

## **A STUDY OF COCONUT CULTIVATION AND MARKETING IN POLLACHI TALUK**

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### **ABSTRACT**

India is an agricultural country and one third of population depends on the agricultural sector directly or indirectly. Agriculture remains as the main stay of the Indian economy since times immemorial. The coconut crop has a significant impact on social and cultural impact on the coconut cultivators. Marketability and price established for coconut and its products determines the economic condition of farmers. Tamilnadu holds foremost share in coconut area and production after the state of Kerala. Coconut cultivation is considered to be one of the major livelihoods which support 60 % farmers in the state. The coconut is not only significant in socio cultural needs of our society, but also has gained considerable importance in the national economy as a potential source of rural employment and income generation among the plantation crops. . The increasing trend of coconut production has brought new challenges in terms of finding market for the surplus. There is also a need to respond to the challenges and opportunities, that the global markets offer in the liberalized trade regime. During past two decades the coconut plantation crop has received ample research and development attention in the country and as a result of these concerted efforts is well exhibited in terms of increase in area of production and productivity of coconut in the country. A concerted effort from all stakeholders in the development of coconut cultivation is vital for inducing a sustainable progress in this sector. The present study has brought out the profitability involved in the cultivation and economic aspects of coconut. This study may be useful to make appropriate decision for mitigating the problems faced by coconut growers.

**Key Words:** Coconut, Marketing, Production, Plantation, Profitability

### **INTRODUCTION**

India is an agricultural country and one third of population depends on the agricultural sector directly or indirectly. Agriculture remains as the main stay of the Indian economy since times immemorial. A proverb in Philippine “If you could count the stars, then you could count

all the ways the coconut tree serves us". Coconut cultivation is considered to be one of the major livelihood which supports 60% farmers in the state. Coconut industry, all round efforts made for integrated development of coconut sector in the areas of production.

## **STATEMENT OF THE PROBLEM**

The coconut production has been one of the most important components of the Indian economy. The increasing trend of coconut production has brought new challenges in terms of finding market for the surplus. There is also a need to respond to the challenges and opportunities, that the global markets offer in the liberalized trade regime. During past two decades the coconut plantation crop has received ample research and development attention in the country and as a result of these concerted efforts is well exhibited in terms of increase in area of production and productivity of coconut in the country.

Even though, India is the third largest coconut growing country in the world all round efforts are made for integrated development of coconut sector in the areas of production, processing and marketing after establishment of a statutory body, (i.e.) Coconut Development Board, by the Government of India in the year 1981. In view of the changing scenario in the coconut sector, it was felt necessary to study the production and marketing of coconut and make fresh appraisal of the changing pattern of coconut production, trade and its ancillary industries. Hence, the present study was taken up for the research purpose.

## **OBJECTIVES OF THE STUDY**

The following are the objectives formulated for the purpose of the study

1. To examine the awareness of respondents about the coconut marketing.
2. To analyze the problems in coconut cultivation and marketing.
3. To explore the returns realized by the growers in the study area.

## **RESEARCH METHODOLOGY**

A research design is the overall plan or programme of research. The research design adopted by the researcher is discussed in the following paragraphs.

Among the leading coconut producing states of India, Tamilnadu stands first in terms of productivity. Nearly 4, 10,000 hectares are used for coconut production. In Tamil Nadu, almost all districts are involved in coconut cultivation. Among them the top three districts are Coimbatore,

Thanjavur and Dindigul. Coimbatore district shows the highest productivity compared to other districts. Coimbatore district has pleasant climatic conditions suitable for coconut cultivation. In Coimbatore, Pollachi taluk is the major source area known for its coconut cultivation. So the study is confined to pollachi taluk. The primary data is collected from farmers with the help of structured questionnaire using convenient sampling method among 250 respondents. The questionnaire was prepared in such a way that they are simple and understandable. The questionnaire was framed in Tamil, which may be very easy for the respondents to express their views.

The secondary data is collected by referring to journals, articles and magazines and various relevant websites.

### **STATISTICAL TOOLS USED IN THE STUDY**

The data collected were analysed on parallel with the objectives of the study on hand. Conventional tools like descriptive tables and percentage were used for the purpose of analysis. The graphs and charts have also been made use of where ever necessary. Further, the following specific tools were used.

