

# COMPETITIVENESS OF THE COCONUT INDUSTRY IN INDIA

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## I. Introduction

Coconut is cultivated in India in 18 States and 3 Union Territories in an area of 1.9 million hectares. Coconut, predominantly a small holders' crop, occupies a prime position in the cultural, social and economic lives of millions of people across the world. Globally the crop has coverage of 12.16 million hectares and an annual production of 64.85 billion nuts spanning 93 countries. India is the second largest producer of coconut in the world accounting for 24.26 % in production and 15.57 % in area.

Coconut provides food and livelihood security and employment opportunities to a major segment of the rural population in India and many Asian and Pacific countries in the

world. The crop contributes to more than Rs, 83,000 million (US\$1600 M) to the country's GDP and about 6 per cent to the edible oil pool. Similarly, the industry helps to earn foreign exchange to the tune of Rs 13,000 million (US\$250 M.) per annum by exporting coconut and coconut products. About 10 million people are dependent on coconut farming and its allied activities. Besides, coconut is a perennial source for raw materials to a number of other industries like oil milling, coir and coir based industries, Activated Carbon manufacturing industries, shell powder manufacturing units, solvent extraction units etc. which provides continuous employment to nearly 8 lakhs workers of which 80% are women folk. There are about 5 million

coconut holdings of which 98% are less than 2 ha in size. Majority of the coconut holdings in the country are rain-fed and hence are susceptible to the vagaries of nature. The progress of the Indian Coconut industry is constrained due to the low scale of returns at the farm level on account of the influence of vagaries of nature and market induced uncertainties.

## II. Area and Production of Coconut

According to the All India final estimates (2008-09), the area and production of coconut in the country is 18.95 lakhs hectares and 15729.75 million nuts respectively. The corresponding figures for the year 2007-08 were 19.03 lakh hectares and 14743.56 million nuts. Compared to the

**Table 1. The area, production and productivity of coconut**

ALL INDIA FINAL ESTIMATE OF COCONUT 2008-2009										
States /Union Territories	2007-2008					2008-2009 (Final)				
	AREA ('000 Hectares)	% share	Production (Million nuts)	% share	Yield (Nuts/ha)	AREA ('000 Hectares)	% share	Production (Million nuts)	% share	Yield (Nuts/ha)
Andhra Pradesh	101.32	5.32	1119.26	7.59	11047	104.00	5.49	970.00	6.17	9327
Assam	19.00	1.00	136.00	0.92	7158	18.80	0.99	147.10	0.94	7624
Goa	25.50	1.34	127.60	0.87	5004	25.61	1.35	128.18	0.81	5005
Gujarat	16.40	0.86	138.30	0.94	8433	15.88	0.84	157.42	1.00	9851
Karnataka	405.00	21.28	1635.00	11.09	4037	419.00	22.12	2176.00	13.83	5193
Kerala	818.80	43.02	5641.00	38.26	6889	787.77	41.58	5802.00	36.89	7365
Maharashtra *	21.00	1.10	175.10	1.19	8338	21.00	1.11	175.10	1.11	8338
Nagaland	0.90	0.05	0.20	0.00	222	0.92	0.05	0.55	0.00	598
Orissa *	51.00	2.68	275.80	1.87	5408	51.00	2.69	275.80	1.75	5408
Tamil Nadu	383.37	20.14	4968.20	33.70	12959	389.60	20.56	5365.00	34.11	13771
Tripura *	5.80	0.30	11.40	0.08	1966	5.80	0.31	11.40	0.07	1966
West Bengal *	28.60	1.50	355.50	2.41	12430	28.60	1.51	355.50	2.26	12430
A & N Islands	21.60	1.13	80.60	0.55	3731	21.69	1.14	82.00	0.52	3781
Lakshadweep *	2.70	0.14	53.00	0.36	19630	2.70	0.14	53.00	0.34	19630
Pondicherry	2.20	0.12	26.60	0.18	12091	2.10	0.11	30.70	0.20	14619
All India	1903.19	100.00	14743.56	100.00	7747	1894.57	100.00	15729.75	100.00	8303

Source: Directorate of Economics & Statistics, Ministry of Agriculture, Govt. of India.

