019 Q3	2019 Q4	2020 Q1	2020 Q2	2020 Q3	2020 Q4	2021 Q1	2021 Q2	2021Q 3	2021Q 4	2022 Q1	2022 Q2	2022 Q3	2022 Q4	2023 Q1	2023 Q2
Domestic Price	10233	8900	9533	9400	9900	9767	10433	12233	13233	11200	10333	9733	8733	8500	8167	8267	8000	7567
International Price	3405	3102	3308	4089	4379	4378	4830	6569	7147	8005	7531	9335	10633	9365	7313	6275	6044	5729

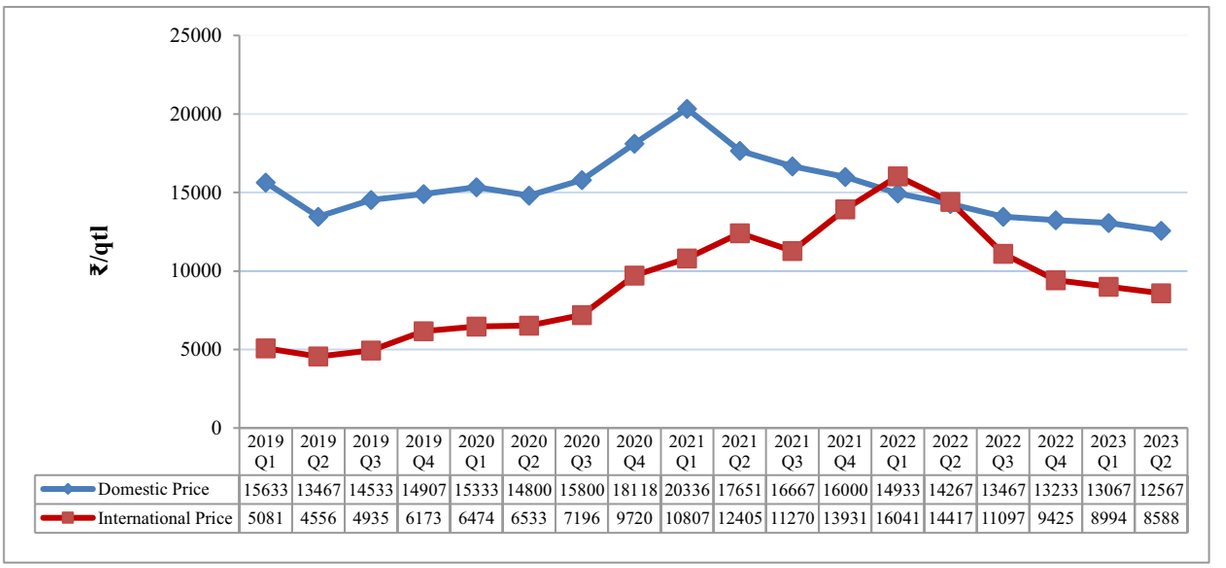
Source: 1. United States Department of Agriculture for International Prices. (Oilseeds: World Markets and Trade Report, June, 2023, prices are CIF from Philippines/Indonesia to NW Europe)

2. Economic and Statistics Division, Ministry of Agriculture and Farmers Welfare for domestic wholesale prices at Payyannur (Kerala) centre

4.20 Chart 4.12 presents the comparison of domestic and international prices of coconut oil for the period from 2019 to 2023(Q2). It is seen that the domestic wholesale prices of coconut oil have been higher than the international prices from 2019 to 2023(Q2), except 2022 (Q1&Q2), limiting the export potential of coconut oil. Both prices declined in 2019(Q2) and thereafter exhibited upward trend. The prices of coconut oil in domestic market continued to

surge till 2021(Q1) and thereafter witnessed steady decline upto 2023(Q2). The world prices of coconut oil continued to rise till 2022(Q1), except a dip in 2021(Q3) and recorded a steady decline during 2022(Q2) and 2023(Q2). Over the years, the mark up between the domestic and international prices of coconut oil reduced sharply from ₹10,552 per quintal in 2019(Q1) to ₹3,979 per quintal in 2023(Q2).

Chart 4.12: Domestic and International Prices of Coconut Oil



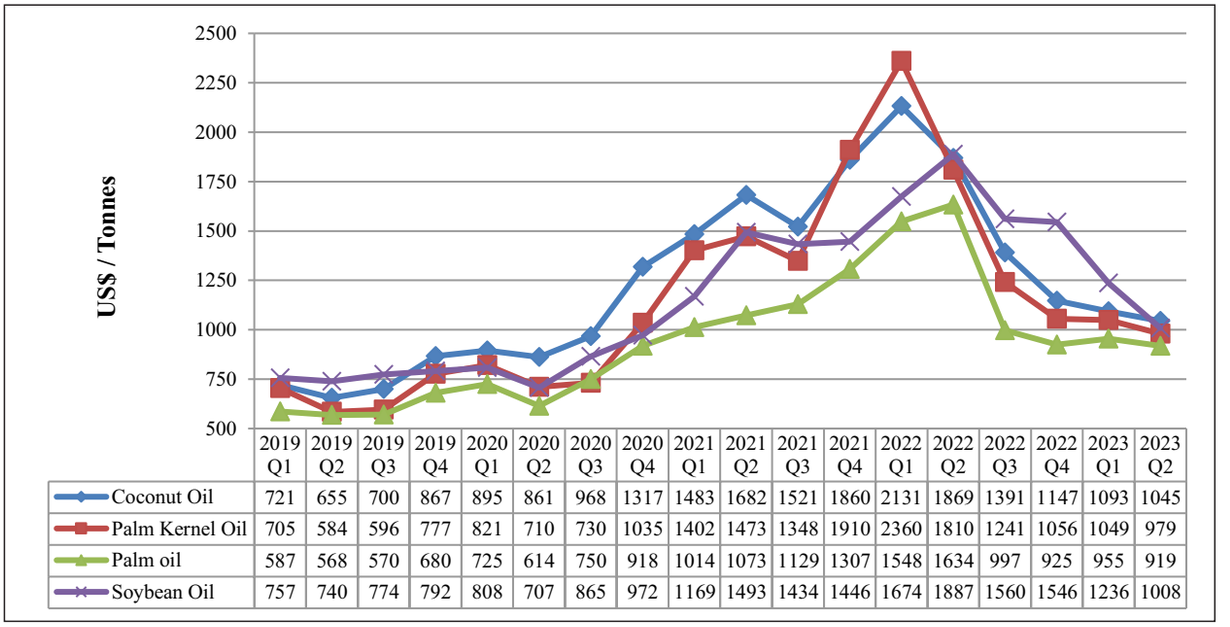
	2019 Q1	2019 Q2	2019 Q3	2019 Q4	2020 Q1	2020 Q2	2020 Q3	2020 Q4	2021 Q1	2021 Q2	2021 Q3	2021 Q4	2022 Q1	2022 Q2	2022 Q3	2022 Q4	2023 Q1	2023 Q2
Domestic Price	15633	13467	14533	14907	15333	14800	15800	18118	20336	17651	16667	16000	14933	14267	13467	13233	13067	12567
International Price	5081	4556	4935	6173	6474	6533	7196	9720	10807	12405	11270	13931	16041	14417	11097	9425	8994	8588

Source: 1. World Bank Pink Sheet (July 2023) for international prices
2. Economic and Statistics Division, Ministry of Agriculture and Farmers Welfare for domestic wholesale prices

4.21 Given the considerable scope of substitution among various vegetable oils on the demand side, it is imperative to examine the relative price trends among various edible oils. Chart 4.13 depicts international prices of coconut oil and its competing oils namely, palm oil, palm kernel oil and soybean oil for the period 2019 to 2023(Q2). During this period, the price of these edible oils in the international market have followed almost a similar trend and is supported by strong correlation of coconut oil prices with the international prices of other oils such as palm kernel oil (0.98), palm oil (0.95) and soybean oil (0.87). Moreover, it can also be seen that the prices of coconut oil tend to be relatively higher than that of other oils for most of the period, due to higher cost of production and preference for coconut oil over other oils due to nutritional and functional properties of coconut oil.

4.22 It is observed from Chart 4.13 that the trajectory of international prices was steady and upward till 2021(Q2). In 2021(Q3), except palm oil, all other edible oils witnessed a dip and continued to surge upward thereafter. The international prices of palm kernel oil and coconut oil hit the peak in 2022(Q1) and declined afterwards. However, international prices of soybean oil and palm oil increased till 2022(Q2) and recorded a steady decline during the last four quarters.

Chart 4.13: International Prices of Coconut Oil, Palm Kernel Oil, Palm Oil and Soybean Oil



	2019 Q1	2019 Q2	2019 Q3	2019 Q4	2020 Q1	2020 Q2	2020 Q3	2020 Q4	2021 Q1	2021 Q2	2021 Q3	2021 Q4	2022 Q1	2022 Q2	2022 Q3	2022 Q4	2023 Q1	2023 Q2
Coconut Oil	721	655	700	867	895	861	968	1317	1483	1682	1521	1860	2131	1869	1391	1147	1093	1045
Palm Kernel Oil	705	584	596	777	821	710	730	1035	1402	1473	1348	1910	2360	1810	1241	1056	1049	979
Palm oil	587	568	570	680	725	614	750	918	1014	1073	1129	1307	1548	1634	997	925	955	919
Soybean Oil	757	740	774	792	808	707	865	972	1169	1493	1434	1446	1674	1887	1560	1546	1236	1008

Notes: 1. Coconut oil (Philippines/Indonesia), from January 2021, crude, CIF Rotterdam; January 1999 to December 2020, crude, CIF NW Europe; previously, bulk, c.i.f. Rotterdam

2. Palm kernel oil (Malaysia/Indonesia), from January 2021, crude CIF Rotterdam; August 2001 to December 2020, crude, CIF NW Europe; previously Malaysian, nearest forward

3. Palm oil (Malaysia), from January 2021, RBD, FOB Malaysia Ports; December 2001 to December 2020, RBD, CIF Rotterdam; previously Malaysia 5%, c.i.f. N.W. Europe, bulk

4. Soybean oil, from January 2021, Dutch Soyoil Crude Degummed, EXW Dutch Mills; January1999 to December 2020, Dutch crude degummed, FOB NW Europe; previously crude

Source: World Bank Pink Sheet (July 2023)

Coconut Oil Global Outlook

4.23 Global production of coconut oil is estimated to increase marginally in 2023-24 to 3.76 million tonnes, as per USDA (July 2023). However, global trade in coconut oil is expected to marginally decline, with exports projected at 1.99 million tonnes in 2023-24. As per commodity price forecasts of World Bank Commodity Market Outlook (April 2023), the nominal international prices of coconut oil, which remained almost stagnant in 2022 over previous year, are expected to decline in 2023 to US$ 1,100 per tonne and will moderate to US$ 1,300 per tonne in 2024 (Table 4.3). The prices of palm oil and soybean oil exhibited upward trend in 2022 over previous year, while prices of coconut oil remained largely unchanged during this period. However, prices of all these oils are forecast to decline significantly in 2023 and increase marginally in 2024.

Table 4.3: Commodity Price Forecasts (in nominal US$/tonne)

Commodity	2021	2022	2023[F]	2024 [F]
Coconut oil	1636	1635	1100	1300
Palm oil	1131	1276	980	1020
Soybean oil	1385	1667	1120	1105

Note: [F]Forecast

Source: World Bank Commodity Market Outlook (April 2023)

Trade Policy for Coconut Products including Edible Oils

4.24 Despite availability of various edible oils in the country, domestic consumption has outpaced the domestic production. As a result, India meets about 60 percent of its domestic demand through imports and import duties on edible oils are framed by evolving global production, international prices and domestic demand. With the use of coconut oil both for consumption as well as cosmetics and personal care industry, it competes with other edible oils such as palm oil, palm kernel oil, soybean oil etc. Therefore, it is worthwhile to analyze trade policy of edible oils in the recent years.

4.25 With regard to copra export policy, both ball and milling copra are freely exportable through all ports in the country. Further, since April 2018 exports of edible oils, including coconut oil are free, except mustard oil, which can be exported only in consumer packs up to 5 kg and with a Minimum Export Price (MEP) of US$ 900 per tonne.

4.26 At present, imports of copra are 'Restricted' w.e.f 14th June 2023 but, imports of coconut oil continue to be canalized through State Trading Enterprises (STEs). Further, the import policy of desiccated coconut was amended in January 2020 to protect the domestic growers against cheap imports of desiccated coconut from Sri Lanka by putting import of desiccated coconut with Cost, Insurance and Freight (CIF) value of below ₹150 per kilogram under 'Prohibited' category.

4.27 At present, applicable tariff rate on imports of copra and desiccated coconut is 70 percent, whereas on activated carbon it is 7.5 percent (Table 4.4). Similarly import duty on copra meal is 15 percent. Crude and refined coconut oil is subject to 35 percent and 45 percent import duty, respectively. The bound tariff and current applied tariff on major edible oils, including coconut oil, are given in Table 4.4.

Table 4.4: Bound Tariff and Applied Tariff on Coconut and Coconut Products, including other Edible Oils in India (in percent)

Description	Applicable Tariff [Basic Customs duty plus AIDC]	Bound Tariff
Coconut Products		
Desiccated Coconut	70	100
Activated Carbon	7.5	40
Copra	70	100
Coconut/Copra Oilcake	15	100
Vegetable Oils		
Coconut Oil (Crude)	35	300
Other Coconut Oil	45	300
Crude Palm Oil*	5	300
Refined Palm Oil, RBD*	12.5	300
Crude Soybean Oil*	5	45
Refined Soybean Oil*	12.5	45
Crude Sunflower Oil*	5	300
Refined Sunflower Oil*	12.5	300
Crude Groundnut Oil	35	300
Other Groundnut Oil	45	300
Crude Mustard Oil	35	75
Refined Mustard Oil	45	75

*Note: * Applicable duty is valid up to 31st March 2024*
Source: Central Board of Indirect Taxes and Customs (CBIC), Ministry of Finance

4.28 Major changes were introduced in import tariff structure of palm oil in November 2017. On CPO, import duty was raised from 15 percent to 30 percent in November 2017 and to 44 percent in March 2018 but in January 2019, it was reduced to 40 percent. Similarly, import duty on RBD palmolein was increased from 25 percent to 40 percent in November 2017 and further to 54 percent in March 2018. The import policy of RBD palm oil was amended from 'Free' to 'Restricted' category in January 2020.

4.29 Subsequently, in order to control the rise in price of palm oil and allow greater availability of oil in the market for consumption, the basic import duty on CPO was reduced from 37.5 percent to 27.5 percent w.e.f 27th November 2020 and to 15 percent in the Union Budget 2021-22. Thereafter, basic import duty on CPO was reduced from 15 percent to 10 percent and on RBD palm oil was reduced to 37.5 percent in June 2021. In case of CPO, the basic import duty was further reduced from 10 percent to 2.5 percent in September 2021and on

RBD palm oil from 37.5 percent to 32.5 percent. Government reduced the basic import duty on CPO from 2.5 percent to 'zero' to control further rise in prices of vegetable oils in the country w.e.f 14th October 2021. The import policy for RBD palm oil was amended from "Restricted" to "Free" till 31st December 2021 and the basic import duty was reduced from 32.5 percent to 17.5 percent (applicable till 31st March 2022), which was further reduced to 12.5 percent w.e.f 21st December 2021. On all above crude and refined variety of edible oils, the duty cut has been extended till 31st March 2024.

4.30 In November 2017, import duty on crude soybean oil was increased from 17.5 percent to 30 percent and further to 35 percent in June 2018. In the case of refined soybean oil, import duty was raised from 20 percent to 35 percent in March 2018, and to 45 percent in June 2018. In the Union Budget 2021-22, on crude soybean oil and crude sunflower oil, the basic customs duty on imports was cut from 35 percent to 15 percent. Subsequently, on crude soybean oil and crude sunflower oil, the basic import duty was reduced from 15 percent to 7.5 percent w.e.f 20th August 2021 followed by further reduction to 2.5 percent w.e.f 11th September 2021. Similarly, in 2021, the basic import duty was reduced multiple times on refined soybean and sunflower oil i.e from 45 percent to 37.5 percent w.e.f 20th August 2021 and to 32.5 percent w.e.f 11th September 2021 and further to 17.5 percent w.e.f 14th October 2021 and to 12.5 percent w.e.f 15th June 2023.

Issues in Trade Policy and Prospects for India's Trade in Coconut

4.31 In the recent years, Indian coconut industry is facing grave challenges due to unfair competition caused by multiple Regional/Free Trade Agreements (RTAs/FTAs) such as South Asian Free Trade Agreement (SAFTA) among SAARC member countries, the Indo-Thailand FTA, the Indo-Sri Lankan FTA and ASEAN FTA. In 2019-20, the most debilitating impact on desiccated coconut industry in India was caused by duty free cheaper imports of coconut from Sri Lanka under SAFTA agreement. As a result, import policy of desiccated coconut was amended in January 2020 to protect the domestic growers against cheap imports of desiccated coconut from Sri Lanka by putting import of desiccated coconut with Cost, Insurance and Freight (CIF) value of below ₹150 per kilogram under 'Prohibited' category. Consequently, import of desiccated coconut which witnessed record high at 17.9 thousand tonnes in 2019-20 started falling thereafter to 5.8 thousand tonnes in 2021-22 and further to 4.8 thousand tonnes in 2022-23 (Annex Table 4.5).

4.32 Diversification in coconut value chain is a prominent issue that requires pragmatic intervention. To continue the growth momentum of coconut exports, it is high time to innovate and explore the untapped segments. The high-end coconut wood, long shelf life coconut gratings, tender coconut water, coconut sugar, coconut jaggery, coconut vinegar, coconut sap, sweets etc. are some coconut value added products which have high demand in niche markets and diversification can help to suitably leverage these markets. Another promising market for use of coconut derivatives is the cosmetic segment. Globally, the

booming health care industry, with consumer interest in sustainable, natural and organic products, pave the way for usage of coconut oil, coconut milk and coconut cream as raw material for wide range of cosmetic products. Moreover, due to high presence of lauric acid, coconut oil is now valued across the world for its health and medicinal attributes. As a result, with rise in demand, coconut oil and virgin coconut oil have immense potential for export in the coming years.

4.33 The import of huge quantity of palm oil and other edible oils is also causing price volatility of coconut oil in the domestic market. As coconut growers cannot easily shift from perennial crop to other seasonal crops so during the peak coconut production season, imports may be either restricted through selected western and eastern ports, which are at a distance from traditional coconut growing states in the south and divert to the edible oil deficient states in order to protect the small and marginal coconut growing farmers.

4.34 The import of oil cake, a by-product of virgin coconut oil, which is further processed to defatted desiccated coconut, is another issue of concern. This product is quite different in parameters from the original desiccated coconut which is mixed with domestically produced desiccated coconut of good quality and sold at cheaper a price which is adversely impacting the desiccated coconut industry. This issue needs to be resolved by preventing the imports of desiccated coconut under the HS code of oil cake.

4.35 India imports large quantity of coconut oil cake (31.5 % of the total imports in value in 2022-23)for cattle feed production. However, the imported oil cake contains 10 to 12 percent oil content while domestic oil cake contains only 6 percent. The imported oilcake is in high demand by solvent industries for extraction of coconut oil and same is generally used for adulteration in coconut oil. If not checked early, it may have detrimental effect both on human health and coconut sector. Hence, the import of only defatted coconut oil cake should be allowed.

Recapitulation

4.36 The exports of coconut and coconut products recorded a growth of 9.8 percent in 2022-23. Activated carbon, the single largest product, accounts for over 60 percent of coconut exports. Being a leading producer of coconut, India has great potential to tap the global coconut market and it can only be possible with greater emphasis on diversification in the coconut value chain and gaining competitive advantage in coconut value added products.

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CHAPTER 5

Costs, Returns and Inter-Crop Parity

5.1 The Commission has considered both demand and supply side factors of coconut and copra, including the cost of production of coconut and copra, overall demand and supply of copra, coconut oil, its substitutes and other coconut products, trends in the domestic and international prices, inter-crop parity, likely impact of recommended MSP on consumers, and other users, rational utilisation of land, water and other production resources, and a minimum of 50 percent as the margin over the cost of production, while recommending the MSP of milling copra and ball copra for 2024 season.

5.2 The Commission uses crop-wise, State-wise cost estimates provided by the Economics and Statistics Division (E&S Division), Ministry of Agriculture and Farmers Welfare, Government of India compiled under 'Comprehensive Scheme (CS) for studying the Cost of Cultivation of Principal Crops in India'. Since CS data for coconut is available upto 2021-22, it needs to be projected for crop season 2023-24. Based on CS data, crop-wise and State-wise projections of cost of cultivation (CoC) are made for the ensuing season.

