

## Production and Marketing of Coconuts in Karnataka: Some Preliminary Findings

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### ABSTRACT

This paper aims to highlight certain facts that help as well as constrain the production and marketing of coconuts in Karnataka. Based on the observation and analysis of the collected data, the paper concludes that both the production and marketing practices of coconut in Karnataka need to be made more professional if it has to continue to benefit the farmers and to assert its role in the Indian scenario.

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### Introduction

“Coconut is the king of vegetables with its sap, fruits, leaves, stem, root and all parts to feed, appease, shelter, cure and carry mankind” - Joes Maria de Silva

The Coconut (*Cocos nucifera*) is a benevolent tree, a nature's gift to mankind. The coconut tree provides clothing, utensils and shelter and therefore, is an important source of earning livelihood to the people of coconut growing states. The coconut crop is grown in 12.2 million hectares of land which constituted about 0.7% of net crop area of the world. India contributes about 15.46% in area and 26.34% in terms of production of coconut in the world. The major coconut crop acreage is concentrated in the states of Kerala, Karnataka, Tamil Nadu and Andhra Pradesh. Karnataka stands second in area (507 thousand hectare) and production (5893 million nuts). State has the production of 44083 lakh nuts with an area of 443384 ha.

### Area and Production of Coconuts in India

It is a well-known fact that India ranks first in the world production of coconut with a production of 16943 million nuts and a productivity of 8965 nuts per ha. In India coconut is grown in 18 states and 3 union territories in an area of 18.90 lakh ha. The role of coconut is very significant in the national economy in view of poverty alleviation and generation of income and employment especially to the poor. The crop contributes about Rs.12, 000 crores to the country's GDP and 6% to the vegetable oil pool. The country also earns foreign exchange to the tune of Rs.2, 200 cores by way of export of coconut products including coir. It is estimated that about 10 million people in the country depends on coconut culture and industry for their livelihood.

Table 1. All India Final Estimates of Area and Production of Coconut

2011-12			
States /Union Territories	AREA ('000 Hectares)	Production(000 metric ton)*	Productivity (Kilogram/ha)
A & N Islands	21.80	72.30	3317
Andhra Pradesh	142.00	1270.00	8944
Assam	20.80	194.80	9365
Bihar	15.20	97.50	6414
Chhattisgarh	0.80	6.30	7875
Goa	25.70	89.00	3463
Gujarat	20.90	217.90	10426
Karnataka	511.00	3784.60	7406
Kerala	766.00	3973.90	5188
Lakshadweep	2.60	48.70	18731
Maharashtra	21.00	120.00	5714
Mizoram	0.00	0.10	0
Nagaland	0.90	0.30	333
Orissa	53.90	258.00	4787
Puducherry	2.10	20.00	9524
Tamil Nadu	430.70	4515.60	10484
Tripura	6.20	18.10	2919
West Bengal	29.10	252.90	8691
All India	2070.70	14940.00	7215

Source: Advisor, Horticulture Division, Ministry of Agriculture, Govt. of India.

\* 1563 nuts - 1 metric ton

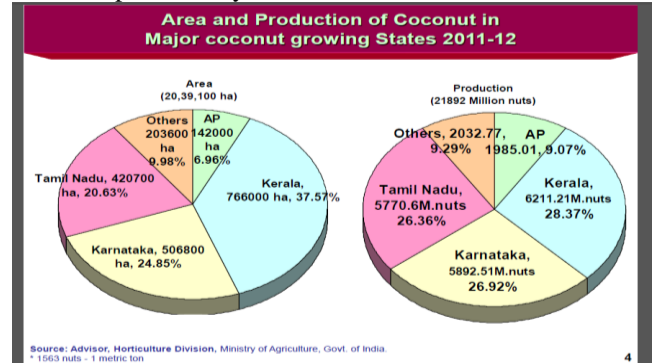
**Table 2. Area, Production and Productivity of Coconut in India for the Year 2011-12**

