Country Paper – India

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Introduction

Coconut is one of the most useful crops to mankind. Because of its multifaceted uses of its products; it is called the Kalpavriksha or Tree of abundance. It is an important food crop of economic importance to many of the Asian and Pacific countries in the world. The crop provides livelihood security and employment opportunities to a major segment of the rural mass of these countries. India being the largest coconut producing country in the world, occupies 31% of global production. Coconut palm provides food security and livelihood opportunities to more than 12 million people in India. It is also a fiber-yielding crop. More than 15,000 coir based industries provide employment to nearly six lakhs workers of which 80 per cent are women folk. The crop contributes around Rs.2,50,000 million (US$ 3788 M) to the country's GDP and earns export revenue of around Rs.43,654 million (US$ 661 M). Coconut and coconut products are gaining global importance as a contributing factor to the health, nutrition and wellness of human beings. This is due to its multiple medicinal and nutraceutical properties which are being revealed day by day. This new development in health sector has brought in an unprecedented increase in the demand of coconut products in domestic and international markets. It is estimated that there are five million coconut holdings and 12 million farmers in the country, covering 16 states and three Union Territories. This country paper mainly encompasses the major developments in Indian coconut sector along with other salient outcomes.

In India, coconut is predominantly a small holders crop where about 98% coconut holdings are owned by small and marginal farmers. As per the All India estimate for the year 2016-17, the area and production of coconut in the country is 2.096 million hectares and 22237.97 million nuts respectively. In comparison to the figures of the previous year, the area under coconut cultivation and coconut production increased by 0.38 per cent and 0.32 per cent, respectively.

India, the largest producer of coconut in the world is having sufficient raw material surplus, good reputation in global markets and access to good technologies in the production of virgin coconut oil, packed tender nut water, minimally processed tender coconuts, activated carbon etc. The presence of dominant ethnic population in the Gulf, UK and US are the strengths of India. India is having good network of organizations for conducting research in coconut. Central Plantation Crops Research Institute (CPCRI) was established in 1970 as one of the agricultural research institutes under the Indian Council of Agricultural Research (ICAR) and an International Coconut Gene Bank for South Asia (ICG-SA) was established at Kidu, Karnataka in 2013.The Research Centre at Kidu helps to cater to the needs of the farmers by supplying elite planting materials of the mandate crops, in addition to serving as the International Coconut Gene Bank for South Asia.

The All India Coordinated Research Project on Palms, started in the year 1972, is coordinating research in coconut, oil palm and palmyra under different agro-climatic regions for the identification of location specific technologies. The project provides adaptive research support for coconut through collection, conservation, cataloguing and evaluation of germplasm, evaluation of new hybrids and high yielding varieties of coconut, standardization of agro-techniques for various agro-climatic regions including development of appropriate farming systems and development of efficient pest and disease management strategies.

Coconut Production - 2015 -17 and forecast for 2018

As per the statistics of APCC for the year 2015, India tops world production of coconut with 20440 million nuts. As per the latest data of the Government of India, 22237.97 million coconuts (2965 MT of copra equivalent) are produced in the country. Over the period from 2012-13 to 2016-17 coconut production in the country decreased by 1.95% from 22,680.03 million nuts to 22,237.97 million nuts. Droughts due to the insufficient monsoon in major coconut growing states coupled with natural calamities like cyclonic storms and effect of pests and diseases are mainly attributed to this decreasing trend in coconut production.

The four southern states, Kerala, Tamil Nadu, Karnataka and Andhra Pradesh accounted for 88.87 percent of the coconut area and 90.81 percent of the coconut production in the country. Kerala, with the largest area under coconut cultivation and production accounted for 36.86 percent of the area under coconut and 33.57 percent of production at national level.

The productivity of coconut at national level for 2016-17 is 10,611 nuts per hectare. The highest yield is reported from Chhattisgarh at 16508 nuts per hectare followed by Andhra Pradesh (13759 nuts/ ha) and Tamil Nadu (13423 nuts/ ha). Andhra Pradesh and Tamil Nadu out perform to about 40 % over the other two major coconut growing states of Karnataka (9744 nuts/ ha) and Kerala (9663 nuts/ ha).

