CHAPTER I

INTRODUCTION
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The coconut palm is one of the most useful and important trees in the world and it has a long association with human history of over thousand years. Since then, this crop has been considered both as an object of reverence in the local tradition and as the most profitable economic enterprise/activity.¹

The coconut palm, cocos nucifera Linn., with its tall, slender and uniformly thick stem and massive crown with large number of leaves, bearing bunches of nuts in their axiles is one of the beautiful and useful trees in the world. It perhaps yields more products of use to mankind than any other tree. It is no wonder that the palm is looked upon with reverence and affection by the inhabitants of the coconut producing countries and considered as KalpaVruksha.²

Each and every part of the coconut palm is useful in one way or another. The tender coconut supplies a very popular, refreshing and satisfying beverage. The raw kernel is an important article of food. The oil from the nut is used in cooking and in the manufacture of soap and other toilet requisites. The coconut oil cake is a valuable cattle feed. Fibre from the husk is used in the manufacture of coir ropes, mats and mattings. The trunk otherwise called 'porcupine wood', is used in house construction and furniture
making. The leaves after plaiting are used to thatch houses. The juice obtained on tapping the inflorescence is rich in sugar and is converted into jaggery, sugar, vinegar and sweet or fermented toddy. The products of commercial importance are copra, oil, oil-cake, desiccated coconut and fibre.

"The importance of the palm lies in the fact that not only does it supply food, drink and shelter but also provides raw material for a number of important industries. It is also essentially a crop of the small land holder who obtains cash for the purchase of necessaries of life by the sale of coconut and coconut products. In the Philippines, 82 percent of the total area under coconut is composed of small holdings with an average of about two hectares. In India the average is estimated to be less than an acre. In Ceylon, small holdings of less than 20 acres each account for over 80 percent of the area under the crop. In Malaya, out of a total area of 6.0 lakh of acres 3.9 lakh acres are composed of holdings of less than 100 acres in extent."

The coconut industry is intimately connected with the economic and domestic life of the inhabitants of the coconut growing countries. It provides employment and perhaps the only source of livelihood to many thousands of people. Thus in Philippines eight million people or more than a third of the entire population is dependent upon this industry for the livelihood. In India, according to Gopalan, the coconut industry gives full or part time employment.
the total population of Kerala comprising the districts of Trivendrum, Quilon, Kottayam, Trichur, Kozhikode, Cannanore and Palghat. In Ceylon, the coconut industry is the main source of livelihood and provides employment for nearly 3 million of its population.

Coconut serves as one of the important sources of food. In India, coconut is consumed in the form of tender nuts, raw kernel, copra, coconut oil and desiccated coconut. According to Gopalan, the nut equivalent of coconuts and coconut products consumed in India comes to 2893 million or about 84 percent of the total production in the country. In Ceylon, the per capita consumption of coconuts is estimated at 140 nuts per annum which amounts to annual consumption of 1000 million nuts out of an estimated production of 2000 million. In Philippines 4 to 5 percent of the production is reported to be consumed locally.

Besides, more coconut plantations are needed to meet the growing demands viz., food, oil, coir, medicine etc. and has great economic importance. In addition to this, it is also evident that there is enormous potentiality for expanding coconut plantation/crops in Karnataka. Hence the study about coconut cultivation has gained much importance.

Consequently, in most of agriculturally dominant countries.
the economics of coconut cultivation has become a subject of great importance. The countries like Bangla Desh, Phillipines, Indonesia, Sri Lanka and India have raised many questions regarding coconut cultivation/crops. Particularly, coconut crop cultivation has attracted the attention of Indian agriculture since modernisation. Also India being the third largest production of nuts in the world, and particularly, in India, Karnataka State stands third in the production of nuts, understanding the economics of the coconut plantation assumes paramount importance. Moreover the cultivation of coconut crop is most suitable for Indian land holdings (of small size) providing large employment.

Coconut tree yields more products of use to mankind than any other tree known to man. The variety of products derived from the coconut palms throughout the world is practically boundless. The nuts of the coconut palm could truly be counted among the most important fruits of the world. The tender nut supplies a refreshing beverage and the raw kernel is an important article of food in all coconut growing countries. A number of commodities are derived from the nut which enter international commodity markets.

The dried kernel-copra, is a major source of oil. Coconut oil is an important and one of the oldest items used in the manufacture of soaps, other cosmetics and in margarine.
Poonac or "pressed cake" which is the meal after oil extraction is a valuable livestock feed. Desiccated coconut is used widely in bakery and confectionary trades the world over.