1. Chi-square Analysis
2. Average Ranking analysis
3. Average Scoring Analysis

### **LIMITATIONS OF THE STUDY**

The study is subject to the following limitations

1. This study is restricted to Pollachi taluk only. Its findings and suggestions may not be applicable to all other regions.
2. Time and cost are the factors which have limited the size of sample as 250.

### **REVIEW OF LITERATURE**

**Mohamed Sharfudeen, M and Yasmin (2005)** the study says about the importance and consumption pattern of coconut, desiccated coconut and bio-chemical composition of desiccated coconut, problems and its marketing promotions. Coconut is the most important horticulture crop. Coconut is grown in an area of million hectares producing million nuts annually. Coconut is used as a food crop at the national level for the purpose of producing oil in India. Desiccated coconut is the dried disintegrated endosperm of the coconut. It is commonly known as desiccated and commercially known as coconut powder. Desiccated coconut is the white kernel of the coconut,

which is grated and dried to moisture of approximately 2.5 percent. It is the food having considerable nutritive value. Manufacturing process of desiccated coconut does not require any sophisticated machinery and equipment. The coconut development board of India and central food technology research institute, Mysore have developed a technology to produce desiccated coconut. AGMARK has developed quality standards for desiccated coconut. The problem of raw materials, affected the growth of desiccated coconut industry. Small scale entrepreneurs are facing problems in procuring raw materials from other states because of 4 percent central sales tax. All the desiccated coconut manufacturing units located in south India are small-scale sector. They have conducted Market promotional activities, liberal financial assistance, strict quality and exemption of tax is essential for improving the marketing of desiccated coconut, for high economies of scale.

**Niraj Kumar and Sanjeev Kapoor(2010)** this study reports that Coconut crop forms an important constituent of food basket for the people of Orissa and meets the economic needs of people dependent on its marketing. The study conducted in five coastal districts of Orissa, namely, Puri, Cuttack, Khurda, Ganjam, and Jagatsinghpur has examined the market chains for coconut to find the flow of product from farmers through different intermediaries to the consumers. Prices and market margins have been computed at different stages of the chain in order to reflect the value addition through various participants of the chain. Marketing channels have been found to be well established in the state, particularly in the coastal areas. No major value addition is done by the players at any level. The existence of functional channels explains that production and marketing system of coconut in the state can manage both increased supply and increased demand. The study has observed a high ratio of vendors v/s farmers and aggregators v/s vendors in the channel. In spite of this high ratio, both vendors and aggregators are able to earn profit and are continuing the business. It is suggested that coconut based industries should be jointly promoted by State Industry Department, State Agriculture Department and Coconut Development Board.

**Sivarajah and Ponniah (2010)** the purpose of this study is to develop a multi-market model for the analysis of an alternative policy options to increase exports of coconut products from Sri Lanka. Secondary data on the production and exports of coconut products are used. Simulations indicate that depreciation of the rupee exchange rate has a significant impact on export prices, volume of exports and income of industry stakeholders, but there is no significant impact on the producer prices or producer incomes, and supply of coconut products. Simulations show that

export prices of coconut products declined for the rupee exchange rate depreciations in real terms. But in nominal terms, the export prices increased to cause an increase in the exporting firms' income and government tax revenues, and a modest increase in the industry income. Depreciation of the rupee could raise the income of exporters and the government tax revenue, which could be used for investing in development of new technology or factory modernization subsidy schemes. Increased export prices can also boost processing of coconuts and encourage firms to export more coconut products. But the depreciation of the rupee has larger ramifications on the economy as a whole, thus it is not a viable policy option to choose for the long run.

**Ayoob, et al (2012)** this study analyses that Kerala state is the largest producer of coconut in India, even then marketing of this produce is not regulated in the state. Marketing co-operatives registered under the state government could channelize a meager amount of marketable surplus. In light of these circumstances, a research study was undertaken to examine the attitude of coconut growers towards the marketing co-operatives in Kerala. The study was conducted region-wise and affiliation-wise. 150 coconut growers from each region who are members of co-operative coconut marketing societies were selected based on proportionate random sampling procedure. The study revealed that the attitude of growers towards the co-operative societies among the affiliations is significantly different. The attitude index showed that nine out of fourteen variables have not reached up to the level of positive attitude expected by the respondents.

