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A STUDY ON BANANA CULTIVATION IN TRICHIRAPPALLI DISTRICT

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ABSTRACT :

The banana is considered to be one of the most primitive, cultivated tropical fruits in India which ranks next to mango in area and production. It is not only the staple food of millions of people, but also the most important commercial fruit of the tropical areas of the world. The study find out on banana Cultivation for especially to analyse the socio-economic conditions as well as to assess the cost and benefits, family size and land holdings of banana cultivators in Thirupparaithurai, Srirangam Taluk, Trichirappalli District of banana with 100 samples have been selected.

KEYWORDS : *Banana Cultivation, Banana Cost and Banana Income.*

INTRODUCTION

Banana is the most popular fresh fruit all over the world and its name comes from the Arabic word 'banana', which means finger. The scientific name of Banana is Musa accuminata and Musa balbisiana. But the old scientific names of banana are Musa Sapientum and Musa paradisiacal. Bananas are rich source carbohydrates and potassium. These are the first choice of athletes owing to its high energy potential.

Banana is a large perennial herb with leaf sheaths that from the trunk like pseudostem. Banana was first domesticated in the tropical regions of South East Asia. Banana is a nutritious gold mine. Its high Vitamin B6 content helps fight infection and is essential for the synthesis of 'heme', the iron containing pigment of hemoglobin. The fruit is also rich in potassium and a great source of fibre too. In recent years, considering the adverse impact of indiscriminative use of chemicals, new trend of organic banana production has been adopted worldwide. A novel name, i.e. "Green Foods" for this has been coined.

Buddhist texts of 600 BC for the first time in history mentioned banana as a highly nutritive food. Their chronicles describe a beverage made from banana which the monks were allowed to drink. Travelogues of 327 BC mention that Alexander the Great discovered the taste of banana in the valleys of India. In the year 200 AD, China had an organized banana plantation. Islamic conquerors brought banana to Palestine in 650 AD. The Arab merchants succeeded in spreading banana cultivation all over Africa. In 1502 AD, colonists started the first banana plantation in the Caribbean and in Central America. Thus banana consumption had been in vogue for thousands of years. Also, it is interwoven with national heritage and culture. It is one of the oldest fruits known to mankind. Banana is one of the world's most important food crops. In India, banana crop accounts for 2.8 per cent of agricultural GDP. It is an important crop for subsistence farmers, and ensures year round security for food or income.

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ECONOMICS OF BANANA CULTIVATION

The term economics of Banana Cultivation its production and the cost. It also includes the profit made out of banana cultivation. There are two types of Banana family.

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➢ Estate

It is one of the major fruits of the world. It is delicious nutritions and easily digestible. An average one banana weighing around 100 gms provides 109 calories. Banana is a perishable fruit. It requires careful handling and quick making.

Fruits: Banana is a most valued food items. It is energy content makes it very advantages and filling stale through poorer in proteins as compared to Cereals. Ripe banana has 1.29 proteins 8kg carbon and 0.490 fiber. It has of Potassium, iron and potassium in banana are wholly available. The fruit is a fair sourced of B vitamins and Calcium.

Leaves: Banana leaf is universally used for servicing meals; leaves are also used as biological planted on southern India. Leaves are also used a cattle feed and dried leaves are used in fence around the thatched houses.

Pseudostem: After the harvest of bunches, the fibers are extracted from dried stem. These fibers are used for the preparation of various articles such as handbags tablemat, garlands.

Rhizomes: Rhizomes are used as cattle food. After the harvest of bunch of rhizomes with half food of pseudostem are cut into small pieces and feed for milking animals such as cause and buffaloes in Gujarath state.

Banana Flower: Banana flowers are used as a vegetable food.

Varieties: Large varieties of banana are shown in India. Bananas home land is India. It is grown over two lakh hectares, constituting about 14 per cent of the total area of 34.5 lakh areas under fruits cultivation. The production of banana is estimated of 30 lakh tones accounting for about 30 per cent job total production of all fruits grown in the country, over 300 varieties are grown and most of them are consumed internally.

STATEMENT OF PROBLEM

Banana is the second most important fruit crop in India next to mango. Its year round availability, affordability, various range, nutritive and medicinal value makes it favourite fruit among all classes of people. It has also good export potential cultivation technique of the crop is an economically viable enterprise leading to increase in productivity, improvement in produce quality and early crop maturity with the produce commanding premium price. Banana is a very popular fruit due to its low price and high nutritive value. It is consumed in fresh or cooked from both as ripe and raw fruit.