As per 2015 statistics, India contributes 30.49% of world coconut production and enjoys the first position in terms of production. 75.60 % of area under coconut and 74.55 % of production are contributed by three leading coconut growing countries viz., India, Indonesia and Philippines. India ranks second in terms of productivity (10349 nuts per ha) next to Brazil (11574 nuts per ha), among the major coconut growing countries.

During the period from 2012-13 to 2016-17, the area under cultivation of coconut decreased from 21.37 lakh hectares to 20.96 lakh hectares. The decrease in area is mainly because of the rapid urbanization taken place especially in Kerala coupled with the effects of back to back cyclone hit coastal Andhra, Tamil Nadu and Odisha.

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. A 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 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 the juvenile phase.

Non-availability of sufficient quantity 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 cost. Dearth of skilled labourers for farm operations including harvesting, plant protection measures, crown cleaning, etc. are the reasons for lesser productivity. The natural calamities like droughts due to deficit monsoons, cyclones and climate change 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 on the crown. This makes the process tiresome. The old/ senile and uncared palms due to absentee landlordism are 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 interests in coconut cultivation by the farmers which ultimately leads to reduced production and productivity.

Policies to Promote Farm Productivity and increase Farmer's Income:

In India, development programmes and policies in coconut are mainly carried out by Coconut Development Board under the Ministry of Agriculture and Farmers Welfare. Production and distribution of quality planting materials, expansion of area under coconut especially in non-traditional states, promotion of adoption of integrated nutrient management, pest management and coconut based farming systems by establishing farmer participatory demonstration plots, replanting and rejuvenation of old and senile coconut gardens, Technology Mission on Coconut for promoting value addition, facilitating formation and handholding farmer producer organizations for promoting production, processing and marketing of coconut are the major policies adopted in India for promoting coconut sector. Formation of farmers' collectives in coconut sector is encouraged by the government for aggregation, farm level processing, collective plant protection measures and production of value added coconut products.

The development programmes in coconut is undertaken by the Board for replanting, new planting, rehabilitation for enhancing coconut production and productivity are listed below:

Replanting/new planting, rehabilitation and farm productivity programmes

India 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 lethal disease called root wilt. Cutting and removing the disease advanced trees and giving management care to the existing palm population is the only strategy to manage the gardens. Therefore the R&R programme was implemented in the state from 2009 and is still 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 cutting and removal, replanting and rejuvenation. The scheme is extended to other traditional coconut growing states from 2016-17 onwards. So far more than 3.5 million palms have been cut and removed under the scheme and nearly 3.05 lakh ha. is 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 stake holders in those regions, establishment of regional coconut nurseries for extending support to various participating states for strengthening the seedling production programme, distribution of hybrids/dwarf seedlings in government sector and establishment of nucleus coconut seed gardens and coconut nurseries in private sector are taken up under this programme. Last year nearly 7.20 lakhs seedlings were produced and distributed under this scheme. 10 DSP farms have so far been established in different parts of the country.

Expansion of Area under Coconut

This programme is for extending 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. Financial and technical assistance is extended under the scheme for taking up new planting of coconut in potential areas.

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 by establishing farmer participatory demonstration plots in farmer's field.

Publicity and Extension activities

The Board is disseminating information on various aspects of coconut cultivation and industry through various media and publications besides organizing awareness training programmes for farmers, stakeholders and training programmes for imparting skills and knowledge to farmers, unemployed youths and rural women in various fields related to coconut. 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 Board and the balance is shared between the state government and 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 for establishing the medicinal and nutraceutical properties of coconut products especially coconut oil. Technical and financial support is given to establish 479 processing units with processing capacity of 2785 million nuts per year.

