Coconut Situation - India*

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Introduction

Overview of total area under coconut

Coconut is eulogized as the 'Kalpavriksha', the 'Tree of life', due to its multifarious utilization as food, fuel, medicine, timber and other utility purposes of different parts from root to leaves, from tender nut water to outer husk, etc. offers scope for sustaining the livelihood of growers, farm communities and industries in major coconut growing countries of the world. The crop is intricately woven into the socio-economic and cultural background of the Indian subcontinent. As per 2016 statistics of APCC, India is the largest coconut producing country in the world, with 33.02 % share of global production. More than 12 million people in the country depend on coconut for their livelihood. The crop contributes around Rs. 414,279.59 million (US$ 6427.27 M) to the country's GDP and earns export revenue of around Rs. 42,965.88 million (US$ 666.59 M). Due to its nutraceutical and health benefits, the crop is gaining importance in various parts of the world, which is realized by the increased domestic and international trade of coconut and coconut products.

As per the All India estimate for the year 2017-18, the area and production of coconut in the country is 2.10 million hectares and 23,798.23 million nuts, respectively. The corresponding figures for the year 2016-17 were 2.08 million hectares and 23,904.10 million nuts. In comparison to the figures for the previous year, the area under coconut cultivation increased by 0.96 % and coconut production decreased by 0.44 %.

Coconut Situation - India

In India, coconut is cultivated in 16 States and 4 Union Territories located in different parts of the country in varied agro-climatic zones. However, about 89.02 % of the area and production fall in the south peninsular region covering 4 States of Tamil Nadu, Kerala, Karnataka and Andhra Pradesh.

Out of the total geographical area of 328.73 million hectares of India, the total agricultural land is 181.95 million hectare. About 2.10 million ha is covered under coconut which is about 1.15 % of the total agricultural area.

It may be noted that Indian agriculture is the home of small and marginal farmers (85%). Coconut is predominantly a smallholders' crop in India. About 12 million people, i.e. 0.99 % of the Indian population are dependent on coconut in the country and very meager portion of them are big farmers.

Major strengths and weakness

The role of research institutions and State Agricultural Universities in developing new high yielding, biotic/abiotic stress resistant varieties, preservation and value addition; role of Government agencies like Ministry of Agriculture & Farmers Welfare, Coconut Development Board, Coir Board under the Ministry of Micro, Small and Medium Enterprises (MSME), other Central & State government agencies, extension agencies in technology dissemination, reaching the developmental programmes to the needed, making necessary changes in the policies; and the role of farmers as the proactive end users to adopt the technologies and their action in collective manner are the strengths of the country that could bring the crop to a better status compared to last decade. Decrease in availability of agricultural land, fragmentation of agricultural lands, climatic vagaries, uncertainty in availability of manpower for farm operations, escalation in cost of cultivation coupled with price fluctuations and long juvenile phase of the crop are the major weaknesses faced by the stakeholders in the coconut sector. Occurrence of new invasive pests like White Fly and its other strains and their wide range of host plants is a future threat to the coconut farmers.

The future thrust would be production and distribution of quality coconut seedlings, increasing production and productivity to meet the demand, promotion of export of coconut and coconut products, replanting and rejuvenation of coconut gardens, entrepreneurship development in value addition, market intelligence, etc.

Coconut production in CY 2017, 2018, 2019 and forecast for CY 2020

▶ *Coconut Production*

As per the statistics of APCC for the year 2016, India tops in world production of coconut with 22,167 million nuts. As per the latest data of the Government of India, 23,798.23 million coconuts (3173 MT of copra equivalent) are produced in the country. Over the period from 2014-15 to 2017-18 coconut production in the country increased by 16.43 % from 20,439.61 million nuts to 23,798.23 million nuts.