Banana is vulnerable to weather and diseases. Banana plants below over easily and can easily be destroyed by hurricanes and gale. They are also attacked by a wide variety of pests and diseases. This necessitates the researcher to take up a study of banana cultivation.

OBJECTIVES

➢ To study the characteristics of the banana cultivators.
➢ To know the banana cost and income of banana cultivation.
➢ To focus the problems faced by the farmers in the process of banana cultivation.

HYPOTHESES

➢ There is no relationship the cost and income.
➢ There is no significant relationship between size of the family and land holdings.

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RESEARCH METHODOLOGY

The study of economics of banana cultivation in Thirupparaithurai, village, Anthanallur block, Trichirappalli District, is an empirical study based on the primary data. The collected data were processed and presented in the form of tables and diagrams.

Statistical Tools

The statistical tools like percentage bar-diagram have been used in this analysis. To statistical tools are used as correlation method of tools and Chi-square test statistical tools are using the table analysis.

Sources of Data

The study is based on the both primary and secondary data.

Primary Data were collected through direct personal interview with the help of questionnaire; information's were collected regarding age, religion educational status, family details, income, expenditure saving and borrowing, land holding fertilizers using and so on.

Secondary Data relating to study areas were collected from village Journals, News papers and books.

Size of the Sample

In order to analyse economics of banana cultivation, 100 samples were selected through random sampling method.

REVIEW OF LITERATURE

Chandrasekaran and Kathirvel viewed that Banana is used for both domestic consumption as well as industrial consumption banana pulp is used for making chips, powders, flower, jam, puree, flakes, jelly etc.,

The fibre is used for stringing flower and strealth as fuel, animal feed wrapping material and layer of rood over thatched shelters, pseudostem core a medicinal as well as routine dish most of households and Rhizome also used as animal feed. Banana is used on many auspicious occasions in Hindu tradition. Thus banana is an inseparable product for every Indian in many ways.

Nagarajan stated that Kadali is planted from November to January and holds the filed for eleven months. The variety prefers red loamy soil and soils with aboundant quantities of slit. The variety has also performed reasonably well in alkaline soils and the crop raised there in is net affected by wilt disease.

Kadali responds well to sheep manure and hence farmers arrange for sheep penning in areas selected for cultivation.

Praveena and Selvalakshmi viewed that investment on fertilizers can be reduced by application of bio-fertilizers. Bio fertilizers do not Pollute the soil and ground water with residues. It promotes and enhances agro ecosystems health including biodiversity biological cycles and soil biological activities.

Mohamed Jaffer and Namasivayam viewed that it is ideal to study the cost of cultivation and returns on banana to find the income level of the banana growers. An attempt is made to study the variations in the cost and identify the causes for such variation. It would help to identify the method of banana cultivation that is most beneficial to the banana growers.

Results and Discussion for Collecting the Primary data collected from 100 samples of Banana Cultivators in Andhanallur block Thirupparaithurai village have been selected. Farmers given questionnaire to get information about their family structure. The status was estimated on the basis of age, education, size of the family, family type, income earned, and expenditure and land holdings. In this village most of the farmers are cultivating different varieties of bananas and all the farmers are expected to earn profit from the banana cultivation.

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Table – 1: Sex wise Classification

S. No.	Sex	No. of. Respondents	Percentage
1.	Male	55	55
2.	Female	45	45
	Total	**100**	**100**

Source: *Primary Data*

From the above table No.1 it is clear that out of 100 samples 55 percent are male and 45 percent are female respondents. So the table shows that the majority of the respondents are male in the selected samples.

Table – 2: Age wise Classification

S. No.	Age	No. of Respondents	Percentage
1.	21 to 40	23	23
2.	41 to 60	57	57
3.	Above 60	20	20
	Total	**100**	**100**

Source: *Primary Data*

The above table No. 2 classifies the age factor of respondents results that majority 57 percent are coming under the age group between 41 to 60 and 23 percent of them are between 21 to 40 age group. The rest are in the age group of 21 to 40.

Table – 3: Religion wise Classification

S. No.	Religion	No. of Respondents	Percentages
1.	Hindu	43	43
2.	Muslim	30	30
3.	Christian	27	27
	Total	**100**	**100**

Source: *Primary Data*

The table No. 3 exhibits that out of 100 respondents, 43% of them belonged to Hindu families, and 30% are Muslim families, and 27% are Christian families. In general, Hindus are high in number in the study area.

