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COPRA PRODUCTION AND ISSUES IN KARNATAKA: POLICIES OPTIONS

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ABSTRACT

The word agriculture means production of crops. It encompasses all the allied activities like horticulture, sericulture, diary etc. Man started agriculture nearly 10000 years ago. From a nomadic hunter, he became a stationed cultivator. Since then, agriculture has developed into a science through ages. Agriculture plays a prominent role in the development of any economy. It provides basic food to the population of the country. No country, however advanced in any other sector, can afford to substitute agriculture with an alternative for its food requirements. Myrdal emphasized the importance of agriculture by saying "It is in the agricultural sector that the battle for long-term economic development will be won or lost."

KEYWORDS: *agriculture, marketing system, poor people. Coconut, plants*

INTRODUCTION

Agriculture is the backbone of Indian economy and still plays a significant role despite large scale development of industrial and tertiary sectors. In recent years several changes are taking place in the Indian agrarian sector due to globalization of the economy and modern technological developments Karnataka is the second largest producer of coconut in the country contributing 26% of the national output. It produces premium quality copra which is in demand throughout the country. However, the prices of coconut products have been facing a stagnant regime in the past many years. The marketing system is said to be inefficient and not providing the remunerative prices to producers. In this background, the present study has attempted to understand the scenario of coconut marketing and analyze the efficiency of the marketing system of coconut in the state.

SCIENTIFIC CLASSIFICATION OF COCONUT

All the living creatures on the earth are classified by the biologists for the purpose of identifying them. The branch of science that deals with this classification is called taxonomy. The Swedish botanist and physician Carl Linnaeus (1707–1778) is called the father of taxonomy as he was the first to make a systematic classification of more than 12000 plants and animals in his magnum opus System Nature (Calisher, 2007). Linnaeus developed a rank based system for classification of living things and binomial nomenclature for naming them. Currently, the naming and classification of plants is governed by the International Code of Nomenclature for algae, fungi, and plants (ICN) also known as Melbourne Code. But, there are known deviations from this code as well.

The living things are classified in a hierarchical order in eight major ranks as follows:

Domain, Kingdom, Phylum, Class, Order, Family, Genus, Species.

COCONUT INDUSTRY IN KARNATAKA

Karnataka stands second in India in production of coconut next only to Kerala. It contributes about 26% and 25% to the country's total area and production in coconut respectively. Coconut is grown as a major crop in the southern districts of the state viz. Tumkur, Hassan, Chitradurga, Chikkmagalur, Mandya, Mysuru, Dakshina Kannad. Udupi and Ramanagara. It is the chief and only source of income for millions of people in this region. It has been interwoven with their life and culture. The area under cultivation, output and productivity are growing at a significant rate. The copra manufactured from the state is known for its quality and demanded throughout the country. Tiptur is the largest market dealing with copra. Maddur is a famous market for tender coconuts. The product moves to various states from this market.

COCONUT PRODUCTION: AN OVERVIEW

Coconut is a unique product that is useful to the poor people in terms of social and economic values. Coconut is grown in more than 93 countries for the reason it grows well in tropical climatic areas. Coconut assumes significance in the light of its contribution in employment and income generation to all agrarian economies. Besides being used for

edible purposes as fresh nut, copra and cooking oil, it is also used in the manufacture of industrial products such as cosmetics, soaps, shampoos, hair oil, body lotions and making coir materials such as sacks, ropes, mats, etc. Tender coconut, having properties of thirst quenching and health values-vitamins, minerals, anti-oxidants, has provided informal employment to large number of poor people. Coconut is also a crop of small and marginal farmers. 98 percent of coconut is grown in less than two hectares. Thus it forms income generation of many small and marginal farmers either as main income or additional (subsidiary) income. The waste is also used in agriculture for making manure on one hand and firewood on other hand by households. In This chapter, the products and by products of coconut and their socio-economic utility is discussed. Further an attempt is made to study the area under coconut cultivation, its production and Productivity in the World, India and Karnataka. Further A scenario of Coconut production in five major coconut producing districts of Karnataka, namely Tumkur, Hassan, Chitradurga, Chikkmagalur and Mandya is also provided.

