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J Nehru Naik
Ph. D F DP Research Scholar,
Department of Economics,
Andhra University,
Visakhapatnam,
Andhra Pradesh, India

Dr. G Nagaraja
Associate Professor,
Department of Economics,
Andhra University,
Visakhapatnam,
Andhra Pradesh, India

Correspondence
J Nehru naik
Ph. D F DP Research Scholar,
Department of Economics,
Andhra University,
Visakhapatnam,
Andhra Pradesh, India

A study of coconut cultivation and marketing in Ambajipeta Taluk, East Godavari district A.P

J Nehru Naik and Dr. G Nagaraja

Abstract
India is an agricultural country and one third of population depends on the agricultural sector directly or indirectly. Agricultural remains as the main stray 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 it by products determines the economic condition of farmers. Andhra Pradesh holds foremost share in coconut area and production after the state of Kerala. Coconut cultivation is considered to 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 planation 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 planation crop has received ample research and development attention in the country and as a result of these consorted efforts is well exhibited in terms of increase in area of production and productivity of coconut in the country. A concerned effort from all stakeholders in the development of coconut cultivation is vital for inducing a sustainable progress in the sector. The present study has brought out the profitability involved in the cultivation and economic aspects of coconut. 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.

Keywords: Coconut, marketing, production, planation, 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 stray 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 serve us "Coconut cultivation is considered to be one of the major livelihoods which support 60 per cent 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 consorted 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.
4. To analyze the basic features of the study area and general issues relating to coconut Production in Andhra Pradesh.
5. To analyze the issues concerned with coconut yields from the selected villages of Ambajipet taluk.

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, Andhra Pradesh stands first in terms of productivity. 2014-20015 year13808 hectares are used for coconut production. In Andhra Pradesh, almost all districts are involved in coconut cultivation. Among them the top three districts are East Godavari West Godavari and Srikakulam East Godavari district shows the highest productivity compared to other districts. East Godavari district has pleasant climatic conditions suitable for coconut cultivation. In East Godavari, Ambajipeta taluk is the major source area known for its coconut cultivation. So the study is confined to Ambajipeta taluk. The primary data is collected from farmers with the help of structured questionnaire using convenient sampling method among 300 respondents. The questionnaire was prepared in such a way that they are simple and understandable. The questionnaire was framed in Telugu, 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 analyzed 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 Ambajipeta 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 300.

Review of literature

Mohamed Sharfudeen, M and Yasmin (2005) [14] 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 has 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 activates, liberal financial assistance, strict quality and exemption of tax is essential for improving the marketing of desiccated coconut, for high economies of scale.

V. Abankwah, A. Aidoo and B.T Weneboah-Koduah (2010) [9]. Margins and economic viability of fresh coconut marketing in the Kumasi Metropolis of Ghana. “The study was conducted in the Kumasi metropolis of the Ashanti was randomly collected from 120 individual fresh coconut marketers in market centers across the metropolis and analyzed, using deconstructed marketing margins and Return on capital Employed. The study revealed that fresh coconut marketing in the Kumasi metropolis is a viable venture that employs people within the economically active age group. Actors in the market have very low educational background with some having no formal education. It has been identified as a safe net for school drop outs, proving meaningful employment for them. Fresh coconut marketing has been found as a lucrative venture to economically empower both men and women to improve their livelihoods. With a minimum of GHC18.00, as a start-up capital, one can enter into this venture receive proportionate returns.

Siva rajah and Ponniah (2010) [16] 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.

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 tonsure 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.

N. Karunakaran (2015) [3], "Profitability of Coconut Cultivation in Kerala." One important feature of Kerala's agriculture is the change in cropping pattern in favor of commercial crops. In this change, plantation crops increased considerably. Among these crops, coconut is an important commercial crop in Kerala. There are certain determinants that motivated the farmer's to make such a shift in the cropping pattern. The input wise analysis on cost of coconut Cultivation in Kerala by size of farm did not indicate any specific relation between the total cost of cultivation and the size of farm. Average return per hectare of coconut indicated inverse relation with the size of farm. Estimating costs and returns of coconut cultivation in terms of various investment criteria revealed that this crop is profitable in Kerala. The study also revealed that profitability of coconut is inversely related to the size of farm.

K.S. Sebastian (2015) [2] Concluded that India stands first in Production of coconuts in the global market. Indian's production rate is about 22,000 million coconuts per annum which Accounts to about 30 percent of the total world's production of coconuts. However India's contribution to the world export is worth U$$ 453 million which hardly reach a two digit percentage of world export. Philippines, the third largest producer of coconut in the world I exporting coconut products worth U$$ 1518 Million, which contributes to about 34 percent of the world export of coconut products. The second largest producer of coconut Viz. Indonesia is exporting U$$ 1030 million which is equivalent to 23 percent of the total export of coconut products. The other two coconut exporting countries are Sri Lanka and Thailand. The total production of coconut in Sri Lanka is only one eighth of India's production and Thailand's is only one twenty fifth, whereas they export coconut products worth U$$ 372 million and U$$ 225 million respectively.