**George Thomas, V., et al (2012)** the study examines about the organic method of cultivation by the use of natural and renewable resources is the best option to ensure soil, air and water around us unpolluted keeping the environment safe for the present and the future generations. Organic agriculture follows the logic of a living organism in which all elements (soil, plant, farm animals, insects, the farmers etc.) are closely linked with one another. Unlike other field crops, there is no critical stage for nutrient requirement of coconut palm. Coconut palms export nutrients to the aboveground parts continuously from limited volume of soil throughout its existence. Organic farming can be a reality in coconut cultivation provided all the steps are taken to create awareness and arrangements made for certification using the guidelines of organic production. Further strengthening of organic farming research system is also necessary to address various aspects of organic farming for improvement of technologies from time to time. To achieve the potential of organic farming in coconut, farmer participatory training is essential. The farmers also will

require financial support to meet the initial yield reduction and other cost of cultivation. They also should be provided adequate market intelligence and marketing support for getting the maximum profit out of organic farming. As the diffusion of any technology will depend on the satisfaction of farmers with regard to the economics of cultivation, they should be assured encouraging price support for their organic produce and products. Elaborate market promotion for organic coconut products may be needed to catch up in the markets.

## **COCONUT CULTIVATION AND MARKETING- AN OVERVIEW**

### **1. HISTORY**

Historically, in the medieval period the coconut was known as *Nux indica*, the Indian nut, during the same period it was also referred as Nargil tree, "the tree of life". Western literature mentioned the Malayalam name "Tenga" for the coconut palm which related to Tamil 'Tennai' and believed to have been introduced from Sri Lanka. Its geographical dispersion around the world was aided by waves of sea, travelers migrating and trading between homeland countries and even to more distant islands, from Asia to American coasts. Botanically, the coconut palm is a monocotyledon and belongs to the order Areceaceae, family Palmae and the specie is known as *Cocusnucifera*.

The English name coconut, first mentioned in English print during the year 1555, comes from the Spanish and Portuguese word *coco*, which means "monkey face." Spanish and Portuguese explorers found a resemblance to a monkey's face in the three round indented markings or "eyes" found at the base of the coconut. On the Nicobar Islands of the Indian Ocean, whole coconuts were used as currency for the purchase of goods until the early part of the twentieth century. Since ancient times, coconuts are ceremonially associated with worship of Gods and Goddess in Hindu religion. Its antiquity in Indian mythology is well established as mentioned in *Kishkindakand* and *Coconut Tree Aranya kandin Valmiki Ramayana*. References also have been mentioned on coconut in *Raghuvansha* of Kalidasa and Sangama literature. Coconut, in its natural form, decorated with gold or silver formed a part of offerings on many religious occasions and social gatherings. The coconut is a benevolent crop and a perfect gift to mankind. It has during the span of history represented not only the source of food, beverage, oil seed, fibers, timber and health products but also associated with magic, mystery, medicine and omen in the life of people. The coconut palm tree provides clothing, utensils and dwellings and therefore, remains an important

source of earning livelihood to the inhabitants of the coconut producing states in coastal areas. The inhabitants therefore, affectionately eulogized the coconut plant with reverence as “Kalpavriksha”,

The most important and economically valuable produce of coconut palm is its fruit popularly known as ‘nut’. It is made up of an outer exocarp, a thick fibrous fruit coat known as husk; underneath lays the hard protective endocarp or shell. Lining the shell is a white albuminous endosperm or ‘coconut meat’ and the inner cavity is filled with a clear sweet refreshing liquid called ‘coconut water’. The kernel of a matured nut is the most precious product used for edible purpose. The dried kernel or copra is the richest source of edible oil and a by-product coconut oil cake, a source of vegetable protein used as an ingredient for livestock feed. The shell as such is used for fuel purpose; shell gasifies as an alternate source of heat. Coconut fruit energy, making handicrafts, ice-cream cups and other commercial products like shell powder, shell charcoal and activated carbon. The husk yields fibers, which is converted into coir and coir products viz., coir carpets, coir geo-textile, coir composite, coir safety belts, coir boards, coir asbestos and coir pith. Coir pith a secondary by product obtained during defibering process is used as soil conditioner and mending all types of soils. The spongy nature of pith helps in disintegration of clay soil and allows free drainage. Its sponginess helps to retain water and oxygen and also prevents loss of vital nutrients from

## **COCONUT CULTIVATION**

### **1.1. PRODUCTION OF SEEDLINGS**

The Department of Agriculture plays a major role in improving the productivity and production per unit by way of producing and supplying quality planting materials through various schemes.