\* For 2008-09, data of 2007-08 repeated

figures for the previous year, the area under coconut has decreased by 0.45% and production has increased 6.7 percent during 2008-09.

The four Southern States of Kerala, Karnataka, Tamil Nadu and Andhra Pradesh accounted for 89.7% of the coconut area and 90.99% of the coconut production in the country. Kerala, the largest coconut growing State, recorded a decline of 3.8% in area and increase in production by 2.9%. Tamil Nadu, the second largest coconut growing state recorded an increase in area by 6.23% and an increase in production by 8%. In Karnataka the area increased by 3.5% and production increased by 33.1%. In Andhra Pradesh, the area has increased by 2.6% and production declined by 13.3%.

### III. Productivity/Yield

The yield per hectare of coconut at the national level for 2008-2009 was 8303 nuts/ha which shows an increase of 7% over the previous year 2007-2008. The highest yield was reported in Lakshadweep Islands at 19630 nuts/ha followed by Puducherry at 14619 nuts/ha and Tamil Nadu at 13771 nuts/ha.

Over the decade ending 2008-2009 coconut acreage, production and productivity in India has been increased at the annual growth rate of 0.77%, 2.3%, 1.51% respectively (Table 2). In Kerala, however, the acreage under coconut was declining since 2003-2004 may be due to the shifting to more remunerative crops, urbanization and real estate development. The area, production and productivity of coconut in India is given in Table 1.

Coming to the global scenario India occupies the 2<sup>nd</sup> rank in production and first in

**Table 2. Trend in Area, Production and Productivity of Coconut in India for the last 10 years**

ALL INDIA			
YEAR	Area '000 ha	Production Million Nuts	Productivity Nuts/ha
1998-99	1754.50	12535.90	7145
1999-2000	1768.10	12129.00	6860
2000-01	1823.90	12678.40	6951
2001-02	1932.30	12962.90	6709
2002-03	1921.80	12535.00	6523
2003-04	1933.70	12178.20	6298
2004-05	1935.00	12832.90	6632
2005-06	1946.80	14811.10	7608
2006-07	1936.80	15840.40	8179
2007-08	1903.19	14743.56	7747
2008-09	1894.57	15729.75	8303
Annual Growth rate	0.77	2.30	1.51

productivity among APCC countries. Indonesia is number one in production and the Philippines ranks the third position (Table 3).

### IV. Trend in the Prices of Coconut Oil

Coconut oil is considered as the single largest commodity that determines the market of the primary product of coconut in all the producing countries. Hence

the stability of the coconut oil market is important for the growth of the coconut culture and industry. An analysis of price behavior of coconut oil in the international market shows that the market is characterized by seasonal and annual fluctuations. Between the two, the annual fluctuations are highly volatile than the monthly price variations. While seasonal variations in the coconut oil is directly correlated with the seasonal demand and

**Table 3. Major Coconut Producing Countries**

Country	Production (in million nuts)	Percentage Contribution
Indonesia	16,498	25.44
India	15,730	24.26
Philippines	15,868	24.16
Brazil	3,289	5.07
Sri Lanka	2,853	4.40
Papua New Guinea	1,495	2.31
Mexico	1,402	2.16
Thailand	1,104	1.70
Vietnam	813	1.25
Tanzania	401	0.62
Malaysia	379	0.58
Other Countries	5,218	8.05
Total	64850	100.00

supply the annual fluctuation of coconut oil is linked with the abundant supply of cheap vegetable oils and fats due to the free movements of the commodities as well as the cyclic variations in the supply.