Rama Chandra Rajudantuluri (2015) [1] Observed the East Godavari District is located in the north coastal part of the state of Andhra Pradesh. The district is known as the rice bowl of Andhra Pradesh with lush paddy fields and coconut groves. Total agricultural area of the district is 5.11 lakh ha, from which coconut occupies an area of 50.167 ha with an annual production of 7299.65 lakh nuts.

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 Arecaceae, family Palmae and the specie is known as Cocus nucifera.

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 Aranyakandin 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., coil carpets, coir geo-textile, coir composite, coir safety belts, coir boards, coir asbestos and coir pith. Coir pith a secondary by product obtained during deferring 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 monocarp 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 liters 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 rain fed 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 Azadirachtin.

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 the10th 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 fetchesRs.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 date

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 1: Gender of the Respondents

Sl. No.	Gender	No. of Respondents	Percentage
1	Male	236	78.67
2	Female	64	21.33
	Total	300	100

From the above table, it is clear that 78.67 percent of the respondents are Male and 21.33 percent of the respondents are Female.

Majority (78.67%) of the respondents, are male.

Table 2: Educational Qualification of the Respondents

Sl. No.	Gender	No. of Respondents	Percentage
1	No formal education	68	22.66
2	School level	135	45
3	Under Graduation	71	23.68
4	Post-Graduation	24	8
5	Professional in agriculture	2	0.66
	Total	300	100

From the above table, it is clear that 45 percent of the respondents are education upto School level 23.68% of the respondents are educated upto under graduation, 22.66% of the respondents have no formal education, 8% of the respondents are post graduates, and 0.66% of the respondents are professional in agriculture.

Most (45%) of the respondents, are educated upto School level.

Table 3: Area of Coconut Seedlings Planted

Sl. No.	Area of Coconut Seedling Planted	No. of Respondents	Percentage
1	Below 5 acres	132	44.0
2	Between 6to20 acres	143	47.67
3	Above 20 acres	25	8.33
	Total	300	100

From the above table, it is clear that 47.67% 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 8.33% of the respondents planted coconut seedlings above 20 acres. Most (47.67%) of the respondents, have planted coconut seedlings between 6 to 20 acres.

Table 4: Types of trees Planted by the Respondents

Sl. No.	Area of Coconut Seedling Planted	No. of Respondents	Percentage
1	Dwarf Coconut	38	12.66
2	Tall Coconut	97	32.33
3	Queen palm	148	49.35
4	Hybrid	17	5.66
	Total	300	100

From the above table, it is clear that 49.35% of the respondents have planted queen palm variety, 32.33% of the respondents have planted tall Coconut variety, 12.66% of the respondents have planted dwarf coconut variety and 5.66% of the respondents have planted hybrid coconut variety.

Majority (49.35%) of the respondents, have planted queen palm variety.

Table 5: Yielding Time Duration of Coconut Trees

Sl. No.	Yielding Time Duration	No. of Respondents	Percentage
1	3 years	38	12.66
2	4 years	102	34
3	5 years	160	53.33
	Total	300	100

From the above table, it is clear that for 53.33% of the respondents yielding time duration of coconut trees is 5years, for 34% of the respondents yielding time duration of coconut trees is 4 years, for 12.66% of the respondents yielding time duration of coconut trees is 3 years.

For Majority (53.33%) of the respondents, yielding time duration of coconut trees is 5years.

Table 6: Number of Trees Planted per acre

Sl. No.	Number of Trees Planted per acre	No. of Respondents	Percentage
1	Below 50 Trees	46	15.34
2	Between 51 to 76 Trees	222	74
3	Between 76 to 100 Trees	32	10.66
4	Above 100 Trees	-	-
	Total	300	100

From the above table, it is clear that 74% of the respondents have planted between 51 to 76 trees in one acre, 15.34% of the respondents have planted below 50 trees in one acre, 10.66% 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 (74%) of the respondents, have planted between 51 to 76 trees in one acre.

Table 7: Nature of Irrigation of Coconut

Sl. No.	Nature of Irrigation	No. of Respondents	Percentage
1	Trip irrigation	207	69
2	Basin irrigation	59	19.67
3	Sprinkler	34	11.33
	Total	300	100

From the above table, it is clear that 69% of the respondent's irrigation system is trip irrigation, 19.67% of the respondent's irrigation system is basin irrigation, and 11.33% of the respondent's irrigation system is sprinkler.
Majority (69%) of the respondents, irrigation system is drip irrigation.

