INTER DISTRICT VARIATIONS IN THE PRICES OF COCONUTS, COPRA AND COCONUT OIL IN KERALA

JACOB MATHEW
Central Plantation Crops Research Institute, Kasaragod

ABSTRACT

The variations in the wholesale prices of coconuts, copra and coconut oil in Kerala, from 1958 onwards were studied. While the inter-district variations in the price of copra and coconut oil remained more or less steady over the years, the variations in the prices of coconuts was found to increase with increase in prices. The possible reasons for this phenomena are discussed.

INTRODUCTION

The coconut crop occupies a pride of place in the economy of Kerala State. About one-third of the cropped area in the State is under coconut and no other crop is grown in such a large extent. There are about 2.5 million coconut holdings in the state and according to a survey conducted during the 60s, the cultivating households were selling about 75% of the total production in the form of raw nut itself, while about 15% were used for home consumption (Anonymous, 1966, 1967). Consumption of coconut oil in the State is of the order of 60,000 tons, of which about 50,000 tons is for edible purposes (Thampan and Pankajakshan, 1976). It is used in almost every household in the State, for culinary purposes and or toiletary purposes. In view of the above, the fluctuation in the prices received by the cultivator for the raw produce and those paid by the consumer for the end product are watched with interest by many in the State. In this paper, an attempt has been made to examine the interdistrict variations in the wholesale prices of coconut (with husk), copra and coconut oil.

Coconut is a traditional crop of Kerala. During 1978–79, over 3000 million nuts were produced in the State from about 6.8 lakh ha. Except in the two interior districts of Idukki and Palghat, in all the other districts, about 50,000 to 1,00,000 ha. are under coconuts. The maximum area under coconut is in Calicut district,

closely followed by Cannanore and Quilon districts. In the case of production also, the same pattern is noticed (Table—1). Productivity is highest in Trichur distirict. In Calicut, Ernakulam and Alleppey districts also, it is higher than the state average. Availability of coconuts was the highest in Calicut district, with 249 nuts, per capita, followed by Cannanore district. In the remaining districts, except in Idukki and Palghat, it fell within the range of 125 to 148 nuts.

Table 1. Production, productivity and availability of coconuts in Kerala State

District	*Area* ('000 *ha*)	*Production* (*Million nuts*)	*Produ-ctivity* (*nuts/ha*)	*Availability* (*nuts, per capita*)
Trivandrum	75.8	320	4221	146
Quilon	87.6	357	4077	148
Alleppey	59.4	283	4768	133
Kottayam	51.3	192	3743	1295
Idukki	14.3	40	2806	52
Ernakulam	57.3	276	4816	128
Trichur	49.6	311	6265	146
Palghat	18.9	62	3274	37
Malappuram	65.6	266	4054	143
Calicut	99.4	524	5270	249
Cannanore	94.3	422	4477	178
State	673.5	3053	4533	143

Alleppey, Cochin and Calicut are among the important markets for coconuts and coconut products in Kerala, and Bombay is an important market for coconut oil outside the State. In the Kerala markets, the wholesale prices of coconuts, copra and coconut oil move in close sympathy with each other. Coconut oil being the end product, its price can be considered as the independant variable. The following mathematical relationship could be obtained for the wholesale prices of coconuts and copra, from the data for Calicut market (Table—2).

Table 2. Average annual wholesale prices of Coconuts and coconut products at Calicut (1950 to 1979)

Year	*Coconuts* (*Rs.*/1000 *nuts*)	*Copra* (*Rs./qntl.*)	*Coconut oil* (*Rs./qntl.*)
1950	179	152	229
1951	242	164	244
1952	133	110	164
1953	152	125	185
1954	144	118	175
1955	128	98	143
1956	128	95	148
1957	154	128	193
1958	190	150	230
1959	185	149	226
1960	205	158	240
1961	215	155	236
1962	247	177	264
1963	249	195	284
1964	242	183	277
1965	351	287	422
1966	366	285	456
1967	417	322	498
1968	411	315	497
1969	397	331	497
1970	543	456	702
1971	424	371	581
1972	374	335	521
1973	689	557	864
1974	923	730	1153
1975	708	527	846
1976	764	601	931
1977	921	694	1072
1978	982	793	1173
1979	947	769	1146

Source: "Report on the marketing of coconuts and coconut products in India" (1962) for the data upto 1960.

