

## **REVVING UP KARNATAKA'S COCONUT PRODUCTION INDUSTRY**

Nagendra N.<sup>14</sup> Dr. Pralhad Rathod<sup>15</sup>

### **ABSTRACT**

Karnataka, along with Kerala and Tamil Nadu accounts for almost 85 percent of the country's coconut output. Inadequate rains in Karnataka led to a rise in diseases and pest attacks in 2018-19, in the process recording the lowest productivity ever witnessed by the state. According to the Coconut Development Board, Andhra Pradesh (AP) registered the highest productivity in the country, at 13,563 nuts per hectare during the period. It is noteworthy that AP has been raising the tempo in the coconut cultivation space. One of the issues the coconut industry is confronted with is rather uncommon in the Indian scenario – in the domestic market, its output, namely copra, fetches almost 2.5 times what it fetches in the international market, in value terms. In this backdrop, the researcher set out to ascertain the factors that work against the growers in general. The researcher also sought to ascertain the measures needed to address the problems faced by the coconut industry. The investigation led the researcher to conclude that higher domestic prices stifle the exports of coconut products and reduce the consumption of coconut oil, among other things. Growers should not content themselves with mono-cropping practices since it dents productivity. Inter-cropping with cocoa, will go a long way in raising the fortunes of the growers and diversifying away the risk. Incidentally, the country's cocoa output is far less than the demand. The MSP (minimum support price) concerning ball copra that Karnataka specialises in, has not been computed scientifically and rationally, thereby placing the relevant growers at a disadvantage vis-à-vis the growers of milling copra. NAFED (National Agricultural Cooperative Marketing Federation of India Ltd) should raise its storage capacity and as well prolong the procurement period, to impart some stability to coconut prices.

### **KEYWORDS**

**Ball Copra, Cocoa, Consumption, Mono-Cropping, Productivity, Stifle, Tempo etc.**

### **1.1 THEORETICAL BACKGROUND**

Coconut palm (*cocos nucifera* linn, as it is technically called) is arguably the most useful palm in the world. Every part of the tree delivers value. Not surprisingly it is called *kalpavriksha*, the wish-fulfilling divine tree referred to in Hindu mythology. The dried kernel of coconut, called copra, is the richest source of vegetable oil. 65 to 70 per cent of the kernel contains oil, aptly called coconut oil. Coconuts are the fruit of the coconut palm tree, which originated in Southeast Asia, and were transported throughout the Pacific either by migrating Indonesians and Polynesians or on the drifting ocean currents. Coconut is propagated through seedlings raised from select seed nuts. Generally, nine-12-month-old seedlings are used for planting. Seedlings, which have six to eight leaves and 10-12 cm collar girth when they are nine-12 month old are chosen (Coconut Development Board, 2016). Kerala, Karnataka, Tamilnadu and Andhra Pradesh qualify as the leading states in the country in coconut production. Other states of the country boast of a me-too presence. The dried kernel of coconut, called copra, is the richest source of vegetable oil. 65 to 70 per cent of the kernel contains oil, aptly called coconut oil. The oil is popular in the country and elsewhere for edible purposes and industrial purposes.

### **1.2 STATEMENT OF THE PROBLEM**

The country's coconut industry is not in the pink of health although the country is the leading producer of copra in the world. Karnataka is among the three states that lead in coconut production. Many factors have been working against the growers of coconut of late, although the domestic prices of copra are far ahead of the international prices of copra.

<sup>14</sup>Research Scholar, Department of Commerce, Tumkur University, Karnataka, India, [nagu.hst@gmail.com](mailto:nagu.hst@gmail.com)

<sup>15</sup>Associate Professor, Department of P.G. Studies in MBA, Visvesvaraya Technological University, Karnataka, India, [simrankrish@gmail.com](mailto:simrankrish@gmail.com)



To make matters worse, consumption of coconut oil in the country has been falling owing to the availability of other edible oil alternatives like palm oil. Hence the industry must be revamped through appropriate strategies.

### **1.3 REVIEW OF LITERATURE**

In the following pages, the existing literature on the subject is briefly renewed.