WORLD PRODUCTION OF COPRA

Copra is a major commercial product derived from coconut and almost all the coconut growing economies have been traditionally dependent largely on copra and coconut oil as a source of demand for coconut. The world production of copra is estimated to be 6.76 million tonnes in the year 2014-15 (APCC, 2015). It has increased by 2.4 per cent from 4.85 million tonnes in 2000. Philippines are the top producer of copra contributing 38 per cent of world production. India is the second largest producer and contributes nearly 25 per cent of world production. Table 1 shows the production of copra by different countries in the year 2014.

Table 1 World production of copra in 2014 (Tonnes)

Sl. No.	Country	Production (in tonnes)	Percentage to world total
1	Philippines	2,578,000	38.11
2	India	1,728,200	25.55
3	Indonesia	1,481,174	21.90
4	Mexico	201,072	2.97
5	Papua New Guinea	106,532	1.58
6	Sri Lanka	92,139	1.36
7	Vietnam	56,669	0.84
8	Mozambique	46,224	0.68
9	Malaysia	45,900	0.68
10	Ivory Coast	45,292	0.67
11	Other countries	552,749	8.17
	World	**6,763,881**	**100.00**

Source: APCC (2014) Coconut Statistical Yearbook.

Coconut Production in India

Agriculture still enjoys predominant position in Indian economy despite the fact that the largest contribution to its GDP comes from Service sector. As quoted by Sir Charles Metcalfe, India is a country of little republics called villages. They are agrarian economies. They sustain on agriculture and allied activities. Therefore, agriculture has importance in the development of Indian Economy. Even after development of non-farm sector, agriculture has kept alive its significance in Indian economy. It is because it employs sixty percent of rural population and to equal number of people is a main source of income.

Coconut is an important horticultural crop grown as mixed crop or individual crop on either commercial or non-commercial purposes in many parts of the country. Coconubeing a versatile crop has multi-utility. Tender coconut is used as a beverage as it contains vitamins, minerals and anti-oxidants. There is a saying that no food is preparedwithout using coconut. Because of its multi-use property in both edible and non-edible purposes, coconut has attained commercial importance. It has obtained a prominent place in Indian socio-economic life. On the other hand, coconut shells are used in charcoal industry and fuel by rural poor. India has diverse climatic zones that can support growth of coconut favourably. Coconut is reported to be grown in 18 states and 3 union territories in India at in large scale. Major states of coconut production are Kerala, Karnataka, Tamil Nadu, Andhra Pradesh, Telangana, Goa, Lakshadweep, Odisha, West Bengal, Gujarat and Andaman Nicobar Islands. The reasons for concentration of coconut in these states are favourable climatic conditions such as tropical weather, soil, rainfall and coast line. This section analyzes area under cultivation, production and productivity

All India final estimates of area and production concerning coconut for 2014-15

The following Table-2 furnishes the estimated area over which coconut is grown and the estimated production of coconut from the said area for the year 2014-15.

Table-2, All India final estimates of area and production of coconut for 2014-15

Sl.No	States/Union Territories	Area ('000 Hectares)	Production (Million nuts)	Productivity (Nuts/ha)
1	Kerala	649.85	4896.61	7535
2	Karnataka	515.03	5141.15	9982
3	Tamil Nadu	465.11	6917.46	14873
4	Andhra Pradesh	105.99	1463.56	13808
5	Odisha	50.68	324.89	6411
6	Gujarat	31.63	295.03	9328
7	West Bengal	29.41	372.23	12657
8	Maharashtra	28.10	187.44	6670
9	Goa	25.79	127.72	4952
10	Andaman & Nicobar Islands	21.91	129.77	5923
11	Assam	21.14	237.49	11234
12	Bihar	14.90	141.38	9489
13	Tripura	6.93	28.41	4100
14	Lakshadweep	2.57	70.91	27591
15	Puducherry	1.88	21.90	11649
16	Chhattisgarh	1.71	27.85	16287
17	Telengana	1.69	25.34	14994
18	Nagaland	1.45	16.32	11255
19	Mizoram	0.04	0.16	4000
20	Daman & Diu	Neg.	13.99	