▶ *Area under Coconut by Region or Province or State*

The four southern States of Kerala, Tamil Nadu, Karnataka and Andhra Pradesh accounted for 89.02 % of the coconut area and 93.05 % of the coconut production in the country. Kerala, with the largest area under coconut cultivation and production accounted for 38.49 % of the area under the crop and 35.52 % of production at national level.

The productivity of coconut at national level for 2017-18 is 11,350 nuts per hectare. The highest yield is reported from Andhra Pradesh at 14,038 nuts per hectare followed by Tamil Nadu (13,637 nuts/ ha) and West Bengal (12,484 nuts/ ha). As per the latest statistics, the average productivity in the four major southern States of Kerala, Tamil Nadu, Karnataka and Andhra Pradesh is about 10,000 nuts/ ha.

As per 2016 statistics, India contributes 33.02 % of world coconut production and enjoys the first position in terms of production. 76.38 % of area under coconut and 74.37 % of production are contributed by three leading coconut growing countries viz., India, Indonesia and Philippines. India ranks first in terms of productivity (10,616 nuts per ha) next to Vietnam (8,915 nuts per ha), among the major coconut growing countries.

During the period from 2014-15 to 2017-18, the area under cultivation of coconut in the country increased from 1.98 million hectares to 2.10 million hectares.

▶ *Age Profile of Coconut Trees*

Coconut is a traditional crop in the major coconut growing States of the country, which is cultivated over centuries. As coconut is grown as a homestead plant and cultivation is mainly taken up by the small and marginal farmers, the major part of the palms are retained even after their economic life. Hence about 20 % of the palm population in India is estimated to be senile and unproductive. Massive Replanting & Rejuvenation programme is being taken up in the country after the successful implementation of the pilot projects in few areas of the country.

The seedlings of new and improved varieties are also being planted under the area expansion programme assisted by the Central and State Governments in India. It is estimated that about 10 % of the palms in India are still in juvenile phase.

▶ *Constraints/Issues Related to Coconut Production and Farm Productivity*

The long juvenile phase of the crop is the main constraint. Non-availability of sufficient quantiy planting materials of new and improved high yielding varieties is one of the major obstacles faced by the farmers who are interested in coconut cultivation.

Coconut is a smallholders' crop and the homestead/ fragmented nature of coconut cultivation makes it difficult to adopt modern scientific technologies and farm mechanization for higher income and reduced production costs. Dearth of skilled labour for farm operations including harvesting, plant protection measures, crown cleaning, etc. is one of the reasons for lesser productivity. The natural calamities like droughts due to deficit monsoons, cyclones, and climate change factors affect the coconut production and productivity. The incidence of pests and diseases in coconut is increasing due to the constraint that most of the plant protection operations are to be carried out at the crown. This makes the process tiresome coupled with the old/ senile and uncared palms, due to absentee landlordism, serve as breeding sites for the insects and pathogens.

The wild fluctuation in coconut prices due to its seasonal nature and too many middlemen in the supply chain also are the reasons for reduced level of interest in coconut cultivation by the farmers which ultimately leads to reduced production and productivity.

▶ *Policies to Promote Coconut Farm Productivity and Increase Farmer's Income*

The Government of India is already taking actions for creating awareness about the scientific management practices recommended for coconut in varied agro-climatic zones of the country. More stress is to be given for awareness activities for proper impact of the programme. Formation of farmers' collectives in coconut sector is encouraged by the Government for aggregation, farm level processing and also to facilitate taking collective plant protection measures. Schemes promoting the government and private sector in production of quality planting material, input management, encouraging adoption of scientific plant protection measures, water conservation by developing low cost water harvesting structures and moisture conservation measures to augment soil moisture and thereby mitigating the effect of global warming in coconut farming are being attended duly as part of the productivity improvement and increasing the farmers' income. As part of organic farming, bioagents for management of various pests and diseases are developed and popularized among the farmers for adoption.

Schemes are already in implementation for replanting & rejuvenation of the coconut gardens in India which are widely popular in the major coconut

growing States of the country. The impact of the same on the productivity and the production is estimated to be visualized in near future.