The year 2008 witnessed a sudden price crash in respect of all vegetable oils on account of global recession and resulting reduction in the import-appetite of consuming countries whereas the year 2010 witnessed a reverse trend and hence noticed comparatively higher prices in both the cases. The monthly average price of coconut oil reached Rs.5040 per quintal in May 2010 in India and thereafter expressed an upward trend till December 2010 and arrived at Rs.8102 per quintal. The yearly average price of Rs.8102 per quintal was about 60% higher than that of the year 2009. The trend in the international and the domestic price of coconut oil indicates that the domestic price always rules above the international price. Among the seventeen major oils and fats in world, Coconut Oil (CNO) and Palm Kernel Oil (PKO) are the only two lauric oils. Between the two, coconut oil has advantage over Palm Kernel Oil due to its medicinal and health benefits besides the benefit of cost advantage for further processing into value added products for industrial application

## V. Export of Coconut Products

India's huge domestic market has been the main consumer of coconut and coconut products. The domestic price of coconut oil has so far been higher than the international price. Therefore, India has not had any significant role in the world trade. However, with the increase in the prices of edible oils at the global level, the difference between the domestic and international price has been substantially reduced. On

account of this, there has been increase in the quantity of export of most of the coconut products. Coconut Exports grew by 23.80% in value and touched Rs 536.60 Cr in 2010-11 against Rs 432.38 Cr in 2009-10 (Table 4).

and productivity in the country for the past three decades. India is now positioned as the second largest producer of coconut with highest productivity in the world.

Table 4. Export of Coconut Products from India (Qty in Tonnes, Value Rs.in Lakhs)

Sl No	Item	2009-2010		2010-2011*	
		Qty	Value	Qty	Value
1	Coconuts (fresh)	13621.03	1889.81	15751.89	2267.77
2	Coconuts(dried)	2957.56	1119.16	3889.62	1342.99
3	Desiccated coconut	2050.06	464.16	900.00	950.00
4	Other coconuts excluding fresh / dried	8822.87	2567.44	10960.17	3080.93
5	Coconut oil (crude)	14.13	16.85	30.17	19.26
6	Coconut oil (refined)	5066.85	3986.90	5840.00	6130.00
7	Other residues of coconut or Copra	271.14	44.33	1056.67	53.20
8	Oilcake (Solventless)	346.00	41.40	213.77	49.68
9	Coconut shell (raw)	1986.28	304.00	1870.35	364.80
10	Shell charcoal	39938.00	2429.53	15522.78	2915.44
11	Copra	22997.18	9113.03	29625.03	10935.64
12	Coconut Shell based Activated Carbon*	36855.21	21262.62	38712.12	25550.00
Total			43238.43		53659.71

Source: Directorate General of Commercial Intelligence and Statistics, Kolkata  
\*Compiled from the export returns of Exporters Registered with the Coconut Development Board.

## VI. Coconut Development Board and Its Programmes

Coconut Development Board established in 1981, has been implementing various programmes for improving production and productivity in the beginning. Since India was lagging behind in technology development for product diversification and by-product utilization, subsequently thrusts were given on technology development through sponsored research. Now the country is having many value added coconut products like desiccated coconut, coconut milk, coconut milk powder, coconut chips, virgin coconut oil, packed tender coconut water, shell charcoal, activated carbon etc. The concerted efforts of the Board could bring about perceptible improvement in area, production

A brief of the pivotal programmes implemented by the Board in the country for the benefit of the farming community is narrated below:

### VI (i) Replanting and rejuvenation of coconut gardens in Traditional States in India

The prevalence of old and senile palms, poor genetic base of the planting material under cultivation, over populated stands of both coconut and other trees in the homestead, poor management of the crop and severe incidence of pest and diseases are the major reasons for the low productivity. This proposal is therefore, for improving productivity through a programme of cutting and removing the old, senile, unproductive and disease advanced palms, replanting with quality seedlings and rejuvenation of the existing gardens through an integrated

package of practices including restructuring of the gardens through shade regulation.

Nearly 30% of coconut gardens in the traditional coconut growing states are more than 50-60 years old, and have crossed their prime productive period. The planting density in Kerala is also more than the recommended level and ranges from 200 palms to 250 palms or more per ha. With the objective of cutting and removing the old, senile and disease advanced unproductive palms and also rejuvenating the existing healthy palms as well as replanting with quality seedlings so as to maintain optimum planting density, a project for Replanting and Rejuvenation in the root wilt affected districts of Kerala and UT of Andaman and Nicobar Islands has sanctioned by Government of India as a Pilot scheme in 2009-10. The project is sanctioned for the three year period at a total cost of Rs. 22756.43 Million (US \$ 506 million) crores and subsidy component of Rs. 4785.04 million (US \$ 106 million) as a Central Sector Scheme.