The husk of the nuts provides a high quality hand fibre which is used in numerous industries. Locally, fibre provides the valuable raw material in spinning coir yarn and in the manufacture of coir ropes, cordage, brooms, woven carpets and many other utility items.

The hard shell is mainly used locally as a fuel but there is a heavy demand for carbonised coconut shells in overseas markets. Some of this shell-charcoal is converted into activated charcoal which has important industrial uses as a combating air and water pollution.

India is the third largest coconut producing country in the world. The Philippines and Indonesia occupy the first and second place respectively. In India, coconut culture occupies about 1.2 million hectares spread over the entire coastal belt. Some interior places which are otherwise suitable are also utilised for coconut culture. Such places could be seen in parts of Karnataka, Bihar and Madhya Pradesh. Among the major coconut growing states, Kerala ranks first where 57.74 percent of the total
coconut hectarage and 49.28 percent of the total production in the country are concentrated. While this is so, the unit productivity of the crop in the Kerala State is low compared to that of other states. The productivity of the crop in Kerala is as low as 4925 nuts per hectare, whereas it is 10651 nuts in Tamil Nadu and 5215 nuts in Karnataka. Thus the productivity in Tamil Nadu and Karnataka is higher than that in Kerala.

REVIEW OF STUDIES

A general survey of the studies conducted earlier covering several aspects with a view to understanding the functioning of the economics of cost, production and marketing of various agricultural commodities is attempted here. The studies on all major agricultural commodities in India have been covered chronologically categorywise. The time horizon is from 1969 to 1996.

CEREALS

A study on "cost of production of wheat in Punjab during the 1973-74 season reveals that the cost of production per quintal of wheat in Punjab increased from Rs.67.10 in 1972-73 to Rs.74.34 in 1973-74. This was due to the rise in cost of cultivation per hectare from Rs.1650.54 in
1972-73 to Rs.2037.14 in 1973-74. This rise in the cost of cultivation per hectare was proportionately much more than an increase in yield per hectare. The rise in yield per hectare was primarily due to the increased use of most of the inputs, which together with the rise in input prices, also explained the increase in the total cost of cultivation per hectare. As a result of the increase in both the yields per hectare and the average post-harvest prices of the grain and the by-product, the gross income per hectare of wheat increased during the year under review. Since the increase in the total cost of cultivation per hectare was much less than that in gross income, net income per hectare over total cost of cultivation rose manifold between 1972-73 and 1973-74. Net income over cash and kind expenses nearly doubled between the two years.

Subba Rao\textsuperscript{13} has assessed the economic efficiency of rice marketing system and evaluated the impact of public intervention on the marketing system with special reference to the West Godavari districts of Andhra Pradesh during 1968-72. The author has followed twin approaches i.e., concurrent marketing margin and structure - conduct - performance for the assessment of economic efficiency in the marketing of rice at the village and institutional levels. The cross section analysis has revealed that large farmers
realised higher prices than small farmers although considerable variation existed between prices received by the sample farmers. Further, the losses suffered by the small farmers due to various imperfections in the marketing system do not appear to be as large as is generally believed.

A study by Ratna-Reddy\textsuperscript{14} on size productivity relationship between farm size and productivity holds good in majority of the regions. It was mainly due to the higher labour intensity on small farms and also due to intensity of material inputs, to some extent. Higher labour intensity on small farms was due to the availability of cheap family labour and also the use of more hired labour.

As far as net returns to farming was concerned, the small farmers were not able to convert their output advantages to higher net profits due to their higher total expenditure especially in the case of local paddy. This was due to the reason that small farmers try to maximise their output while large farmers try to maximise profits. The reasons for this may be (i) Small farmers produce more in order to meet the higher food requirements of a large family, (ii) and they may not be able to reduce their total expenditure by adopting labour substituting techniques like tractors as they cannot afford.
PULSES

Rahman and Kashem\textsuperscript{15} studied growing and marketing problems of pulse crops in Bangla Desh. High price of fertilizer, high cost of production, lack of capital, disease problem and high cost of pesticides, high price of seeds and high irrigation cost were found to be the major factors in growing pulse crops. Reduction of price of improved seeds of pulse crops, distribution of credit, reduction in prices of fertilizer and pesticides, provision of irrigation and drainage facilities were the important measures suggested to overcome the various problems of cultivation of pulses. Provision of improved storage facilities, providing price protection to farmers from middlemen were the measures suggested to overcome the marketing problems of pulses.