Table – 4: Community wise Classification

S. No.	Community	No. of Respondents	Percentage
1.	SC	35	35
2.	BC	45	45
3.	MBC	20	20
	Total	**100**	**100**

Source: *Primary Data*

Community wise classification is represents in table no. 4 Out of selected samples 45 percent are backward class, 35 percent are scheduled class and 20 percent are most backward class. This study reveals that the majority of the people living in the study area are BCs.

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Table – 5: Marital Status wise Classification

S. No.	Marital Status	No. of Respondents	Percentage
1.	Married	85	85
2.	Unmarried	9	9
3.	Widow	6	6
	Total	**100**	**100**

Source: *Primary Data*

From the above Table No.5 it brings the marital status of the respondents. The majorities 85 percent are married and 9 percent are unmarried. The remaining 6 are widows.

Table – 6: Types of Family wise Classification

S. No.	Types of Family	No. of Respondents	Percentage
1.	Nuclear Family	69	69
2.	Joint Family	31	31
	Total	**100**	**100**

Source: *Primary Data*

The table no. 6 brings out the nature of family type of the sample study. Out of 100 given sample 69 percent are preferred to live in a nuclear family and only 31 percent are supporting joint family types.

Table – 7: Size of the Family wise Classification

S. No.	Family size	No. of Respondents	Percentage
1.	0 – 3	54	54
2.	3 – 5	20	20
3.	5 – 7	17	17
4.	Above 7	9	9
	Total	**100**	**100**

Source: *Primary Data*

The family size is classified according to the number of members in a family. The table no.7 measures the family size. 54 percent are in a short family set up. 20 percent households having number from 3 to 5 and 17 percent of the family size is with the strength of 5 – 7. Only 9 percent having with more than 7 members.

Table – 8: Size of Land Holdings wise Classification

S. No.	Size of Land in areas	No. of Respondents	Percentage
1.	0 – 2	21	21
2.	2 – 4	32	32
3.	4 – 6	36	36
4.	Above 6	11	11
	Total	**100**	**100**

Source: *Primary Data*

From the table No. 8 it is clear that land holdings of the farmers. 32 percent of the respondents are holding 2 – 4 acres. 36 percent of the farmers are holding 4 – 6 acres. 21 percent of the respondents are having 0 – 2 acres. Only 11 percent of respondents are holding above 6 acres of land in the study area. From this it is understood that medium holders are high in the study area.

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Table – 9: Types of Land

S. No.	Types of Land	No. of Respondents	Percentage
1.	Dry Land	-	-
2.	Wet Land	100	100
	Total	**100**	**100**

Source: *Primary Data*

The nature of land holdings of the farmers in the study area is presented in the table no. 9. The total 100 percent lands area having with a good irrigation and water facilities. Hence the total lands are wet.

Table – 10: Types of Fertilizers

S. No.	Fertilizers	No. of Respondents	Percentage
1.	Organic Fertilizer	35	35
2.	Inorganic fertilizer	43	43
3.	Both	22	22
	Total	**100**	**100**

Source: *Primary Data*

The above Table No. 10 shows the types of fertilizer using in the cultivation of banana. The majority of 43 percent of the farmers are using inorganic fertilizer and 35 percent are using organic fertilizer, and the remaining 22 percent are going for both types of fertilizers in the study area.

Table – 11: Nature of Land Ownership

S. No.	Ownership of Land	No. of Respondents	Percentage
1.	Owned	82	82
2.	Tenant	14	14
3.	Both	4	4
	Total	**100**	**100**

Source: *Primary Data*

From the table No.11 it is clear that the 82 percent farmers are having own land 14 percent belong to the type of tenant holding and the remaining 4 percent of the farmers possess both type of land.

Table – 12: Varieties of Banana Cultivation

S. No.	Varieties	No. of Respondents	Percentage
1.	Poovan	9	9
2.	Rasthali	14	14
3.	Nendran & Karpuravalli	30	30
4.	Mondan & Nendran	13	13
5.	Nendran & Ralipoovan	24	25
6.	Poovan & Nendran	10	10
	Total	100	100

Source: *Primary Data*

From the table no. 12 it is explained that 30 percent of the households cultivate a Nendran and Karpuravalli varieties and 24 percent of the households cultivate Nendran and Rali Poovan. The 14 percent of the respondents cultivate Rasthali and the only 9 percent of the respondents cultivate Poovan variety of banana.