5.3 The projected CoC estimates of coconut for crop year 2023-24 for major coconut growing States, viz. Andhra Pradesh, Karnataka, Kerala and Tamil Nadu are based on actual estimates available for the latest triennium ending (TE) 2021-22. The estimates of projected CoC capture movement in overall input cost separately over each of the past three years, viz. 2019-20, 2020-21 and 2021-22, for each of the projected States. An assessment of likely changes in input costs for 2023-24 with reference to each of three consecutive years ending with 2021-22, is made by constructing the Composite Input Price Indices (CIPIs) (base 2011-12) for each State. The CIPIs are based on latest prices of major farm inputs like human labour, bullock labour, machine labour, fertilisers, manures, seeds, pesticides and irrigation, as per data available from Labour Bureau, Ministry of Labour and Employment, State Governments and Office of Economic Adviser, Ministry of Commerce and Industry. Based on CIPIs thus constructed, the Commission projects CoC A_2, A_2+FL and C_2 per hectare of coconut for each State. except cottonseed oil (67.7%), rapeseed oil (65.6%) and soybean oil (64.5%).

5.4 Further, the cost of production (CoP) A_2, A_2+FL and C_2 estimates per coconut are projected by using respective projected CoC estimates, ratio of main product (MP) to gross value of output (GVO) and projected yield of coconut, for each State. After that, all-India estimates of CoP per coconut are derived based on State-wise projected CoP per coconut and their production shares in total coconut production of the projected States.

5.5 State-wise CoP per quintal of milling copra is projected using the State-wise projected CoP per coconut, per nut average processing charges of coconut into milling copra, and number of nuts per quintal of milling copra. Then, all-India estimates of CoP per quintal of milling copra are derived using State-wise projected CoPs per quintal of milling copra and their shares in total milling copra production of States under consideration. The transportation cost, marketing charges and crop insurance premium for milling copra per quintal at all-India level during crop season 2023-24 are projected using information from State Governments, Coconut Development Board and Office of Economic Adviser, Ministry of Commerce and Industry. Finally, per quintal all-India modified CoP inclusive of transportation cost, marketing charges and crop insurance premium for milling copra for ensuing season is derived. These projected all-India estimates of CoP and modified CoP are considered by the Commission while formulating price policy recommendations.

5.6 The Commission has undertaken cost projection exercise based on the latest three-year actual cost estimates under certain implicit assumptions. One, it is assumed that fixed cost components for each State, in all likelihood, would not undergo any significant change in the intervening period between 2021-22 for which actual cost estimates are available, and the ensuing crop year 2023-24 for which cost projections are made. Two, since coconut yield varies from year to year due to multiplicity of factors and due to wide fluctuations, Olympic average yield[1] has been used for estimating yield in Kerala and Tamil Nadu. In Andhra Pradesh, yield has been projected based on time series of yield data under Comprehensive Scheme. In case of Karnataka, due to large variations in yield under CS, it has been projected based on yield data provided by Coconut Development Board, Ministry of Agriculture & Farmers Welfare, Government of India.

Costs and Returns of Coconut during TE2021-22

5.7 The average CoC A_2 and A_2+FL, gross returns and percent returns over CoC A_2 and A_2+FL of coconut during TE2021-22 based on actual cost estimates in Andhra Pradesh, Karnataka, Kerala, Tamil Nadu and at all-India level, were analysed and are given in Table 5.1. The gross value of output (GVO) of coconut is estimated at prevailing market prices of main product and by-products during harvest season in village/cluster of villages, where coconut crop is grown and harvested. The year-wise CoC A_2, A_2+FL, GVO, gross returns over CoC A_2 and gross returns over CoC A_2+FL for the States and at all-India level are given in Annex Table 5.1.

[1] Olympic average yield is calculated by dropping the highest and the lowest yield from latest five-year yields and calculating the average of the remaining three-year yields

Cost of Cultivation of Coconut

5.8 All-India average CoC A_2 and A_2+FL of coconut during TE2021-22 were ₹77,143 per hectare and ₹1,05,872 per hectare, respectively. Per hectare A_2 CoC was highest in Kerala at ₹1,13,966, followed by Tamil Nadu (₹72,216/ha), Andhra Pradesh (₹44,230/ha), and lowest in Karnataka (₹41,184/ha). The per hectare A_2+FL CoC was also highest in Kerala at ₹1,51,295, followed by Tamil Nadu (₹92,389/ha), Karnataka (₹70,239/ha), and lowest in Andhra Pradesh (₹46,461/ha). The all-India costs registered an increasing trend during TE2021-22. In Andhra Pradesh and Kerala, per hectare costs declined in 2020-21 over 2019-20 but increased in 2021-22 over 2020-21, whereas in Karnataka, costs increased in 2020-21 over 2019-20 but declined in 2021-22 over 2020-21. In case of Tamil Nadu, cost A_2 increased in 2020-21 over 2019-20 but decreased in 2021-22 over 2020-21, while A_2+FL cost declined in 2020-21 over 2019-20 but increased in 2021-22 over 2020-21.

Gross Value of Output and Returns of Coconut

5.9 All-India GVO of coconut during TE2021-22 was ₹1,87,772 per hectare, with Kerala recording the highest GVO (₹2,64,659/ha), followed by Tamil Nadu (₹2,04,963/ha), Andhra Pradesh (₹1,50,119/ha), and lowest in Karnataka (₹89,092/ha). GVO in all States and at all-India showed an increasing trend during the period TE2021-22.

Table 5.1: All-India Average Costs and Gross Returns over Actual Cost of Cultivation of Coconut during TE2021-22

State	CoC A_2	CoC A_2+FL	GVO	Gross Returns over CoC A_2		Gross Returns over CoC A_2+FL	
	₹/ha			₹/ha (Col.4 - Col.2)	Percent (Col.5 / Col.2)*100	₹/ha (Col.4 - Col.3)	Percent (Col.7 / Col.3)*100
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Andhra Pradesh	44230	46461	150119	105890	239.4	103658	223.1
Karnataka	41184	70239	89092	47908	116.3	18853	26.8
Kerala	113966	151295	264659	150693	132.2	113365	74.9
Tamil Nadu	72216	92389	204963	132747	183.8	112574	121.8
All-India	**77143**	**105872**	**187772**	**110629**	**143.4**	**81900**	**77.4**

Note 1: CoCs of coconut are inclusive of establishment cost

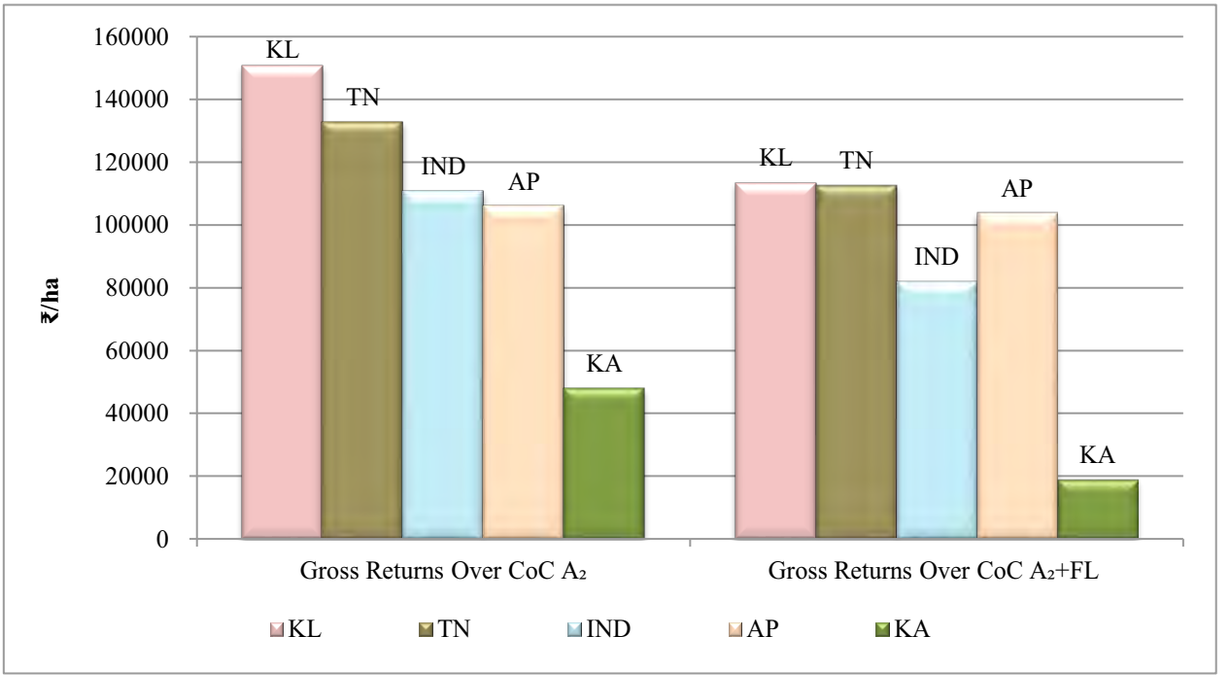
2: All-India CoC, GVO and gross returns are weighted average of respective CoC, GVO and gross returns of projected States

Source: CACP Calculations using CS data

5.10 The average gross returns over actual CoC A_2 and A_2+FL of coconut during TE2021-22 for Andhra Pradesh, Karnataka, Kerala, Tamil Nadu, and all-India level have been presented in Chart 5.1. All-India per hectare average gross returns over CoC A_2 and A_2+FL of coconut during TE2021-22 were ₹1,10,629 and ₹81,900, respectively. Per hectare returns over CoC A_2 (₹1,50,693) and A_2+FL (₹1,13,365) were highest in Kerala mainly due to higher prices, followed by Tamil Nadu, Andhra Pradesh, and lowest in Karnataka owing to significantly low yield. In terms of percentage, average gross returns over A_2 and A_2+FL at all-India level during TE2021-22 were 143.4 percent and 77.4 percent, respectively, and were highest in Andhra Pradesh, followed by Tamil Nadu, Kerala, and lowest in Karnataka.

5.11 At all-India level, average gross returns over CoC A_2 and A_2+FL of coconut have improved during TE2021-22 due to increase in yield and prices. The returns over CoC A_2 and A_2+FL registered the increasing trend in all States during TE2021-22. There are wide variations in cost of cultivation and returns in coconut cultivation across the States. Therefore, in order to enhance farmers' income, efforts are needed to reduce cost of cultivation/production, improve yield, ensure remunerative prices and assured market in major coconut producing States.

Chart 5.1: Average Gross Returns of Coconut in Major Coconut Producing States, TE2021-22



Note 1: CoCs of coconut are inclusive of establishment cost

2: All-India CoC, GVO and gross returns are weighted average of respective CoC, GVO and gross returns of projected States

Source: CACP Calculations using CS data

Agricultural Labour Wages and Farm Input Prices

Growth in Daily Wage Rates of Agricultural Labour

5.12 Average annual growth in daily wage rates of agricultural labour in major coconut producing States and at all-India level in nominal and real terms (2022-23=100) during coconut season (July to June) for 2020-21, 2021-22 and 2022-23 has been given in Table 5.2. Average annual daily wage rates of agricultural labour during coconut season at constant prices (real wages) are derived by using average annual daily wage rates of agricultural labour during the season at current prices and deflator derived by average annual Consumer Price Index for Agricultural Labourers. At all-India level, agricultural labour wages at current prices increased by 5.6 percent in 2020-21, 5.5 percent in 2021-22 and 7.3 percent in 2022-23, while real daily wages increased marginally by 0.7 percent in 2020-21 and one percent in each of 2021-22 and 2022-23.

5.13 The highest increase in average daily wage rate (at current prices) in 2022-23 over 2021-22 was recorded in Andhra Pradesh at 16.4 percent, followed by Odisha (11.3%), Karnataka (9.5%), Gujarat (8.2%), West Bengal (5.2%), Maharashtra (4.5%), Kerala (3.3%), and lowest in Tamil Nadu (1.3%). The increase in real daily wage rate was also highest in Andhra Pradesh (9.5%), followed by Karnataka (5.6%), Odisha (5%), and lowest in Gujarat at 0.4 percent, but real wages recorded a decline in Tamil Nadu (-4.3%), Kerala (-3.7%), Maharashtra (-2.0%), and West Bengal (-1.5%).

Table 5.2: Growth in Average Daily Wage Rates of Agricultural Labour in Major Coconut Growing States during Coconut Season

State	Growth (%) at Current Prices			Growth (%) at Constant Prices (2022-23=100)		
	2020-21	2021-22	2022-23	2020-21	2021-22	2022-23
Andhra Pradesh	4.2	8.7	16.4	-0.7	3.6	9.5
Gujarat	1.8	5.6	8.2	-1.6	0.5	0.4
Karnataka	3.0	5.4	9.5	-3.6	-0.2	5.6
Kerala	1.0	4.9	3.3	-0.7	0.0	-3.7
Maharashtra	7.0	4.3	4.5	2.6	0.5	-2.0
Odisha	7.0	9.3	11.3	2.4	4.9	5.0
Tamil Nadu	9.9	3.8	1.3	2.7	1.4	-4.3
West Bengal	8.9	3.5	5.2	4.0	-2.2	-1.5
All-India	**5.6**	**5.5**	**7.3**	**0.7**	**1.0**	**1.0**

Note 1: Average daily wage rates of agriculture labour are related to man only
2: Growth is derived from the average taken for the period from July to June
3: All-India daily wage rate is weighted average of daily wage rates of States mentioned in Table

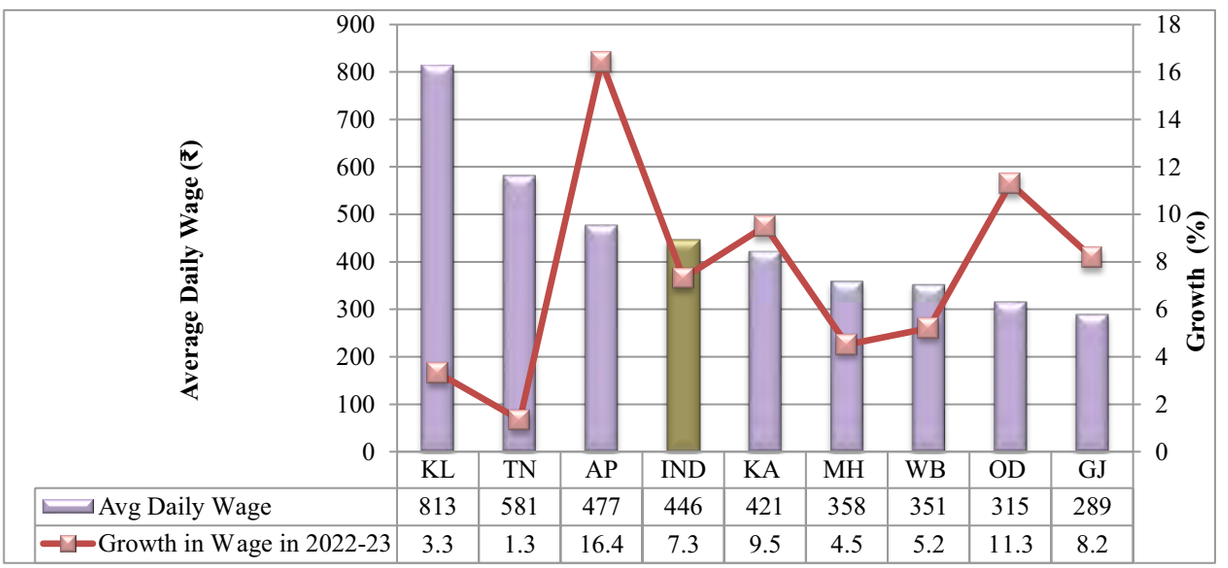
Source: Labour Bureau, Ministry of Labour and Employment, Government of India and CACP Calculations

Daily Wages of Agriculture Labour

5.14 Chart 5.2 depicts State-wise average daily wages of agricultural labour during coconut season (July to June) in 2022-23 and growth in wages in 2022-23 over 2021-22 in major coconut producing States. There are large variations in agricultural wage rates across States. The all-India weighted average daily wage rate of agricultural labour in selected coconut producing States was ₹446 during 2022-23, while Kerala recorded the highest wages at ₹813, followed by Tamil Nadu (₹581), Andhra Pradesh (₹477), Karnataka (₹421), Maharashtra (₹358), West Bengal (₹351), Odisha (₹315), and lowest in Gujarat (₹289). Andhra Pradesh, Gujarat, Karnataka and Odisha recorded higher growth in average daily wage rate than all-India average, while Kerala, Maharashtra, Tamil Nadu and West Bengal recorded lower growth than all-India during coconut season in 2022-23 over 2021-22.

5.15 It can be seen clearly that wage rates have increased significantly in all major coconut producing States, and resulted in substantial increase in cost of cultivation/production in these States. Therefore, there is need to promote farm mechanization in coconut farming on a large scale, so as to reduce cost of cultivation/production and improve profitability of coconut farmers. The 'monthly average of daily wage rates for agricultural labour at current prices' and 'monthly Consumer Price Index for Agricultural Labourers (CPI-AL)' for coconut producing States from 2019-20 to 2022-23 are given in Annex Table 5.2 (a) and Annex Table 5.2 (b), respectively.

Chart 5.2: Average Daily Wage Rates and Growth in Wages of Agriculture Labour in Selected States during Coconut Season in 2022-23 over 2021-22



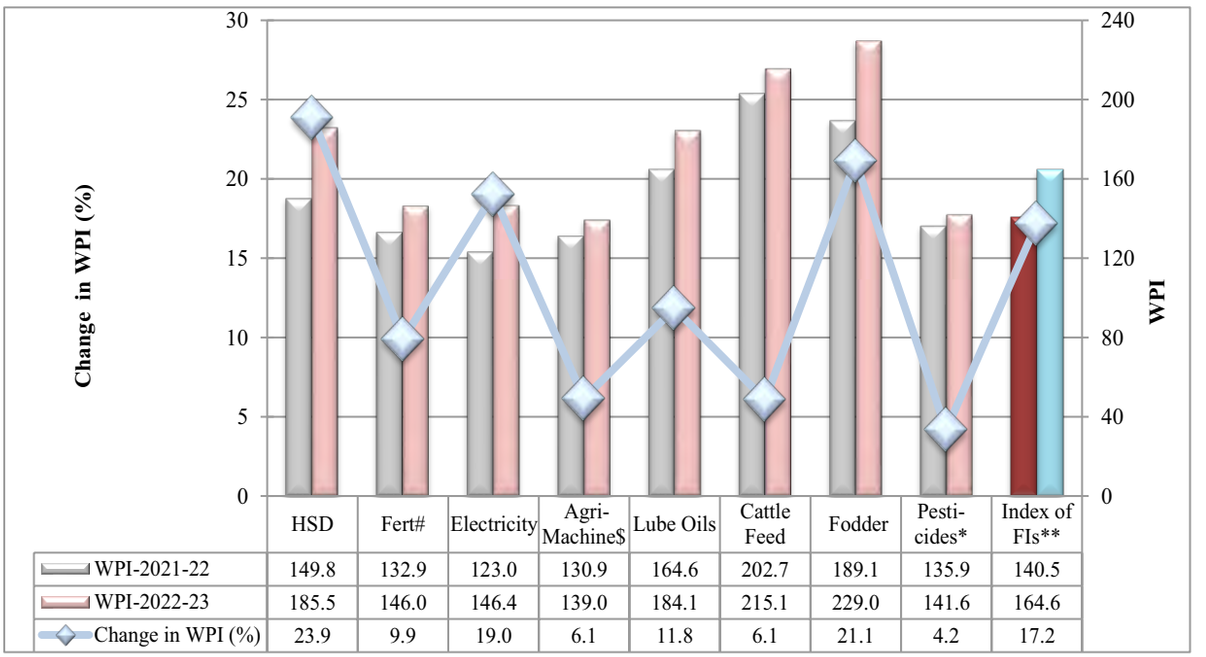
	KL	TN	AP	IND	KA	MH	WB	OD	GJ
Avg Daily Wage	813	581	477	446	421	358	351	315	289
Growth in Wage in 2022-23	3.3	1.3	16.4	7.3	9.5	4.5	5.2	11.3	8.2

Note 1: Average daily wage rates of agriculture labour are related to man only
2: Growth is derived from the average taken for the period from July to June
3: All-India daily wage rate is weighted average of daily wage rates of States mentioned in Chart
Source: Labour Bureau, Ministry of Labour and Employment, Government of India and CACP Calculations

Movement in Farm Input Prices

5.16 The movement of the Wholesale Price Index (WPI) for various farm inputs (Base: 2011-12) during coconut season (July to June) for 2022-23 over 2021-22 is presented in Chart 5.3. The price index for High Speed Diesel (HSD) increased from 149.8 in 2021-22 to 185.5 in 2022-23, registering a significant increase of 23.9 percent in 2022-23. WPI of other farm inputs also increased in 2022-23 over 2021-22, and ranged from 4.2 percent for pesticides and other agrochemical products to 21.1 percent in fodder. The indices for fertilizers and nitrogen compounds, electricity, manufacture of agricultural and forestry machinery[2], lube oils, and cattle feed moved up by 9.9 percent, 19.0 percent, 6.1 percent, 11.8 percent and 6.1 percent, respectively, in 2022-23. The weighted index of above-mentioned selected farm input prices in 2022-23 registered an increase of 17.2 percent over the last year. The monthly wholesale price indices of various farm inputs from 2021-22 to 2022-23 are given in Annex Table 5.3.