2011-12				
States /Union Territories	AREA ('000 Hectares)	Production(000 metric ton)*	Production (Million Nuts)	Productivity (Nuts/ha)
A & N Islands	21.80	72.30	113.00	5184
Andhra Pradesh	142.00	1270.00	1985.01	13979
Assam	20.80	194.80	157.86	8397
Chhattisgarh	0.80	6.30	9.85	12309
Goa	25.70	89.00	138.58	5394
Gujarat	20.90	217.90	340.58	16296
Karnataka	511.00	3784.60	5892.51	11627
Kerala	766.00	3973.90	6211.21	8109
Lakshadweep	2.60	48.70	62.52	23156
Maharashtra	21.00	120.00	187.56	8931
Nagaland	0.90	0.30	0.47	521
Orissa	53.90	258.00	403.25	7482
Puducherry	2.10	20.00	31.26	14886
Tamil Nadu	430.70	4515.60	5770.60	1377
Tripura	6.20	18.10	13.44	2278
West Bengal	29.10	252.90	574.40	19739
All India	2039.10	14006.50	21892.16	10736

Source: Advisor, Horticulture Division, Ministry of Agriculture, Govto of india

**Estimates of Area and Production of Coconuts In Karnataka**

In Karnataka, coconut is one of the major commercial plantation crops. It is grown in an area of 4.29 lakh ha, occupying about 30% of the total area under horticulture crops. It is grown in almost all the districts of Karnataka. The production in Karnataka is 3056 million nuts with a productivity of 7110 nuts per ha. Karnataka contributes about 25% of the coconut area and 27% of the production in the country. Productivity of the state is 11628 nuts/Ha., compared to national productivity of 10736 Nuts/Ha.

**Figure 1. Area and Production of Major Coconut Growing States in the Year 2011-12**

Among thirty districts, Tumkur and Hassan are the major coconut growing districts. For the study 894 sample holdings was covered spread across seven districts and yield data from 8940 palms recorded. Majority of the palms covered under the study were tall, within the age group of 15-60 years.

**Table 3. District-wise Area and Production of Coconut in Karnataka for the Year 2011-12**

SI No.	Districts	Area in ha	Percentage share in area	Production in lakh nuts	Percentage share Production	Productivity(Nuts/ha)
1.	Tumkur	142880	32.22	13496	30.6	9446
2.	Hassan	62575	14.11	6222	14.1	9943
3.	Chitradurag	42531	9.59	5712	13.0	13431
4.	Chikmagalur	38113	8.60	2078	4.7	5431
5.	Mandya	26727	6.03	3455	7.8	12925
6.	Mysore	26280	5.93	2388	5.4	9085
7.	Udupi	17460	3.94	1712	3.9	9807
8.	Dakshina kannada	16077	3.63	2156	4.9	13414
9.	Ramanagar	14532	3.28	1686	3.8	11599
10.	Davangere	117010	2.64	1164	2.6	9943
11.	Chamarajanagar	11381	2.57	892	2.0	7836
12.	Uttar kannada	7626	1.72	587	1.3	7700
13.	Shimoga	5954	1.34	593	1.3	9957
14.	Bangalore rural	4039	0.91	402	0.9	9943
15.	Chikkaballapur	3192	0.72	317	0.7	9943
16.	Kolar	2805	0.63	279	0.6	9943
17.	Bangalore urban	2264	0.51	225	0.5	9943
18.	Kodagu	1617	0.36	161	0.4	9942
19.	Haveri	1290	0.29	128	0.3	9943
20.	Bellari	910	0.21	90	0.2	9943
21.	Bagalkote	695	0.16	69	0.2	9942
22.	Koppal	652	0.15	65	0.1	9943
23.	Dharwad	511	0.12	51	0.1	9943
24.	Gadag	461	0.10	46	0.1	9944
25.	Belgamu	307	0.07	31	0.1	9941
26.	Bijapur	288	0.06	29	0.1	9941
27.	Gulbarag	242	0.05	24	0.1	9942
28.	Yadgir	218	0.05	22	0.0	9940
29.	Raichur	27	0.01	3	0.0	9926
30.	Bidar	20	0.00	2	0.0	9950
31.	State	443384	100.0	44083.00	100.0	9942