The major components of the programme and the rate of assistance are as given below: Cutting and removal of old, senile, unproductive and disease advanced palms with a compensation of Rs.13000/- per ha (US \$ 288)

Rejuvenation of existing gardens through integrated management practices @ Rs 15000/ha (US \$ 333 /ha for 2 years @ Rs. 7500/- per ha (US \$ 166).

Assistance for replanting @ Rs.20 per seedling. Implementation, Monitoring, Evaluation, Training etc.

The project is implemented by the Board in association with the Department of Agriculture and local bodies as a Farmer participatory programme. Implementation will be closely monitored at the level of the

Local Body, by the State Government (at the state level) and by Coconut Development Board (at the national level).

With the implementation of the scheme in the last two years in the state of Kerala and the Union Territories of A&N Islands, 7 lakhs palms in the stage of old, senile and unproductive, were removed and a subsidy of Rs. 270 million released. The scheme was covered in an area of nearly 1 lakh ha. The entire area has been rejuvenated by applying agricultural inputs at subsidized rate and replanting of seedlings undertaken in the areas where planting density was not above the recommended density.

**This project is proposed to be extended in the remaining districts of Kerala as well as other major coconut growing states where old and senile palms exist in large gravity.**

#### *VI (ii) Coconut Cluster Programme for improving productivity in coconut*

In India the area under coconut seems to have reached a saturation point. Therefore, the possibility of taking up new planting is limited. The area under coconut is expected to either remain stagnant or even marginally decline. In many areas coconut is being replaced by rubber in view of the very lucrative prices as well as the dearth of labour for coconut harvesting. Therefore in the years to come, coconut production can be improved only by improving productivity.

The Board therefore intensified the productivity improvement programme on Cluster Baisi during the recent past. Under this programme, farmers in contiguous areas have been motivated to come together on a common platform to take up productivity improvement

programmes, reduce costs and build up marketable surpluses. The Board extends support to the farmers for procuring critical inputs and taking up plant protection measures. The programme is implemented in a farmer participatory mode and the progress is periodically reviewed in cluster meetings. This programme is fast gaining popularity as the farmers have been greatly enthused by the crop improvement; gains in productivity, vegetative growth and increased income by adopting coconut based farming systems. Efforts are under way to wean the farmers from the practice of monoculture to integrated farming by taking up intercrops and allied agricultural activities such as bee keeping, pisciculture, cultivation of seasonal and perennial intercrops. The coconut clusters are also taking up plant protection measures on a community basis. Scarcity of farm labour for harvesting continued to be a major constraint.

**The Board has formed 742 Cluster in the country covering an area of 25517 hectare in 8 states. The scheme has benefited 87087 small and marginal farmers.**

#### *VI (iii) Friends of Coconut Trees-Training programme to address the labour shortage*

The Board has initiated a residential training program to train about 5000 underemployed youths in developing special skills and confidence in coconut palm climbing and plant protection activities for the benefit of the coconut community under the title 'Friends of Coconut Tree'. **The major objectives of the training programme are:**

- To develop a professional group of youth under the

banner of "Friends of Coconut Tree" for harvesting and plant protection operations in coconut

- To impart training to a group of unemployed youth in developing technical skills, entrepreneurship capacity, leadership qualities and communication skills to address the needs of the coconut growers.
- To make them self reliant and instill confidence in undertaking the responsibility of "Friends of Coconut Tree".
- To tackle the problem of unavailability of coconut tree climbers for coconut farming and plant protection activities
- Generate appropriate technologies to support sustainable growth of coconut sector and generate employment opportunities for the youth.

#### **The target fixed for the current year is training to 5000 youths**

An insurance scheme for coconut tree climbers is introduced to these Friends of Coconut so as to minimize the occupational risks and make available manpower for coconut harvesting. The insurance coverage is Rs.1,00,000/- for accidental death. The Board meets 100 % of the cost of the annual premium.