Chart 5.3: Movement in Wholesale Price Index (WPI) of Farm Inputs during Coconut Season 2021-22 and 2022-23



	HSD	Fert#	Electricity	Agri-Machine$	Lube Oils	Cattle Feed	Fodder	Pesti-cides*	Index of FIs**
WPI-2021-22	149.8	132.9	123.0	130.9	164.6	202.7	189.1	135.9	140.5
WPI-2022-23	185.5	146.0	146.4	139.0	184.1	215.1	229.0	141.6	164.6
Change in WPI (%)	23.9	9.9	19.0	6.1	11.8	6.1	21.1	4.2	17.2

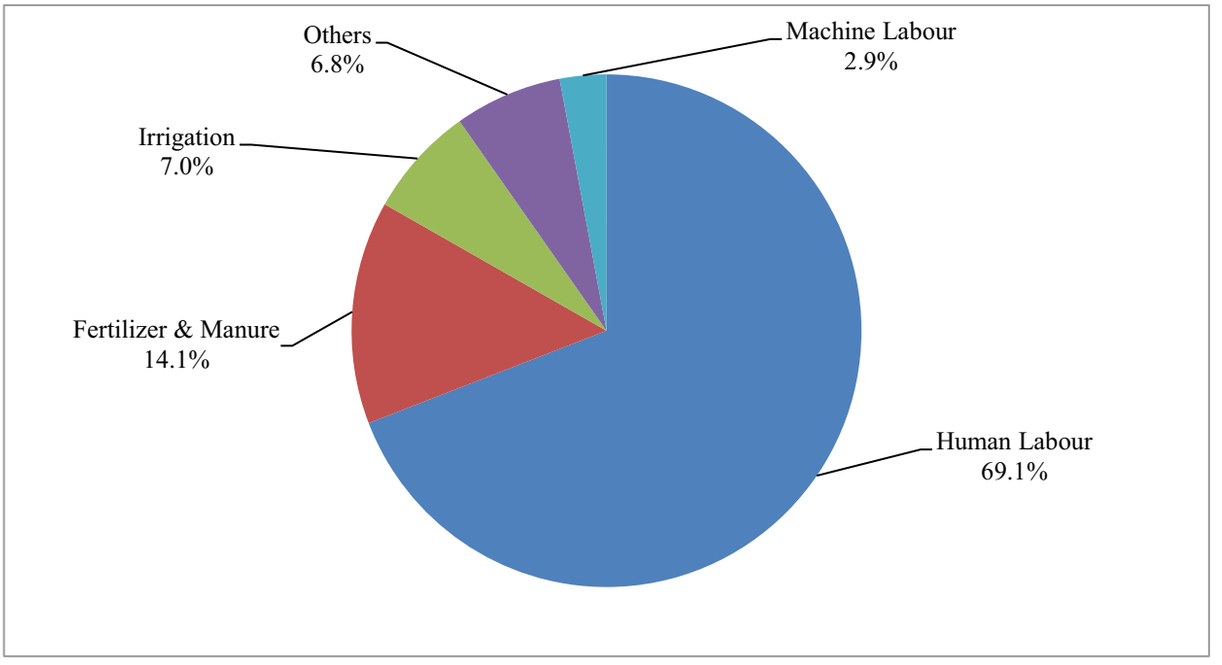
Note 1: WPI of a farm input shown in graph is average of monthly WPIs from July to June of that farm input
2: WPI of Farm Inputs is weighted average of WPIs of farm inputs mentioned in Chart
 # : Fertilizers and Nitrogen Compounds
$: Manufacture of Agricultural and Forestry Machinery
**: Pesticides and other Agrochemical Products*
*** : Index of Farm Inputs*
Source : Office of the Economic Adviser, Ministry of Commerce & Industry, Government of India and CACP Calculations

[2]Manufacture of agricultural and forestry machinery consists of 'agricultural tractors', 'harvesters', 'agriculture implements', 'threshers' and 'soil preparation & cultivation machinery (other than tractors)'.

Share of Farm Inputs in Cost of Production

5.17 The share of various farm inputs in actual all-India total cost of production A_2+FL during TE2021-22 is presented in Chart 5.4. The largest expenditure in coconut production was on human labour at 69.1 percent, followed by fertiliser and manure (14.1%), irrigation (7%), and machine labour (2.9%). Coconut is highly labour-intensive crop, so increase in agricultural wages has resulted in higher cost of cultivation. As the share of human labour in total cost of production is very high and the share of machine labour is extremely low, promotion of mechanization in labour-intensive operation like harvesting, drying, dehusking and deshelling of nut, would help in reducing cost of cultivation/production of coconut and copra substantially, and consequently, improve profitability of the coconut farmers.

Chart 5.4: Share of Farm Inputs in Actual All-India Total Cost of Production (A_2+FL) of Coconut, TE2021-22



Note: Others include Bullock Labour, Seed, Insecticides, Interest on Working Capital, Rent paid for Leased-in-Land, Land Revenue, Cesses & Taxes, Depreciation on Implements & Farm Buildings, and Miscellaneous Expenses
Source: CACP Calculations using *CS data*

Cost Projections of Coconut and Milling Copra for Crop Season 2023-24

Coconut

5.18 Based on actual farm input price indices and farm input weights upto 2021-22, and prices of farm inputs upto 2022-23, the Commission has projected composite input price indices (CIPIs) for crop season 2023-24. Using State-wise actual cost estimates during period

TE2021-22 and projected CIPIs, estimates of CoC A_2, A_2+FL and C_2 of coconut for each of the States were projected for crop season 2023-24. Using these projected estimates of CoC, ratio of value of main product to GVO during TE2020-21 and projected yields, State-wise CoP A_2, A_2+FL and C_2 of a coconut were projected for crop season 2023-24. Subsequently, all-India weighted average projected CoP A_2, A_2+FL and C_2, with weights being the respective share of the State in total production of coconut of projected States during TE2022-23, have been worked out for a coconut for crop year 2023-24. The break-up of actual cost of cultivation estimates of coconut in Andhra Pradesh, Karnataka, Kerala and Tamil Nadu from 2019-20 to 2021-22, are given in Annex Tables 5.4a to 5.4d. The projected CoP estimates for coconut in Andhra Pradesh, Karnataka, Kerala and Tamil Nadu for crop season 2022-23 and 2023-24 are given in Annex Table 5.5.

5.19 For crop season 2023-24, projected A_2 cost of production (CoP) of coconut (including establishment cost) was lowest for Andhra Pradesh at ₹2.52 per nut, followed by Tamil Nadu (₹4.84/nut), Karnataka (₹5.34/nut), and highest for Kerala (₹7.63/nut). The A_2+FL cost was also lowest for Andhra Pradesh at ₹2.66 per nut, followed by Tamil Nadu (₹6.12/nut), Karnataka (₹9.07/nut), and highest for Kerala (₹10.10/nut). Cost C_2 varied from ₹4.79 per nut in Andhra Pradesh to ₹10.42 per nut in Tamil Nadu, ₹12.99 per nut in Karnataka, and ₹14.19 per nut in Kerala. The all-India weighted average A_2 cost was projected at ₹5.7 per nut, A_2+FL cost at ₹7.97 per nut, and C_2 cost at ₹11.89 per nut, for crop season 2023-24.

5.20 The projected CoP A_2 per nut of coconut declined in all States during for crop season 2023-24 over 2022-23 while projected A_2+FL cost per nut of coconut increased for Kerala (1.9%) and Karnataka (2.8%), but declined in Tamil Nadu (-1.4%) and Andhra Pradesh. The projected C_2 cost per nut of coconut increased by 1.8 percent in Kerala, but declined in Tamil Nadu (-0.7%), Karnataka (-8.4%), and Andhra Pradesh (-9.4%). The all-India weighted average A_2 and C_2 cost per nut of coconut witnessed a decline, while A_2+FL increased during crop season 2023-24 over 2022-23.

Milling Copra

5.21 State-wise CoP A_2, A_2+FL and C_2 of milling copra for crop season 2023-24 have been projected by using State-wise projected CoP A_2, A_2+FL and C_2 of a coconut, and per nut average processing cost of a coconut into a milling copra and average number of nuts per quintal of copra during TE2021-22. Subsequently, using these State-wise projected CoP A_2, A_2+FL and C_2 of milling copra, all-India weighted average projected CoP A_2, A_2+FL and C_2 of milling copra, with weights being the respective share of the State in total production of milling copra of projected States during TE2022-23, have been worked out for crop season 2023-24. State-wise average number of nuts per quintal of milling copra and per nut average processing cost of coconut into milling copra during TE2021-22, projected CoPs including establishment cost per quintal of milling copra for crop season 2023-24, and the production share of milling copra during TE2022-23, are presented in Table 5.3.

5.22 The projected CoP A_2 of milling copra including establishment cost for crop season 2023-24 was lowest for Andhra Pradesh at ₹4,814 per quintal, followed by Tamil Nadu (₹4,502/qtl), Karnataka (₹4,631/qtl), and highest for Kerala (₹7,427/qtl). The projected A_2+FL cost was also lowest for Andhra Pradesh (₹4,981/qtl), followed by Tamil Nadu (₹5,529/qtl), Karnataka (₹7,430/qtl), and highest for Kerala (₹9,212/qtl). The projected C_2 cost ranged from ₹7,444 per quintal for Andhra Pradesh to ₹8,973 per quintal for Tamil Nadu, ₹10,374 per quintal for Karnataka and ₹12,184 per quintal for Kerala. The per quintal all-India weighted average projected A_2, A_2+FL and C_2 costs (including establishment cost) of milling copra were ₹5,901 and ₹7,350 and ₹10,517, respectively.

5.23 The transportation cost, marketing charges and crop insurance premium for milling copra during crop season 2023-24 have been estimated at ₹90 per quintal based on available information in replies from State Governments, Coconut Development Board and Office of the Economic Adviser, Ministry of Commerce and Industry. The transportation cost at all-India level was based on weighted average Wholesale Price Index Number (WPI) of Transport Equipment and Fuels constructed by the Commission from the selected WPIs published by the Office of the Economic Adviser, Ministry of Commerce and Industry, and information provided by State Government of Karnataka and Kerala. The marketing charges at all-India level were based on information provided by State Government of Karnataka and Kerala, whereas, crop insurance premium at all-India level was based on prevailing insurance rate and insured area of coconut in Andhra Pradesh, Karnataka, Kerala and Tamil Nadu. The per quintal all-India modified CoP A_2, A_2+FL and C_2 of milling copra inclusive of establishment cost, transportation cost, marketing charges and crop insurance premium were projected at ₹5,991, ₹7,440 and ₹10,607, respectively for crop season 2023-24.

5.24 The projected CoP A_2 of milling copra increased in 2023-24 over 2022-23 for Andhra Pradesh and Tamil Nadu, but declined for Karnataka and Kerala, while A_2+FL cost increased in all the States. The C_2 cost rose in Andhra Pradesh, Kerala and Tamil Nadu, but declined in Karnataka. The all-India CoP A_2 of milling copra registered a marginal decline of 0.9 percent but A_2+FL increased by 2.8 percent, and C_2 increased by 1.7 percent in 2023-24 over 2022-23. The all-India modified CoP A_2 of milling copra registered a marginal decline of 0.8 percent, whereas A_2+FL increased by 2.8 percent and C_2 registered a growth of 1.7 percent, in 2023-24 over 2022-23. Wholesale Price Indices of "Transport Equipment and Fuels" from 2011-12 to 2022-23 are presented in Annex Table 5.6. The projected CoP estimates for milling copra for the States of Andhra Pradesh, Karnataka, Kerala and Tamil Nadu for crop season 2022-23 and 2023-24 are given in Annex Table 5.7.

Table 5.3: Projected Cost of Production of Milling Copra for Crop Season 2023-24

State	Average Number of Nuts per quintal Copra during TE2021-22	Average Processing Charges per Coconut to Milling Copra during TE2021-22 (₹/nut)	Cost of Production for Milling Copra for Crop Season 2023-24 (₹/qtl)			Production Share (%) of Milling Copra during TE2022-23
			A_2	A_2+FL	C_2	
Andhra Pradesh	1158	1.86	4814	4981	7444	2.9
Karnataka	750	0.84	4631	7430	10374	5.0
Kerala	725	2.61	7427	9212	12184	47.3
Tamil Nadu	800	0.79	4502	5529	8973	44.8
All-India	**773**	**1.69**	**5901**	**7350**	**10517**	**100.0**

Note 1: CoP of milling copra is inclusive of establishment cost
2: Production shares are related to production of milling copra of projected States mentioned in Table
3: All-India CoP of milling copra are weighted average of CoPs of projected States mentioned in Table
Source: CACP Calculations using CS data, State Governments, and Coconut Development Board, Ministry of Agriculture and Farmers Welfare

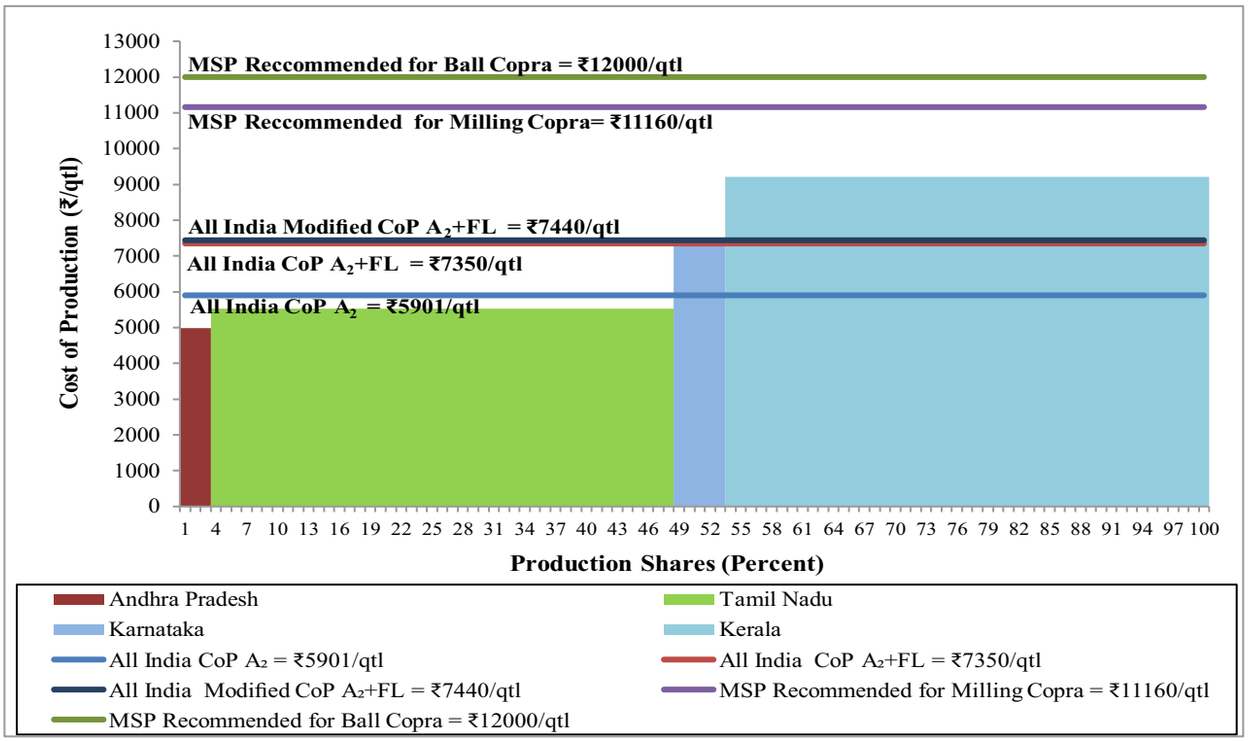
Production vis-a-vis Cost Projections of Milling Copra

5.25 Chart 5.5 shows supply curve[3] for projected A_2+FL CoP by States in ascending order with their corresponding relative shares in all-India production. It is evident from supply curve that projected A_2+FL CoP in Andhra Pradesh and Tamil Nadu was lower than all-India CoP A_2+FL, while Karnataka and Kerala have higher cost of production. Among top-two producers of milling copra, which accounts for 92.1 percent production of milling copra of projected States, Kerala has higher projected A_2+FL CoP than Tamil Nadu, because of higher cost of cultivation and processing cost in Kerala. Among other two States, Karnataka has higher projected A_2+FL CoP than Andhra Pradesh, mainly due to significantly lower yield in Karnataka.

5.26 Year-wise projected cost of production, minimum support price and percent margin in MSP over cost of production for crop years 2019-20 to 2023-24 for copra are given in Annex Table 5.8. The recommended MSP of ₹11,160 per quintal of milling copra for 2024 season covers the projected A_2+FL cost of all the States. MSP margin over projected all-India CoP A_2+FL of milling copra was 51.8 percent, highest for Andhra Pradesh at 124 percent, followed by Tamil Nadu (101.8%), Karnataka (50.2%), and lowest for Kerala at 21.1 Percent.

[3] Supply curve is a graphical representation of CoP, which represents the quantum of production of milling copra produced at different CoP in various States.

Chart 5.5: Supply Curve and Projected Cost of Production (A_2+FL) for Copra Season 2024



Note 1: CoPs of milling copra are inclusive of establishment cost
2: Production shares are related to production of milling copra of projected States only mentioned in Chart
3: All-India CoP of Milling Copra are weighted average of CoPs of projected States mentioned in Chart
Source: CACP Calculations using CS data

Inter-Crop Parity in Returns

Inter-Crop Parity in Returns among Crops

5.27 Inter-crop parity being one of the factors for determination of MSP, comparative analysis of per hectare returns of coconut and different competing crops/crop combinations in major coconut producing States has been made. The basic idea is that area allocation amongst different crops/crop combinations be such that their respective per hectare returns are more or less balanced and help in developing a production pattern keeping in view changing demand patterns. Table 5.4 and Chart 5.6 present all-India relative average gross returns measured in percentage terms over CoC A_2+FL for various competing crops/crop combinations with reference to coconut during TE2021-22.

5.28 It is evident that sugarcane is the only crop which has 38.7 percent higher returns than coconut, while coconut has higher returns than other crop combinations such as paddy+paddy, soybean+paddy, sunflower+paddy, and ragi+paddy. Even though these crops are not strictly substitutes, the comparison provides information about relative profitability of coconut and other crops/crop combinations. Thus, coconut farmers earned significantly

higher returns than each of the competing crop combinations, during TE2021-22, but among the cash crops, coconut was less profitable than sugarcane.

Inter-Crop Parity in Returns among States

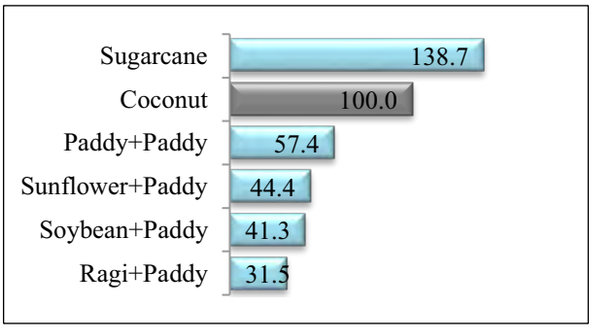
5.29 Relative gross returns of crops in selected States and at all-India level during period TE2021-22 with respect to coconut over actual cost of cultivation are presented in Annex Table 5.9. In Andhra Pradesh, coconut, which competes with sugarcane, paddy+paddy and sunflower+paddy, was more profitable than these crop/crop combination during TE2021-22. For Karnataka, profitability of coconut was substantially lower as compared to profitability of crop/crop combination sugarcane, paddy+paddy, soybean+paddy, sunflower+paddy and ragi+paddy during TE2021-22.

5.30 In case of Kerala, coconut cultivation was more profitable than crop combination paddy+paddy during period TE2021-22, except for 2019-20. For Tamil Nadu, coconut was more profitable as compared to crop/crop combination sugarcane, paddy+paddy and ragi+paddy during TE2021-22.

Table 5.4: Relative Average Gross Returns (%) with Respect to Coconut during TE2021-22

Crops	Relative Average Gross Returns over A_2+FL with respect to Coconut
Coconut	100.0
Sugarcane	138.7
Paddy+Paddy	57.4
Soybean+Paddy	41.3
Sunflower+Paddy	44.4
Ragi+Paddy	31.5

Chart 5.6: Relative Average Gross Returns (%) with Respect to Coconut during TE2021-22



Note 1: For soybean, paddy, ragi, sunflower and coconut, the average is for the years 2019-20 to 2021-22; and for sugarcane, the average is for the years 2018-19 to 2020-21

2: All-India CoC, GVO and gross returns of a crop are weighted average of respective CoC, GVO and gross returns of projected States

Source: CACP calculation using CS data

Comparison of Projected CACP Cost with State Estimates

5.31 Andhra Pradesh, Andaman & Nicobar Islands, Kerala, Karnataka and Tamil Nadu have provided the estimates of cost of production of coconut/copra for crop year 2023-24 along with suggestion for minimum support prices (MSPs) for milling/ball copra for 2024 season. CACP projections, cost of production estimates for coconut/milling copra along with suggested MSPs by States for milling/ball copra for crop season 2023-24 (copra 2024 season) are given in Annex Table 5.10. There were variations in cost estimates provided by the States and CACP cost estimates owing to the different methodologies and cost concepts used by the States and CACP.