▶ *Coconut replanting/new planting, rehabilitation and farm productivity programs*

India has already started Replanting and Rejuvenation (R&R) of traditional coconut gardens in the country. To begin with, the programme was introduced in Kerala, the State with the longest history of coconut cultivation where 1/3rd of palm population was old, senile and disease advanced. Apart from the longest recorded history of coconut cultivation, the State is under the grip of a debilitating disease called root (wilt) disease. Cutting and removing the disease advanced palms and giving management care to the balance palm population is the only strategy to manage the gardens. Therefore the R&R programme was implemented in the State from 2009 and is continuing. The main objective of the scheme is to enhance the productivity and production of coconut by removal of disease advanced, old and senile palms, replanting with quality seedlings and rejuvenating the remaining palms by giving compensation to farmers for the three components. The scheme has been extended to other traditional coconut growing States from 2016-17 onwards and nontraditional coconut growing States from 2017-18. So far more than 20.34 million palms have been cut and removed under the scheme and nearly 6.35 lakh ha was rejuvenated.

Production and distribution of planting material

Establishment of Demonstration cum Seed Production (DSP) Farms in different parts of the country for creating infrastructure facilities for production of quality planting materials besides demonstrating and educating the scientific coconut cultivation and processing to various stakeholders in those regions, establishment of Regional Coconut Nurseries by extending support to various participating States for strengthening the seedling production programmes, distribution of hybrids/

dwarf seedlings in Government sector, establishment of Nucleus Coconut Seed Gardens and Coconut Nurseries in private sector are taken up under this programme. During 2018-19, more than one million seedlings were produced and distributed under these schemes. The Board has established 11 DSP farms so far in different agro-ecological locations of the country. During 2019-20, large scale quality seedlings production is envisaged.

Expansion of Area under Coconut

This programme is to extend adequate technical and financial support to the farmers to take up coconut cultivation on scientific lines in potential areas to attain a significant achievement in the future production potential. Massive area expansion programme under coconut in potential pockets of the country is also planned during 2019-20.

Integrated Farming for Productivity Improvement programmes

The objective of the programme is to improve production and productivity of the coconut holdings through an integrated approach and thereby

increasing the net income from unit holdings with the component programmes under 'Laying out of Demonstration Plots' and establishing 'Organic Manure Units' by providing incentives. Scientific integrated management practices including coconut based farming systems are promoted under the scheme.

Publicity and Extension activities

The Board is disseminating information on various aspects of coconut cultivation and industry through various media and publications besides organizing training programmes to impart skills and knowledge to farmers, unemployed youths and rural women

in various fields related to coconut. The Board also regularly participates in exhibitions and fairs across the country and abroad.

Coconut Palm Insurance Scheme (CPIS)

The Coconut Palm Insurance Scheme intends to provide insurance coverage to coconut crop. Under the scheme, all healthy bearing palms in the age group from 4 to 60 years are eligible to get insurance coverage against natural perils leading to death or becoming unproductive. 50% of the insurance premium is borne by the Govt.of India and balance is shared between the concerned State Govt. and the farmers @ 25% each.

Technology Mission on Coconut

The Technology Mission on Coconut programme gives emphasis on the development of technologies for the management of insect pest and disease affected gardens and product diversification besides demonstration and promotion of these technologies for adoption. Under the Mission, research projects and clinical studies are sponsored through reputed institutions in the area of technology development and also to establish the medicinal and nutraceutical properties of coconut products especially coconut

oil. Up to 2018-19, technical and financial support was given to establish 484 processing units with processing capacity of about 2752 million nuts per year.