### **1.2 CULTIVATION**

Most of the gardens are maintained as monocrop with wider spacing. In some areas multi cropping system is also practiced with a combination of coconut with vegetables, cattle, and fruits. For the first two years from plantation, coconut plant is irrigated at 45 litres of water per seedling, once in 4 days, during dry summer months. Provide adequate water to the transplanted seedlings. This in turn, arrests the spread of pest and diseases. Majority of the coconut gardens are maintained by adopting integrated nutrient management. For the first three years after planting under rainfed conditions, apply fertilizers in two split doses. Under irrigated conditions, the fertilizers can be

applied in 3-4 equal split doses. In case of low lying areas, apply fertilizer after water table recedes in one single dose or in two split doses as conditions permit. In all types of soils that are low in organic matter content (except reclaimed clayey soils and alluvial soils), apply organic matter at of 15-25 kg/palm/year during June-July from the second year of planting. In some patches where the tall variety is predominantly grown, eriophyid mite infestation is seen and as a preventive measure, farmers are undertaking root feeding with Azadiractin.

### **1.3 COPRA**

More than 50% of coconut is converted to copra and equal quantity of coconut is traded in the form of partially dehusked coconut for supplying to nontraditional states in India. Around 50 copra driers are established for copra production in the state.

### **1.4 TENDER COCONUT**

The tender coconut can be harvested in the sixth month where as mature coconut can be harvested in the 10th month. Moreover if the coconuts are harvested at tender stage, the incidence of pest and disease can also be reduced and the production will increase proportionally. The price of tender coconut at farm gate itself fetches Rs.13-14/- which goes up to Rs.18-19/- during peak summer.

### **1.5 INTERCROPPING**

In general, palms in the age group of 8-25 years are not suitable for inter and mixed cropping. However, cereals and tapioca are recommended as intercrops in young coconut plantation up to 3-4 years. Since ginger and turmeric are shade tolerant crops with shallow roots, they can be intercropped in coconut garden even in the age group of 15-25 years. It ensures better land utilization, solar energy harvesting, efficient water use, utilization of soil nutrient resources, more returns and an insurance against crop failure.

## **2. COCONUT PRODUCTION SCENARIO**

Coconut palms are grown in more than 80 countries of the world, with a total production of 61 million tonnes per year. Coconut trees are very hard to establish in dry climates, and cannot grow there without frequent irrigation; in drought conditions, the new leaves do not open well, and older leaves may become desiccated; fruit also tends to be shed.

## **3. HARVESTING**



The periodicity and frequency of harvesting coconuts vary from area to area, depends on the yield of the tree, variety and finally the purpose for which the crop is utilized. In highly productive gardens, nuts are harvested once in a month i.e. on west coast, harvesting of nuts may be possible 6 to 12 times a year. The gardens having low productivity usually harvest the coconuts only 6 times i.e. once in every two months. The areas where husk of nuts for retting is priority, in that area about 10 to 12 harvests are obtained. It is done by cutting whole bunch of nuts by lowering down with the help of coir rope tied in the bunch, but sometimes individual nut may be harvested.

#### **4. STORAGE OF COCONUT**

Though the storage is an important function to create utility and regular supply of the commodity throughout the year, due to variation in the consumption pattern of the coconut, there is wide variation in storage practices and that too for a short duration. The type of storage practiced in the coconut trade is actually for the seasoning and to facilitate husking, shelling, drying to reduce the moisture content of the kernel so as to get the desirable thickness of the meat (kernel) and to increase the yield of copra and oil content. The quality of copra produced after storage is also superior to that is obtained from the freshly harvested nut. The storage of harvested nuts is always beneficial when the nuts are fully ripe. Good quality of copra can only be harvested from fully matured green coconuts. The storage of coconuts which have been harvested, comparatively at immature stage may help in obtaining higher copra content per nut but such nuts are prone to spoilage on storage.

#### **5. SUPPLY**

The farmers generally retain a portion of their farm produce for meeting seed requirement, direct consumption and payment of climber's wages etc. The quantity of coconut converted to copra for milling purpose varies from state to state depending upon the consumption pattern of coconut and its products. It may be negligible in the coconut producing states, where coconuts are mainly harvested for consumption of tender coconut water and matured nuts for direct consumption as kernel. It may be 90 per cent in the Southern state where the coconuts are exclusively harvested for conversion to copra for extraction of coconut oil.