Bureau of Economics and Statistics, Trivandrum, for the data since 1960.

(i) Wholesale price of coconuts (with husk)
$y = 4.37 + 0.8138 \text{ x } (R^2 = 0.9937)$

(ii) Wholesale price of copra

$y = 2.04 + 0.6487 \text{ x } (R^2 = 0.9978)$, where x represents the wholesale price for coconut oil. From the above equations it can be seen that most of the variations in the prices of coconut and copra could be explained by the variations in the prices of coconut oil. Market for oil is also seen to be spatially well integrated. The close relationship in the prices of coconut oil at the different markets can be seen from Table 3, showing the coefficients of correlation between the prices at different pairs of markets.

Table 3. Coefficients of correlation between the wholesale prices of coconut oil at important markets, during 1950 to 1976

	Alleppey	*Calicut*	*Bombay*
Cochin	0.999978	0.999861	0.998778
Alleppey		0.999827	0.998594
Calicut			0.998571

Source: Jacob Mathew (1978)

For analysing the price trends, the period 1950 to 1979 can be conveniently broken up into four sub periods (i) 1950 to 56, during which the prices of coconuts as well as the related products declined in a fairly continuous manner, (ii) 1956 to 1964 during which the prices generally increased with moderate fluctuations, (iii) 1964 to 1975 during which prices not only increased sharply but also tended to fluctuate very widely than in the preceeding period, and (iv) 1975 onwards during which the prices are increasing at a fairly continuous manner. Since the scope of the paper is limited to a study of intra-regional variations in Kerala State which came into existence only in 1956, the first period, viz. 1950–56 has not been considered for further analysis.

Bureau of Economics and Statistics, Trivandrum regularly collects data on wholesale prices of coconuts (with husk), copra and coconut oil from about 15–20 important marketing centres for these commodities, spread all over the State. District average figures are available from 1958 onwards for nine districts for coconuts (except for Ernakulam, Trichur and Cannanore districts for 1967 to 1969) and eight districts each for copra and coconut oil. Price data on copra and coconut oil are not reported from Trivandrum and Malappuram districts, while wholesale prices of coconuts are not available for Kottayam district. None of these data is available for Palghat district. Since Idukki and Wynad districts came into existence only recently, these have been excluded from this study. Whenever comparison betweern the prices of coconuts, copra and coconut oil was attempted, it was restricted to six common districts only, viz. Quilon and Alleppey in South Kerala, Ernakulam and Trichur in the Centre and Calicut and Cannanore in the north.

The inter-district coefficients of variation(%) for the wholesale prices of coconuts, copra and coconut oil are presented in table–4. The variation between districts for the wholesale prices of copra and coconut oil was more or less similar (less than 2%) and remained steady over the years. In the case of coconuts, even during the initial years, the CV was as high as 5% and during the 70s, it almost doubled. In other words, with increase in prices, the divergence between districts in the wholesale prices of coconuts also widened, where as in the case of copra and coconut oil, no such divergence was noticed.

In view of the importance of the crop to the state, it is worth examining how this divergence in coconut prices between districts has happened. In table 5, the mean wholesale prices of coconuts, copra and coconut oil obtained during three different periods, in the different districts have been given. During period 1(1959–64), the prices were generally increasing with moderate fluctuations, whereas in period 2(1970–75), the prices not only increased very sharply, but also tended to fluctuate violently. During period 3, the prices were again increasing at a fairly continuous manner.

Table 4. Inter-district coefficients of variation (%) for the wholesale prices of cocounts (with husk), copra and coconut oil, during 1958 to 1979

Year	*Coconut*	*Copra*	*Coconut oil*
1958	3.32	1.80	2.20
1959	5.82	1.32	0.64
1960	6.60	2.01	1.02
1961	5.05	2.16	1.05
1962	1.79	2.51	1.41
1963	3.25	1.33	0.88
1964	3.43	0.87	1.47
1965	3.90	1.16	1.19
1966	5.63	1.90	1.34
1967	..	1.29	1.09
1968	..	1.45	1.10
1969	..	1.02	0.91
1970	10.62	1.36	0.76
1971	10.57	1.81	1.76
1972	10.56	1.53	1.31
1973	10.27	1.68	0.24
1974	91.2	1.26	1.61
1975	7.46	1.18	1.78
1976	10.09	1.27	1.29
1977	8.54	3.24	1.22
1978	8.78	1.14	0.99
1979	10.15	1.14	1.05