Source :DES, Karnataka

Average holding size in the state as per survey findings is 1.13 ha, which varied from 0.51 ha in Dakshina Kannada to 1.63 ha in Tumkur. Coconut palm density for the state is found to be 131 per ha., where as the bearing palm density is 118 per ha.. Bearing palms in the sample gardens selected constitute to almost 90 per cent of the total palms selected in the state. Yield per palm estimated varied widely from 31 to 86. The lowest of 31 is in Chikmagalur district while the highest of 86 is estimated in the district of Mandya. Based on the analysis of data collected the annual per hectare yield is 5289 nuts in the state. Production of coconuts in Karnataka state in 2012-13 is estimated to be 23451 lakh nuts, which was 44083 lakh nuts as per the latest figures released by Department of Economics & Statistics, Karnataka.

#### Coconut: A Rain-Fed Crop in Karnataka

The productivity of coconut in Karnataka is only 7110 / ha which is below the national productivity of 8965 nuts / ha. The major reason for the low productivity in Karnataka is lack of irrigation, poor genetic potential of the palms, incidence of pest and diseases, and poor management practices. Coconut is a crop which grows and produces continuously throughout the year. The crop performance will be poor if water shortage is felt for a long spell continuously. Continued drought experienced by the major coconut growing districts during 2011-12 and 2013 had a serious impact on the productivity of coconut in the state. The rainfall received in major coconut growing districts is given in Table-4.

**Table 4. Rainfall Details of the Major Coconut Growing Districts in Karnataka**

District	Avg.Rain fall (mm)	Rainfall Received		
		2010	2011	2012
Tumkur	691	983 (+42.3)	617 (-10.7)	559 (-19.1)
Chamaraja nagar	828	900 (+8.7)	759 (-8.3)	530 (-36)
Chitradurga	530	971 (+83.2)	418 (-21.1)	576 (-8.7)
Davanagere	629	1044 (+66)	541 (-14)	588 (-6.5)
Hassan	1199	1292 (+7.8)	964 (-19.6)	659 (-45)

Note: (+) & (-) Figures given in brackets are rainfall percentage variation

The rainfall data made available by the Karnataka State Natural Disaster Monitoring Center (Table-4) shows a significant departure (-) from normal rainfall during the year 2011-12. Due to this, severe depletion of soil moisture occurred continuously resulting in low coconut productivity and even death of palms in severely affected areas. Coconut is traditionally grown in areas with moderate to high rainfall (more than 1500 mm). However, the coconut area has extended to dryer areas with less annual rainfall. These locations include Hassan, Tumkur, Chitradurga, etc., which receives less than 900 mm annual rainfall. The soils of these areas are characterized by less water holding capacity and hence experiences drought more frequently. Though there was good rainfall during 2010, due to deficit rains in 2011 and 2012, the coconut palms were severely affected where adequate moisture conservation measures and life saving irrigation were not taken up.

#### Production and productivity of tender coconuts in major coconut growing districts in Karnataka

In Karnataka about 20 per cent of the total production of coconut is harvested in the form of tender coconuts. It has been reported that nearly 50 to 60 of the coconut production in Mandya, Bangalore, Mysore and Hassan districts is harvested as tender nuts. In Karnataka state, tender coconut is a notified

commodity in 14 regulated markets but actual trading is carried out in 6 markets only. Farmers in these districts lease out their gardens mostly to middlemen or sometimes traders and vendors. Tender coconuts are traded in regulated markets of Maddur, Mandya, Channarayapatna, Holenarshimapur, Hosdurga and Kadur, but Maddur market is famous for daily trading of tender coconuts.