- Coconut production fell to 21,384 million nuts compared with 23,798 million nuts in the previous year as per the Union agriculture ministry's third advance estimate. After sliding to a decade-low of 20,439 million nuts in 2014-15, coconut production had been steadily growing until last year. (Krishnakumar, 2019). The slump has been attributed to erratic weather patterns of heavy rains and drought as well as general neglect of the crop especially in Kerala, the top coconut producer in India. The state, along with Tamil Nadu and Karnataka, account for nearly 85 per cent of the country's total output.
- The 4.61 per cent increase in minimum support price (MSP) for the milling copra variety at INR9,960 per quintal for the 2020 season over the previous season has brought cheers to producers and the processing industry in Kerala and Tamil Nadu (Sajeev & Vishwanath, 2020). However, the producers of ball copra variety in Karnataka are disappointed with the 3.83 per cent increase at INR10,300 a quintal.
- Coconut plays an important role in the Indian economy. It contributes to India's GDP to the extent of about INR 15,000 crores. 72 percent of global production is accounted for by India. India's productivity is high too (Raghavi & Balaa, 2019). In India, Tamil Nadu tops the list in coconut productivity. However, production is high in Karnataka. Kerala tops in area. In India, almost 70 percent of the coconut is used for edible purposes.
- Tumkur is known as 'Kalpataru Naadu' or the 'land of coconuts'. The crop is grown extensively here (The New Indian Express, 2019). Coconut growers await a permanent solution to the agrarian and industrial crises facing Tumkur district. The crises have been triggered by water scarcity, power scarcity and a deficiency of basic infrastructure in industrial areas. While coconut is a major horticulture crop in the district, especially in Tiptur, Turuvekere, Chikkanayakanahalli, Tumakuru and Gubbi, growers have been incurring losses owing to pest attack and fluctuating prices.
- India is a signatory to W.T.O (CH, 2015). It calls for a liberalised EXIM policy that warrants dismantling of trade barriers. It would not be possible to curb coconut imports. It will have a negative impact on the coconut industry of the country if the production cost is not reduced to make it competitive at the international market. Thus, product diversification, application of stringent quality standards to coconut products and increased productivity are some of the ways to make this industry competitive.

### **1.4 RESEARCH GAP**

The reviewed literature has captured the falling coconut output rather tellingly. As the researcher concerned implies, it has to do with the systematic risk, by and large. The systematic risk has been the erratic weather pattern characterised by heavy rains or drought. Another researcher has pointed out that the MSP declared in respect of ball copra has not been fair to coconut growers from South Karnataka, in particular. Yet another researcher has highlighted the fact that coconut plays an important role in the country's economy, contributing its own mite to the country's GDP. However, the learned researchers have not dwelt in depth on the factors that have worked against the coconut growers. Nor have they outlined measures that could address the problems faced by the coconut industry of the state. It is this gap the present study seeks to bridge.

### **1.5 SCOPE OF STUDY**

The study confines itself to Karnataka's coconut industry in general and examines the status of the growers of coconut based in Tumkur district.



## **1.6 OBJECTIVES**

The objectives of the study are to:

- Identify measures to address the problems faced by Karnataka's coconut industry.
- Identify the factors that have worked against the growers.

## **1.7 HYPOTHESIS PROPOSED TO BE TESTED**

The study proposes to test the following hypotheses: "Higher price has reduced the consumption of coconut oil"

## **1.8 RESEARCH DESIGN**

The following paragraphs furnish the research methodology.

### **1.8.1 Research Methodology**

The study is descriptive in nature and has used the 'fact-finding' survey method.

### **1.8.2 Sources of Data**

Primary data has been collected from the respondents, viz., 50 experts on coconut and 100 coconut growers.

Secondary data has been collected from the web sites of the Coconut Development Board, the websites of the government of India and the government of Karnataka and the financial press

### **1.8.3 Sampling Plan**

*Experts:* Given the time constraints and the limited number of experts with exposure to the coconut industry hailing from the area covered by the study, purposive or judgement sampling under the non-probability method has been deployed. The researcher selected 50 such respondents. This criterion, according to the researcher, is the most appropriate one for the present study. What is important is the typicality and the relevance of the sampling units to the study and not their overall representativeness to the population. Thus, it guarantees inclusion of the relevant elements in the sample. Probability sampling plans cannot give such a guarantee.

*Coconut Growers:* Simple random sampling under the probability sampling method has been deployed to select the growers since it gave each of them an equal and independent chance of being selected. Accordingly, interview schedules were administered to 200 growers. Interview schedules duly completed and received from the first 100 growers were eventually selected for the study.

### **1.8.4 Data Collection Instruments**

Interview schedules were administered to the respondents for collection of primary data.

### **1.8.5 Data Processing and Analysis Plan**

Non-parametric statistical units were used to test the association between some qualitative characters and conclusions were drawn based on formation of  $H_0$  and  $H_1$ .