5.32 In case of Andhra Pradesh, projected CoP for milling copra was higher than CACP projections due to 95.6 percent higher cost on labour (human, bullock, machine) and irrigation, 7.2 times higher cost on fertiliser, manure, insecticides and miscellaneous charges, and 1.1 times higher cost on interest on working capital and fixed capital by the State. In case of Kerala, projected CoP for milling copra was higher than CACP projection because the State estimates were 1.7 times higher for cost of irrigation and miscellaneous charges, 8.7 times higher cost on rental value of owned land, and 94.5 percent higher cost on interest on working capital and fixed capital. Similarly, the cost estimates of Tamil Nadu and Karnataka were higher than CACP projections.

Recapitulation

5.33 The average A_2+FL CoC during TE2021-22 was ₹1,05,872 per hectare at all-India level, and varied from ₹46,461 per hectare in Andhra Pradesh to ₹1,51,295 per hectare in Kerala. At all-India level, the average GVO of coconut during TE2021-22 was ₹1,87,772 per hectare, and ranged from ₹89,092 per hectare in Karnataka to ₹2,64,659 per hectare in Kerala. The average gross returns of coconut over CoC A_2+FL at all-India level were ₹81,900 per hectare during TE2021-22, the lowest (₹18,853/ha) in Karnataka and highest (₹1,13,365/ha) in Kerala. The percentage average gross returns over A_2+FL at all-India level was 77.4 percent, and varied from 26.8 percent in Karnataka to 223.1 percent in Andhra Pradesh.

5.34 The average daily wages of agriculture labour at all-India level (at current prices) increased by 7.3 percent and weighted index of selected farm input prices increased by 17.2 percent during the coconut season (July to June) in 2022-23 over corresponding period in 2021-22. As the share of human labour in total cost of cultivation/production during TE2021-22 was very high (69.1%), and wages increased in major coconut producing States, there is a need for promoting mechanisation to reduce cost of cultivation/production and enhance profitability of coconut farming.

5.35 At all-India level, the CoP A_2+FL for milling copra inclusive of establishment cost for crop season 2023-24 was projected at ₹7,350 per quintal, registering an increase of 2.8 percent over the previous crop season. The projected A_2+FL cost of production varied from ₹4,981 per quintal in Andhra Pradesh to ₹9,212 per quintal in Kerala. All-India modified CoP A_2+FL inclusive of establishment cost, transportation cost, marketing charges and crop insurance premium was projected at ₹7,440 per quintal for crop season 2023-24, an increase of 2.8 percent over crop season 2022-23. Though coconut is less profitable than sugarcane, but more profitable than other competing/alternative crops/crop combinations.

5.36 The MSP of ₹11,160 per quintal recommended for the milling copra for 2024 season would cover projected A_2+FL and C_2cost of production of all States except Kerala. The MSP margin over projected CoP A_2+FL of milling copra at all-India level was 51.8 percent, and ranged from 21.1 percent in Kerala to 124 percent in Andhra Pradesh.

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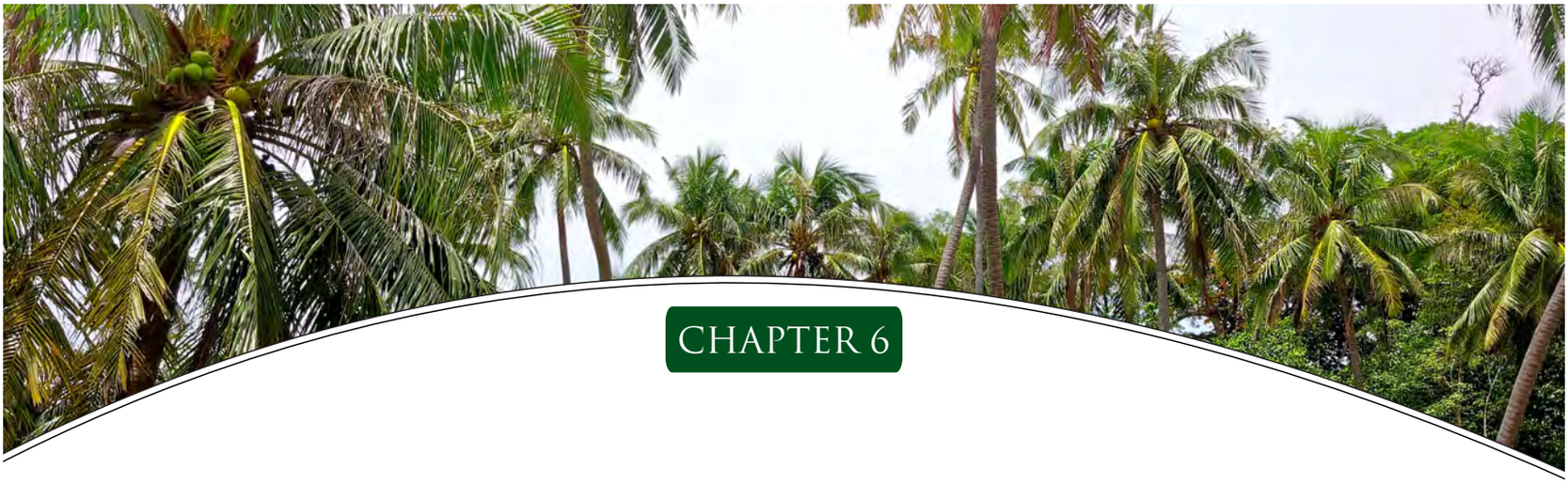

CHAPTER 6

Considerations and Recommendations for Price Policy

6.1 The Commission has recommended the MSP for Copra for the 2024 season after carefully examining and taking into account various factors affecting coconut farming such as the cost of production of coconut and copra, overall demand and supply of copra and coconut oil, the trend in the domestic and global prices of coconut products, coconut oil and other vegetable oils, profitability of coconut *vis-à-vis* other crops, likely impact of the recommended MSP on consumers and other users and a minimum of 50 percent margin over cost of production. The Commission has also held consultations and in-depth discussions with the officers of the Central and State Governments of major coconut producing States, coconut farmers, farmers' representatives, industry representatives, industry associations and research institutions in order to seek information and views on different aspects of coconut economy.

Demand-Supply Situation

6.2 India is the largest producer of coconut with 29.3 percent share in global production. Coconut production in the country is estimated at 13.5 million tonnes in 2022-23, marginally higher than in 2021-22. More than 90 percent of the total production is contributed by the four States, Kerala, Tamil Nadu, Karnataka and Andhra Pradesh. In 2022-23 domestic coconut oil production is estimated to be at 534.3 thousand tonnes, registering a fall of 4 percent, while consumption is estimated to decrease by 9.1 percent. The Stock-to-Use ratio is estimated to increase from 5 percent in 2021-22 to 6.1 percent during 2022-23.

Price Trend

6.3 The wholesale prices of ball copra, milling copra and coconut oil have been volatile over the past few years. From mid-2020, wholesale price of copra and coconut oil picked up after a fall during 2019 and price of milling copra and coconut oil reached the highest level in March 2021 during last 5 years and started to decline thereafter. Wholesale price of milling copra touched ₹13,450 per quintal in March 2021, followed by a fall in prices to a low of ₹7,621 per quintal in October 2022. The wholesale price of coconut oil also exhibited a similar trend touching a high of ₹20,845 per quintal in March 2021, followed by a gradual fall and touched

₹14,917 per quintal in November 2022. Price of coconut oil picked up in December 2022 and was ₹14,257 per quintal in June 2023. Ball copra price displayed an increasing trend since July 2020 and peaked in February 2022 followed by a downward trend since March 2022. The wholesale price of ball copra crashed from a high of ₹16,536 per quintal in January 2019 to ₹9,208 per quintal in July 2020 and touched ₹17,376 per quintal in December 2021. During the last one year, price of ball copra fell from ₹14,116 per quintal in July 2022 to ₹8,316 per quintal in June 2023.

6.4 The WPI inflation rate for copra rose to 12.8 percent in 2021, followed by a fall to (-)9.6 percent in 2022. In case of coconut (fresh), wholesale inflation rate rose from (-)5.4 percent in 2019 to 22.3 percent in 2021 followed by a fall to (-)5.1 percent in 2022. The inflation rate for coconut oil increased from (-)5 percent in 2019 to 12.2 percent in 2021 followed by a fall to (-)9.5 percent in 2022. Wholesale inflation rate in June 2023 was (-)10.9 percent for coconut (fresh), (-)18.8 percent for copra and (-)14.2 percent in case of coconut oil.

Coconut Productivity

6.5 India produces 9,122 nuts per hectare, and is at second position after Brazil (13,150 nuts/ha) among the major coconut producing countries in the World. Since 2017-18 coconut yield has been on a downward trend except during 2020-21 when a marginal increase in yield was recorded. However, during 2021-22 and 2022-23 the yield remained constant at 6.2 tonnes per hectare. Average coconut yield in India declined by (-)16.6 percent during TE2022 as compared to TE2018.

6.6 Weather conditions, infestation of pest and diseases, poor agronomic and management practices, etc. have led to interstate disparity in productivity. During 2018-22 the average yield of coconut declined by (-)4.7 percent in Kerala, the largest producer of coconut in India. Other major producers like Karnataka (-23.9%), Gujarat (-18.9%) and Tamil Nadu (-15.9%) also registered a decline in productivity. However Odisha (12.2%), Andhra Pradesh (7.02%) and Maharashtra (2.9%) showed a positive trend in productivity over the same period.

Coconut Procurement

6.7 There has been a phenomenal increase in the procurement of copra during 2022 and 2023. In 2022, NAFED procured 40,849 tonnes of total copra valued at ₹432 crore, while in 2023 (as on 10th August 2023), over one lakh tonnes of copra valued at ₹1,171 crore has been procured.

Trade Scenario

6.8 Total exports of coconut products (excluding coir and coir products) stood at ₹3,554.2 crore in 2022-23, 9.8 percent higher than in 2021-22. Activated carbon continues to be the largest exported coconut product followed by coconut oil and desiccated coconut. Despite domestic prices of coconut oil above the international prices, the exports have been showing an increasing trend since 2018-19 and India exported a record volume of 23.4 thousand tonnes in 2022-23. Since 2020-21, copra exports have shown a significant increase, reaching a peak of 20.7 thousand tonnes during 2022-23 from 2.3 thousand tonnes in 2020-21. The export volume of activated carbon has been growing steadily during the last decade, reaching 150.2 thousand tonnes in 2022-23.

6.9 Imports of coconut and coconut products declined from ₹1,174 crore in 2021-22 to ₹1,019 crore in 2022-23, and major coconut products imported were activated carbon (55.1%), copra oil cake (31.5%) and desiccated coconut (7.5%).

World Production and Prices

6.10 After a decline in global coconut production during 2019 and 2020, there was an increase in coconut production by 2 percent in 2021 but again declined by about 1.5 percent in 2022. Global coconut oil production declined marginally by 0.8 percent during 2022-23 compared to 2021-22. The domestic wholesale prices of copra have been higher than the world prices since 2019 but the gap between the international and domestic prices has declined over the period from ₹5,544 per quintal in 2020 to ₹20 per quintal in 2022. The price of coconut oil has been falling in the international market since 2022(Q1) and the markup between the domestic and international prices reduced from ₹10,552 per quintal in 2019(Q1) to ₹3,979 per quintal in 2023(Q2).

Cost and Returns

6.11 The average A_2+FL CoC was estimated at ₹1,05,872 per hectare at all-India level, and varied from ₹46,461 per hectare in Andhra Pradesh to ₹1,51,295 per hectare in Kerala. The average gross returns of coconut over CoC A_2+FL at all-India level during TE2021-22 were ₹81,900 per hectare, and were lowest (₹18,853/ha) in Karnataka and highest (₹1,13,365/ha) in Kerala. The percentage average gross returns over A_2+FL at all-India level were 77.4 percent, and varied from 26.8 percent in Karnataka to 223.1 percent in Andhra Pradesh.

6.12 At all-India level, the CoP A_2+FL for milling copra inclusive of establishment cost for crop season 2023-24 was projected at ₹7,350 per quintal, registering an increase of 2.8 percent over the previous crop season. The projected A_2+FL cost of production varied from ₹4,981 per quintal in Andhra Pradesh to ₹9,212 per quintal in Kerala. All-India modified CoP A_2+FL inclusive of establishment cost, transportation cost, marketing charges and crop insurance

premium for crop season 2023-24 was projected at ₹7,440 per quintal. Coconut is less profitable than sugarcane, but more profitable than other competing/alternative crops/crop combinations.

Non-Price Policy Recommendations

Higher and Stable Yield

6.13 Coconut farmers suffer from low and unstable productivity due to old and senile coconut trees, poor agronomical and management practices, incidence of pests and diseases, agro-climatic factors, natural calamities, etc. The Commission has noted that there exist wide variations in yield level within and across States. Adoption of high yielding varieties, integrated management of pest and diseases, quality planting materials, efficient water management, climate resilient varieties, etc. are some of the interventions that can help farmers in improving productivity. However non-availability of good quality coconut seedlings and planting material and incidence of pests and diseases are major constraints. The Commission thus recommends that a targetted replanting and rejuvenation programme in a mission mode may be implemented on priority basis. States may formulate strategy to improve and stabilize yield of coconut.

Coconut Replanting and Rejuvenation Programme

6.14 The Coconut Development Board (CDB) has been implementing the "Replanting and Rejuvenation of Coconut Gardens" scheme. However, given large area under old and senile plantation, the replanting and rejuvenation Scheme needs to be implemented on a larger scale to make significant impact on productivity. The Commission reiterates its earlier recommendation to scale up the replanting and rejuvenation Scheme. Since success of this Scheme largely depends on the availability of quality seedlings and planting materials, the Commission recommends that efforts should be made to ensure adequate availability to farmers. The State Governments should make special efforts in collaboration with various research agencies and related departments to expand the reach of the replanting and rejuvenation Scheme.

Improved Water Management Practices

6.15 Nut yield and growth of coconut palms are highly dependent on moisture content in the soil. "*Pradhan Mantri Krishi Sinchayee Yojana* - Per Drop More Crop (PMKSY - PDMC)", has been implemented by Central Government to improve water use efficiency. Some State Governments have also taken initiatives to improve water use efficiency. Government of Kerala has been implementing an innovative Community Irrigation Initiative. The scarcity of water caused due to droughts and erratic rainfall has adversely affected the coconut yield and needs an urgent intervention by the Central and State Governments. The Commission

recommends that the farmers should be made aware of the need for efficient water use as well as encouraged to adopt micro-irrigation and soil moisture conservation measures in coconut farming. Special emphasis should be given on expanding coconut area under micro-irrigation.

Effective Pest and Disease Control

6.16 Coconut production faces serious challenges from diseases and damages by insect pests. Breeding and selection of varieties with resistance to pests and diseases is thus crucial for sustainable development of coconut sector. The Commission recommends that the research institutions should be encouraged to develop and popularize coconut varieties/hybrids tolerant to key pests and diseases for sustainable production. “Integrated Pest and Disease Management (IPDM)” practices to protect coconut palms from pests and diseases should be promoted among coconut farmers.

Coconut-Based Integrated Farming Systems

6.17 Coconut gardens are ideal for integrated farming system due to tall nature of coconut palms and wide interspaces between the palms. Farming in the interspaces enables the farmer to earn additional returns as well as make the best utilization of resources such as water, labour and land. Coconut based cropping systems involving cultivation of compatible crops like tubers, flowers, medicinal and aromatic crops, fruits, vegetables, spices, etc. in interspaces of coconut are considered economically superior to coconut mono-cropping. Mixed cropping systems including coconut, dairy, poultry, rabbitry, sericulture and pisciculture have been successfully practiced. The Commission recommends that the research institutions, State Governments and local self-governments should play a proactive role in encouraging farmers to take-up coconut based integrated farming system.

Farm Mechanization

6.18 Almost all coconut producing States are facing problem of high labour cost and scarcity of labour. In 2021-22, labour costs accounted for 73.5 percent of total operating costs of coconut production at all-India level and ranged from 65.8 percent in Tamil Nadu to 78.6 percent in Kerala due to high wages in the State. "Friends of Coconut Tree" is a training programme being implemented by Coconut Development Board (CDB) for training youth in palm climbing, crown cleaning and pest and disease management using a mechanical device. Improvements in machines like climbers are needed to make it more user-friendly and affordable. Government support for research on mechanization of harvesting and other operations can facilitate development and diffusion of mechanization in coconut cultivation. Due to height of the coconut palms, proper maintenance of the crop, in particular pest and disease detection, spraying, aerial survey and imaging, maturity stage sensors, quality sensors, etc. are major challenges. The Commission recommends that the research agencies

should be provided with the necessary support for development of farmer-friendly drone technology enabled devices, which can be used by coconut farmers for better maintenance of palms.

Strengthen Procurement Operations and Infrastructure

6.19 One of the major issues facing copra procurement operations is lack of infrastructure and effective institutions. Since majority of coconut farmers are small and marginal and do not have facilities for processing coconut into copra, farmers are forced to sell raw coconut to traders/middlemen and do not benefit from procurement operations under the PSS. Due to shortage of proper storage facilities at local level, procurement agencies transport copra procured from farmers to 100-200 km. There is also lack of procurement centers at village/panchayat level in some states.

6.20 Procurement of de-husked coconut has been a long-standing demand of farmers of various States but it may not be possible due to infrastructure and logistic constraints. Therefore, the Commission recommends that, farmers' collectives including CPS/CPF/CPC, cooperatives etc. should be strengthened and provided assistance under Agriculture Infrastructure Fund (AIF) to set up de-husking, de-shelling, drying and storage facilities. This would enable aggregation of produce and conversion of coconut into copra and member farmers would benefit from procurement operations. Due to perennial nature of the crop and market arrivals evenly distributed throughout the year, procurement period of six months for copra may be reviewed.

6.21 Although share of Andaman & Nicobar (A&N) Islands in total coconut production in the country is less than one percent, coconut contributes nearly 23 percent to total value of crop output in the Island. Due to lack of infrastructure and value-addition facilities, produce procured under the PSS is transported from the Island to Chennai/Kolkata and about ₹800 per quintal is incurred on transportation cost. In view of the importance of coconut sector in the Island, the Commission recommends that infrastructural facilities for value-addition, scientific storage, etc. should be created in A&N Islands. This would help in saving transport cost, create employment opportunities and enhance value realization to coconut farmers in the Island.

Encourage Value-addition and Entrepreneurship

6.22 The utilization pattern of coconut is highly skewed in favour of coconut oil, which is relatively costlier *vis-à-vis* other competing oils. Thus, it is important to diversify into other-value added products and fully utilize coconut by-products to make coconut sector competitive and profitable. The demand for value added products such as virgin coconut oil, high-end coconut wood, long shelf life coconut gratings, tender coconut water, coconut sugar, coconut jaggery, coconut vinegar, coconut saps sweets, etc. has increased in both

domestic and international markets. The Commission recommends that coconut value chains should be developed and efforts should be made to attract private investment in processing facilities to exploit export opportunities for value-added products. To capitalize on domestic and export opportunities and realize the sector's potential, there is a need to formulate a comprehensive and integrated strategy for promoting value-addition in coconut sector.

Coconut Palm Insurance Scheme (CPIS)

6.23 The Commission has noted that the performance of CPIS is not effective in most States due to lack of awareness and interest among coconut farmers about the scheme, delays in obtaining administrative approvals from concerned State Governments, inadequate publicity, non-remittance of State share of premium, etc. The Commission recommends that the State Government in collaboration with CDB and AIC should create adequate awareness and publicity of the Scheme among coconut farmers using electronic and print media and organize capacity building programmes for various stakeholders for effective implementation of the Scheme.

Import Policy of Coconut Oil Cake

6.24 Oilcake is the second largest coconut-based product imported in the country and accounts for more than 40 percent of total imports. The imported coconut oil cake contains 10-12 percent oil content vis-à-vis around 6 percent in domestically produced oil cake. Oil, which is extracted from imported coconut oil cakes using solvent extraction technique, is used for adulteration of edible coconut oil, which adversely affects domestic coconut oil sector. The Commission recommends that import policy of coconut oil cake should be reviewed.

Minimum Support Price (MSP) Recommendations

6.25 The all-India weighted average projected A_2+FL cost of production of copra for the crop season 2023-24 is estimated at ₹7,350 per quintal and the modified cost of production inclusive of transportation charges, marketing and insurance premium works out to be ₹7,440 per quintal. The all-India projected A_2+FL cost of milling copra for crop year 2023-24 increased by 2.8 percent over crop year 2022-23.

6.26 Considering the projected cost of production and other relevant factors, the Commission recommends that MSP of milling copra be fixed at ₹11,160 per quintal and ball copra at ₹12,000 per quintal for the 2024 season. The recommended MSP of ₹11,160 per quintal of milling copra will cover the projected A_2+FL cost of all States as well as the weighted average all-India C_2 cost of production. The recommended MSP of milling copra would give a gross margin of 51.8 percent over the cost of production.

6.27 The Commission believes that these price and non-price policy recommendations would incentivize coconut farmers to adopt new technologies and scientific practices to improve productivity and profitability. It would also encourage coconut industry towards value-addition and product diversification to meet changing consumer demands and tap emerging market opportunities.