### **ANALYSIS AND INTERPRETATION**

The data collected from the respondents were systematically analyzed and presented in the form of tables under various headings in the following pages. This chapter is divided into two sections viz. section A and section B.

Section A: deals with simple Percentage Analysis of collected data

Section B: deals with application of statistical tools such as

- a) Chi-Square Analysis
- b) Average Ranking Analysis
- c) Weighted Average Score Analysis

### **PERCENTAGE ANALYSIS**

**Table: No.1**

#### **Gender of the Respondents**

S.No	Gender	No. of Respondents	Percentage
1	Male	197	78.8
2	Female	53	21.2
	Total	250	100

From the above table, it is clear that 78.8% of the respondents are Male and 21.2% of the respondents are Female.

Majority (78.8%) of the respondents, are male.

**Table: No.2**

#### **Educational Qualification of the Respondents**

S.No	Educational Qualification	No of Respondents	Percentage
1	No formal education	61	24.4
2	School level	106	42.4
3	Under graduation	63	25.2
4	Post graduation	19	7.6
5	Professional in agriculture	1	0.4
	Total	250	100

From the above table, it is clear that 42.4% of the respondents are educated upto school level, 25.2% of the respondents are educated upto under graduation, 24.4% of the respondents have no formal education, 7.6% of the respondents are post graduates, and 0.4% of the respondents are professional in agriculture.

Most (42.4%) of the respondents, are educated upto school level.

**Table: No.3**  
**Area of Coconut Seedlings Planted**

S.No	Area of Coconut Seedlings Planted	No of Respondents	Percentage
1	Below 5 acres	110	44.0
2	Between 6 to 20 acres	112	48.8
3	Above 20 acres	18	7.2
	Total	250	100

From the above table, it is clear that 48.8% of the respondents have planted coconut seedlings between 6 to 20 acres, 44.0% of the respondents have planted coconut seedlings below 5 acres, and 7.2% of the respondents planted coconut seedlings above 20 acres.

Most (48.8%) of the respondents, have planted coconut seedlings between 6 to 20 acres.

**Table: No.4**  
**Types of trees planted by the Respondents**

S.No	Types of trees planted	No of Respondents	Percentage
1	Dwarf coconut	29	11.6
2	Tall coconut	81	32.4
3	Queen palm	128	51.2
4	Hybrid	12	4.8
	Total	250	100

From the above table, it is clear that 51.2% of the respondents have planted queen palm variety, 32.4% of the respondents have planted tall coconut variety, 11.6% of the respondents have planted dwarf coconut variety and 4.8% of the respondents have planted hybrid coconut variety.

Majority (51.2%) of the respondents, have planted queen palm variety.

**Table: No.5**  
**Yielding Time Duration of Coconut Trees**

S.No	Yielding time duration	No of Respondents	Percentage
1	3 years	26	10.4
2	4 years	84	33.6
3	5 years	140	56
	Total	250	100

From the above table, it is clear that for 56% of the respondents yielding time duration of coconut trees is 5 years, for 33.6% of the respondents yielding time duration of coconut trees is 4 years, for 10.4% of the respondents yielding time duration of coconut trees is 3 years.

For majority (56%) of the respondents, yielding time duration of coconut trees is 5 years.

**Table: No.6**

**Number of Trees Planted per acre**

S.No	Number of Trees Planted per acre	No of Respondents	Percentage
1	Below 50 trees	34	13.6
2	Between 51 to 76 trees	194	77.6
3	Between 76 to 100 trees	22	8.8
4	Above 100 trees	-	-
Total		250	100

From the above table, it is clear that 77.6% of the respondents have planted between 51 to 76 trees in one acre, 13.6% of the respondents have planted below 50 trees in one acre, 8.8% of the respondents have planted between 76 to 100 trees in one acre and none of the respondents have planted trees above 100 trees in one acre.

Majority (77.6%) of the respondents, have planted between 51 to 76 trees in one acre.

**Table: No.7**

**Nature of Irrigation of Coconut**

S.No	Nature of Irrigation	No of Respondents	Percentage
1	Tripirrigation	178	71.2
2	Basinirrigation	46	18.4
3	Sprinkler	26	10.4
Total		250	100

From the above table, it is clear that 71.2% of the respondent's irrigation system is trip irrigation, 18.4% of the respondents irrigation system is basin irrigation, and 10.4% of the respondents irrigation system is sprinkler.