Performance of the coconut processing industry

Coconut Development Board (CDB) has been designated as the Export Promotion Council for all coconut products other than coir and coir products from 1st April 2009 by the Govt.of India. Since then export of coconut products from India is shown below:

Year	Export value (In INR Million)	Export value (In USD Million)	% growth over previous year (In USD Million)
2009-10	4323.84	91.19	--
2010-11	5256.50	115.33	21.57
2011-12	8386.47	175.00	59.55
2012-13	10225.33	188.10	21.93
2013-14	11561.19	191.32	13.06
2014-15	13123.80	214.64	13.52
2015-16	14502.36	221.52	10.50
2016-17	20616.96	307.39	42.76
2017-18	17643.06	273.72	-14.42
2018-19	20453.58	292.52	15.93

Exports of coconut products during 2018-19 were valued at US $ 296.79 M as against US $ 256.01 M

registering a growth of 15.93 % over the last year. Major items of export are Activated Carbon, Dried Coconut and Fresh Coconut in terms of value. USA is the largest importer of coconut shell based Activated Carbon from India, followed by United Kingdom and Japan whereas Afghanistan is the largest importer of dried coconut followed by Pakistan and Iran. Three Gulf Cooperation Council (GCC) Countries viz., UAE, Oman and Qatar are the major importers of fresh coconut from India. Contribution of Activated Carbon alone to the total export is 65.72 % whereas Dried Coconut contributed 9.78 %, in terms of value.

Details of export of non-traditional products like virgin coconut oil (VCO), oleochemicals, nata de coco, coconut water, coconut sugar, coconut flour, etc. are not available with Directorate General of Commercial Intelligence and Statistics (DGCIS), Govt.of India as there is no separate HS code for these items.

Summary of Coconut Product Utilization in the Country for 2018

It is estimated that about 16 % of the total coconut production in India is consumed as tender coconut with a meager share utilized by the tender coconut water preserving & packaging units. About 45 % of the production is used as raw coconuts- of which domestic consumption is 70 % and for industries (30 %) for production of desiccated coconut, virgin coconut oil, coconut milk/ cream, frozen grated/ dry coconut, etc. The rest 38 % is converted to copra of which about 23 % is consumed directly for various edible purposes. Coconut oil is extracted for edible, toiletry and other purposes from the balance 77 % of the copra.

The time series price movement of coconut oil (domestic as well as international) for the last 14 years (from the year 2004 onwards) revealed that whenever there is rise in domestic coconut oil price, the international prices exerted a pull-down-force to make the prices integrated. This aspect very well validates the international trade theory on price integration of primary commodities in the trade liberalized regime. The crucial interpretation is that dependency on single commodity like coconut oil will never provide the adequate margin to sustain for a longer period.

Average FOB Price of Major Coconut Products for CY 2016, 2017 and 2018 in US$

The FOB prices of coconut products are showing an upward trend. The fresh coconut prices have gone to about 69.77 % i.e. US$ 780.67 per MT during 2018 compared to US$ 459.83 during 2016. The desiccated coconut prices have gone to about 47.77 % i.e. US$ 2065.70 per MT during 2018 compared to US$ 1397.88 during 2016. The copra prices have increased by 40.0 % i.e. US$ 1777.36 per MT during 2018 compared to US$ 1269.46 during 2016.

Since there is no separate HS code for coconut milk/ cream/ powder, coconut water and coconut sugar, there is no possibility of getting precise data on its export from India.

Analysis of price trends and factors affecting the price of coconut products

Price of coconut oil has shown decreasing trend during the year 2012-13. Price started improving from mid of 2013 and the same trend continued during 2014. In the year 2014, the monthly average price of coconut oil which opened at US $ 159.35 per quintal in January at Kochi Market expressed a bullish trend and attained US $ 239.09 per quintal in August. Thereafter the price expressed a slight declining trend. In 2015, the monthly average price expressed mixed trend till August and thereafter expressed a declining trend and closed at US $ 146.82 per quintal and the same trend continued till July 2016. Thereafter price showed an upward trend. The price started rising up from the month of May 2017 and closed at US $ 289.41 per quintal. In 2018, the monthly average price showed decreasing trend till November and closed at US $ 233.34 per quintal. In the last 6 months, the highest price was quoted during the month of January 2019 at US $ 266.91 per quintal.