### **1.8.6 Limitations**

Primary data has sometimes been deduced through constant topic-oriented discussions with the respondents. It is possible that a certain degree of subjectivity has influenced their views.

**1.9 EXPERTS**

In the following paragraphs, the primary data collected from the 50 experts on the coconut industry is analysed.

**1.9.1 Factors that have worked against the Growers**

Lately Karnataka’s coconut growers have been complaining that several factors have worked against them. Hence the researcher requested the respondents to disclose the factors have worked against the growers. Their replies to the query appear in the following table.

**Table-1**

Factors	Number of Respondents
Higher domestic prices stifle exports of coconut products	46
Unfair MSP for ball copra	45
Higher price has reduced the consumption of coconut oil	45
Reduced productivity	43
Copra procurement by NAFED does not influence the market price of coconut	42
Inadequate rains have led to higher incidence of pests and diseases	41
Forced to raise dwarf varieties owing to dearth of climbers	40

Sources: Authors Compilation

Higher domestic prices stifle exports of coconut products, aver 46 respondents. Unfair MSP for ball copra is cited by 45 respondents. Higher price has reduced the consumption of coconut oil, aver 45 respondents. Reduced productivity is cited by 43 respondents. Copra procurement by NAFED does not influence the market price of coconut, maintain 42 respondents. Inadequate rains have led to higher incidence of pests and diseases, according to 41 respondents. Growers forced to raise dwarf varieties owing to dearth of climbers, according to 40 respondents.

**1.9.2 Measures to Address the Problems Faced by the Coconut Industry**

With the respondents revealing the factors that have worked against the growers, the researcher requested them to suggest measures to address the problems faced by the coconut industry. Their replies to the query appear in the following table.

**Table-2**

Measures	Number of Respondents
Growers’ mono-cropping practice dents productivity	47
Growers should raise cocoa as an inter-crop since the demand for cocoa exceeds supply	47
NAFED’s storage capacity should be raised adequately to influence the market price of coconut	46
Fair level of MSP for ball copra should be ensured since the production cost of ball copra is higher	45
NAFED’s procurement period should be extended to stabilise coconut prices	44
Growers should not harvest the nuts prematurely since it lowers oil recovery	44
Copra manufacturing practices need to be improved	43

Sources: Authors Compilation

Growers’ mono-cropping practice dents productivity aver 47 respondents. Growers should raise cocoa as an inter-crop since the demand for cocoa exceeds supply, advice 47 respondents. NAFED’s storage capacity should be raised adequately to influence the market price of coconut assert 46 respondents. Fair level of MSP for ball copra should be ensured since the production cost of ball copra is higher, believe 45 respondents. NAFED’s procurement period should be extended to stabilise coconut prices, assert 44 respondents. Growers should not harvest the nuts prematurely since

it lowers oil recovery, maintain 44 respondents. Copra manufacturing practices need to be improved, assert 43 respondents.

### 1.10 GROWERS

In the following paragraphs, the primary data collected from the 100 growers is analysed.

#### 1.10.1 Factors that have worked against the Growers

Lately Karnataka's coconut growers have been complaining that several factors have worked against them. Hence the researcher requested the respondents to disclose the factors have worked against the growers. Their replies to the query appear in the following table.

**Table-3**

Factors	Number of Respondents
Physical effort and fear factor lead fewer people to take up tree-climbing	90
Unfair MSP for ball copra	89
Forced to raise dwarf varieties owing to dearth of climbers.	87
Inadequate rains have led to higher incidence of pests and diseases	82
Damage to copra resulting from poor storage and transport facilities	81
Effective mechanical climbing aids yet to be marketed	78
Reduced productivity	74
Poor genetic makeup of coconut seeds / seedlings	73
Price instability triggered by rising competition from palm and soybean oils	71
Higher price has reduced the consumption of coconut oil	57

Sources: Authors Compilation

Physical effort and fear factor lead fewer people to take up tree-climbing, say 90 respondents. Unfair MSP for ball copra is cited by 89 respondents. Forced to raise dwarf varieties owing to dearth of climbers, remind 87 respondents. Inadequate rains have led to higher incidence of pests and diseases, according to 82 respondents. Damage to copra resulting from poor storage and transport facilities is cited by 81 respondents. Effective mechanical climbing aids yet to be marketed, point out 78 respondents. Reduced productivity is cited by 74 respondents. Poor genetic makeup of coconut seeds / seedlings is cited by 73 respondents. Price instability triggered by rising competition from palm and soybean oils is cited by 71 respondents. Higher price has reduced the consumption of coconut oil, according to 57 respondents.