Majority (71.2%) of the respondents, irrigation system is drip irrigation.

**Table: No.8**

**Time Duration of Fertilizing Coconuts**

S.No	Duration	No of Respondents	Percentage
1	6 months once	157	62.8
2	1 year once	64	25.6
3	2 year once	29	11.6
	Total	250	100

From the above table, it is clear that 62.8% of the respondents fertilize their coconuts 6 months once, 25.6% of the respondents fertilize their coconuts once in a year, and 11.6 % of the respondents fertilize their coconuts 2 years once.

Majority (62.8%) of the respondents, fertilize their coconuts 6months once.

**Table: No.9**

**Rotation Period of Harvesting Coconuts**

S.No	Rotation Period	No of Respondents	Percentage
1	Between 25 to 35 days	7	2.8
2	Between 36 to 60 days	223	89.2
3	Above 61 days	20	8
	Total	250	100

From the above table, it is clear that for 89.2% of the respondent's rotation period of harvesting coconuts is between 36 to 60 days, for 8% of the respondents rotation period of harvesting coconuts is above 60 days and for 2.8% of the respondent's rotation period of harvesting coconuts is between 25 to 35 days.

For majority (89.2%) of the respondents, rotation period of harvesting coconuts is between 36 to 60 days.

**Table: No.10**

**Opinion about the Availability of Separate Market for coconuts**

S.No	Separate market	No of Respondents	Percentage
1	Available	25	10.0
2	Not Available	225	90.0
	Total	250	100

From the above table, it is clear that 90% of the respondents opined that they have separate market for coconuts and 10% of the respondents opined that they do not have separate market for coconuts.

Majority (90%) of the respondents, opined that they have separate market for coconuts.

**Table: No.11**

**Fixation of Coconut Price**

S.No	Fixation of Coconut Price	No of Respondents	Percentage
1	Bid	-	-
2	Bargaining price	-	-
3	Price fixed by dealers	24	96.0
4	Rate fixed by the government	1	4.0
	Total	25	100

From the above table, it is clear that 96% of the respondents expressed that coconut prices are fixed by the dealers, 4% of the respondents expressed that coconut rates fixed by the government, and none of the respondents expressed that coconut prices are fixed by bid and it is also clear that there is no scope for fixing price by way of bargaining.

Majority (96%) of the respondents, expressed that coconut prices are fixed by the dealers.

**Table: No.12**

**Medium of Selling of Coconuts**

S.No	Medium of Selling of Coconuts	No of Respondents	Percentage
1	Petty shops	2	0.8
2	Departmental stores	10	4.4
3	Middleman	168	74.6
4	Local Markets	17	7.6
5	Personal selling to ultimate consumer	28	12.4
	Total	225	100

From the above table, it is clear that 74.6% of the respondents are selling coconuts through middleman, 12.4% of the respondents are selling by themselves, 7.6% of the respondents are selling in the local markets, 4.4% of the respondents are selling through departmental stores and 0.8% of the respondents are selling through petty shops.

Majority (74.6%) of the respondents, are selling coconuts through middleman.

**Table: No.13**

**Profits from Sale of Coconuts per Acre**

S.No	Profits from sale of Coconuts Per Acre	No of Respondents	Percentage
1	Below ₹ 50,000	165	66.0
2	Between ₹ 50,001 to ₹ 1,00,000	67	26.8
3	Above ₹ 1,00,001	18	7.2
Total		250	100

From the above table, it is clear that for 66% of the respondents profit from sale of coconuts per acre is below ₹ 50,000, for 26.8% of the respondents profit from sale of coconuts per acre is between ₹ 50,001 to ₹ 1, 00,000 and for 7.2% of the respondents profit from sale of coconuts per acre is above ₹ 1, 00,001.

For majority (66%) of the respondents, profit from sale of coconuts is below ₹50, 000.

**Table: No.14**

**Level of loss incurred by Selling through Middleman**

S.No	Level of Loss	No of Respondents	Percentage
1	Very high	36	14.4
2	High	82	32.8
3	Moderate	86	34.4
4	Low	29	11.6
5	Very low	17	6.8
Total		250	100

From the above table, it is clear that for 34.4 % of the respondents the level of loss by selling through middle man is moderate, for 32.8 % of the respondents the level is high, for 14.4% of the respondents the level of loss is very high, for 11.6 % of the respondents the level of loss is low and for 6.8 % of the respondents the level of loss by selling through middle man is very low.