Maddur market is an important regulated market exclusively for marketing of tender coconut. The regulated market has been established in Maddur town of Mandya district in Karnataka State in the year 1992, considering the magnitude of cultivation of coconut crop in Maddur region as the climate in this region is congenial to the production of quality tender coconuts. The market yard is spread over about 12 acres of land with essential infrastructure facilities required for the regulated market. Traders informed that the peak production of tender coconut begins from the month of November and continue up to February which co-inside with the winter season. On the contrary the peak demand season is during the summer months of May to June when the supply becomes lean. The market caters to the needs of the coconut farmers cultivating in and around Maddur area. However, during off-season tender coconuts do arrive from Kollegal and other surrounding areas situated even at distant places. On inquiry from the traders it was informed that there is no correlation between quantum of arrival and prices offered by the wholesale traders in Maddur market. Similarly, the prices of matured coconut and tender coconut are also unrelated to the seasonal variation. It was gathered that on an average there is demand for around 2 to 3 lakh nuts per day due to the constant demand from the up-country markets like Mumbai, Tamil Nadu and Andhra Pradesh. However, among these up-country markets Mumbai is the leading market with an average demand of around 2 lakhs nuts per day. During peak season, about 20 trucks load amounting to about 1.5 lakh coconuts are sent to Andhra Pradesh alone. The quality i.e. size and maturity of tender coconuts differ with the demand from consuming markets i.e. coconut sent to Bangalore and Mumbai city are better in appearance compared to the coconuts sent to other market places. The consumer in Andhra Pradesh and Mumbai prefer tender coconuts having better coconut jelly content over the coconuts with water only. It was observed that due to high cost of transportation the traders negotiate to safeguard the interest of consumer by offering competitive prices for the tender nuts. It was learnt that about 25 traders were active in the market. However, only 6 to 7 big traders control 70 per cent of the coconut trading in the market.

The sale in the market takes place through mutual negotiation immediately after entry of the commodity at the market gate and not by open auction system. The representatives of the commission agents offer their prices to sellers for the tender coconut brought to the market. The market activities begin in the morning at 10 a.m. and continue till 6 to 7 p.m. depending on the arrivals of tender coconuts. The market authority collects market charges @ 1.5 per cent of the turnover or Rs.300/- to Rs.350/- per truck which approximately contains 6000 nuts per truck. The commission agents charge Rs.5/- per 1000 nuts to the farmers-trader or traders. These markets cater to the demand of up-country markets like Pune, Mumbai, Nagpur of Maharashtra, Gujarat and Delhi supplying about 8-12 truckloads, with the capacity to load 8000 to 10,000 tender nuts per day. In Bangalore, the

wholesale market of tender coconut at Yeshvanthapur transacts about one lakh nuts daily and at Bommanalli market nearly 200 to 250 farmers bring their supplies and participate in the auction conducted in the market yard with daily transaction of about 50,000 nuts. Tender coconuts from villages to the market are transported by trucks, tempos and matadors. Now-a-days trucks are common means of transport as each truck load carries about 4000 to 10,000 coconuts. Tender coconuts are simply loaded in trucks or other carriers, retailers transport them to different retail centers in tempo, rickshaw cycles, hand carts or even head loads in the cities.

#### Activities of Coconut Development Board in Karnataka

The Coconut Development Board under the Ministry of Agriculture, Government of India implements various schemes for the integrated development of coconut culture and industry. The Board implements the programmes through the State Horticulture Department. Major projects implemented by the Board includes production and distribution of planting material, expansion of area under coconut, integrated farming for productivity improvement and technology demonstration and market promotion. Under the Technology Mission on Coconut, the Board implements the programmes for demonstration and adoption of technologies, for product processing and product diversification. The Board has been organizing the coconut growers under coconut producers' societies and coconut producers' federations. The Board has also been providing training to youth for palm climbing and plant protection operations through selected Krishi Vigyana Kendras in Karnataka. During 2012-13, the Board trained 797 youths under this programme.