The price of milling copra was below MSP of US $ 74 per quintal in all the three major markets in Kerala throughout the year 2012. The year 2013 started with

a mixed trend in the prices of milling copra and the prices remained below MSP of US $ 76.18 per quintal till the middle of the year. The prices improved from mid of 2013 and same trend continued during 2014. In the year 2014, the monthly average price of milling copra which opened at US $ 114.79 per quintal in January at Kochi Market expressed a bullish trend and attained US $ 165.33 per quintal in August. Thereafter the price expressed a slight declining trend and closed at US $ 129.97 with a net gain of US $ 15.18 per quintal. In 2015, the monthly average price expressed a mixed trend till June, thereafter expressed a declining trend and closed at US $ 95.22. In January 2016, the monthly average price recorded at US $ 87.64 per quintal, expressed a mixed trend till July and thereafter expressed an upward trend and closed at US $ 106.74 per quintal. In 2017, the monthly average price opened at US $ 118.99 per quintal in January showed an upward trend and is closed at US $ 216.74 per quintal with a net gain of US $ 97.76 per quintal. In 2018, the monthly average price opened at US $ 203.42 per quintal in January showed a downward trend and is closed at US $152.51 per quintal at Kochi Market.

▶ *Number of Coconut Processing Plants and their Capacities for CY 2018 and 2019 are as follows:*

Seventy two coconut processing units were newly assisted during the year 2017-18 (Desiccated Coconut Powder (DCP) -16, Virgin Coconut Oil (VCO)-10, Tender Coconut Water (TCW) -3, Coconut oil-2, Copra making units- 15, Frozen shredded coconut -1, Ball copra-14, Coconut milk powder & Coconut sugar- 1, Coconut chips & Nata de coco & vinegar-1, Coconut shell charcoal-6, Activated carbon-1, Neera-2. The total processing capacity of these 72 units was 303.36 million nuts/ year. The no. of coconut processing newly units assisted during the year 2018-19 is 5 (Decicated Coconut Powder -1, Tender Coconut Water -1, Coconut oil-1, Ball copra -2.) with a total processing capacity of 16.8 million nuts/ year.

A total of 484 coconut processing units were assisted by the Board from April 2002 to March 2019 (Desiccated Coconut Powder-112, Virgin Coconut Oil-58, Tender Coconut Water-29, Coconut oil-65, Copra making unit- 49, Frozen shredded coconut -2, Ball copra-59, Coconut milk powder -2, Coconut milk-1, Flavoured coconut juice-1, Coconut chips-6, Neera-11, Coconut vinegar- 6, Packing of coconut water-2, Coconut wood products-1, Coconut shell ice cream cup-2, Coconut shell powder-18, Coconut shell charcoal-29 & Activated carbon-31). The total processing capacity of these 484 units was 2752.48 million nuts/ year.

▶ *Update of Recently Adopted National Quality Standards of Coconut Products*

The Technology Development Centre of CDB is engaged in the development and demonstration of technologies for product diversification and by-product utilization of coconut. The Centre is devoted to product development, microbial analysis of coconut based products, apart from skill development programmes to interested entrepreneurs and self help groups for acquiring technologies on post harvest coconut processing and process demonstration. The centre received

the recognition of National Accreditation Board for Testing and Calibration Laboratories (NABL), a Constituent Board of Quality Council of India. Many value added and novel products were developed by the institute during the previous years and the institute has now been designated as CDB Institute of Technology (CIT).

The Bureau of Indian Standards (BIS) is the National Standard Body of India established under the BIS Act 1986 for the harmonious development of the activities of standardization, marking and quality certification of goods and for matters connected therewith or incidental thereto.

(Will be continued in the next issue).

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