Source: Asian and Pacific Coconut Community (APCC) Statistical Year Book 2014 Period: 2015-16

In terms of area, Kerala topped the list with coconut having been raised on 771,000 hectares, approximately. In terms of production, Kerala topped the list with a production of 7,429 million nuts. In terms of productivity, Chattisgarh topped the list with 16,508 nuts per hectare.

Karnataka produced 5,129 million nuts over an area of 526,000 hectares. Thus Karnataka was ahead of Tamilnadu in terms of area but lagged Tamilnadu in terms of production. It lagged Tamilnadu significantly in productivity with 9,744 nuts per hectare as against Tamilnadu's 13,423 nuts per hectare. Tripura's productivity was the lowest, at 4,097 nuts per hectare.

COCONUT PRODUCTION IN KARNATAKA

Karnataka contributes 26 percent land under coconut cultivation and 25 percent of coconut production in India. It is also second largest horticultural crop in Karnataka. More or less the crop is grown in all districts of Karnataka. Karnataka is having larger part of its land under coconut cultivation next only to Kerala. It is the second largest producer of coconut next only to Tamil Nadu. Coconut is mainly cultivated in coastal districts and southern inland regions of the state. The major coconut growing districts are Tumkur, Hassan, Mandya, Mysore, Ramanagara, Dakshina Kannada, Udupi, Chitradurga, Chikkmagalur, Davanagere, Shimoga and Uttara Kannada. Although other districts also produce coconut, their contribution is negligible. In this section an attempt is made to study the area, production and productivity of coconut in the state as well as the major districts of Karnataka.

Area, production and productivity of coconut in Karnataka, district-wise, for 2014-15

The following Table-3 furnishes district-wise area, production and productivity of coconut for the year 2014-15

Table -3, Area, production and productivity of coconut in Karnataka, district-wise, for 2014-15

SL No	Districts/Islands	Area(Ha)	Production (Lakh Nuts)	Productivity (Nuts/Ha)
1	Tumkur	149419.00	12836.92	8592
2	Hassan	61019.00	3826.29	6271
3	Udupi	17825.00	3135.47	17591
4	Chitradurga	38729.00	2979.15	7693
5	Dakshina Kannada	18407.00	2821.27	15328
6	Mandya	27573.00	2736.82	9926
7	Chikmagalur	41329.00	2380.89	5761
8	Mysore	22352.00	1976.74	8844
9	Ramanagar	15056.00	1678.50	11149
10	Davangere	11863.00	1641.39	13837
11	Chamarajanagar	9122.00	814.03	8924
12	Uttar Kannada	7784.00	694.63	8924
13	Shimoga	5403.00	482.16	8924
14	Kolar	2566.00	228.99	8925
15	Bangalore Rural	2255.00	201.23	8924
16	Chikkaballapur	2087.00	186.24	8924
17	Kodagu	1586.00	141.53	8924
18	Haveri	1360.00	121.36	8924
20	Bangalore Urban	1281.00	114.31	8924
21	Koppal	812.00	72.46	8924
22	Bagalkote	743.00	66.30	8924
23	Bellari	555.00	49.53	8925
24	Dharwad	318.00	28.38	8925
25	Bijapur	296.00	26.41	8923
26	Gulbarga	192.00	17.13	8922
27	Gadag	184.00	16.42	8924
28	Yadgir	168.00	14.99	8923
29	Belgaum	131.00	11.69	8924
30	Raichur	80.00	07.14	8925
31	Bidar	19.00	01.70	8948
32	Karnataka	440514.00	39310.07	8924