PLANTATION CROPS

P.P.Madappa\textsuperscript{16} conducted a study of cost of production of coffee in India. Coffee as a plantation and foreign exchange-earning crop is well-known in India. The need for and the importance of the study of cost of production of coffee can not be overemphasized. Several cost studies on coffee have been made in India. But these studies are subjected to several limitations. This study attempted to overcome some of
the limitations and to fill the gaps. The objectives of the study were (i) to review the studies on cost of production of coffee in India; (ii) to study the cost of production of coffee by survey method, covering estates of almost all size-groups.

The cost of new planting as available from the Report of the Plantation Inquiry Commission (1956), varied from about Rs.1,000 to 2,000 per acre for the first year. In yet another recent study it varied from Rs.2,500 per acre in 1965-66 to Rs.3,000 in 1969-70. The estimated replanting cost as shown in the study was Rs.2,000 per acre for the first five years in 1965-66 and Rs.2,500 in 1969-70.

As per the studies available, the cost of production of matured/bearing plants per acre varied anything between Rs.400 and Rs.700 in 1953. In 1958 the estimated cost of production was Rs.836 per acre. The estimated cost of production in 1961 was Rs.1,300 per acre. The main findings of this study are : a) The average coffee area per planter was about 55 acres, with a range from 10 acres to above 200 acres. The average paddy growing area per planter was about 3 acres, and coffee and orange growing area was about 15 acres.b) Estates of smaller size contained more younger plants than the estates of bigger size.c) On an average, the net expenditure per acre of paddy was about Rs.235 and for orange Rs.150.
The average net income per acre from paddy was about Rs.90 and from orange about Rs.100. The total cost of production of coffee per acre was about Rs.900. Out of the total cost of production, cultivation cost accounted for about Rs.500 (55 per cent), cost of preparing the produce for the market for about Rs.100 (9 per cent) and 'other costs' for about Rs.300 (30 per cent). Inputwise, labour cost accounted for about 40 per cent of the total cost and material cost for about 20 per cent.

e) The average pre-tax profit per acre of coffee production was Rs.275. However, the estates under the size-group of 100 to 200 acres incurred a loss of Rs.11 per acre. On the basis of output-input co-efficients under the different size-groups of estates, it appeared as though it was more economical to own an estate of the size of either 200 acres and above, between 50 and 100 acres or between 10 and 25 acres than to own an estate of the size of 100 to 200 acres or 25 to 50 acres.

COCONUT

There are several studies, covering one aspect or the other, on cost of cultivation, production and marketing of coconut conducted by many researchers. A brief review has been done here.
P.K. Das studied the estimation of production cost and returns for coconut in Kerala. This study reveals that coconut cultivation under good management is profitable in Kerala. Since the scope of this paper was limited to monoculture of west coast tall variety of coconut, the full economic potential of this crop with hybrids as well as under inter/mixed cropping has not been expressed here. As it appears, owing to the economic pressure on land for deriving maximum benefits from the available resources, most of the coconut gardens in Kerala are now intercropped with annuals, semi-perennials and perennial crops. Under these situations, the cost of production of nuts found to be lower and the returns from the coconut-based farming systems are higher than what has been observed in this study.

C. Latha Bastime and M.P. Abdurazak studied cost and returns from coconut holdings of different sizes in northern Kerala. The study revealed that the cost of maintenance per hectare was Rs.6297.65, Rs.5431.62, Rs.5100.52 and Rs.4183.73 respectively for the four categories of farms. The average cost was worked out to Rs.4442.05 per hectare. Sixty five percent of the total cost was incurred for application of manures and fertilizers. Inputwise analysis showed that 45.19 percent of the total cost was incurred on manures and 41.16 percent on labour. Only very limited
expenditure was made on plant protection chemicals. The family labour utilisation showed wide variation i.e., 34.73 percent in stratum I to 6.59 percent in stratum III. The average net profit per hectare was worked out Rs.10360 43.

N.Nagaraj, K.N.R.Sastry and M.G.Chandrakanth studied economic considerations in selecting coconut enterprise. The performance of garden provides ample security for the funds lent since the farmers continue to get substantial returns over costs for sufficiently a long period. The various measures like Internal Rate of Return, Benefit Cost Ratio, Net Present Value and Pay Back Period provide ample proof in this regard. Therefore lending for coconut orchard and also establishment of the same for earning income need not be considered as a risky proposition. Further this situation becomes more favourable if it is complemented with other crops and livestock enterprises. In actual experience also, here are evidences where the farmers having coconut gardens, have successfully utilised space, water and sunshine for growing mulberry and coca.