(Vijay Paul Sharma)
Chairman

(Naveen Prakash Singh)
Member (Official)

(Ratan Lal Daga)
Member (Non-Official)

(Anupam Mitra)
Member Secretary

Annex Tables

Annex Table 1.1: Area under Coconut Cultivation in Selected States

('000 ha)

Year	Kerala	Karnataka	Tamil Nadu	Andhra Pradesh	Odisha	West Bengal	Maharashtra	Gujarat	Assam	Bihar	Tripura	Others	All India
2001-02	939.5	369.8	335.8	104.0	46.7	25.0	16.8	14.2	21.1	-	3.3	56.1	1932.3
2002-03	899.2	375.4	345.9	105.2	53.3	25.0	16.4	14.9	20.9	-	3.3	62.3	1921.8
2003-04	906.2	376.0	352.7	104.0	55.4	24.4	18.0	16.0	21.3	-	3.3	56.4	1933.7
2004-05	897.8	385.4	357.1	104.0	50.8	24.3	18.0	16.4	21.3	-	3.3	56.6	1935.0
2005-06	897.8	385.4	370.5	104.0	50.8	24.9	18.0	16.4	19.1	-	3.3	56.6	1946.8
2006-07	870.9	401.0	374.6	101.9	51.0	25.1	21.0	16.4	19.0	-	3.3	52.6	1936.8
2007-08	818.8	405.0	383.4	101.3	51.0	28.6	21.0	16.4	19.0	-	5.8	52.9	1903.2
2008-09	819.0	405.0	383.0	101.0	51.0	29.0	21.0	-	19.0	-	-	76.0	1904.0
2009-10	788.0	419.0	390.0	104.0	51.0	28.6	21.0	16.0	18.8	-	5.8	53.0	1895.2
2010-11	788.0	419.0	390.0	104.0	51.0	28.6	21.0	16.0	18.8	-	5.8	53.7	1895.9
2011-12	766.0	511.0	430.7	142.0	53.9	29.1	21.0	20.9	20.8	15.2	6.2	53.9	2070.8
2012-13	798.2	513.1	465.1	128.9	54.3	29.2	28.1	21.1	22.2	15.2	6.5	54.8	2136.7
2013-14	797.2	517.3	465.1	121.9	50.8	29.3	28.1	31.6	20.2	15.2	6.9	56.8	2140.5
2014-15	649.8	515.0	465.1	106.0	50.7	29.4	28.1	31.6	21.1	14.9	6.9	57.0	1975.8
2015-16	770.6	526.4	459.7	103.9	50.9	29.5	27.7	22.8	19.7	14.9	7.2	55.0	2088.5
2016-17	770.8	513.9	461.1	115.2	50.9	29.6	20.9	24.4	20.6	14.9	4.6	55.2	2082.1
2017-18	807.1	518.4	441.5	99.5	50.9	30.3	27.0	24.9	19.9	11.4	4.6	61.3	2096.7
2018-19	760.9	619.8	436.9	111.8	46.7	30.8	27.2	26.9	20.6	11.9	4.6	52.7	2150.9
2019-20	760.8	624.0	373.3	111.4	51.7	31.3	29.9	27.4	20.8	12.1640	4.6	61.6	2109.0
2020-21	768.8	642.5	444.9	113.0	52.35	31.8	30.16	25.0	20.8	12.1550	4.6	52.9	2199.0
2021-22	765.4	604.2	446.2	105.8	52.82	32.6	30.32	25.6	21.0	12.1550	4.7	52.9	2153.7
2022-23*	765.0	628.4	446.2	105.8	52.82	32.6	30.22	25.6	21.0	12.1550	4.5	52.9	2177.2

*Note: * First Advance Estimates*

Source: Horticulture Statistics Division, Ministry of Agriculture and Farmers Welfare

Annex Table

Annex Table 1.2: Production of Coconut in Selected States

('000 tonnes)

Year	Kerala	Karnataka	Tamil Nadu	Andhra Pradesh	West Bengal	Odisha	Maharashtra	Gujarat	Assam	Bihar	Tripura	Others	All India
2001-02	3952.4	1034.6	2266.3	774.1	223.1	143.3	133.4	70.8	112.6	-	4.8	204.4	8919.7
2002-03	3928.3	1049.5	1968.4	797.2	223.1	141.4	124.3	72.5	110.2	-	4.8	205.3	8625.3
2003-04	3773.5	1052.2	1761.9	822.3	218.5	167.5	188.1	76.9	106.2	-	4.8	208.0	8379.7
2004-05	3940.7	832.5	2231.8	825.2	213.9	189.0	188.1	95.2	106.2	-	4.8	202.9	8830.2
2005-06	4352.9	832.5	3349.0	613.8	222.6	189.0	188.1	95.2	141.0	-	4.8	202.6	10191.4
2006-07	4165.7	1118.2	3736.3	912.7	247.1	189.8	120.5	95.2	105.3	-	4.8	204.2	10899.7
2007-08	3881.5	1125.0	3418.6	770.2	244.6	189.8	120.5	95.2	93.6	-	7.8	198.2	10145.0
2008-09	3882.2	1125.7	3419.1	770.0	245.0	189.9	120.4	-	93.6	-	7.6	292.4	10145.9
2009-10	3992.0	1497.0	3692.0	667.0	245.0	190.0	120.0	108.0	101.0	-	8.0	204.3	10824.3
2010-11	3992.0	1497.0	3692.0	667.0	245.0	190.0	120.0	108.0	101.0	-	8.0	220.0	10840.0
2011-12	3973.9	3784.6	4515.6	1270.0	252.9	258.0	120.0	217.9	194.8	97.5	18.1	236.6	14939.9
2012-13	3990.4	4169.9	4760.7	1330.4	254.2	262.2	129.0	221.9	110.3	97.1	18.9	264.2	15609.1
2013-14	4107.4	3469.5	4760.7	1258.4	255.2	223.6	129.0	203.1	94.0	97.3	19.5	293.0	14910.7
2014-15	3370.0	3538.3	4760.8	1007.3	256.2	223.6	129.0	203.1	163.5	97.3	19.5	298.7	14067.2
2015-16	5113.1	3529.8	4247.1	982.4	257.1	226.0	186.7	215.2	91.3	97.3	20.3	290.0	15256.3
2016-17	5137.0	4671.1	4531.5	950.0	258.3	235.6	137.1	232.2	105.7	97.3	22.2	107.5	16485.6
2017-18	5829.0	4326.7	4152.0	963.4	260.5	235.7	88.2	166.3	116.0	52.9	22.0	199.9	16412.6
2018-19	5299.0	3412.2	3703.7	1081.1	264.9	197.4	144.1	179.0	126.1	53.9	12.7	207.5	14681.5
2019-20	4814.0	2966.0	3297.8	1073.0	268.4	244.5	361.1	182.7	110.3	54.1	12.7	213.6	13598.1
2020-21	4788.0	3392.1	3751.3	1127.3	272.3	273.3	154.2	147.3	102.4	54.1	12.7	225.9	14300.8
2021-22	3808.7	3570.8	3511.6	1164.9	280.1	274.2	164.5	146.6	107.9	54.1	8.9	224.9	13317.2
2022-23*	3855.5	3713.6	3511.6	1164.9	280.1	274.2	165.3	146.6	107.9	54.1	12.6	231.9	13518.4

*Note: * First Advance Estimates*

Source: Horticulture Statistics Division, Ministry of Agriculture and Farmers Welfare

Annex Table 1.3: Yield of Coconut in Selected States

(tonnes/ha)

Year	Andhra Pradesh	West Bengal	Tamil Nadu	Karnataka	Gujarat	Maharashtra	Odisha	Assam	Kerala	Bihar	Tripura	Others	All India
2001-02	7.44	8.92	6.75	2.80	4.99	7.94	3.07	5.34	4.21	-	1.46	3.64	4.62
2002-03	7.58	8.92	5.69	2.80	4.87	7.58	2.65	5.27	4.37	-	1.46	3.30	4.49
2003-04	7.91	8.95	5.00	2.80	4.80	10.45	3.02	4.98	4.16	-	1.46	3.69	4.33
2004-05	7.93	8.80	6.25	2.16	5.80	10.45	3.72	4.98	4.39	-	1.46	3.58	4.56
2005-06	5.90	8.94	9.04	2.16	5.80	10.45	3.72	7.38	4.85	-	1.46	3.58	5.23
2006-07	8.96	9.84	9.97	2.79	5.80	5.74	3.72	5.54	4.78	-	1.46	3.88	5.63
2007-08	7.60	8.55	8.92	2.78	5.80	5.74	3.72	4.93	4.74	-	1.35	3.75	5.33
2008-09	7.62	8.45	8.93	2.78	-	5.73	3.72	4.93	4.74	-	0.00	3.85	5.33
2009-10	6.41	8.57	9.47	3.57	6.76	5.71	3.73	5.37	5.07	-	1.38	3.85	5.71
2010-11	6.41	8.57	9.47	3.57	6.76	5.71	3.73	5.37	5.07	-	1.38	4.10	5.72
2011-12	8.94	8.68	10.49	7.41	10.41	5.71	4.78	9.37	5.19	6.40	2.91	4.39	7.21
2012-13	10.32	8.70	10.24	8.13	10.51	4.59	4.83	4.98	5.00	6.37	2.92	4.82	7.31
2013-14	10.32	8.71	10.24	6.71	6.42	4.59	4.40	4.65	5.15	6.38	2.82	5.16	6.97
2014-15	9.50	8.71	10.24	6.87	6.42	4.59	4.41	7.73	5.19	6.53	2.82	5.24	7.12
2015-16	9.45	8.71	9.24	6.71	9.43	6.73	4.44	4.62	6.64	6.53	2.82	5.27	7.31
2016-17	8.25	8.72	9.83	9.09	9.50	6.56	4.63	5.13	6.66	6.53	4.82	1.95	7.92
2017-18	9.68	8.61	9.40	8.35	6.67	3.27	4.63	5.82	7.22	4.66	4.82	3.26	7.83
2018-19	9.67	8.60	8.48	5.51	6.65	5.30	4.23	6.12	6.96	4.52	2.75	3.94	6.83
2019-20	9.63	8.57	8.83	4.75	6.67	12.06	4.73	5.31	6.33	4.44	2.76	3.47	6.45
2020-21	9.98	8.55	8.43	5.28	5.89	5.11	5.22	4.92	6.23	4.45	2.76	4.27	6.50
2021-22	11.01	8.58	7.87	5.91	5.73	5.42	5.19	5.13	4.98	4.45	1.90	4.25	6.18
2022-23*	11.01	8.58	7.87	5.91	5.73	5.47	5.19	5.13	5.04	4.45	2.76	4.39	6.21

*Note: * First Advance Estimates*

Source: Horticulture Statistics Division, Ministry of Agriculture and Farmers Welfare

Annex Table

Annex Table 2.1: Wholesale Price Index of Coconut (fresh) (Base: 2011-12)

Month	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
January	130.5	175.0	173.7	151.7	230.0	217.1	210.7	240.4	290.7	252.0
February	134.3	177.7	161.5	159.8	229.9	216.9	220.1	237.3	286.0	246.4
March	141.6	183.2	159.9	161.8	222.6	212.1	221.9	237.5	283.9	245.4
April	149.3	189.9	157.8	175.4	224.2	205.1	219.4	245.0	301.5	239.9
May	160.6	186.8	155.6	184.2	233.3	206.7	207.9	257.1	238.6	237.9
June	160.6	187.7	149.9	183.2	223.4	205.8	210.5	261.1	233.7	234.1
July	162.4	177.0	138.7	181.4	221.1	206.5	215.1	262.3	229.2	
August	168.2	178.3	141.6	193.4	222.2	206.7	207.9	252.8	234.3	
September	174.5	184.0	139.0	207.1	223.5	207.8	213.8	316.9	231.9	
October	171.6	184.1	142.9	206.1	214.2	204.4	231.3	315.3	236.0	
November	174.2	179.8	141.2	208.6	200.7	210.1	232.2	299.7	243.7	
December	170.1	178.1	143.4	222.4	205.7	207.3	240.6	294.4	245.1	

Source: Office of the Economic Advisor, Department for Promotion of Industry and Internal Trade, Ministry of Commerce and Industry

Annex Table

Annex Table 2.2: Wholesale Price Index of Copra (Base: 2011-12)

Month	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
January	116.8	162.7	112.3	121.6	215.5	209.6	186.0	206.4	205.7	173.5
February	121.6	161.9	109.7	130.3	214.4	206.7	186.3	210.2	204.9	167.9
March	127.6	162.0	103.9	128.3	209.4	204.2	184.1	219.6	202.6	160.8
April	141.8	161.9	103.9	134.6	215.3	198.6	184.2	218.5	200.0	159.8
May	150.0	154.4	102.3	132.1	226.1	192.3	181.4	215.2	195.8	159.3
June	147.9	145.5	100.6	145.8	222.2	187.3	179.1	217.2	185.8	148.2
July	152.0	134.4	99.5	152.0	218.1	186.6	180.7	211.5	184.1	
August	172.1	143.8	105.2	168.5	218.7	190.8	184.7	209.0	183.5	
September	170.0	139.6	107.6	188.6	212.2	191.2	187.8	208.4	185.2	
October	160.9	135.1	109.1	189.8	199.0	191.2	192.4	207.3	183.2	
November	153.2	130.2	110.0	195.4	191.2	189.1	195.9	206.5	182.2	
December	148.5	118.7	114.6	210.1	198.3	186.4	205.9	206.9	180.6	

Source: Office of the Economic Advisor, Department for Promotion of Industry and Internal Trade Ministry of Commerce and Industry

Annex Table 2.3: Wholesale Price Index of Coconut Oil (Base: 2011-12)

Month	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
January	122.8	157.0	133.7	139.2	178.5	185.0	170.4	191.4	188.5	164.6
February	128.6	155.7	133.1	142.9	176.3	185.1	166.6	194.5	189.8	162.0
March	132.4	152.8	124.1	143.4	175.4	177.6	166.6	199.8	187.6	161.7
April	145.0	150.0	123.1	142.6	180.0	172.1	167.7	199.8	186.7	157.3
May	143.0	155.4	126.9	142.6	184.5	167.3	167.3	199.6	184.8	154.8
June	150.4	148.5	124.6	143.9	182.8	164.4	168.0	201.3	174.2	152.7
July	155.1	144.6	116.0	153.1	180.6	163.0	167.8	200.1	171.8	
August	159.8	143.9	120.7	156.4	180.9	164.0	173.8	193.0	170.1	
September	163.2	144.0	126.5	163.0	179.5	166.3	176.3	188.0	167.2	
October	162.8	138.0	126.8	163.4	180.9	168.4	180.3	187.1	165.9	
November	161.7	140.1	128.2	171.3	177.5	166.8	186.8	190.3	162.4	
December	156.4	139.9	134.9	182.6	180.4	169.0	189.4	188.7	164.5	

Source: Office of the Economic Advisor, Department for Promotion of Industry and Internal Trade, Ministry of Commerce and Industry

Annex Table 2.4: Average Market Prices of Milling Copra in Major Markets

(₹ /Quintal)

Month	Kerala			Tamil Nadu		All- India Avg.	MSP
	Kochi	*Alappuzha*	*Kozhikode*	*Kangayam*	*Vellakoil*		
Jul-20	10,142	10,032	10,284	9,720	9,845	10,005	9,960
Aug-20	10,687	10,558	11,244	9,750	10,500	10,548	9,960
Sep-20	11,720	11,553	12,137	10,675	11,125	11,442	9,960
Oct-20	12,442	12,300	12,361	11,100	11,700	11,981	9,960
Nov-20	12,714	12,543	12,970	11,000	11,900	12,225	9,960
Dec-20	13,306	13,155	13,790	12,125	12,850	13,045	9,960
Jan-21	12,984	12,873	13,698	11,600	12,440	12,719	10,335
Feb-21	13,627	13,398	13,916	12,375	13,000	13,263	10,335
Mar-21	13,876	13,694	13,779	12,500	13,400	13,450	10,335
Apr-21	13,207	13,140	13,222	12,500	12,840	12,982	10,335
May-21	11,955	11,818	11,697	11,667	10,933	11,614	10,335
Jun-21	11,678	11,603	11,400	11,000	10,800	11,296	10,335
Jul-21	10,642	10,482	10,618	10,000	10,400	10,428	10,335
Aug-21	10,844	10,723	10,903	10,000	10,150	10,524	10,335
Sep-21	10,413	10,317	10,600	10,000	10,200	10,306	10,335
Oct-21	10,194	10,123	10,479	10,000	10,280	10,215	10,335
Nov-21	10,243	10,193	10,703	9,500	10,025	10,133	10,335
Dec-21	10,045	9,974	10,440	9,000	9,720	9,836	10,335
Jan-22	9,342	9,239	9,616	8,625	8,719	9,108	10,590
Feb-22	9,264	9,163	9,466	8,500	8,848	9,048	10,590
Mar-22	9,687	9,531	9,584	8,675	9,375	9,370	10,590
Apr-22	9,297	9,170	9,297	9,040	8,480	9,057	10,590
May-22	8,881	8,812	8,934	8,375	8,250	8,650	10,590
Jun-22	8,450	8,350	8,758	7,975	8,200	8,347	10,590
Jul-22	8,398	8,269	8,782	7,660	8,120	8,246	10,590
Aug-22	8,403	8,235	8,758	7,675	8,100	8,234	10,590
Sep-22	8,133	8,050	8,253	7,520	7,480	7,887	10,590
Oct-22	7,626	7,539	7,963	7,550	7,425	7,621	10,590
Nov-22	8,617	8,405	8,896	7,875	7,650	8,289	10,590
Dec-22	9,032	8,971	9,205	8,020	8,220	8,690	10,590
Jan-23	8,761	8,742	9,140	7,800	7,600	8,409	10,860
Feb-23	8,600	8,500	8,739	7,650	7,500	8,198	10,860
Mar-23	8,602	8,513	8,695	7,500	7,540	8,170	10,860
Apr-23	8,505	8,403	8,553	7,300	7,575	8,067	10,860
May-23	8,615	8,435	8,505	7,450	7,600	8,121	10,860
Jun-23	7,965	7,840	7,975	7,180	7,600	7,712	10,860

Source: Coconut Development Board, Ministry of Agriculture and Farmers Welfare

Annex Table 2.5: Average Market Prices of Ball Copra in Major Markets

(₹ /Quintal)

Month	Tiptur	Arsikere	All-India Avg.	MSP
Jul-20	9,242	9,174	9,208	10,300
Aug-20	9,871	9,758	9,814	10,300
Sep-20	10,397	10,230	10,313	10,300
Oct-20	11,563	11,238	11,400	10,300
Nov-20	12,440	12,471	12,455	10,300
Dec-20	14,836	14,218	14,527	10,300
Jan-21	14,338	13,996	14,167	10,600
Feb-21	14,591	14,382	14,487	10,600
Mar-21	15,197	15,549	15,373	10,600
Apr-21	15,580	15,318	15,449	10,600
May-21	15,966	15,895	15,931	10,600
Jun-21	15,695	15,640	15,667	10,600
Jul-21	15,658	15,739	15,699	10,600
Aug-21	16,248	16,537	16,393	10,600
Sep-21	16,172	16,517	16,345	10,600
Oct-21	16,423	16,867	16,645	10,600
Nov-21	16,996	16,694	16,845	10,600
Dec-21	17,442	17,310	17,376	10,600
Jan-22	17,131	16,805	16,968	11,000
Feb-22	17,439	17,185	17,312	11,000
Mar-22	17,068	16,664	16,866	11,000
Apr-22	16,769	16,622	16,696	11,000
May-22	15,126	14,653	14,889	11,000
Jun-22	13,590	13,481	13,535	11,000
Jul-22	14,129	14,104	14,116	11,000
Aug-22	13,974	13,794	13,884	11,000
Sep-22	13,537	13,440	13,489	11,000
Oct-22	13,642	13,545	13,594	11,000
Nov-22	12,567	12,292	12,429	11,000
Dec-22	11,675	11,704	11,690	11,000
Jan-23	11,117	11,170	11,144	11,750
Feb-23	10,382	10,454	10,418	11,750
Mar-23	9,620	9,540	9,580	11,750
Apr-23	8,922	9,182	9,052	11,750
May-23	9,194	9,036	9,115	11,750
Jun-23	8,282	8,351	8,316	11,750

Source: Coconut Development Board, Ministry of Agriculture and Farmers Welfare

Annex Table

Annex Table 2.6: Average Market Prices of Raw Coconut in Major Markets

(₹ /Nut)