Table 5. Inter-district variations in the mean wholesale prices of coconuts (with husk), copra and coconut oil, and during different periods

District	*Mean wholesale price during*			*% increase over period* 1	
	Period 1 (1959-64)	*Period* 2 (1970-75)	*Period* 3 (1976-79)	*Period* 2	*Period* 3
(i) *Coconuts (with husk) (Rs./100 nuts)*					
Trivandrum	226.22	624.33	930.21	186.0	311.2
Quilon	236.38	670.72	1002.96	183.7	324.3
Alleppey	239.53	679.35	986.21	183.6	311.7
Ernakulam	245.38	728.06	1055.39	196.7	330.1
Trichur	241.07	758.29	1092.12	214.6	353.0
Palghat	214.83	613.65	928.26	185.6	332.1
Calicut	221.18	601.76	903.74	172.1	308.6
Cannanore	223.98	585.34	824.34	161.3	268.0
Mean	231.07	657.69	965.41	184.6	317.8
(ii) *Copra (Rs./qntl.)*					
Quilon	167.91	507.16	709.12	202.0	322.3
Alleppey	169.68	521.47	326.96	207.3	328.4
Kottayam	168.48	520.52	730.08	209.0	333.3
Ernakulam	163.04	502.99	711.37	208.5	336.3
Trichur	166.42	504.93	714.90	203.4	329.6
Calicut	167.66	506.84	727.77	202.3	334.1
Cannanore	162.69	500.39	710.56	207.6	336.8
Mean	166.55	509.19	718.68	205.7	331.5
(iii) *Coconut Oil (Rs./qntl.)*					
Quilon	249.18	762.02	1072.49	205.8	330.4
Alleppey	249.90	777.58	1097.39	211.2	339.1
Kottaym	249.77	777.60	1090.87	211.3	336.7
Ernakulam	248.92	780.63	1101.21	213.6	342.4
Trichur	249.75	777.27	1079.40	211.2	332.2
Calicut	253.51	780.73	1081.60	208.0	326.6
Cannanore	247.72	792.57	1094.10	219.9	341.7
Mean	249.82	778.34	1088.15	211.6	335.6

The wholesale price of coconuts varied between Rs. 215 in Malappuram district to Rs. 245 in Ernakulam district, during period 1, whereas during the subsequent period, the range was between Rs. 585 (for Cannanore district in North Kerala) and Rs. 758 (for Trichur district in Central Kerala). When the wholesale price in Cannanore district showed an increase of 161%, it rose by 215% in Trichur district. During period 3 also, the highest price of Rs. 1092 was reported from Trichur district and the lowest price of Rs. 824 from Cannanore district. Compared to period 1, the percentage increase during this period was to the extent of 353% in the case of Trichur district, where as it was only 268% in Cannanore district. Even now, the prices are increasing at a lesser rate in Cannanore district. Compared to period 2, the prices rose by 40% at Cannanore district during period 3, whereas in the other districts, it went up by 45 to 50%. During period 1, the prices at Trichur and Cannanore districts differed by only Rs. 17 per 1000 nuts. This rose to Rs. 173 during period 2 and to Rs. 268, in the recent years. In other words, during the latter two periods, the prices received at Trichur district was one-third higher than those received at Cannanore district. The maximum increase in price was noticed in Trichur district, followed by the adjoining district of Ernakulam, both in Central Kerala. The minimum increase took place in Cannanore district, followed by Calicut district, both of which are in North Kerala. In the southern districts of Trivandrum, Quilon and Alleppey, the prices increased at an intermediate level. In other words, the divergence between districts, during the 70s in the matter of wholesale prices of coconuts, has come about through relatively small increases in the northern districts, where the prices are usually lower and large increases in the central districts where the prices are usually higher.