V.M.Jakhade and V.P.Kurian conducted a study in two districts of Kerala State with an objective to find out the amount of expenditure incurred on fertilizers and manures and its proportion to total expenditure on coconut cultivation and to
assess the amount of credit required for the purpose by different classes of coconut growers. In the light of above objectives the study indicated that cultivators had grown more than one crop like paddy, arecanut, topico, plantation etc. And with regards to expenditure, it showed that there was variance between the regions and the expenditure on fertilizers and manures accounted for more than 70 percent to total expenditure. Besides the analysis indicated that the loans/credit issued for coconut cultivation amounted to only 20 percent of the total credit/loan.

Chandan Mukherjee (1975) in his study estimated cost of maintenance of coconut plantation at 1973-74 prices before the doubling of fertilizer prices. The cost of maintenance was found to be Rs.10.50 per nut bearing tree per year. According to the study the cost of maintenance and procurement during the first four years will be less than that during the fifth year onwards.

H.M.G.Herath studied the performance of replanting of senile holdings in the coconut sector in Sri Lanka. The study indicates that subsidies have not been effective. Many farmers do not undertake replanting due to deferment of present incomes. Studies have been made to evaluate the various ways by which replanting could be made attractive. One approach that holds promise is the interplanting of coconut land.
with banana plantation and subsequent replacement with coca when the banana phases out. This system gives incomes from the second year onwards and hence mitigates the severity of loss of income in the early years of replanting. Both the economic and financial rates of return from this area were attractive. The economic benefit-cost ratios were higher than the financial benefit-cost ratios. Sensitive analysis shows the financial and economic returns were still high even under unfavourable assumptions.

Study made by H.I. Dalvi and others on the cost of marketing margins has shown that marketing of coconut in Sindhudurg district in Maharashtra is simple and not involving many intermediaries as the demand was restricted to the district only. Most of the produce was consumed locally and hence nuts were sold by local producers to consumers. Direct selling to the consumers was found to be the most profitable one than selling through the wholesalers. The farmers got maximum share in consumers rupee, while in case of latter it was minimum. Co-operatives must therefore be encouraged to come forward in the marketing of coconuts as this channel offers better share to the producers in the consumers price.

Mathew observes on the need for irrigating coconut palms that "palms undoubtedly benefit from irrigation and
this can be done on a small scale when it is possible to
divert streams or to store water in small tanks, as in
South India. But it is unlikely that large areas of palms will
continue to be cultivated in areas where rainfall is low and
badly distributed and little attention is currently being
paid to the possibilities of irrigation of coconut palms, except
in general terms and as applicable to smallholdings.\" 

C.K.B.Nambar and others\textsuperscript{25} conducted a study on
application of organic manure to reduce coconut mortality on
coastal sand. Field experiment was carried out to assess
the role of different organic sources along with normal
application in the establishment of coconut on literal sand.
The application of cattle manure, coirdust, coconut shading,
forest leaves, along with NPK resulted in a remarkable
reduction in mortality. These applications increased the
growth characteristics like palm height and number
of leaves etc.

Viswanathan Pillai's\textsuperscript{26} study on coconut palms in
1975 indicates that every part of the tree has important economic
uses. The chief product is the coconut kernel which is
converted into copra from which coconut oil is extracted.
Coconut kernel and oil are important food items especially
for the people of Kerala. Coconut husk is used for the
extraction of the strongest and most enduring natural fibre
which is the raw material for the coir industry. Coconut shell, besides being an efficient fuel, is put to industrial use in making activated charcoal. It is also used for several handicraft products.

India accounted for about 1/5th of the world's output of coconuts in the year 1975. Among Indian States, Kerala occupies a unique position in the matter of coconut production. The state accounted for more than 70 percent of the all India area under coconut and was responsible for 2/3rds of the total output of the crop in the year 1975.

The trend in production over the last decades (1970) was not quite encouraging. Two factors have been mentioned for the low rate of increase in production. The first and more apparent one is damage being done to the crops by the root and bud diseases which affected a considerable part of the coconut tracts of the State. Second unfavourable conditions.