Month	Kerala		Tamil Nadu		Karnataka		All-India Avg.
	Thiruvananthapuram (W)	*Alappuzha*	*Kangayem*	*Nagercoil*	*Mangalore*	*Arsikere*	
Jul-20	13.0	15.5	14.4	14.4	-	15.2	14.5
Aug-20	13.0	16.2	15.0	17.3	-	14.1	15.1
Sep-20	14.3	18.5	15.5	18.9	28.0	16.7	18.6
Oct-20	15.2	20.5	18.6	19.7	28.0	19.4	20.2
Nov-20	16.5	21.9	21.0	22.3	-	18.3	20.0
Dec-20	16.5	23.8	21.8	22.1	29.0	16.2	21.6
Jan-21	15.4	22.5	18.0	20.7	29.5	11.8	19.7
Feb-21	14.8	21.9	15.3	19.6	-	15.3	17.4
Mar-21	-	21.5	13.0	19.0	-	16.6	17.5
Apr-21	14.8	21.1	14.4	17.1	28.0	17.8	18.9
May-21	14.6	18.5	14.0	14.6	-	18.5	16.0
Jun-21	15.0	17.9	16.0	14.1	-	18.6	16.3
Jul-21	13.5	17.1	15.6	13.1	-	21.7	16.2
Aug-21	13.8	17.2	15.0	14.4	-	18.3	15.7
Sep-21	14.0	16.9	15.0	15.0	-	17.5	15.7
Oct-21	14.0	16.7	15.0	15.2	-	17.6	15.7
Nov-21	14.0	16.8	16.0	16.1	25.0	19.2	17.9
Dec-21	13.9	17.6	17.4	15.4	-	18.3	16.5
Jan-22	13.5	15.9	18.0	14.4	27.5	19.5	18.1
Feb-22	13.5	15.7	17.0	14.0	31.2	20.0	18.6
Mar-22	13.1	16.3	15.0	13.6	32.1	20.5	18.4
Apr-22	13.0	15.8	13.0	13.2	30.1	21.1	17.7
May-22	12.9	15.2	12.5	12.3	29.1	20.3	17.1
Jun-22	12.9	14.1	11.5	11.3	27.9	19.6	16.2
Jul-22	12.9	13.5	12.2	11.3	27.8	19.1	16.1
Aug-22	12.9	13.6	13.3	11.4	27.0	19.8	16.3
Sep-22	13.0	13.8	13.0	12.9	24.1	18.9	16.0
Oct-22	12.8	13.7	13.0	13.0	24.1	18.2	15.8
Nov-22	12.6	14.3	13.5	12.5	27.0	18.1	16.3
Dec-22	13.0	15.3	13.0	13.5	28.9	19.7	17.2
Jan-23	13.2	15.6	15.0	14.0	29.9	18.5	17.7
Feb-23	13.2	15.1	13.0	14.0	28.0	18.8	17.0
Mar-23	12.6	15.1	13.0	13.4	28.3	19.4	17.0
Apr-23	12.2	14.9	13.0	13.0	30.0	18.1	16.9
May-23	12.2	14.8	13.0	12.5	29.6	18.2	16.7
Jun-23	11.9	13.9	13.0	13.4	23.8	17.7	15.6

Source: Coconut Development Board, Ministry of Agriculture and Farmers Welfare

Annex Table

Annex Table 2.7: Average Market Prices of Coconut Oil in Major Markets

(₹ /quintal)

Month	Kerala			Tamil Nadu		All-India Avg.
	Kochi	*Alappuzha*	*Kozhikode*	*Kangayam*	*Thanjavur*	
Jul-20	16,042	16,032	16,532	13,189	18,000	15,959
Aug-20	16,577	16,555	17,771	14,273	19,300	16,895
Sep-20	17,611	17,560	19,000	15,914	20,350	18,087
Oct-20	18,342	18,339	19,523	16,961	20,330	18,699
Nov-20	18,961	18,924	20,063	17,509	20,625	19,216
Dec-20	19,968	19,973	21,626	18,439	21,150	20,231
Jan-21	19,802	19,810	21,877	18,004	21,350	20,169
Feb-21	20,770	20,700	21,932	18,723	21,625	20,750
Mar-21	21,047	21,094	21,881	18,955	21,250	20,845
Apr-21	20,013	20,112	21,418	18,467	21,250	20,252
May-21	18,281	18,323	19,852	16,514	21,250	18,844
Jun-21	18,160	18,183	19,028	15,920	21,150	18,488
Jul-21	17,345	17,368	17,632	14,987	21,100	17,686
Aug-21	17,461	17,461	18,047	14,924	21,100	17,799
Sep-21	17,100	17,117	17,647	14,544	21,100	17,501
Oct-21	16,894	16,880	17,487	14,366	21,100	17,345
Nov-21	16,987	16,987	17,433	14,554	21,100	17,412
Dec-21	16,584	16,619	17,219	14,157	21,200	17,156
Jan-22	15,739	15,739	16,147	12,957	21,600	16,436
Feb-22	15,621	15,636	15,768	12,943	21,600	16,314
Mar-22	15,890	15,881	16,061	14,024	21,613	16,694
Apr-22	15,497	15,507	15,683	13,240	21,650	16,315
May-22	15,068	15,100	15,103	12,678	21,650	15,920
Jun-22	14,600	14,600	14,800	12,546	21,650	15,639
Jul-22	14,432	14,439	14,800	12,013	21,230	15,383
Aug-22	14,339	14,345	14,698	11,735	20,600	15,143
Sep-22	14,033	14,050	14,282	11,022	20,600	14,797
Oct-22	13,339	13,365	13,661	10,662	20,600	14,325
Nov-22	13,803	13,773	14,507	11,904	20,600	14,917
Dec-22	14,061	14,110	15,229	12,110	20,600	15,222
Jan-23	13,861	13,942	15,390	11,834	20,950	15,195
Feb-23	13,700	13,700	15,068	11,452	20,950	14,974
Mar-23	13,676	13,700	14,761	11,359	21,300	14,959
Apr-23	13,493	13,493	14,633	11,209	21,300	14,826
May-23	13,434	13,465	14,590	11,067	21,300	14,771
Jun-23	12,812	12,833	13,937	10,402	21,300	14,257

Source: Coconut Development Board, Ministry of Agriculture and Farmers Welfare

Annex Table 2.8: Trends in Wholesale Prices of Coconut Oil, Palm Oil and Soybean Oil in India

(₹/quintal)

Month	Coconut Oil	Palm Oil	Soybean Oil
Jan-21	20,169	10,562	11,337
Feb-21	20,750	10,737	11,732
Mar-21	20,845	11,335	12,318
Apr-21	20,252	11,843	13,130
May-21	18,844	12,668	14,161
Jun-21	18,488	12,477	14,407
Jul-21	17,686	12,102	14,225
Aug-21	17,799	12,444	14,484
Sep-21	17,501	12,481	14,566
Oct-21	17,345	12,457	14,530
Nov-21	17,412	12,336	14,334
Dec-21	17,156	12,248	14,011
Jan-22	16,436	12,108	13,729
Feb-22	16,314	12,462	13,937
Mar-22	16,694	13,892	15,125
Apr-22	16,315	14,206	15,724
May-22	15,920	14,787	16,219
Jun-22	15,639	14,391	15,995
Jul-22	15,383	13,343	15,329
Aug-22	15,143	13,020	14,884
Sep-22	14,797	12,101	14,486
Oct-22	14,325	11,463	14,241
Nov-22	14,917	11,402	14,644
Dec-22	15,222	11,079	14,510
Jan-23	15,195	10,875	14,348
Feb-23	14,974	10,701	14,076
Mar-23	14,959	10,699	13,773
Apr-23	14,826	10,653	13,444
May-23	14,771	10,492	13,042
Jun-23	14,257	10,216	12,590

Source: 1. Coconut Development Board, Ministry of Agriculture and Farmers Welfare
2. Price Monitoring Cell, Department of Consumer Affairs, Ministry of Consumer Affairs, Food and Public Distribution

Annex Table

Annex Table 3.1: Position of Districts under Different Productivity Bands in Major Coconut Producing States

Periods	<5000 Nuts/ha	5000-10000 Nuts/ha	≥10000 Nuts/ha
	Districts	Districts	Districts
Andhra Pradesh			
TE2012-13	-	Chittoor	East Godavari, Krishna, Srikakulam, Visakapatanam, Vizianagaram, West Godavari
TE2021-22	-	Srikakulam	Chittoor, East Godavari, Krishna, Visakapatanam, Vizianagaram, West Godavari
Karnataka			
TE2012-13	-	Chamarajanagar, Chikmagalur, Davangere, Hassan, Shimoga, Tumkur, Udupi, Uttar Kannad	Chitradurga, Dakshin Kannad, Mandya, Mysore, Ramanagara
TE2021-22	-	Chikmagalur, Chitradurga, Dakshin Kannad, Davangere, Hassan, Mandya, Ramanagara, Shimoga, Tumkur, Uttar Kannad	Chamarajanagar, Mysore, Udupi
Kerala			
TE2012-13	-	Alappuzha, Ernakulam, Idukki, Kannur, Kasargod, Kollam, Kottayam, Kozhikode, Malappuram, Palakkad, Pathanamthitta, Thiruvananthapuram, Thrissur	-
TE2021-22	Ernakulam, Idukki, Kottayam	Alappuzha, Kannur, Kasargod, Kollam, Kozhikode, Malappuram, Palakkad, Pathanamthitta, Thiruvananthapuram, Thrissur, Wayanad	-
Tamil Nadu			
TE2012-13	-	Kanyakumari, Tirunelveli	Coimbatore, Dharmapuri, Dindigul, Erode, Krishnagiri, Madurai, Namakkal, Pudukottai, Salem, Sivaganga, Thanjavur, Theni, Thiruvarur, Thiruchirappally, Tirupur, Vellore, Virudhunagar
TE2021-22	-	Dharmapuri, Kanyakumari, Karur, Pudukottai, Sivaganga, Tenkasi, Tirupur, Virudhunagar	Coimbatore, Dindigul, Erode, Krishnagiri, Madurai, Namakkal, Salem, Thanjavur, Theni, Thiruvarur, Tirupattur, Vellore

Note : Only those districts, which have more than 1 percent share in State's total production have been considered for the analysis

Source: 1. Directorate of Economics and Statistics, Ministry of Agriculture and Farmers Welfare

2. Coconut Development Board, Ministry of Agriculture and Farmers Welfare

Annex Table 3.2 (A): Important Diseases Prevalent in Different States Affecting Coconut Cultivation in India

Diseases	States with Disease Incidence
Root (wilt)	Kerala, districts adjoining Kerala in Tamil Nadu & Karnataka and Goa
Leaf rot	Kerala, Karnataka, Tamil Nadu
Bud rot	All coconut growing States
Ganoderma/ Basal stem rot (Thajavur wilt)	Tamil Nadu, Karnataka, Andhra Pradesh, Kerala
Stem bleeding	Tamil Nadu, Karnataka, Andhra Pradesh, Kerala
Tatipaka	Andhra Pradesh

Source: Coconut Development Board, Ministry of Agriculture and Farmers Welfare

Annex Table 3.2 (B): Important Pests Prevalent in Different States Affecting Coconut Cultivation in India

Major Pests	States with Pest Incidence
Rhinoceros beetle	All coconut growing States
Red palm weevil	All coconut growing States
Leaf Eating Caterpillar	Karnataka, Tamil Nadu, Andhra Pradesh, Odisha
Eriophyid Mite	All coconut growing States
Whitefly	All coconut growing States

Source: Coconut Development Board, Ministry of Agriculture and Farmers Welfare

Annex Table

Annex Table 4.1: Production Share of Major Producers of Coconut, TE2012 and TE2022 and Coconut Oil, TE2012-13 and TE2022-23

Coconut (in million nuts)				
	Production		Share (%)	
Country	**TE2012**	**TE2022**	**TE2012**	**TE2022**
India	15005	20097	23.7	30.5
Philippines	15540	14713	24.5	22.3
Indonesia	15854	14142	25.0	21.5
Sri Lanka	2755	3053	4.3	4.6
Brazil	3276	2459	5.2	3.7
Papua New Guinea	1364	1483	2.2	2.2
Vietnam	995	1410	1.6	2.1
World	**63353**	**65912**		
Coconut Oil ('000 tonnes)				
	Production		**Share (%)**	
Country	**TE2012-13**	**TE2022-23**	**TE2012-13**	**TE2022-23**
Philippines	1712	1624	50.0	44.2
Indonesia	943	1029	27.6	28.0
India	397	576	11.6	15.7
Vietnam	102	180	3.0	4.9
World	**3421**	**3670**		

Source: 1. International Coconut Community for coconut production
2. United States Department of Agriculture for Coconut Oil Production

Annex Table 4.2: Share of Major Vegetable Oils in Global Production

(in million tonnes)

Oils	Production (TE2012-13)	% share	Production (TE2022-23)	% share
Coconut	3.7	2.4	3.7	1.7
Cottonseed	5.2	3.3	4.9	2.3
Olive	3.1	2.0	2.9	1.4
Palm	52.0	33.5	74.7	35.5
Palm Kernel	6.0	3.9	8.6	4.1
Peanut	5.1	3.3	6.4	3.1
Rapeseed	24.1	15.5	30.5	14.5
Soybean	42.2	27.2	59.0	28.0
Sunflowerseed	14.0	9.0	19.9	9.5
Total	**155.3**		**210.5**	

Source: United States Department of Agriculture (Oilseeds: World Markets and Trade Report July 2013 & July 2023)

Annex Table 4.3: Share of top Exporters/ Importers of Coconut Oil, TE2012-13 and TE2022-23

(in thousand tonnes)

Country	TE2012-13	% share of total	TE2022-23	% share of total
Exporters				
Philippines	969	52.0	1009	50.5
Indonesia	665	35.7	638	31.9
Malaysia	137	7.4	199	10.0
European Union	16	0.9	33	1.7
Papua New Guinea	31	1.7	39	2.0
World	**1862**		**1997**	
Importers				
European Union	687	37.4	668	32.9
USA	522	28.5	485	23.9
Malaysia	169	9.2	242	11.9
China	180	9.8	211	10.4
Sri Lanka	4	0.2	64	3.2
World	**1834**		**2030**	

Source: United States Department of Agriculture

Annex Table

Annex Table 4.4: Trends in India's Exports of Coconut and Coconut Products, 2013-14 to 2022-23

(Quantity in tonnes, Value in ₹ Lakh)

S. No.	Item	2013-14		2014-15		2015-16		2016-17		2017-18		2018-19		2019-20		2020-21		2021-22		2022-23	
		Qty	*Value*	*Qty*	*Value*	*Qty*	*Value*	*Qty*	*Value*	*Qty*	*Value*	*Qty*	*Value*	*Qty*	*Value*	*Qty*	*Value*	*Qty*	*Value*	*Qty*	*Value*
1	Coconuts (fresh)	30397	7235	29020	8928	37467	11279	51701	14544	38648	19448	34753	17929	29043	16059	28766	17059	41472	15920	47562	16872
2	Coconuts (dried)	22250	16196	16974	21249	22010	20754	26310	21834	12934	15607	16788	19994	10504	11923	8773	11305	8299	10174	2773	2993
3	Desiccated coconut	5166	3869	3244	2666	3443	3151	14563	14451	8422	11213	1638	1420	1439	1177	1857	2858	7457	11949	4612	6188
4	Other coconuts excluding (fresh/dried)	11103	4148	11533	5587	15447	7111	33244	11338	9390	6079	5023	3947	4417	3973	6069	5111	6140	5491	6046	8636
5	(a) Coconut oil (crude)	31	66	28	51	75	180	16439	15777	305	535	11	24	52	166	244	944	4717	7256	6519	10524
	(b) Coconut oil (refined)	6674	8510	7189	14606	6731	13816	17060	22249	7018	13782	6803	13648	7819	14004	12026	24643	16043	35729	16869	34816
6	Other residues of coconut or Copra	549	171	418	85	141	34	197	64	185	196	371	73	154	40	26	41	136	70	105	69
7	Fresh Endocarp	1162	431	3681	1064	2048	706	5415	1354	2962	862	4611	1762	3179	903	10356	5172	12258	5434	14032	5145
8	Dried Endocarp	150	45	133	137	132	120	712	539	227	210	374	260	420	656	978	1662	1056	1904	2895	2879
9	Other Endocarp	637	172	489	237	390	188	1375	958	1195	1428	1246	1714	1573	1644	1592	2603	1056	1593	1551	2769
10	Oilcake (defatted/ expellers)	37	16	28	7	0	0	34	8	24	6	0	0	20	8	24	22	38	41	33	24
11	Coconut shell (Raw)	613	218	575	334	330	220	183	166	564	530	487	435	97	77	65	93	131	97	35	46
12	Activated Carbon	68435	60786	64562	66458	71673	74756	85396	81117	93392	95127	97050	134411	103071	118460	113536	151427	137364	206414	150210	236976
13	Copra	11957	7244	7284	8093	4389	3648	18227	12978	3028	3484	2204	3451	2333	3614	2295	3323	11326	13942	20662	21386
14	Others		6031		5983		2619		6831		7333		5470		3514		3218		7691		6102
	Total		**115137**		**135485**		**138582**		**204206**		**175841**		**204538**		**176217**		**229481**		**323706**		**355423**

Source: 1. Directorate General of Commercial Intelligence and Statistics (DGCIS), Ministry of Commerce and Industry

2. Coconut Development Board, Ministry of Agriculture & Farmers Welfare

Annex Table 4.5: Trends in India's Imports of Coconut and Coconut Products, 2013-14 to 2022-23

(Quantity in tonnes, Value in ₹ Lakh)

S. No.	Item	2013-14		2014-15		2015-16		2016-17		2017-18		2018-19		2019-20		2020-21		2021-22		2022-23	
		Qty	*Value*	*Qty*	*Value*	*Qty*	*Value*	*Qty*	*Value*	*Qty*	*Value*	*Qty*	*Value*	*Qty*	*Value*	*Qty*	*Value*	*Qty*	*Value*	*Qty*	*Value*
1	Coconut (Fresh)	-	-	-	-	-	-	-	-	-	-	26	14	22	12	0	0	57	34	0	0
2	Other coconut excluding fresh/dried	2	4	-	-	-	-	-	-	125	142	6	13	-	0	274	410	34	79	1	9
3	Desiccated Coconut	13	12	246	371	66	67	-	-	314	314	5340	5225	17937	17857	5619	8699	5801	9074	4817	7654
4	Other Endocarp	30	10	-	-	-	-	-	-	1	1	-	-	1	3	0	0	-	-	0	1
5	(a) Coconut oil (Crude)	0	0	6205	4943	2415	1890	-	-	-	-	0	0	0	0	285	269	192	300	64	108
	(b) Coconut oil (Refined)	1646	873	3468	3076	2760	2257	9	37	566	630	466	333	2451	1400	428	296	33	93	31	94
6	Other residues of coconut or copra	-	-	33	7	270	28	-	-	727	530	7586	1653	1170	742	375	324	130	106	199	73
7	Coconut shell charcoal	10380	2341	14880	4042	13890	4411	350	108	40	7	23010	8270	8940	2445	113562	2906	58648	2704	36025	4477
8	Activated Carbon	9767	16060	12468	19050	12700	20006	12951	22708	16295	28292	19606	37963	21171	39343	18650	38816	20644	44572	19147	56167
9	Copra	-	-	281	203	290	206	-	-	4602	4183	11785	8011	13270	7637	12971	9587	8589	7899	1195	795
10	Oilcake (Solvent and Expeller variety)	25798	3725	88290	13619	157727	24270	165295	26529	211390	30321	218046	35401	281527	49654	262405	51761	224813	52179	127507	32098
11	Others		88		59		119		159		306		837		512		173		340		471
	Total		**23112**		**45369**		**53255**		**49542**		**64726**		**97720**		**119607**		**113241**		**117379**		**101949**

Source: 1. Directorate General of Commercial Intelligence and Statistics (DGCIS), Ministry of Commerce and Industry

2. Coconut Development Board, Ministry of Agriculture & Farmers Welfare

Annex Table 4.6: India's Exports of Coconut Oil to Major Countries

(Quantity in tonnes)

Country	2020-2021	2021-2022	2022-2023
United Arab Emirates	3901.1	4516.8	6150.9
Netherland	24.6	2011.8	2179.0
Indonesia	-	-	2002.1
Saudi Arab	1673.1	1834.9	1911.4
Sri Lanka	65.1	1329.7	1818.2
Malaysia	234.5	3114.1	1458.9
Iran	-	-	1175.1
Qatar	739.8	924.7	1019.2
Oman	466.7	583.9	693.8
USA	1256.4	1374.3	689.4

Source: Directorate General of Commercial Intelligence and Statistics (DGCIS), Ministry of Commerce & Industry

Annex Table 4.7: Trends in India's Export of Coir and Coir Products, 2013-14 to 2022-23

(Quantity in tonnes, Value in ₹ Lakh)