Table 8: Time Duration of Fertilizing Coconuts

Sl. No.	Duration	No. of Respondents	Percentage
1	6 months once	184	61.34
2	1 year once	79	26.33
3	2 year once	37	12.33
	Total	300	100

From the above, it is clear that 61.34% of the respondent's fertilizer their coconuts 6 months once, 26.33% of the respondents fertilize their coconuts once in a 1 year, and 12.33% of the respondents fertilize their coconuts 2 years once.
Majority (61.34%) of the respondents, fertilize their coconuts 6months once.

Table 9: Rotation Period of Harvesting Coconuts

Sl. No.	Rotation period	No. of Respondents	Percentage
1	Between 25 to 35 days	15	5
2	Between 36 to 60 days	250	83.34
3	Above 61 days	35	11.66
	Total	300	100

From the above table, it is clear that for 83.34% of the respondent's rotation period of harvesting coconuts is between 36 to 60 days for 11.66%of the respondents rotation period of harvesting coconuts is above 60days and for 5% of the respondent's rotation of harvesting coconuts is between 25 to35 days.
For majority (83.34%) of the respondents, rotation period of harvesting coconuts is between 36 to60 days.

Table 10: Opinion about the Availability of Separate Market for coconuts

S. no.	Separate market	No. of Respondents	Percentage
1	Available	42	14
2	Not Available	258	86
	Total	300	100

From the above table, it is clear that 86% of the respondents opined that they have separate market for coconuts and 14% of the respondents opined that they do not have separate market for coconuts.

Majority (86%) of the respondents opined that they have separate market for Coconuts.

Table 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 did and its 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 12: Medium of Selling of Coconuts

S. no	Medium of Selling of Coconuts	No. Of Respondents	Percentage
1	Petty shops	8	2.66
2	Departmental stores	19	6.33
3	Middleman	205	68.34
4	Local Markets	27	9.0
5	Personal selling to ultimate consumer	41	13.66
	Total	300	100

From the above table, it is clear that 68.34% of the respondents are selling coconuts middleman, 13.66% of the respondents are selling by themselves, 9.0% of the respondents selling in the local markets, 6.33% of the respondents are selling through departmental stores and 2.66% of the respondents are selling through petty shops.
Majority (68.34%) of the respondents, are selling coconuts through middleman.

Table 13: Profits from Sale of Coconuts per Acre

Sl. No	Profits from Sale of	No. Of Respondents	Percentage
	Coconuts per Acre		
1	Below 50,000	193	64.33
2	Between 50,001 to1,00,000	82	27.34
3	Above 1,00,001	25	8.33
	Total	300	100

From the above table, it is clear that for 64.33% of the respondents profit from sale of coconuts per acre is below 50,000, for 27.34% of the respondents profit from sale of coconuts per acre is between 50,001 to 1, 00,000 and for 8.33% of the respondents profit from sale of Coconuts per acre is above 1, 00,001.
For Majority (64.33%) of the respondents. Profit from sale of coconuts is below 50,000.

Table 14: Level of loss incurred by Selling through Middleman

Sl. No.	Level of loss	No. Of Respondents	Percentage
1	Very High	42	14
2	High	95	31.67
3	Moderate	103	34.33
4	Low	37	12.34
5	Very low	23	7.66
	Total	300	100

From the above table, it is clear that for 34.33% of the respondents the level of loss by selling through middle man is moderate for 31.67% of the respondents the level is high for 14% of the respondents the level of loss is very high, for 12.34% of the respondents the level of loss is low and for 7.66% of the respondents the level of loss by selling through middle man is very low.
For most (34.33%) of the respondents, the level of loss by selling through middle man moderate.

Table B.1: Average Ranking Analysis –The Labour Problems in Coconut Cultivation

Sl. 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	3
4	Less working duration	105	164	360	74	31	2.936	4
5	Migratory labour	60	100	116	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

Sl. 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 of 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 Limited market information.

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

Findings

Majority (78.67%) of the respondents, are male.

Most (45%) of the respondents, are educated upto school level.

Most (47.67%) of the respondents, have planted coconut seedlings between 6 to 20 acres. Majority (49.35%) of the respondents, have planted queen palm variety.

Majority (53.33%) of the respondents, yielding time duration of coconut trees is 5 years. Majority (74%) of the respondents, have planted between 51 to 76 trees in one acre.

Majority (69%) of the respondents, irrigation system is drip irrigation.

Majority (61.34%) of the respondents, fertilize their coconuts 6months once.

Majority (83.34%) of the respondents, rotation period of harvesting coconuts is between 36 to 60 days

Majority (86%) 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 (68.34%) of the respondents, are selling coconuts through middleman.

Majority (64.34%) of the respondents, profit from sale of coconuts is below 50, 000.

Most (34.33 %) 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.

Suggestions

1. Coconut Production

To increase productivity, it is necessary to take up systematic replanting and under planting to replace the old, senile, and 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. 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

Ambajipeta plays a vital role in coconut production, at East Godavari 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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