#### 1.10.2 Measures to Address the Problems Faced by the Coconut Industry

With the respondents revealing the factors that have worked against them, the researcher requested them to suggest measures to address the problems faced by the coconut industry. Their replies to the query appear in the following table.

**Table-4**

Measures	Number of Respondents
Fair level of MSP for ball copra should be ensured since the production cost of ball copra is higher	93
NAFED's storage capacity should be raised adequately to influence the market price of coconut	89
NAFED's procurement period should be extended to stabilise coconut prices	81

Sources: Authors Compilation

Fair level of MSP for ball copra should be ensured since the production cost of ball copra is higher, assert 93 respondents. NAFED's storage capacity should be raised adequately to influence the market price of coconut, according to 89 respondents. NAFED's procurement period should be extended to stabilise coconut prices, argue 81 respondents.

### **1.11 SUMMARY OF FINDINGS**

In the following paragraphs, a summarised version of the findings arrived at in respect of the two categories of respondents is furnished.

#### **1.11.1 Experts**

- Higher domestic prices stifle exports of coconut products, aver 46 respondents. Unfair MSP for ball copra is cited by 45 respondents. Higher price has reduced the consumption of coconut oil, aver 45 respondents. Reduced productivity is cited by 43 respondents. Copra procurement by NAFED does not influence the market price of coconut, maintain 42 respondents. Inadequate rains have led to higher incidence of pests and diseases, according to 41 respondents. Growers forced to raise dwarf varieties owing to dearth of climbers, according to 40 respondents.
- Growers' mono-cropping practice dents productivity aver 47 respondents. Growers should raise cocoa as an inter-crop since the demand for cocoa exceeds supply, advice 47 respondents. NAFED's storage capacity should be raised adequately to influence the market price of coconut assert 46 respondents. Fair level of MSP for ball copra should be ensured since the production cost of ball copra is higher, believe 45 respondents. NAFED's procurement period should be extended to stabilise coconut prices, assert 44 respondents. Growers should not harvest the nuts prematurely since it lowers oil recovery, maintain 44 respondents. Copra manufacturing practices need to be improved, assert 43 respondents.

#### **1.11.2 Growers**

- Physical effort and fear factor lead fewer people to take up tree-climbing, say 90 respondents. Unfair MSP for ball copra is cited by 89 respondents. Forced to raise dwarf varieties owing to dearth of climbers, remind 87 respondents. Inadequate rains have led to higher incidence of pests and diseases, according to 82 respondents. Damage to copra resulting from poor storage and transport facilities is cited by 81 respondents. Effective mechanical climbing aids yet to be marketed, point out 78 respondents. Reduced productivity is cited by 74 respondents. Poor genetic makeup of coconut seeds / seedlings is cited by 73 respondents. Price instability triggered by rising competition from palm and soybean oils is cited by 71 respondents. Higher price has reduced the consumption of coconut oil, according to 57 respondents.
- Fair level of MSP for ball copra should be ensured since the production cost of ball copra is higher, assert 93 respondents. NAFED's storage capacity should be raised adequately to influence the market price of coconut, according to 89 respondents. NAFED's procurement period should be extended to stabilise coconut prices, argue 81 respondents.

### **1.12 CONCLUSIONS**

Conclusions are inferences / generalisations drawn from the findings and relate to hypotheses. They are answers to the research questions or the statements of acceptance or rejection of hypotheses. As explained in a previous paragraph, this study proposes to test the following hypotheses:

#### **1.12.1 Hypothesis Testing**

The study proposes to test the following hypothesis: "Higher price has reduced the consumption of coconut oil"

Hence H<sub>0</sub> and H<sub>1</sub> are as follows:

H<sub>0</sub>: “Higher price has not reduced the consumption of coconut oil”

H<sub>1</sub>: “Higher price has reduced the consumption of coconut oil”

Based on the primary data collected from the respondents, vide Tables: 1 and 3, a chi-square test was applied to ascertain the association, if any, between the two variables. The following Table reveals the computation made using MS-Excel:

**Table-5**

		Observed Values		
	Category	Yes	No	Total
	Experts	45	5	50
	Growers	57	43	100
	Total	102	48	150
		Expected Values		
	Category	Yes	No	Total
	Experts	34	16	50
	Growers	68	32	100
	Total	102	48	150
		Yes	No	
2	o-e	11.0000	-11.0000	
		-11.0000	11.0000	
	(o-e) <sup>2</sup>	121.0000	121.0000	
		121.0000	121.0000	
	((o-e) <sup>2</sup> )/e	3.5588	7.5625	
		1.7794	3.7813	
	CV	5.3382	11.3438	16.6820
	TV			3.8415
	P			0.0022

Sources: Authors Compilation

The calculated value of  $\chi^2$  is 16.6820, higher than the table value of 3.8415 for an alpha of 0.05 at one degree of freedom. Hence the null hypothesis is rejected.