S. No.	Item	2013-14		2014-15		2015-16		2016-17		2017-18		2018-19		2019-20		2020-21		2021-22		2022-23#	
		Qty	*Value*	*Qty*	*Value*	*Qty*	*Value*	*Qty*	*Value*	*Qty*	*Value*	*Qty*	*Value*	*Qty*	*Value*	*Qty*	*Value*	*Qty*	*Value*	*Qty*	*Value*
1	Coir Fibre	173902	32878	219103	41923	255293	41767	370357	53914	374320	70178	299279	60164	308457	49843	354123	62891	399428	63656	*	*
2	Coir Yarn	4247	2848	4070	3001	4134	2821	4426	2948	3328	2458	3408	2642	3028	2301	3849	2919	4285	3331	2726	2042
3	Handloom Mats	22609	23624	25354	23947	20386	22280	20144	21316	18277	18614	19367	21911	16910	19630	20527	24662	21079	26173	17508	21179
4	Tufted Mats	43752	41776	41284	39726	45770	44316	51718	48443	54279	49591	54131	52225	58300	56344	81799	80691	92810	100115	74486	81857
5	Powerloom Mats	234	278	161	225	280	367	166	196	37	58	8	16	26	50	65	107	408	754	337	723
6	Handloom Matting	3426	3354	1667	1835	1706	1969	1273	1535	1117	1395	1071	1436	1177	1366	1418	1712	1110	1423	895	1341
7	Powerloom Matting	0	0	28	44	16	26	0	0	131	216	7	17	5	9	11	19	4	10	0	0
8	Coir Geo- Textiles	4468	3504	4236	3270	4520	3532	6219	4481	5845	3997	7674	5973	8068	6389	8583	7059	6978	6166	7318	6728
9	Coir Rugs & Carpet	93	106	135	146	307	283	205	272	254	270	195	244	367	484	327	428	580	862	495	743
10	Coir Rope	498	390	614	392	517	397	484	389	491	402	486	440	512	466	505	492	716	650	535	500
11	Curled Coir	11263	2948	12621	3732	9470	2510	10356	2419	8800	2316	10768	3137	11290	2682	9381	2422	9943	2623	11450	2922
12	Rubberised Coir	965	1561	897	1411	678	972	888	1296	900	1389	807	1030	578	787	982	1321	644	1097	252	459
13	Coir Pith	271495	34173	316425	43295	408897	68809	490552	90539	548479	101847	566661	123208	579980	134963	680898	191974	696175	225918	417253	125186
14	Coir Other Sorts	89	163	71	86	46	95	256	417	306	498	183	362	298	477	744	1201	696	1230	832	1533
	Total	**537040**	**147604**	**626666**	**163034**	**752020**	**190143**	**957044**	**228165**	**1016564**	**253228**	**964046**	**272805**	**988996**	**275790**	**1163213**	**377898**	**1234855**	**434005**	**534087**	**245215**

Note: 1. #: data upto December, 2022

*2. *: data not provided*

Source: Coir Board of India, Ministry of Micro, Small & Medium Enterprises

Annex Table

Annex Table 5.1: Actual Costs and Gross Returns Over Actual cost of Cultivation of Coconut in Major Coconut Producing States for 2019-20, 2020-21 and 2021-22

Year/ State	CoC A_2	CoC A_2+FL	GVO	Gross Returns over CoC A_2		Gross Returns over CoC A_2+FL	
	₹/ha			₹/ha (Col.4 - Col.2)	Percent (Col.5 / Col.2)*100	₹/ha (Col.4 - Col.3)	Percent (Col.7 / Col.3)*100
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Andhra Pradesh							
2019-20	55395	57693	109903	54509	98.4	52210	90.5
2020-21	38335	40463	166536	128201	334.4	126073	311.6
2021-22	38959	41226	173918	134960	346.4	132693	321.9
Average	**44230**	**46461**	**150119**	**105890**	**239.4**	**103658**	**223.1**
Karnataka							
2019-20	22201	31670	37152	14951	67.3	5483	17.3
2020-21	51675	90931	114252	62578	121.1	23321	25.6
2021-22	49675	88117	115871	66196	133.3	27754	31.5
Average	**41184**	**70239**	**89092**	**47908**	**116.3**	**18853**	**26.8**
Kerala							
2019-20	120940	147636	231055	110116	91.0	83419	56.5
2020-21	106778	146202	266597	159820	149.7	120396	82.3
2021-22	114182	160046	296325	182143	159.5	136279	85.1
Average	**113966**	**151295**	**264659**	**150693**	**132.2**	**113365**	**74.9**
Tamil Nadu							
2019-20	71750	94304	190008	118258	164.8	95705	101.5
2020-21	74008	89141	193909	119902	162.0	104769	117.5
2021-22	70889	93722	230971	160081	225.8	137249	146.4
Average	**72216**	**92389**	**204963**	**132747**	**183.8**	**112574**	**121.8**
All-India							
2019-20	74254	92919	150916	76662	103.2	57998	62.4
2020-21	77469	109210	194729	117260	151.4	85519	78.3
2021-22	79705	115488	217670	137965	173.1	102182	88.5
Average	**77143**	**105872**	**187772**	**110629**	**143.4**	**81900**	**77.4**

Note 1: CoC of coconut is inclusive of establishment cost

2: All-India CoC, GVO and gross return are weighted average of respective CoC, GVO and gross returns of projected States

Source: CACP calculations using CS data

Annex Table 5.2(a): Monthly Average Daily Wage Rates for Agricultural Labour (Man) at Current Prices in Major Coconut Growing States during 2019 to 2023

(₹/day)

Year/Month	AP	GJ	KA	KL	MH	OD	TN	WB	IND
2019									
July	331	247	346	741	305	234	487	289	361
August	340	247	348	741	306	239	495	289	365
September	346	249	350	741	305	236	496	290	366
October	348	249	351	741	308	237	492	291	367
November	357	247	352	741	308	237	496	291	369
December	370	250	353	741	307	239	497	297	374
2020									
January	376	250	355	741	309	242	500	299	376
February	377	250	357	741	305	242	506	302	377
March	374	250	355	741	305	250	512	301	378
April	374	250	355	741	305	250	512	301	378
May	374	250	355	741	305	250	512	301	378
June	370	244	373	763	314	254	523	306	384
July	364	248	367	744	315	244	528	339	386
August	356	248	357	744	315	255	529	315	381
September	363	252	356	744	324	252	530	308	383
October	367	252	358	744	329	255	530	309	385
November	373	252	362	744	329	261	543	314	390
December	383	252	367	744	326	266	546	320	393
2021									
January	388	252	366	756	327	270	563	322	398
February	385	252	370	756	330	274	564	328	400
March	377	257	370	756	331	265	574	329	400
April	395	257	369	756	335	262	574	329	404
May	385	257	367	756	340	256	574	330	402
June	383	259	369	756	342	252	573	330	402
July	392	262	367	756	336	281	570	334	405
August	390	263	369	756	340	280	572	335	406
September	393	263	376	792	346	275	570	332	410
October	405	263	380	792	343	271	574	332	413
November	405	263	380	792	338	270	572	331	411
December	407	265	386	792	339	291	571	332	415

(Contd…)

Annex Table 5.2(a): Monthly Average Daily Wage Rates for Agricultural Labour (Man) at Current Prices in Major Coconut Growing States during 2019 to 2023

(₹/day)

Year/Month	AP	GJ	KA	KL	MH	OD	TN	WB	IND
2022									
January	395	266	387	792	340	292	571	334	413
February	400	268	395	792	342	283	575	332	415
March	417	268	395	794	342	281	575	333	418
April	433	273	394	794	344	289	575	336	423
May	437	274	391	794	351	293	576	337	426
June	439	278	395	794	353	295	576	339	428
July	445	282	395	802	353	301	573	345	431
August	451	284	401	809	356	304	573	348	435
September	458	285	407	809	354	311	573	348	437
October	467	285	417	809	356	309	573	348	440
November	475	286	425	809	356	313	576	348	444
December	477	288	426	809	359	316	579	348	445
2023									
January	477	290	426	811	360	319	584	348	447
February	483	291	426	816	360	319	585	353	449
March	487	294	430	819	361	320	586	356	452
April	493	294	432	822	359	323	582	357	453
May	501	295	433	822	360	323	589	359	456
June	504	296	433	822	364	323	597	359	459

Note 1: Daily Wage rate - Average of five operations i.e., Ploughing, Sowing, Weeding, Transplanting and Harvesting
2: All-India daily wage rate is weighted average of daily wage rates of States mentioned in the Table
3: State-wise data for agricultural wage rate for April and May, 2020 have not been released/published by Labour Bureau. Hence, the wage rate data for March, 2020 have been taken for April and May, 2020 for maintaining continuity in the data.

Source: Labour Bureau, Ministry of Labour and Employment, Government of India and CACP Calculations

Annex Table 5.2(b): Monthly Consumer Price Index for Agricultural Labourers (CPI-AL) in Major Coconut Growing States during 2019 to 2023

Year/Month	AP	GJ	KA	KL	MH	OD	TN	WB	IND
2019									
July	1081	970	1062	1030	1071	844	1101	833	1011
August	1089	979	1069	1022	1086	847	1110	840	1018
September	1098	994	1081	1019	1099	850	1128	856	1029
October	1108	1009	1098	1033	1106	865	1133	872	1041
November	1128	1017	1107	1040	1118	871	1152	883	1054
December	1151	1035	1127	1056	1129	879	1177	880	1069
2020									
January	1155	1033	1129	1069	1132	879	1179	870	1070
February	1151	1026	1118	1055	1139	871	1178	864	1066
March	1144	1025	1108	1051	1137	865	1176	863	1061
April	1146	1035	1122	1050	1150	865	1194	868	1069
May	1154	1038	1141	1062	1159	871	1208	871	1079
June	1157	1043	1145	1054	1162	878	1214	869	1081
July	1158	1039	1150	1051	1163	883	1216	871	1082
August	1160	1040	1156	1045	1166	883	1229	898	1089
September	1170	1053	1163	1049	1170	899	1234	909	1098
October	1187	1071	1181	1050	1185	917	1242	933	1113
November	1201	1080	1194	1050	1187	923	1260	937	1122
December	1191	1060	1184	1049	1177	912	1253	919	1111
2021									
January	1183	1051	1183	1064	1168	903	1250	899	1104
February	1190	1050	1189	1075	1164	903	1252	879	1104
March	1193	1045	1188	1073	1160	900	1243	883	1102
April	1189	1044	1204	1076	1164	903	1249	900	1107
May	1201	1045	1213	1081	1181	912	1247	911	1116
June	1210	1051	1222	1091	1187	917	1256	919	1124
July	1211	1061	1231	1096	1197	920	1249	920	1127
August	1226	1072	1240	1083	1194	921	1247	921	1131
September	1218	1074	1244	1085	1195	918	1237	931	1130
October	1223	1090	1254	1092	1213	933	1250	951	1143
November	1241	1099	1260	1106	1216	942	1270	959	1154
December	1251	1106	1267	1120	1215	942	1290	963	1162

(Contd…)

Annex Table 5.2(b): Monthly Consumer Price Index for Agricultural Labourers (CPI-AL) in Major Coconut Growing States during 2019 to 2023

Year/Month	AP	GJ	KA	KL	MH	OD	TN	WB	IND
2022									
January	1253	1109	1259	1124	1213	943	1292	958	1161
February	1246	1110	1253	1115	1209	945	1292	967	1159
March	1247	1117	1246	1113	1219	949	1282	963	1159
April	1260	1130	1247	1133	1233	958	1275	981	1169
May	1276	1145	1260	1153	1246	963	1294	989	1183
June	1280	1153	1261	1163	1254	972	1299	990	1188
July	1281	1161	1262	1166	1259	979	1301	999	1192
August	1286	1171	1271	1176	1273	985	1312	1004	1201
September	1296	1181	1275	1185	1283	994	1321	1014	1210
October	1308	1185	1288	1192	1291	1002	1337	1029	1221
November	1316	1188	1293	1193	1302	1007	1345	1032	1227
December	1322	1184	1295	1199	1297	1004	1350	1025	1228
2023									
January	1328	1186	1301	1204	1302	1002	1356	1015	1230
February	1332	1194	1305	1206	1304	1001	1359	1013	1232
March	1338	1202	1308	1207	1306	999	1360	1022	1236
April	1341	1205	1315	1212	1313	1004	1367	1034	1243
May	1358	1210	1325	1211	1322	1000	1371	1043	1250
June	1378	1227	1342	1211	1328	1007	1391	1045	1262

Note: All-India CPI-AL is weighted average of CPI-AL of States mentioned in the Table
Source: Labour Bureau, Ministry of Labour and Employment, Government of India and CACP Calculations

Annex Table

Annex Table 5.3: Monthly Wholesale Price Index (Base: 2011 -12) of Major Farm Inputs during 2021 to 2023

Year	High Speed Diesel	Fertilizers and nitrogen compounds	Electricity	Manufacture of Agricultural and Forestry Machinery	Lube Oils	Cattle Feed	Fodder	Pesticides and other agrochemical products	Index of Farm Inputs
2021									
July	121.8	127.3	98.2	126.4	162.3	199.2	173.8	128.9	121.7
August	120.7	128.1	106.4	127.0	162.3	206.0	174.6	130.1	124.3
September	118.1	127.7	116.7	129.0	162.3	205.6	176.4	129.9	126.8
October	131.7	128.3	116.7	129.4	162.3	196.7	178.3	131.6	131.1
November	141.1	129.6	131.5	129.8	162.3	194.1	176.8	131.4	138.7
December	136.1	131.1	135.3	130.5	162.3	198.1	183.9	133.2	139.1
2022									
January	141.2	133.4	135.3	131.9	162.3	197.1	189.1	136.2	141.6
February	147.5	133.8	131.8	132.1	162.3	200.5	192.1	139.7	142.9
March	157.8	135.1	122.2	132.8	162.3	207	203.1	141.4	144.2
April	169.3	137.6	122.2	133.5	171.6	211.4	203.4	142.3	148.6
May	204.3	139.2	126.4	133.8	171.6	208.4	206.8	142.1	161.2
June	207.6	143.3	133.7	135	171.6	208.5	210.5	144.4	165.5
July	210	144.5	133.8	136.6	176.3	210.6	215.7	145.4	167.1
August	194.7	144.9	136.5	136.4	183.6	214.4	219.2	145.9	163.7
September	196	145.1	140.6	137.1	183.6	212.5	215.6	145.5	165.2
October	188.4	148	152.9	138	183.6	210.6	213.6	144.5	166.9
November	200.5	147.9	157.9	139	183.6	215.2	231.5	144.5	173.3
December	184.4	147.3	157.7	138.7	183.6	215.2	240.1	143.8	168.6

(Contd…)

Annex Table

Annex Table 5.3: Monthly Wholesale Price Index (Base: 2011-12) of Major Farm Inputs during 2021 to 2023

Year	High Speed Diesel	Fertilizers and nitrogen compounds	Electricity	Manufacture of Agricultural and Forestry Machinery	Lube Oils	Cattle Feed	Fodder	Pesticides and other agrochemical products	Index of Farm Inputs
2023									
January	181.4	147.4	156.7	139.4	183.6	216.9	248.0	141.6	167.8
February	183.8	146.7	152.4	139.4	183.6	217.4	238.8	140.7	166.6
March	176.5	146.0	148.4	140.0	183.6	218.3	237.9	140.1	163.0
April	171.7	145.5	146.8	140.9	183.6	218.9	237.4	136.6	160.8
May	169.5	144.6	138.6	140.9	190.2	215.9	227.5	135.8	157.0
June	169.0	144.2	134.5	141.4	190.2	214.7	222.7	134.7	155.3

Note: WPI of Farm Inputs is weighted average of WPIs of farm inputs mentioned in the Table
Source: Office of the Economic Adviser, Ministry of Commerce and Industry, Government of India

Annex Table 5.4 (a) : Coconut : Break-up of Cost of Cultivation for Andhra Pradesh

(₹/ha)

Cost Items	2019-20	2020-21	2021-22	% change in 2020-21 over 2019-20	% change in 2021-22 over 2020-21
Operational Cost	**54309**	**38098**	**38769**	**-29.8**	**1.8**
Human Labour					
Casual	25235	24760	25141	-1.9	1.5
Attached	26	0	0	-	-
Family	2298	2023	2151	-12.0	6.4
Total	27559	26782	27292	-2.8	1.9
Bullock Labour					
Hired	0	0	0	-	-
Owned	0	0	0	-	-
Total	0	0	0	-	-
Machine Labour					
Hired	0	420	441	-	4.9
Owned	0	0	0	-	-
Total	0	420	441	-	4.9
Seed	0	0	0	-	-
Fertilisers and Manure					
Fertilisers	23566	6487	6409	-72.5	-1.2
Manure	0	1285	1405	-	9.4
Total	23566	7771	7814	-67.0	0.5
Other Inputs					
Insecticides	0	0	0	-	-
Irrigation charges	0	245	259	-	5.7
Interest on working capital	3059	2122	2154	-30.6	1.5
Miscellaneous	125	757	810	506.6	6.9
Crop Insurance	0	0	0	-	-
Payment to Contractor	-	0	0	-	-
Fixed Cost	**38334**	**50506**	**52720**	**31.8**	**4.4**
Rental value of owned land	32704	49961	52175	52.8	4.4
Rent paid for leased-in land	0	0	0	-	-
Land revenue, cesses & taxes	0	0	0	-	-
Depreciation on implements & Farm buildings	3384	360	348	-89.4	-3.6
Interest on fixed capital	2246	185	197	-91.8	6.2
Establishment Cost	**0**	**4618**	**4933**	**-**	**6.8**
Total cost including establishment cost C_2 (₹/ha)	**92643**	**93223**	**96422**	**0.6**	**3.4**
Paid-out cost including establishment cost A_2 (₹/ha)	**55395**	**38335**	**38959**	**-30.8**	**1.6**
Paid-out cost including establishment cost & family labour A_2+FL (₹/ha)	**57693**	**40463**	**41226**	**-29.9**	**1.9**
Ratio of Main Product to GVO	**0.9670**	**0.9984**	**0.9984**	**3.2**	**0.0**
Yield of Coconut (Nuts/ha)	**18353**	**16218**	**16725**	**-11.6**	**3.1**
Paid-out cost including establishment cost A_2 (₹/nut)	**2.91**	**2.32**	**2.29**	**-20.3**	**-1.3**
Paid-out cost including establishment cost & family labour A_2+FL (₹/nut)	**3.03**	**2.45**	**2.42**	**-19.1**	**-1.2**
Total cost including establishment cost C_2 (₹/nut)	**4.87**	**5.73**	**5.74**	**17.7**	**0.2**

Note 1: Total cost may not match due to rounding off the figures

2: Per hectare establishment cost C_2 has been segregated into paid-out cost (A_2) and paid-out cost including family labour (A_2+FL) as per respective ratios in total CoC without establishment (C_2), and accordingly respective CoCs of coconut have been derived

3: CoP A_2 and A_2+FL with establishment cost of coconut have been derived by using respective CoC with establishment cost, ratio of main product to GVO and yield

Source: Economics and Statistics Division, Department of Agriculture and Farmers Welfare, Ministry of Agriculture and Farmers Welfare

Annex Table

Annex Table 5.4 (b) : Coconut : Break-up of Cost of Cultivation for Karnataka

(₹/ha)

Cost Items	2019-20	2020-21	2021-22	% change in 2020-21 over 2019-20	% change in 2021-22 over 2020-21
Operational Cost	**22908**	**70591**	**71447**	**208.1**	**1.2**
Human Labour					
Casual	6725	19229	19746	185.9	2.7
Attached	193	0	0	-	-
Family	7034	31203	31880	343.6	2.2
Total	13952	50432	51626	261.5	2.4
Bullock Labour					
Hired	0	0	0	-	-
Owned	0	558	493	-	-11.6
Total	0	558	493	-	-11.6
Machine Labour					
Hired	2686	2983	3308	11.1	10.9
Owned	10	0	0	-	-
Total	2696	2983	3308	10.7	10.9
Seed	0	0	0	-	-
Fertilisers and Manure					
Fertilisers	501	2319	774	362.5	-66.6
Manure	2213	4946	5825	123.5	17.8
Total	2714	7265	6599	167.6	-9.2
Other Inputs					
Insecticides	297	0	327	-	-
Irrigation charges	2031	6466	6163	218.3	-4.7
Interest on working capital	934	2317	2327	148.1	0.5
Miscellaneous	285	570	602	100.4	5.6
Crop Insurance	0	0	0	-	-
Payment to Contractor	-	0	0	-	-
Fixed Cost	**13520**	**30125**	**30373**	**122.8**	**0.8**
Rental value of owned land	8133	26165	26745	221.7	2.2
Rent paid for leased-in land	0	0	0	-	-
Land revenue, cesses & taxes	27	48	51	79.7	5.4
Depreciation on implements & Farm buildings	594	1638	1579	176.0	-3.6
Interest on fixed capital	4767	2274	1998	-52.3	-12.1
Establishment Cost	**12605**	**25994**	**20956**	**106.2**	**-19.4**
Total cost including establishment cost C_2 (₹/ha)	**49033**	**126710**	**122776**	**158.4**	**-3.1**
Paid-out cost including establishment cost A_2 (₹/ha)	**22201**	**51675**	**49675**	**132.8**	**-3.9**
Paid-out cost including establishment cost & family labour A_2+FL (₹/ha)	**31670**	**90931**	**88117**	**187.1**	**-3.1**
Ratio of Main Product to GVO	**0.9707**	**0.9771**	**0.9757**	**0.7**	**-0.1**
Yield of Coconut (Nuts/ha)	**2641**	**8942**	**7286**	**238.6**	**-18.5**
Paid-out cost including establishment cost A_2 (₹/nut)	**8.28**	**5.67**	**6.83**	**-31.5**	**20.5**
Paid-out cost including establishment cost & family labour A_2+FL (₹/nut)	**11.81**	**9.98**	**12.12**	**-15.5**	**21.4**
Total cost including establishment cost C_2 (₹/nut)	**17.80**	**13.90**	**16.51**	**-21.9**	**18.8**

Note 1: Total cost may not match due to rounding off the figures

2: Per hectare establishment cost C_2 has been segregated into paid-out cost (A_2) and paid-out cost including family labour (A_2+FL) as per respective ratios in total CoC without establishment (C_2), and accordingly respective CoCs of coconut have been derived