Experiments conducted by N.Krishnaji and others at the Central Plantation Crops Research Institute showed that it is possible to raise the yield of garden land through the introduction of mixed and inter-cropping. A hectare of land under coconut cultivation could generate a net income of
the order of Rs.5,000 in the year 1976, even on plantation where the 2/3rds of the total nut bearing trees provided optimal farming practices. The implications of these experiments vary from region to region within Kerala.

According to Kunikrishnan, coconut plant offers more than any other plantation crop in the tropics. It has also been called as the Kalpa Vruksha or the "all giving tree". Besides, coconut trees give continuous yield after 6 or 7 years of planting and accommodate variety of other crops along with it. Coconut also has commercial products like coconut oil, coir etc. Thus coconut crop is a source of income, consumer goods, and industrial promotion and has been an object of reverence in local tradition.

Gita Aravamutham analyses the position of coconut crop in Kerala and states the various reasons for poor productivity. The low yield per tree and low quality of the nut is due to over crowding of trees, lack of irrigation and manuring. And also held opinion that Kerala is relatively well versed in commercial utilisation of the coconut and there is a need for revamping production and redistribution of coconut.

Jamool Unni studied the changes in the cropping pattern in Kerala and found out some evidences on
substitution of coconut for rice. As this paper examines shifts in cropping pattern in Kerala in the past two decades, it appears that garden-land crops (particularly coconut) have been gaining at the expense of wet-land crops (particularly paddy). It is also observed that the major part of the increase in area took place in most districts between 1960-61 and 1968-69. The percentage increase in the area under coconut was 37 percent - much larger than increase in the area under rice (12.2 percent) during this period.

T.C. Mohan's study in 1988 points out that Kerala is well known for its coconut production and its productivity from 1956-57 to 1985-86, it has been accounting for 60-65 percent of all India production. The main issue discussed was that why despite favourable agroclimatic conditions there is a declining trend in area, yield and production of coconuts in Kerala. The available findings from various studies neither have provided sufficient explanations nor tackled the problems of coconut economy. To bridge the gap and to increase production and productivity, the State Government was asked to take up comprehensive policy measures like subsidy incentives, providing quality seedlings and extension activities.
Narayana and others conducted a survey on coconut development in Kerala State with special reference to Ernakulum district. They found that the area under coconut cultivation has been showing a declining trend, and coconut production also has shown a declining trend. The small increase in production of coconut is not sufficient for per capita consumption of nuts because of growth in population. The fluctuation of prices of coconut and coconut oil has been another area of study in the book.

M.V. George and P.T. Joseph studied the nature of fluctuations in the prices of coconuts and suggested a scheme for stabilisation of coconut prices in Kerala. The study was undertaken to examine the long-term trend as well as the annual fluctuations in prices with a view to stabilize the price and income of the growers. Since stability in prices is important for consumers as coconut products constitute a major item of consumption to the poorer section of the State population. The study held that, inspite of the large increase in the area under coconut (about 44%) during 70-71, the increase in the production has been very less (24%). It is also said that the fall in the production was due to heavy incidence of diseases.
P.K. Thampan studied promoting product diversification and by-product utilisation in coconut industry in India. Copra making and oil milling are the only coconut based processing activities which have developed on an organised scale. Consequently the economic prosperity of both the farmers and the processors at the primary level is closely woven around the fortunes of milling industry. Of late, the dependence of coconut industry on a single commodity, (coconut oil) has been causing significant instability to the coconut based economy of many states. This situation has to be changed by promoting diversified uses of all the major coconut products and the application of viable technologies for the economic utilization of valuable by-products of coconut. For achieving this objective adequate priority has to be given for technological research besides creating facilities for technology transfer, entrepreneurial development and techno-economic feasibility, including pilot-testing. Progress in this direction could eventually develop a vibrant processing sector when it would become possible to facilitate the economic utilization of all the products and by-products of coconut.

P.Raveendra analyses Demand, Consumption pattern and consumer acceptability of desiccated coconut in India. According to him there is a good scope for increasing the consumption of desiccated coconut.
in the households especially in the north Indian Centres. The product should be made available in small packages of 200 or 500 gm in the provision stores where the regular household items are sold. There is general acceptability on colour and taste of the product. The need is to educate the general public about the advantages of using desiccated coconut. This can be done by different methods such as advertisement through various media, demonstrations, distribution of sample packets at concessional rates etc. Even in Kerala where fresh coconut is a regular article for food preparations, there is scope for improving the consumption because of the convenience and time saving factors. With proper distribution of the product along with necessary propaganda, the consumption of desiccated coconut in the households could be stepped up substantially.