Source: Asian and Pacific Coconut Community (APCC) Statistical Year Book 2014

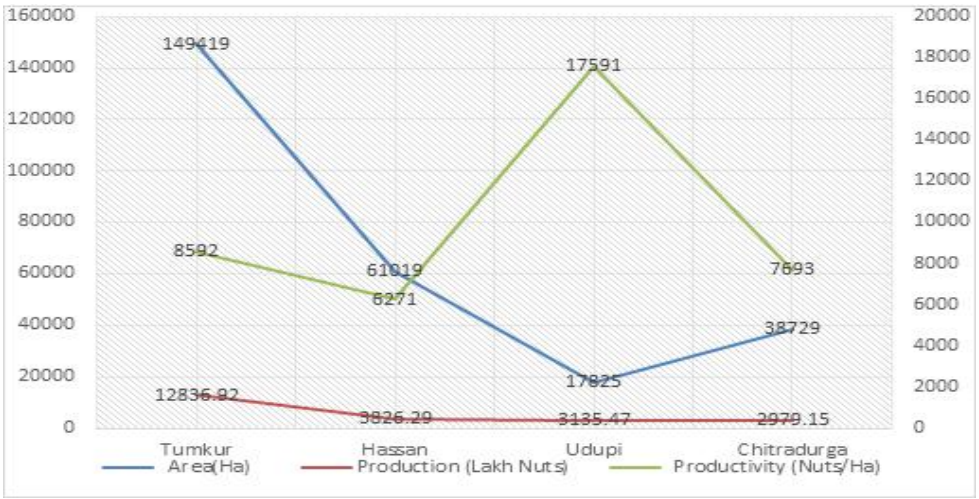

Table-4, Copra export from India

Year	Export Quantity		Export value	
	MT	AGR	(1000 US$)	AGR
1993	16	-	9	-
1994	10	-38	8	-11.11
1995	1	-90	0	-100.00
1996	200	19900	180	-
1997	2	-99	2	-98.89
1998	0	-100	0	-100.00
1999	20	-	16	-
2000	93	365	130	712.50
2001	12		-87	15
2002	31		158	22
2003	95		206	73
2004	761		701	285
2005	1283		69	778
2006	1357		6	1152
2007	1671		23	1307
2008	13578		713	12907
2009	22997		69	18837
2010	17361		-25	15463
2011	18070		4	27249
2012	19278		7	18902
2013	14274		-26	13900
Mean			**5290.95**	**5296.90**
SD			**8171.85**	**8567.69**
CV			**154.45**	**161.75**

Source: Food and agricultural organization, Rome.

AGR = Annual Growth Rate, SD = Standard Deviation, CV = Coefficient of Variation, CGR = Compound Growth Rate.

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Table 4 presents the Copra export from India during 1993-2013. Just 16 metric tons of copra was exported during the year 1993 and it increased to 14274 metric tons in the year 2013. Annual growth rate indicates that there was both positive and negative growth in export of copra from India during the period of study. The highest positive growth of 200% was recorded in the year 1996 and lowest growth rate was -100% in the year 1998. The average export quantity of copra was 5290.95 metric tonnes, CV was 154.45 and the export quantity grew at a compound rate of 66.91% per year. Therefore, copra export from India has been significantly increased during the reference period. In terms of value also, export of copra showed both growth and decline. The mean export value during the period was 5296.90 US dollars, CV was 161.75 and CGR was 67.64%. Overall, the copra export showed a substantial positive growth in terms of both quantities.