#### Marketing Practices

Coconut farmers have two channels for disposal of their coconuts. One is the direct channel and the other one, an indirect channel. Indirect channel is the most prominent channel adopted among coconut farmers. Direct channel is very simple while the indirect channel is very complex. Based on their mode of disposal of coconuts, four types of coconut farmers have been observed. They include lesser farmer, opportune farmers and farmer adopting mixed practices. Nearly half of the coconut farmers in general and two third of marginal and small farmers in particular have been observed adopting leasing as the mode of disposal of their

coconuts. The financial crises especially the need for money to redeem prior debts and to meet domestic expenses are the prime reasons for leasing coconut trees. The marginal as well as big coconut farmers with sound financial position are free from any such forces compelling them to lease coconut trees. Adoption of mixed practice for disposal of coconuts is found common among big farmers. Locational differences of the farm and differences in age and productivity of coconut trees are the reasons attributed for following mixed practices of marketing by farmers. Absence of lease holders, low productivity as well as poor protection to trees in the farm, seasonal harvesting etc. are some of the factors forcing coconut farmers to adopt mixed marketing practices.

#### Tumkur: Major Producer of Coconuts in Karnataka

The major coconut growing districts in the state of Karnataka are Tumkur, Hassan, Chitradurga, Chickmagalur and Mandya (see Table-5). Tumkur is the major coconut growing district in the state with about 32% share of area and production. It is the largest coconut growing district in the country where majority of the coconut based industries are located.

Tumkur is noticed to be the largest producer of coconut with the production of 13496 lakh nuts, followed by Hassan and Chitradurga. These three districts together have a crop area of 247986 ha. Production of coconut from Tumkur district is 30.6%, followed by Hassan which contributes 14.1% of the state area under coconut and production.

**Table 5. Area, Production & Productivity of Major Coconut Growing Districts in Karnataka (2009-2010)**

Districts	Area in Ha.	Production in Lakh Nuts	Productivity (Nuts / ha)
Tumkur	138660	9858.98	7110
Hassan	62256	4426.51	7110
Chitradurga	42388	2950.08	6960
Chickmagalur	37996	2032.39	5349
Mandya	25410	2550.56	10038
Mysore	22070	1308.99	5931
Udupi	16224	1301.32	8021
Dakshina Kannada	16096	1144.45	7110
Ramanagara	14328	1018.75	7110
Davanagere	12101	994.10	8215
Chamarajanagara	11365	808.07	7110

**Table 6. Area, Production and Productivity of Coconut in Tumkur District from 2000-01 to 2009-10**

Sl. No.	Year	Area (Ha)	Production (Lakh nuts)	Productivity (Nuts/ha)
1	2000-2001	100810.00	6632.83	6580
2	2001-2002	110993.00	5477.67	4936
3	2002-2003	111248.00	5490.26	4936
4	2003-2004	109443.00	5401.18	4936
5	2004-2005	110937.00	5474.91	4936
6	2005-2006	122690.00	6054.94	4936
7	2006-2007	125511.00	6194.16	4936
8	2007-2008	124110.00	6837.65	5510
9	2008-2009	132587.00	9945.66	7502
10	2009-2010	4021140.00	285910.42	7111
	Total	506946.90	34341.97	6774

Source: Department of Horticulture, Bangalore.

### Conclusion

The improvements in the production and productivity of coconut had been on account of continuous efforts made by all the agencies involved in the process of integrated approach to improve the production and productivity of the coconuts. Coconut is an important marketing function to fetch a remunerative price for the coconut but it has not been fairly adopted at the producer's levels, throughout the country, whether for tender and or matured coconuts. However, the wholesale traders adopt the practice of grading coconut and copra based on the categories such as size and shape. Hence, there is a dire need to make the production and marketing practices more coordinated and professional in the interest of the farmers and the overall development of the industry.

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