The price reported for coconuts is for unhusked nuts. One probable reason for the comparatively higher price obtained for coconuts in central and south Kerala is due to the demand for coconut husk from the coir industry. Natural facilities exist in these areas for the retting of husk. It had been estimated (Anonymous 1962) that during the early 60s the husk from about 70% of the nuts produced in the state is consumed by the fibre industry. Judging from the present production levels of coir fibre, there is no reason to believe that this proportion has changed. Even then,

the prices obtained in the southern districts are not as high as that in central Kerala, namely Ernakulam and Trichur districts. A survey report from the Directorate of Coconut Development (Anonymous, 1976) has shown that about 40% of the expeller units in the state are concentrated in the two districts of Ernakulam and Trichur (Table 6). It appears that it is the demand from the milling sector that has pushed up the price of cocnuts to the highest level, in this region. The annual production of milling copra in the state is estimated at nearly three lakh tons. Since two-thirds of the nuts produced in the state is converted to copra, the demand for copra from the oil mills appears to be the most important factor determining the fluctuations in coconut prices. Thus, Cannanore district suffers from lack of retting facilities and lack of demand from the oil mills.

Table 6. Regional distribution of expeller units in Kerala

District	*Number of units*	*Number of expellers*	*Installed capacity (tonnes/day)*
Trivandrum	4	4	14
Quilon	13	15	56
Alleppey	8	6	162
Kottayam	3	3	8
Ernakulam	10	21	174
Trichur	15	30	137
Palghat	2	2	30
Malappuram	7	12	68
Calicut	8	12	128
Cannanore	2	5	23
Total	72	120	800

Source: Coconut Bulletin, May 1976.

Availability of coconuts in the different regions (Table 1) is another reason for the differences in prices. In Cannanore district, where the per capita availability of nuts is the second highest, minimum prices are being received. Calicut district, where supply was in abundance, the prices were not lower than that at Cannanore. This may be because of the heavy demand from the up country buyers. However, since there is no restrictions on the inter-district movement of coconuts, the influence of total production as well as the per capita availability of nuts in each district on the prices appear to be minimum. Also, about 50% of the nuts produced is taken out from the state, in the form of copra and coconut oil. Hence, it may be the demand from the upcountry markets, rather than the internal supply that may be influencing the price movements.

In the case of copra and coconut oil, the differences in the wholesale prices between districts were only marginal at all the periods. Copra price ranged between Rs. 163 and Rs. 170, during period 1, compared to the variation between Rs. 248 and Rs. 254, in the case of coconut oil, for the same period. During Period 2, the copra price increased by 206% and coconut oil prices by 212%. The rate of increase was more or less uniform in all the districts. Similarly during Period 3 also, it increased at a more or less uniform rate of 332% (compared to period 1) for copra and 336% for coconut oil, in all the districts. Coconut oil being the end product, these marginal differences in the prices are not unexpected.

The implications of the low prices of coconuts obtained at Cannanore district is interesting to note. In an earlier study of the trends in the production and productivity of coconuts in the state as a whole and for some of the selected districts, the author (Jacob Mathew, 1979) had concluded that the declining trend in productivity (nuts/ha) was partly due to the reduction in the proportion of bearing palms in the population. Another reason for the negative rate of growth for productivity (Table 7) was the extension of coconut cultivation to marginal lands. Among the districts considered, the rate of decline was the highest in Cannanore district and the lowest in Trichur district. It now appears that the slower rate of increase in price trend of coconuts is one of the reasons for the faster rate of decrease in productivity observed at Cannanore.

Table 7. Compound growth rates for productivity of coconuts (1957—58 to 1974—75)

	Log $y = a + bt$		*Growth*	
	a	*b*	*Rate* (%)	R^2
India	8.8127	–0.0133(0.0011)	–1.317	0.9052
Kerala	8.8299	–0.0167(0.0012)	–1.657	0.9215
Trivandrum	8.7871	–0.0067(0£0017)	–0·673	0.4903
Quilon	8.8661	–0.0189(0.0020)	–1·869	0.8533
Alleppey	8 8673	–0.0086(0.0031)	–0·860	0.3196
Trichur	8.7806	–0 0044(0.0013)	–0 439	0.4369
Cannanore	8.9034	–0.0482(0.0052)	–4.710	0.8418

Note: Figures in parenthesis are standard errors of reg. coefts.

Source: Jacob Mathew(1978).

The above analysis of the inter-district variation in the prices of coconuts and coconut products points out the need for setting up of more coconut based industries in the northern districts, so that the producers may get a better price for their produce. This may also help to arrest the declining trend in productivity to a great extent.

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