C.Narasimhappa observes that coconut is one of the most valuable and essential commodities in India. According to him its marketing has been jeopardised by many inherent reasons and faulty policies of Government which can very well be corrected in order to brighten the prospects of coconut and its products in Indian markets. The efforts are also needed to revamp the present marketing system in favour of grower-consumer linked system, in which the growers and consumers are the participants, and exploitation will no longer be a part of the marketing system.
By involving growers in processing-marketing activities, the much desired vertical integration could be achieved.

N.S.P. Rebello, P.G. Chengappa and Lalith Achoth in 1987 attempted to estimate the cyclical patterns in arrivals and prices of coconuts in four important regulated markets of Karnataka. The price series in all the markets were dominated by the trend variable caused by the high prices prevailing during the years 1983-85. The trends in prices were reflected by a trend in arrivals as well, which is indicative of the long-run supply adjustment to price. The arrivals were characterised by long cycles, which extended to about 5 years in Kadur and Hosdurga and 3½ years in Bangalore. By and large the amplitudes of the price cycles indicated a degree of instability in the price. However, it is observed that these cycles in quantities did not have price dependence.

NEED FOR THE STUDY

From the foregoing review of literature it can be inferred that very few empirical works have been done on coconut plantation with particular reference to Karnataka. An in-depth study covering different aspects of coconut plantation such as cost of cultivation, production, yield, and marketing of coconut etc., is an urgent need of the coconut economy. Therefore, a study has been undertaken to know various aspects of coconut cultivation and to provide
vital information about the prospects of coconut cultivation in Tumkur district as well as in Karnataka.

OBJECTIVES

The primary objectives of the study are to go into the crux of the problems of cost of production, yield and marketing of coconut in Karnataka. However, the specific objectives have been crystallised as follows:

(i) To estimate the trends in the area, production and productivity of coconut crop in Tumkur District and also in Karnataka.

(ii) To estimate the average cost of cultivation of coconut, production, productivity, income received and output-input ratio in the cultivation of coconut plantation in Tumkur District.

(iii) To study the economic viability of raising coconut plantation in Tumkur District.

HYPOTHESES

The following hypotheses are framed and tested in the study:

(i) Area, production and productivity of coconut plantation have increased significantly in Tumkur District and also in Karnataka.

(ii) Coconut plantation is profitable in the Tumkur District.
(iii) Big farmers are benefited more by coconut plantation as compared to small and medium farmers.

LIMITATIONS

The present study is beset with certain obvious limitations. They are enumerated here.

(i) Only four villages were selected for the study. Hence, results are largely applicable to those areas where similar conditions prevail.

(ii) The interview method of data collection requires the respondents to recall from their memory about previous agricultural operations and crop results. Hence, the findings may be subjected to errors.

(iii) Not much research work has been carried out and published on the economics of coconut farming in Karnataka. Hence, the study has been done on the basis of data collected from primary sources alone.

SCHEME OF THE STUDY

The Chapter I presents the theme of the study, review of the literature and need for the study. The objectives of the study and hypotheses to be tested are also specified, the limitations of the study are presented at the end.
The Chapter II discusses the methodology adopted for the study. Sampling procedure, selection of study area, selection of sample farmers, description of the study area, nature and source of data are presented. Then a comprehensive discussion on analytical methods used in the study is also specified.

It is in Chapter III, the trends in area, production and productivity of coconut plantation are explained at the National, State and District levels. Coconut development in India during various five year plans is also discussed.

The cost of cultivation is attempted in Chapter IV. After a brief profile of sample farmers, a discussion on cost of cultivation in irrigated and unirrigated farms among small, medium and large farmers is done. Inferences drawn are presented at the end.

The Chapter V presents the analysis of production of coconut in the study area. Total production and productivity of the sample farmers, and production of tender, desiccated coconut and copra in case of different size groups of farmers in the study area are discussed.

The Chapter VI discusses the marketing of coconut in Tumkur District. In this Chapter, cost per acre, gross returns, net profits per acre and output-input ratio in coconut cultivation
are estimated. Before that, trends in sales and prices of coconut in two Agricultural Produce Market Committees (APMC) in Tumkur district are studied. Further, marketing of coconut in different forms has been carried out in case of irrigated and unirrigated holdings.

The Chapter VII presents the summary of the findings and conclusions.
REFERENCES