Performance of the Coconut Processing Industry

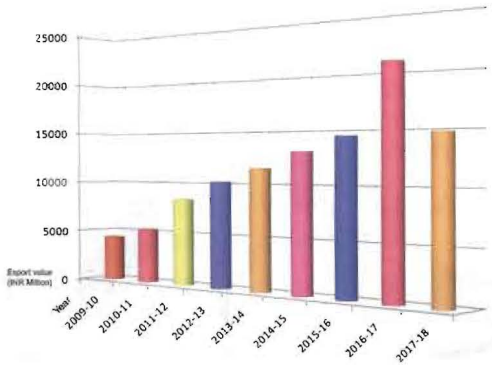
During the financial year 2016-17 export of coconut products (excluding coir items) was valued at Rs.20776.50 Million (US$ 314.77 M) against Rs.14502.40 Million (US$ 220 M) during the previous year, recording an increase of 43.26% in terms of value. Activated Carbon was the single largest item of export both in terms of quantity and value of export. Significant increase was recorded in the export of desiccated coconut, activated carbon and coconut oil. Activated carbon accounted for 39.23% of the total export of coconut products from India during 2016-17. Major coconut products such as coconut oil, desiccated coconut, copra, and coconut shell charcoal registered significant growth in exports during the year 2015-16. The export details in 2017-18 (till January 2018) is presented in Table 1.

The export earnings are picking up with the surge in growth of industries like virgin coconut oil, activated carbon, shell charcoal etc. Indian products are moving to US, UK, Germany, Japan, France, Middle East, and African Countries. Advancement in technology development and the technical and financial support extended by India through the Coconut Development Board under the Technology Mission programme for starting coconut based industries have been instrumental for this success. Added to these, the Board has been designated as Export Promotion Council (EPC) for various products other than coir based products from 1st April 2009 which also has contributed to a perceptible improvement in export.

Table - 1: Export of coconut products (2009-18)

Year	Export value	
	(In INR Million)	(In USD Million)
2009-10	4323.84	91.71
2010-11	5256.50	115.61
2011-12	8386.47	174.60
2012-13	10225.33	187.92
2013-14	11561.19	190.24
2014-15	13123.85	214.20
2015-16	14502.44	221.07
2016-17	20837.4	311.01
2017-18	14748.7	228.97

(till January 2018)



In the capacity of EPC, Board has so far given registration to 3273 exporters of coconut products. This has enabled the Board to monitor the export scenario more closely.

Average price of Major Products per MT in USD (2018)	
Activated Carbon	1944.89
Coconut oil	2888.88
Fresh Coconut	580.77
Desiccated coconut	3000.00

Consumption pattern

Coconut Processing Plants and their Capacities

During the year 2015-16, 61 coconut processing units were assisted by the Coconut Development Board for producing copra, coconut oil, flavoured coconut juice, virgin coconut oil, packaged tender coconut water, neera and neera based products, shell charcoal, activated carbon, etc. Around 30 units were assisted during 2016-17. Board has sanctioned the establishment of 22 processing units in the country during 2017-18. The coconut shell based activated carbon units are run with about 80 % of the installed capacity to produce 9300 MT activated carbon.

Update of Recently Adopted National Quality Standards of Coconut Products

CDB Institute of Technology 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 Institute received the recognition of NABL. Many value added and novel products were developed by the institute during the last year and the institute has now been designated as CDB Institute of Technology (CIT).

Marketing and Product Promotion

Major Market Destinations of Traditional Coconut Products

The UAE, China, Iran, Oman and Saudi Arabia are the major markets for fresh coconuts. Copra attracts good demand from countries like Bangladesh, Nepal, Iran, Vietnam and Hong Kong. Coconut is having a good market in Indonesia, Malaysia, Srilanka, Ireland and Mauritius. USA, Korea, US, Russia and Netherlands are the major buyers of activated carbon.

Major Market Destinations of Non-Traditional Coconut Products

As far as the non-traditional coconut products are concerned, VCO has good demand in Brazil, France, USA, UAE, Oman, Mexico, Qatar and the United Kingdom. Countries like UAE, Kuwait, Oman, USA, Saudi Arabia, Qatar, Canada and UK have good markets for products like coconut water and coconut milk powder.