For Most (34.4 %) of the respondents, the level of loss by selling through middle man is moderate.

**TABLE .B.1**

**Average Ranking Analysis –The Labour Problems in Coconut Cultivation**

S.No	Factors	R1	R2	R3	R4	R5	Average	Rank
1	High cost of labour	600	352	60	14	15	4.164	1
2	Inadequacy of labour	470	252	99	72	24	3.668	2
3	Unskilled labour	15	140	123	224	59	2.244	4
4	Less working duration	105	164	360	74	31	2.936	3
5	Migratory labour	60	100	93	116	124	1.972	5

From the data collected, average ranking scores have been calculated for the labour problems in coconut cultivation.

From the analysis it is understood that the respondents have given first rank to high cost of labour, second rank to inadequacy of labour, third rank to less working duration, fourth rank to unskilled labour, and fifth rank to Migratory labour.

Hence it is concluded that the high cost of labour is the prime problem for majority of the respondents in coconut cultivation.

**TABLE .B.2**

**Average Ranking Analysis - Problems in Coconut Marketing**

S.No	Factors	R1	R2	R3	R4	R5	Weighted average	rank
1	Less storage facility	300	280	138	108	20	5	1
2	Multiple channels of distribution	50	80	126	152	102	3.968	2
3	Seasonal variations in price	615	196	54	102	9	3.06	3
4	Problems in exports	60	220	144	100	85	2.064	4
5	Limited market information	225	216	303	54	23	0.956	5

From the data collected, average ranking scores have been calculated for the problems in coconut marketing.

From the analysis it is understood that the respondents have given first rank for less storage facility, second rank to Multiple channels of distribution, third rank to Seasonal variations in price, fourth rank to Problems in exports and fifth rank to Limited market information.

Hence, it can be concluded that less storage facility is the prime problem for majority of the respondents in coconut marketing.



**TABLE .C.1**

**NUMBER OF ACRES OF FARMING LAND AND AREA OF COCONUT SEEDLINGS**

**Hypothesis:**

There is no significant association between the acres of farming land possessed and areas of coconut seedlings planted by the respondents

Factors		Area of Coconut Seedlings			Total
		Below 5 acres	Between 6 to 20 acres	Above 20 acres	
Acres of Farming Land	Below 5 acres	91	2	0	93
	Between 6 to 20 acres	18	101	1	120
	Above 20 acres	1	19	17	37
<b>Total</b>		<b>110</b>	<b>122</b>	<b>18</b>	<b>250</b>

S.No	Factors	Chi square value	Degree of freedom	P value	Result
1	Acres of Farming Land/ Area of Coconut Seedlings	2.614	4	.000	Hypothesis Rejected

**Significant** – significant value (0.05)

**Non Significant** -significant value (0.05)

**Inference**

From the above table it is clear that calculated p value (0.00) is lesser than the significant value of 0.05. So the hypothesis is rejected.

Hence it can be concluded that there is a significant association between the number of farming land possessed by the respondents and the areas of coconut seedlings planted by the respondents.

**TABLE .C.2**

**NUMBER OF ACRES OF FARMING LAND POSSESSED AND TYPE OF SUBSIDY**

**Hypothesis:**

There is no significant association between the acres of farming land possessed and the type of subsidy received by the respondents

Factors		Type of Subsidy			Total
		Coconut Palm Insurance Scheme	Trip subsidy	Fertilizer subsidy	
Acres of Farming Land	Below 5 acres	1	34	14	49
	Between 6 to 20 acres	11	39	16	66
	Above 20 acres	1	20	3	24
<b>Total</b>		<b>13</b>	<b>93</b>	<b>33</b>	<b>139</b>

S.No	Factors	Chi square value	Degree of freedom	P value	Result
1	Acres of Farming Land/ Type of Subsidy	10.648	4	.031	Hypothesis Rejected

**Significant** – significant value (0.05)

**Non Significant** -significant value (0.05)

### Inference

From the above table it is clear that calculated p value (0.031) is lesser than the significant value of 0.05. So the hypothesis is rejected.

Hence it can be concluded that there is a significant association between the acres of farming land possessed and the type of subsidy received by the respondents.