### 1.13 RESEARCHER’S RECOMMENDATIONS

The following are researcher’s recommendations:

- Higher domestic prices do stifle the exports of coconut products. The high domestic prices come in the way of exports of coconut products and hence it is no surprise that exports of coconut products have been falling for the past couple of year. For example, until recently the country’s copra prices were ruling at USD 1,350 per tonne, while the international prices ruled at USD 550. India is a global leader in production and productivity of copra. With the government support for copra, the chances of a declining trend in raw coconut prices is remote. However, it would not benefit the coconut industry if viewed through the prism of exports. The prices should remain ideally in the range of INR25-30 per kg to remain competitive in the exports market.
- Going by the time involved and the additional cost of production involved, it is only fair that the MSP concerning ball copra is suitably raised by the government. Ball copra is as important as milling copra for all stakeholders. The growers of ball copra are not lessor mortals. The Centre and the Commission for

Agricultural Costs and Prices (CACP) had better take a relook at the MSP concerning ball copra and come out with a fair MSP. They should ensure that such mistakes are not repeated in future.

- All stakeholders must admit that higher price has reduced the consumption of coconut oil. If the stakeholders join hands, it should not be difficult to price it competitively and thus drive up consumption volumes. The raise in consumption volumes should help the country reduce its import of edible oil and raise its export of coconut products.
- Reduced productivity has to do with many factors. Growers should not harvest the nuts prematurely. It will affect oil recovery from the nut. Growers raise dwarf varieties of the crop owing to dearth of climbers although in terms of productivity and production, they are not as remunerative as the traditional variety. Poor genetic makeup of coconut seeds / seedlings only aggravates the situation for the growers.
- With physical effort and the fear factor forcing individuals to stay away from tree-climbing, it is time the research bodies associated with the coconut industry designed effective and affordable mechanical climbing aids.
- Copra procurement by NAFED must be raised to impart stability to coconut prices. The procurement period should be extended too. Unfortunately, neither of them seems to be happening right now.
- Copra manufacturing processes need to be improved in line with the evolving technological innovations. It will improve oil recovery and minimise wastage. It will also add value to the output.
- Storage facilities and transport facilities should be state-of-the-art. Towards this end, the growers and the manufacturers should work relentlessly. After all, they are reaping better prices in the domestic market without having to go through the rigmarole associated with the export market practices / requirements.
- Rising competition from palm and soybean oils pose a threat to the coconut industry. But then, the relevant stakeholders, namely the growers and manufacturers, can always join hands to minimise the cost of the output by embracing state-of-the-art technological innovations. Once this is done, more of consumers will start to patronise coconut oil as they used to in the past.

## REFERENCES

- Coconut Development Board. (2016). *Package of Practices Of Coconut*. Ernakulam: Coconut Development Board.
- Krishnakumar, P. K. (2019, December 13). *News: The Economic Times*. Retrieved from The Economic Times. Retrieved from <https://economictimes.indiatimes.com/markets/commodities/news/coconut-output-drops-10-to-lowest-in-4-years/articleshow/72505025.cms?from=mdr>
- Raghavi, M. S., and Balaa, M. S. (2019). Review on area, production and productivity of coconut in India. *IMPACT: International Journal of Research in Business Management*, 1-5.
- Sajeev, K., & Vishwanath, K. (2020, March 13). *Agri Business: Business Line*. Retrieved from BusinessLine. Retrieved from <https://www.thehindubusinessline.com/economy/agri-business/copra-msp-mixed-reactions-from-producers/article31062682.ece#>
- The New Indian Express. (2019, March 24). *Home: The New Indian Express*. Retrieved from The New Indian Express. Retrieved from <http://www.newindianexpress.com/states/karnataka/2019/mar/24/dry-land-of-coconuts-needs-steroid-shot-for-growth-1954984.html>

\*\*\*\*\*