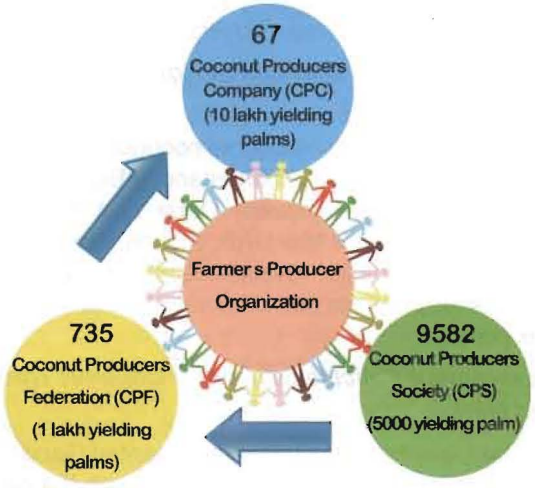
Government Policies Related to Coconut Trade and Market

The Government of India implemented Goods and Services Tax (GST) on 1st July 2017 with the aim to improve ease of doing business in the country. GST was implemented by amalgamating large number of Central and State taxes into a single tax which would mitigate cascading or double taxation in a major way which paves way for a common national market. GST, being a simple tax regime, is expected to reduce the complications in doing business and improve trade. The GST applied on various coconut products ranges from 0 to 28%.

Coconut and coconut products have very good market potential within as well as outside the country. Towards expanding the market for Indian coconut products across the globe, the Board is extending support for sales outlets/ kiosks for value added coconut products, facilitating participation in domestic exhibitions/ trade fairs and buyer-seller meets in metropolitan cities within the country, encouraging coconut product exporters with award for export excellence, overseas and domestic industrial exposure visits to prosperous manufacturers, organising workshops/ seminars for entrepreneurs and exporters etc.

Coconut Research and Development

India was lagging behind in technology development for product diversification till the last two decades. Introduction of Technology Mission has given momentum to this area and now India possesses many technologies in value addition. Acceleration to the activities of CDB Institute of Technology, further quickened coconut product development. In the world, for the first time, technology for processing and packing of neera and various downstream products like neera sugar, jaggery, honey etc have been developed. Food products like sweet/spicy chips, sweet chunks, chocolate, cookies, burfi, lemonade,



flavoured juice, ice cream and milk spread are also the other new additions of CIT's contribution in the product basket.

Three tier Farmer Producer Organization (FPO) in coconut sector.

CDB started a novel extension approach to organize farmers by formation of three tier Farmer Producer Organization (FPO) with Coconut Producers Societies (CPS) at the primary level, Coconut Producers Federation (CPF) at the intermediate level and Coconut Producer Company (CPC) at the apex level. The CPCs are engaged in the production of value added products from coconuts procured from the member farmers. So far 9582 CPSs, 735 CPFs and 67 CPCs are formed and functioning in the country.

Skill Development Training Programmes-Friends of Coconut tree (FoCT)

Acute shortage of palm climbers to harvest and adopt plant protection measures is one of the problems faced by coconut growers. With a view to tackle this problem, the Board is conducting skill development programme from 2011-12 onwards, to train unemployed youths in developing special skills and confidence in coconut climbing and plant protection activities for the benefit of coconut farming community. The skill fetches the youth handsome income for their decent living and help to make available sufficient manpower in coconut harvesting and other plant protection activities.

Other Issues/Problems/ Recommendations

Indian coconut sector has to improve in many areas in spite of the unprecedented progress achieved in selected sectors. There are many issues to be addressed and solutions to be arrived at. Inadequate availability of quality planting material in tune with the increasing demand, low pace of value addition, low level of productivity than the potential, low pace of expansion of crop and low level of Replanting and Rejuvenation of old plantations, non availability of disease tolerant and short statured high yielding varieties are issues that still need solution. Against the annual requirement of 10 million seedlings, the present supply is only 3.5 million seedlings. Considerable area suitable for coconut is available in traditional and non-traditional areas in the country which need to be utilized for expanding the crop. Through convergence of various programmes and bridging the gap in existing schemes, India will try to make coconut a more remunerative crop by enlarging the scale and size of operations and reducing production costs giving more thrust on irrigation, drought management and soil and moisture conservation. Restructuring of planting population giving more stress on hybrids and dwarf and more diversion of production to value addition, improvement in quality standards matching with international standards, adoption of new marketing strategy for tapping domestic and international markets and widening the skill development in all essential areas of production and processing will be other areas of priority. Indian Coconut sector is striving hard to grow further for the benefit of millions of farming community. The country is aiming at sustaining the premier status enjoyed at global level in production and productivity and also in the process of gaining the prime position in export front.

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