### Findings

- Majority (78.8%) of the respondents, are male.
- Most (42.4%) of the respondents, are educated upto school level.
- Most (48.8%) of the respondents, have planted coconut seedlings between 6 to 20 acres.
- Majority (51.2%) of the respondents, have planted queen palm variety.
- Majority (56%) of the respondents, yielding time duration of coconut trees is 5 years.
- Majority (77.6%) of the respondents, have planted between 51 to 76 trees in one acre.
- Majority (71.2%) of the respondents, irrigation system is drip irrigation.
- Majority (62.8%) of the respondents, fertilize their coconuts 6months once.
- Majority (89.2%) of the respondents, rotation period of harvesting coconuts is between 36 to 60 days
- Majority (90%) of the respondents, opined that they have separate market for coconuts.

- Majority (96%) of the respondents, expressed that coconut prices are fixed by the dealers
- Majority (74.6%) of the respondents, are selling coconuts through middleman.
- Majority (66%) of the respondents, profit from sale of coconuts is below ₹50, 000.
- Most (34.4 %) of the respondents, the level of loss by selling through middle man is moderate.
- The high cost of labour is the prime problem for majority of the respondents in coconut cultivation.
- The less storage facility is the prime problem for majority of the respondents in coconut marketing.
- That there is a significant association between the number of farming land possessed by the respondents and the areas of coconut seedlings planted by the respondents.
- There is a significant association between the acres of farming land possessed and the type of subsidy received by the respondents.

## **SUGGESTIONS**

### **1. Coconut Production:**

To increase productivity, it is necessary to take up systematic replanting and under planting to replace the old, senile, unproductive and disease affected palms, using quality planting material. The integrated farming system should be popularized. All the field models of inter / mixed / multicrop / multistoried cropping and mixed farming integrating livestock farming such as dairy, poultry, duck farming, aquaculture have to be popularized among the farmers.

Decreasing the cost of production of nut is the most important criteria for increasing competitiveness. Cost effective management practices such as organic recycling of coconut biomass and other farm wastes or converting them into vermicompost, addition of need based in-puts at the appropriate level and time, adopting drip irrigation by providing subsidy for it, soil moisture conservation, basin management with organic mulching or growing green manures and incorporating them, need based plant protection measures using bio-control agents are also to be adopted for substantial growth in production and to increase the productivity of coconut.

### **2. Pest and Disease Management:**

The integrated pest and disease management approach allows pest and disease management without any adverse impact on ecological sustainability of the Agro ecosystem. A massive

programme should be launched to weed out the old unproductive and diseased coconut palms and replanting seedling of improved hybrid varieties of coconut palms as a measure of rehabilitation.

### **3. Organic Coconut Product:**

The Government may play an active role in promoting the diversification of usage of coconuts and its value added products like coconut cream, spray dried coconut cream powder, coconut vinegar etc., by providing:

- ☞ Institutional support system which will offer knowledge base as i) quality concepts ii) Technology linkage iii) National and International Production and Processing Standards.
- ☞ By providing adequate funds at liberal terms for processing and storage facilities for copra.
- ☞ Close interaction among coconut processors, traders, research organization and Government by way of organizing workshops, trade fairs, exhibitions for the all-round growth of processing industry is necessary.

Thus it would help in bringing down the cost of production of diversified and value added product within the reach of consumers and also provide a better price to farmers.

### **4. Market Research:**

These aspects need strengthening to identify domestic and export market, identification of rich production and distribution channels; thus linking the consumer, customers and public to the market. It is, therefore, recommended that need based and problem oriented market research should be taken up to find solution to emerging marketing problems.

### **CONCLUSION**

Pollachi plays a vital role in coconut production, at Coimbatore district. At the mean time it slowly loses its position because of unremunerative price. Further, the average age of the coconut palm is in decline stage, so its productivity is reduced. In this situation, the policy makers and other stakeholders are urging to take necessary steps to boost up coconut cultivation practices in the study area. As the consumer price for a coconut farmers getting very low, it clearly shows that the marketing system is not favorable to the farmers. If the government takes necessary steps to regulate coconut marketing process and gives, financial assistance to make value added products from core products it may encourage the coconut production.

Coconut play a vital role in offering more employment opportunities to the rural people and it is a profitable venture for all categories of farmers in spite of their high initial investment

and the fluctuating nature of nut price. Hence, it deserves a planned and continuous attention from the various stakeholders. The present study has brought out the profitability involved in the cultivation and economic aspects of coconut.

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