It is proposed to synchronize the harvesting schedules in the clusters by addressing the labor shortage and generating steady employment for agricultural labor. As the clusters are envisaged as a measure to overcome the problems associated with farming in small and marginal holdings, it is gradually proposed to develop the clusters as integrated units for production, processing and marketing. The farmers in the cluster are being motivated to take up primary processing.

#### **VI (iv) Formation of Coconut Producer Societies, Federation and Producer Companies**

Coconut farmers are the most unorganized category in the agricultural sector. With the result, they are not in a position to reap the benefit of most of the programmes implemented by various agencies. They are also unable to raise voice for premium price for their coconut produces.

The Board has therefore initiated the formation of Coconut Producer Societies (CPS) by associating 40-100 coconut growers in a contiguous area with a consolidated minimum of 4000-5000 palms. The objective is socio-economic upliftment of the farmers through productivity improvement, cost reduction, efficient collective marketing and processing and product diversification. It is planned to form 5000 societies in the 12<sup>th</sup> plan period of which 3000 will be completed during this year; i.e. 1000 in Kerala, 500 in Tamilnadu, 500 in Karnataka, 500 in Andhra Pradesh and 500 in other potential states where formation of societies is possible. The CPS-have to be provided with physical infrastructure for providing opportunities for value addition. The CPS will be integrated to form a federation and the federations will be integrated to form 20-25 producer companies over a period of 5 years. A farmer equity contribution is also proposed to be mobilized. A matching equity contribution is requested from the state Government as a one time assistance for making the CPS effective.

#### **VI (v) Product Promotional Campaign**

The Board has been taking many steps to generate an increased demand for coconut and coconut

products by promoting the health benefits and antioxidant properties of coconut. Multimedia campaigns to promote the goodness of coconut has been launched through the print and electronic media. TV commercials on the Goodness of Coconut is telecast in all leading national and regional channels. The print media carries advertorial features highlighting the benefits of coconut and coconut oil.

#### **VII. Technology Mission on Coconut**

The Technology Mission has started in 2001 to promoting economically desirable product diversification and value addition. The Mission has played a very vital role in addressing the various gaps and missing links in the production, post harvest and consumption chain.

Incentives made under the scheme "Technology Mission on Coconut (TMOC)" has accelerated the efforts of the Board in value addition and by-product utilization in the coconut sector. So far 164 coconut processing units with infrastructure facilities worth 152.43 crores for processing 1216 million nuts per year have been established. Nine tender coconut packing units having capacity to process 36 million nuts per year, 13 activated carbon units with a capacity to produce 30,000MT per annum have been established under the scheme.

Units that have come up include desiccated coconut, virgin coconut oil, packed tender coconut water, coconut chips, vinegar, activated carbon etc. The establishment of new units has given a boost to value addition, employment generation and increased income. All these efforts have helped in enhancing market potential for coconut

products both in domestic and international markets.

### **VII (i) Sponsored Research Programmes of the Board**

As coconut oil is the product that determines the price of coconut, the Board has initiated several studies to increase its usage. To dispel the prevailing misinformation regarding coconut and cardio vascular health, the Board has sponsored several studies by reputed national institutions. On the health front, two important studies are in progress.

The Amritha Institute of Medical Sciences, Cochin is currently studying the impact of Coconut Oil as a cooking medium on cardiovascular risk factors and clinical outcomes in patients with coronary artery disease receiving standard medical care.

Another premier institute namely the National Institute of Nutrition Hyderabad has completed a study on the impact of consumption of Dietary coconut oils (VCO & CO) and their health implications. Other studies relating to Coconut Oil taken up are the Batch/continuous transesterification process of utilization of coconut oil for bio diesel production by Indian Institute of Petroleum (IIP), studies on various aspects relating to Coconut Oil, including removal of sedimentation in Coconut Oil, reduction of pour point of Coconut Oil and the composition of Virgin Coconut Oil and traditional coconut oil by the Institute of Chemical Technology (IICT).