TREND IN THE PRICES OF COPRA

Copra, the dried kernel, is the head commercial product from coconut which is chiefly used for oil taking out. Copra usually has an oil substance varying from 65to 72 per cent. Two types of copra, namely milling and edible, are made in India. Milling copra is utilized to extract oil while edible rating of copra is consumed as a dry fruit and utilized for spiritual purposes. Milling copra is usually manufactured by adopt sun drying and simulated means. Substantial quantity of milling copra is produced using modern hot air driers resulting in the accessibility of superior quality copra, which is necessary for the manufacturing of best score coconut oil. A good number of farmers' co-operative societies are also concerned in the produce and marketing of milling copra. Milling copra is obtainable in different grades. Edible copra is made in the shape of balls and cups. Different grades of edible copra are obtainable in the market according to the size, colour, etc.

The degrees of the frequent price variations are so high that they will effect in random changes in the daily, weekly, monthly and yearly prices. If there is a unexpected and drastic fall in the prices of coconut products, it will unfavorably affect the millions of coconut growers and dispensation units. On the other hand if the prices of coconut crop especially that of coconut oil are very high compared to other oils, it will influence the buyers, resulting in minor demand for coconut products. Steps should be in use to guard

the existing demand and fresh demand should also to be created. By minimizing price fluctuations and encouraging stability in the supply of coconut products, the demand for coconut products could be improved. In this circumstance, understanding the price actions of coconut and coconut products is of greatest importance.

Table-5, Price of copra in Karnataka during 2002-2015

Year	Price (Rs. / quintal)	AGR
2002	4604	-
2003	5700	23.79
2004	6950	21.93
2005	6950	0.00
2006	4510	-35.10
2007	4250	-5.78
2008	5000	17.65
2009	4800	-4.00
2010	5500	14.58
2011	6373	15.88
2012	5800	-9.00
2013	7020	21.03
2014	10166	44.82
2015	14000	37.70
Mean	**6544.65**	
SD	**2634.70**	
CV	**40.26**	
CGR	**4.98**	

Source: Karnataka state agricultural marketing board, Bangalore

AGR = Annual Growth Rate, SD = Standard Deviation, CV = Coefficient of Variation, CGR = Compound Growth Rate.

Table 5 presents the Price series of copra in Karnataka during 2002-2015. The price of copra was Rs. 4604 per quintal in the year 2002 and it increased to Rs. 14000 per quintal in the year 2015. Annual growth rate in the last column indicates the fluctuations in the price of copra. The price varied in the range of Rs. 4250 (2007) to Rs. 14000 (2015). The historical highest growth of 44.82% was recorded in the year 2014. This sudden price rise is sometimes attributed to the introduction of online trading system by the Karnataka State Agricultural Marketing Board. But, it has not been verified by a scientific research. The least growth rate of price (negative) of -35.1% was recorded in the year 2006. This was also due to the eriophide mite attack. The Tiptur ball copra which is known for its good quality lost its shape and size due to wrinkled nuts and consequently the demand declined leading to price fall. The average price of copra in the study period was Rs. 6544.65 per quintal. The standard deviation is Rs. 2634.7 which is roughly one third of the mean value. The coefficient of variation is 40.26 which indicate a high fluctuation in the price of copra. However, it is smaller when compared to that of mature coconut. This is due to the less perishability of copra compared to fresh coconuts. The price of copra in the state grew at the

compound rate of 4.98% per year. But, in the same period, the general price level indicated by wholesale price index increased by 5.31% in the country. Therefore, the real price of copra has a negative growth over the study period. This calls for an urgent need to look into the problem and find a remedy for it.

CONCLUSION

Karnataka occupies a significant place in the coconut economy of the country. Though it comes second in terms of production, it has a significant positive growth in production as well as productivity. Unlike Kerala, coconut production is not spread all over the state of Karnataka but concentrated in southern part of it. The 10 southern districts are the major producers of coconut. The coconut growing areas in the state can be broadly classified into two regions as coastal districts like Udupi, Dakshina Kannada and Uttara Kannada and southern inland districts like Tumkur, Hassan, chikkamagalore.

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