3: CoP A_2 and A_2+FL with establishment cost of coconut have been derived by using respective CoC with establishment cost, ratio of main product to GVO and yield

Source: Economics and Statistics Division, Department of Agriculture and Farmers Welfare, Ministry of Agriculture and Farmers Welfare

Annex Table

Annex Table 5.4 (c) : Coconut : Break-up of Cost of Cultivation for Kerala

(₹/ha)

Cost Items	2019-20	2020-21	2021-22	% change in 2020-21 over 2019-20	% change in 2021-22 over 2020-21
Operational Cost	**120781**	**120146**	**133612**	**-0.5**	**11.2**
Human Labour					
Casual	66876	59975	66188	-10.3	10.4
Attached	684	0	0	-	-
Family	22061	32837	38801	48.9	18.2
Total	89620	92812	104989	3.6	13.1
Bullock Labour					
Hired	0	0	0	-	-
Owned	0	0	0	-	-
Total	0	0	0	-	-
Machine Labour					
Hired	75	112	121	49.2	8.3
Owned	0	0	0	-	-
Total	75	112	121	49.2	8.3
Seed	0	0	0	-	-
Fertilisers and Manure					
Fertilisers	1400	2666	3132	90.5	17.5
Manure	22502	17874	18104	-20.6	1.3
Total	23902	20540	21236	-14.1	3.4
Other Inputs					
Insecticides	0	0	0	-5.9	3.1
Irrigation charges	979	910	1025	-7.1	12.7
Interest on working capital	5807	5136	5577	-11.6	8.6
Miscellaneous	397	636	663	60.2	4.2
Crop Insurance	0	0	0	-	-
Payment to Contractor	-	0	0	-	-
Fixed Cost	**48195**	**55838**	**61932**	**15.9**	**10.9**
Rental value of owned land	46223	53319	59265	15.4	11.2
Rent paid for leased-in land	0	0	0	-	-
Land revenue, cesses & taxes	644	898	1029	39.5	14.7
Depreciation on implements & Farm buildings	574	731	757	27.3	3.5
Interest on fixed capital	753	890	881	18.1	-1.0
Establishment Cost	**35509**	**35300**	**35597**	**-0.6**	**0.8**
Total cost including establishment cost C_2	**204484**	**211285**	**231141**	**3.3**	**9.4**
Paid-out cost including establishment cost	**120940**	**106778**	**114182**	**-11.7**	**6.9**
Paid out cost including establishment cost & family labour A_2+FL (₹/ha)	**147636**	**146202**	**160046**	**-1.0**	**9.5**
Ratio of Main Product to GVO	**0.9757**	**0.9733**	**0.9746**	**-0.3**	**0.1**
Yield of Coconut (Nuts/ha)	**15220**	**14078**	**16301**	**-7.5**	**15.8**
Paid-out cost including establishment cost	**7.80**	**7.45**	**6.91**	**-4.5**	**-7.2**
Paid out cost including establishment cost & family labour A_2+FL (₹/nut)	**9.52**	**10.20**	**9.69**	**7.1**	**-5.0**
Total cost including establishment cost C_2	**13.17**	**14.68**	**13.86**	**11.5**	**-5.6**

Note 1: Total cost may not match due to rounding off the figures

2: Per hectare establishment cost C_2 has been segregated into paid-out cost (A_2) and paid-out cost including family labour (A_2+FL) as per respective ratios in total CoC without establishment (C_2), and accordingly respective CoCs of coconut have been derived

3: CoP A_2 and A_2+FL with establishment cost of coconut have been derived by using respective CoC with establishment cost, ratio of main product to GVO and yield

Source: Economics and Statistics Division, Department of Agriculture and Farmers Welfare, Ministry of Agriculture and Farmers Welfare

Annex Table

Annex Table 5.4 (d) : Coconut : Break-up of Cost of Cultivation for Tamil Nadu

(₹/ha)

Cost Items	2019-20	2020-21	2021-22	% change in 2020-21 over 2019-20	% change in 2021-22 over 2020-21
Operational Cost	**77424**	**77225**	**79565**	**-0.3**	**3.0**
Human Labour					
Casual	25189	33484	32160	32.9	-4.0
Attached	1019	1182	584	16.0	-50.6
Family	18827	13304	19611	-29.3	47.4
Total	45035	47969	52354	6.5	9.1
Bullock Labour					
Hired	0	0	0	-	-
Owned	0	0	0	-	-
Total	0	0	0	-	-
Machine Labour					
Hired	2132	2921	2944	37.0	0.8
Owned	0	0	0	-	-
Total	2132	2921	2944	37.0	0.8
Seed	0	0	0	-	-
Fertilisers and Manure					
Fertilisers	9108	4512	5186	-50.5	14.9
Manure	2029	3918	3241	93.1	-17.3
Total	11137	8430	8427	-24.3	0.0
Other Inputs					
Insecticides	117	134	157	14.9	16.7
Irrigation charges	15328	13713	11925	-10.5	-13.0
Interest on working capital	3447	3760	3527	9.1	-6.2
Miscellaneous	228	297	231	30.4	-22.1
Crop Insurance	0	0	0	-	-
Payment to Contractor	-	0	0	-	-
Fixed Cost	**60664**	**58276**	**57307**	**-3.9**	**-1.7**
Rental value of owned land	42692	42177	43904	-1.2	4.1
Rent paid for leased-in land	0	0	0	-	-
Land revenue, cesses & taxes	13	9	9	-34.1	3.0
Depreciation on implements & Farm buildings	1284	1130	923	-12.0	-18.3
Interest on fixed capital	16675	14960	12471	-10.3	-16.6
Establishment Cost	**27333**	**18634**	**22487**	**-31.8**	**20.7**
Total cost including establishment cost C_2	**165422**	**154135**	**159359**	**-6.8**	**3.4**
Paid-out cost including establishment cost A_2	**71750**	**74008**	**70889**	**3.1**	**-4.2**
Paid-out cost including establishment cost & family labour A_2+FL (₹/ha)	**94304**	**89141**	**93722**	**-5.5**	**5.1**
Ratio of Main Product to GVO	**0.9559**	**0.9568**	**0.9629**	**0.1**	**0.6**
Yield of Coconut (Nuts/ha)	**14924**	**13188**	**15340**	**-11.6**	**16.3**
Paid-out cost including establishment cost A_2	**5.03**	**5.35**	**4.46**	**6.4**	**-16.6**
Paid-out cost including establishment cost & family labour A_2+FL (₹/nut)	**6.61**	**6.44**	**5.90**	**-2.6**	**-8.4**
Total cost including establishment cost C_2	**10.62**	**11.25**	**10.06**	**5.9**	**-10.6**

Note 1: Total cost may not match due to rounding off the figures

2: Per hectare establishment cost C_2 has been segregated into paid-out cost (A_2) and paid-out cost including family labour (A_2+FL) as per respective ratios in total CoC without establishment (C_2), and accordingly respective CoCs of coconut have been derived

3: CoP A_2 and A_2+FL with establishment cost of coconut have been derived by using respective CoC with establishment cost, ratio of main product to GVO and yield

Source: Economics and Statistics Division, Department of Agriculture and Farmers Welfare, Ministry of Agriculture and Farmers Welfare

Annex Table

Annex Table 5.5: All-India Projected Cost of Production of Coconut for Crop Season 2022-23 and 2023-24

State	Crop Season 2022-23				Crop Season 2023-24				Percentage Change in Projected CoP of a Coconut for season 2023-24 over 2022-23		
	Projected Cost of Production (CoP) of a Coconut (in ₹)			Production Share (%) of Coconut during TE2021-22	Projected Cost of Production (CoP) of a Coconut (in ₹)			Production Share (%) of Coconut during TE2022-23			
	A_2	A_2+FL	C_2		A_2	A_2+FL	C_2		A_2	A_2+FL	C_2
Andhra Pradesh	3.02	3.07	5.28	8.8	2.52	2.66	4.79	9.3	-16.7	-13.4	-9.4
Karnataka	5.74	8.82	14.19	27.7	5.34	9.07	12.99	28.6	-7.0	2.8	-8.4
Kerala	8.01	9.91	13.94	34.3	7.63	10.10	14.19	33.3	-4.7	1.9	1.8
Tamil Nadu	5.00	6.21	10.49	29.2	4.84	6.12	10.42	28.8	-3.2	-1.4	-0.7
All-India	**6.06**	**7.92**	**12.24**	**100.0**	**5.70**	**7.97**	**11.89**	**100.0**	**-6.0**	**0.6**	**-2.8**

Note 1: CoP of coconut is inclusive of establishment cost
2: Production share are related to production of coconut of projected States only mentioned in Table
3: All-India CoP of coconut is weighted average of CoPs of projected States mentioned in Table

Source: CACP Calculations using CS data, and Coconut Development Board, Department of Agriculture & Farmers Welfare, Ministry of Agriculture and Farmers

Annex Table

Annex Table

Annex Table 5.6: Wholesale Price Index of Transport Equipment and Fuels

Year	Annual Average WPI of Transport Equipment and Fuels	Percentage Growth in Annual Average WPI of Transport Equipment and Fuels
2011-12	102	-
2012-13	108	6.46
2013-14	117	7.76
2014-15	107	-8.33
2015-16	92	-13.89
2016-17	96	4.61
2017-18	101	4.96
2018-19	107	5.81
2019-20	104	-2.98
2020-21	106	2.58
2021-22	136	27.85
2022-23	154	13.20
Average Growth		**4.37**

Note 1: Monthly WPI of Transport Equipment and Fuels is weighted average of monthly WPIs of Tractor Tyre, Agricultural tractors, Light, medium & heavy commercial vehicles, Body (for commercial motor vehicles), Chassis of different vehicle types, Manufacture of parts and accessories for motor vehicles, High Speed Deisel, Lube Oils, Medium & heavy commercial vehicle tyre

2: Annual Average WPI of Transport Equipment and Fuels is average of monthly WPI of Transport Equipment and Fuels from July to June

Source: CACP Calculations using WPIs published by Office of the Economic Adviser, Ministry of Commerce and Industry

Annex Table 5.7: All -India Projected Cost of Production of Milling Copra for Crop Season 2022-23 and 2023-24

State	Cost of Production of Milling Copra for Crop Season 2022-23 (₹/qtl)				Cost of Production of Milling Copra for Crop Season 2023-24 (₹/qtl)				Percentage Change in Projected CoP of Milling Copra for Crop Season 2023-24 over 2022-23		
	A_2	A_2+FL	C_2	Production Share (%) of Milling Copra TE2021-22	A_2	A_2+FL	C_2	Production Share (%) of Milling Copra TE2021-22	A_2	A_2+FL	C_2
Andhra Pradesh	4578	4636	7177	2.8	4814	4981	7444	2.9	5.2	7.4	3.7
Karnataka	4824	7133	11161	4.5	4631	7430	10374	5.0	-4.0	4.2	-7.1
Kerala	7620	8996	11919	47.6	7427	9212	12184	47.3	-2.5	2.4	2.2
Tamil Nadu	4398	5367	8796	45.1	4502	5529	8973	44.8	2.4	3.0	2.0
All-India	**5955**	**7153**	**10343**	**100.0**	**5901**	**7350**	**10517**	**100.0**	**-0.9**	**2.8**	**1.7**

Note 1: CoP of coconut is inclusive of establishment cost

2: Production share are related to production of coconut of projected States only mentioned in Table

3: All-India CoP of milling copra is weighted average of CoPs of projected States mentioned in Table

Source: CACP Calculations using CS data, State Governments, and Coconut Development Board, Department of Agriculture & Farmers Welfare, Ministry of Agriculture and Farmers Welfare

Annex Table

Annex Table 5.8: Year-wise Projected Cost of Production (A_2, A_2+FL & C_2), Minimum Support Price (MSP) and Percent Margin in MSP over Cost of Production for Copra

Crop Year	Projected Cost of Production (CoP) of Coconut (₹/nut)			Projected Cost of Production (CoP) of Milling Copra (₹/qtl)			Transportation Cost, Marketing Charges and Crop Insurance Premium (₹/qtl)	All-India Modified Cost of Production (CoP) of Milling Copra (₹/qtl)			Minimum Support Price (MSP) of Copra (₹/qtl)		Margin (%) in MSP of Milling Copra over CoP of Milling Copra			Margin (%) in MSP of Ball Copra over CoP of Milling Copra		
	A_2	A_2+FL	C_2	A_2	A_2+FL	C_2		A_2	A_2+FL	C_2	Milling Copra	Ball Copra	A_2	A_2+FL	C_2	A_2	A_2+FL	C_2
2019-20	5.65	7.52	10.94	5417	6639	8933	88	5505	6727	9021	9960	10300	83.9	50.0	11.5	90.1	55.1	15.3
2020-21	5.54	7.38	10.94	5626	6805	9286	84	5710	6889	9370	10335	10600	83.7	51.9	11.3	88.4	55.8	14.2
2021-22	6.07	7.64	11.80	5855	6974	9793	86	5941	7060	9879	10590	11000	80.9	51.8	8.1	87.9	57.7	12.3
2022-23	6.06	7.92	12.24	5955	7153	10343	87	6042	7240	10430	10860	11750	82.4	51.8	5.0	97.3	64.3	13.6
2023-24@	5.70	7.97	11.89	5901	7350	10517	90	5991	7440	10607	11160	12000	89.1	51.8	6.1	103.4	63.3	14.1

Note 1: All-India CoP is weighted average of CoPs of projected States

2: CoPs of coconut and milling copra are inclusive of establishment cost

3: Addition of two figures may differ due to rounding off the figures

@: Recommended MSP

Source: Various Price Policy Reports for Copra and CACP Records

Annex Table 5.9: State-wise Gross Returns and Relative Gross Returns over Cost of Production A_2 and A_2+FL with respect to Coconut during Coconut Season

State/Crop/Year	Gross Returns Over (₹/ha)		Relative Average Gross Returns Over (%)	
	A_2	A_2+FL	A_2	A_2+FL
Andhra Pradesh				
Coconut				
2019-20	54509	52210	100.0	100.0
2020-21	128201	126073	100.0	100.0
2021-22	134960	132693	100.0	100.0
TE2021-22	105890	103658	100.0	100.0
Sugarcane				
2019-20	84210	69304	154.5	132.7
2020-21	73189	65786	57.1	52.2
2021-22	-12144	-26274	-9.0	-19.8
TE2021-22	48419	36272	45.7	35.0
Paddy+Paddy				
2019-20	101493	88250	186.2	169.0
2020-21	95138	82154	74.2	65.2
2021-22	82857	67254	61.4	50.7
TE2021-22	93163	79219	88.0	76.4
Sunflower+Paddy				
2020-21	76431	64204	59.6	50.9
2021-22	72196	58295	53.5	43.9
TE2020-21	74313	61249	70.2	59.1
Karnataka				
Coconut				
2019-20	14951	5483	100.0	100.0
2020-21	62578	23321	100.0	100.0
2021-22	66196	27754	100.0	100.0
TE2021-22	47908	18853	100.0	100.0
Sugarcane				
2019-20	171534	164967	1147.3	3008.8
2020-21	146184	136230	233.6	584.1
2021-22	194473	178464	293.8	643.0
TE2021-22	170730	159887	356.4	848.1
Paddy+Paddy				
2019-20	115491	80827	772.5	1474.2
2020-21	100143	73130	160.0	313.6
2021-22	76095	51574	115.0	185.8
TE2021-22	97243	68510	203.0	363.4
Soybean+Paddy				
2019-20	78132	58622	522.6	1069.2
2020-21	69360	52432	110.8	224.8
2021-22	70450	53397	106.4	192.4
TE2021-22	72647	54817	151.6	290.8

(Contd…)

Annex Table

Annex Table 5.9: State-wise Gross Returns and Relative Gross Returns over Cost of Production A_2 and A_2+FL with respect to Coconut during Coconut Season

State/Crop/Year	Gross Returns Over (₹/ha)		Relative Average Gross Returns Over (%)	
	A_2	A_2+FL	A_2	A_2+FL
Karnataka				
Sunflower+Paddy				
2019-20	70004	47426	468.2	865.0
2020-21	68622	50310	109.7	215.7
2021-22	58880	40551	88.9	146.1
TE2021-22	65836	46096	137.4	244.5
Ragi+Paddy				
2019-20	80825	47411	540.6	864.7
2020-21	76001	46419	121.5	199.0
2021-22	44961	17254	67.9	62.2
TE2021-22	67263	37028	140.4	196.4
Kerala				
Coconut				
2019-20	110116	83419	100.0	100.0
2020-21	159820	120396	100.0	100.0
2021-22	182143	136279	100.0	100.0
TE2021-22	150693	113365	100.0	100.0
Paddy+Paddy				
2019-20	137910	118867	125.2	142.5
2020-21	97261	77119	60.9	64.1
2021-22	83247	61058	45.7	44.8
TE2021-22	106139	85681	70.4	75.6
Tamil Nadu				
Coconut				
2019-20	118258	95705	100.0	100.0
2020-21	119902	104769	100.0	100.0
2021-22	160081	137249	100.0	100.0
TE2021-22	132747	112574	100.0	100.0
Sugarcane				
2019-20	107775	84885	91.1	88.7
2020-21	132603	114906	110.6	109.7
2021-22	115171	98689	71.9	71.9
TE2021-22	118516	99494	89.3	88.4
Paddy+Paddy				
2019-20	78163	62177	66.1	65.0
2020-21	47203	32398	39.4	30.9
2021-22	55840	41584	34.9	30.3
TE2021-22	60402	45387	45.5	40.3
Ragi+Paddy				
2019-20	52724	36614	44.6	38.3
TE2021-22	52724	36614	39.7	32.5

(Contd…)

Annex Table 5.9: State-wise Gross Returns and Relative Gross Returns over Cost of Production A_2 and A_2+FL with respect to Coconut during Coconut Season

State/Crop/Year	Gross Returns Over (₹/ha)		Relative Average Gross Returns Over (%)	
	A_2	A_2+FL	A_2	A_2+FL
All-India				
Coconut				
2019-20	76662	57998	100.0	100.0
2020-21	117260	85519	100.0	100.0
2021-22	137965	102182	100.0	100.0
TE2021-22	110629	81900	100.0	100.0
Sugarcane				
2019-20	117665	105093	153.5	181.2
2020-21	133975	121838	114.3	142.5
2021-22	131675	113951	95.4	111.5
TE2021-22	127772	113627	115.5	138.7
Paddy+Paddy				
2019-20	75212	51873	98.1	89.4
2020-21	69414	44851	59.2	52.4
2021-22	70890	44247	51.4	43.3
TE2021-22	71839	46990	64.9	57.4
Soybean+Paddy				
2019-20	48312	32203	63.0	55.5
2020-21	45251	28068	38.6	32.8
2021-22	59610	41146	43.2	40.3
TE2021-22	51058	33806	46.2	41.3
Sunflower+Paddy				
2019-20	49865	32949	65.0	56.8
2020-21	54701	37519	46.6	43.9
2021-22	57964	38549	42.0	37.7
TE2021-22	54176	36339	49.0	44.4
Ragi+Paddy				
2019-20	58721	32050	76.6	55.3
2020-21	60098	31620	51.3	37.0
2021-22	42812	13646	31.0	13.4
TE2021-22	53877	25772	48.7	31.5

Note 1: For soybean, paddy, ragi, sunflower and coconut the average is for the years 2019-20 to 2021-22
2: For sugarcane, the figures for 2018-19, 2019-20 and 2020-21 are presented in 2019-20, 2020-21
3: All-India CoC, GVO and gross returns of a crop were weighted average of respective CoC, GVO and gross returns of projected States

Source: CACP calculations using CS data

Annex Table

Annex Table 5.10: Comparison of CACP and State Projected Cost of Production (C_2) and suggested Minimum Support Price of Copra by State for Crop Season 2023-24

State	CACP Projections on the basis of CS data			State Projections			Suggested Minimum Support Price (MSP) by State	
	Yield of Coconut (Nuts/ha)	Cost of Production (C_2) of Coconut (₹/nut)	Cost of Production (C_2) of Milling Copra (₹/qtl)	Yield of Coconut (Nuts/ha)	Cost of Production (C_2) of Coconut (₹/nut)	Cost of Production (C_2) of Milling Copra (₹/qtl)	Milling Copra (₹/qtl)	Ball Copra (₹/qtl)
Andhra Pradesh	21698	4.79	7444	16100	10.68	9200	15000-16000	17000-18000
Andaman & Nicobar Islands	Union Territory is not under CS			10500	38.91	16786	16786	No Suggestion
Karnataka	7460	12.99	10374	4925	17.00	16206	No Suggestion	18368
Kerala	15321	14.19	12184	7260	21.55	15817	18471	20009
Tamil Nadu	15814	10.49	8973	14875	11.89	11364	15200	15700

Note: Cost of production of coconut and milling copra are inclusive of establishment cost

Source: CACP Calculations using CS data, State Governments, and Coconut Development Board, Department of Agriculture & Farmers Welfare, Ministry of Agriculture and Farmers Welfare

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Department of Agriculture & Farmers Welfare
Ministry of Agriculture & Farmers Welfare
Government of India, New Delhi
September 2023