### **VII (ii) Export Promotion Council (EPC)**

The Government of India has notified Coconut Development Board in 2009 as Export Promotion Council(EPC) for

coconut and coconut products except those from coir and coir products have also helped the Board to pay more attention to the export promotion activities which was hitherto attended by other EPCs such as APEDA, CHEMEXCIL etc. On being designated as EPC, the Board has made worthwhile efforts to extend the following services to the exporters of coconut and coconut products.

In pursuance of the above notification coconut products such as coconut water based products, raw coconuts, coconut oil, dry coconuts, ball copra, cut copra, medicated coconut oil, coconut oil based hair/massage oils, virgin coconut oil, coconut based convenience foods, Coconut shell, Coconut shell powder, coconut shell charcoal, coconut shell based activated carbon, coconut shell buttons, handicrafts made out of coconut shell and parts of coconut tree, coconut wood furniture etc. fall within the jurisdiction of the Coconut Development Board. So far 581 exporters have been issued Registration cum Membership Certificate.

#### **Services provided by the EPC to the exporting community**

- Issuing Registration-Cum-Membership Certificates to exporters;
- Securing benefits under **Vishesh Krishi and Gram Udyog Yojana**, Duty Draw Back, Duty Entitlement Pass Book Scheme, Focus Product Scheme, Special Focus Product Scheme for products from the coconut sector;
- Facilitating participation in International Trade Fairs by seeking assistance under Market Access Initiative Scheme and Market Development Assistance Scheme;

- Disseminating important trade information;
- Analyzing market potential and market trends for the benefit of exporters;
- Providing commercially useful information and assistance to exporters in developing and increasing their exports;
- Providing professional advice in areas such as technology up gradation, quality and design improvement, standards and specifications, product development, packaging etc;
- Providing data on the exports and imports of the country, and other relevant trade data;
- Organizing Seminars, Conferences and Buyer Seller Meet.

The Board is now trying to dovetail its future activities in such a way that the copra coconut oil nexus is minimized and more value added products including packaged tender coconut water is popularized in the domestic and international markets. Attempts will also be made to make available quality high yielding and short duration variety of coconut seedlings to the farming community.

Replanting and rejuvenation of old, senile and unproductive coconut gardens will be a priority area since the land for expanding the area under coconut has come to saturation, especially in the traditional states. The focus on expanding the crop in the traditional belts will be shifted to non traditional and disturbed areas of the country. With all this in mind, the following strategies are proposed for the 12<sup>th</sup> five year plan period with the objective of making the Indian coconut industry globally competitive.

## VIII. Innovative Programmes in Pipeline

Production of quality/hybrid seedlings in the farmers field linking with Coconut Producer Society to meet the increasing demand for hybrid seedlings, collaborative research through Academic Institutions, producer companies having capabilities and infrastructure in the areas of product development, biotechnology, mechanization, plant protection etc, utilization of coconut wood, women entrepreneurship in coconut sector, exploiting the potential for processing and marketing of Neera to make available a healthy non alcoholic product to the public as well as development of much downstream value added products, effecting a drastic shift from the present product mix of copra and coconut oil to non copra and non oil products are some of the innovative activities proposed to be taken up by the Board to strengthen the Indian coconut industry.

Having accepted the Tender coconut water as a health drink in the world over more focus will be made to popularize the usage



Different Coconut Cropping System in India

of Tender coconut so that dependency on coconut oil could be minimized.

Now a stage has come that Genome mapping studies in coconut has to be taken on priority basis. APCC may initiate programmes for Genome mapping of Coconut tree.

## IX. Conclusion

The Board has been adopting a multipronged strategy for increasing production, encouraging

processing and carrying out a vigorous market promotion campaign. The impact of these programmes is reflected in improved production and productivity, increased employment generation, higher value addition and better income for the ten million people who depend on the crop for their livelihood.

The integrated approach adopted for taking up production, processing and marketing on a common platform will also help the coconut growers to increase their earnings from coconut and derive maximum value for the whole nut.

The massive programme proposed for replanting and rejuvenation with substantial support from the Government of India will revive the traditional coconut economy and usher in an era of healthy and sustainable growth. India will gain the premier position in production and productivity and will attain all competitiveness in near future to face the challenges in global coconut sector.

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Compact Area Approach – Direct Implementation by the Coconut Development Board