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Table – 13: Methods of Sales

S. No.	Sales Methods	No. of Respondents	Percentage
1.	Local Market	13	13
2.	Wholesaler	65	65
3.	Retailer	6	6
4.	Wholesaler & Retailer	16	16
	Total	100	100

Source: *Primary Data*

The table no.13 shows the 65 percent of the respondents sale the product through wholesales and 16 percent of the respondents sale the product through wholesaler and retailer and 6 percent of the respondents sale the product through retailer and 13 percent of the respondents take the banana to local market for sale.

Table – 14: Male and Female Work Participation of the Respondents in Cultivation

S. No.	Operation	No. of Male labour Per acre	No. of Female labour Per acre	Male wage per labour Per day	Female wage per labour Per day
1.	Planting	10	75	150	75
2.	Digging	15	-	200	-
3.	Bamboo & Coir	15	5	150	75
4.	Harvesting	10	10	200	100
5.	Wedding	-	10	-	75
6.	Fertilizers application	5	10	150	75
	Total	**55**	**45**		

Source: *Primary Data*

From the table No. 14 it is understood that the work participation of the respondents in the cultivation process. Out of the selected 100 samples 55 are male and others are female. Generally the wage rate for male is higher than the female. Generally the wage rate for male is higher that the female in all work participation and mostly the hard work is done by male.

Table – 15: Cost of Cultivation of Banana

Land Size	No. of respondents	Area in acre	Total Costs of cultivation	Avg. Cost
0 – 2	21	29	1160000	8
2 – 4	32	95	38000000	26
4 – 6	36	140	5600000	37
6 & above	11	110	4400000	29
Total	**100**	**374**	**14960000**	**100**

Source: *Primary Data*

The table No. 15 brings out the cost incurred in cultivating banana in relation to the size of land. According to which the cost in increasing as increasing of land size. The average cost of 29 acres is 8 percent but it is 37 percent for 36 acres. In general the semi-marginal holder are higher in number that is 36 respondents out of 100 in the study area.

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Table – 16: Income from the Banana Cultivation

Land Size	No. of respondents	Area increase	Total Costs of cultivation	Income per acre in Rs.	Profits in Rs.	Avg.income in
0 – 2	21	29	1160000	2349000	1189000	8
2 – 4	32	95	3800000	7695000	3895000	25
4 – 6	36	140	5600000	11340000	5740000	37
6 & above	11	110	4400000	8910000	4510000	30
Total	**100**	**374**	**14960000**	**30294000**	**15334000**	**100**

Source: *Primary Data*

It is vital part in any operations or business to find out income or profit. The above table 16 shows the cost benefit of the banana cultivation. From the study it is clear that income is there in each part of the cultivation, and income as well as land size increases. The average income is measured in term of percentage and it indicates a positive trend according to size of land holdings.

Table – 17: Forms of Saving

S. No.	Forms of Saving	No. of Respondents	Percentage
1.	Co-operative Bank	8	8
2.	Nationalized Bank	74	74
3.	Cash in Hand	14	14
4.	Cash & Hand & Nationalized Bank	4	4
	Total	**100**	**100**

Source: *Primary Data*

Table no. 17 it is mentioned the forms of saving. 74 percent of the respondents are saving in nationalized bank and 14 percent of the respondents prefer in had and 8 percent go for co-operative bank and 4 percent prefer both savings.

Table – 18: Purpose of Saving

S. No.	Purpose of Saving	No. of Respondents	Percentage
1.	Cultivation	40	40
2.	Marriage	18	18
3.	Education	22	22
4.	Emergency	20	20
	Total	**100**	**100**

Source: *Primary Data*

From the table no. 18, it shows that the 40 percent of the respondents are saving money for the purpose of future cultivation and other majority of the people 22 percent are saving money for education and 20 percent of the respondents are saving for the unpredicted events and 18 percent of the respondents save money for the purpose of marriage.

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Table – 19: Sources of Borrowings

S. No.	Sources of Borrowings	No. of Respondents	Percentage
1.	Nationalized Bank	57	57
2.	Jewel loan	8	8
3.	Private Finance	23	23
4.	Banks & Finance	7	7
5.	Relatives	5	5
	Total	**100**	**100**

Source: *Primary Data*

The table no. 19, shows the sources of borrowings. 57 percent of the respondents are borrowed money from the nationalized bank and 23 percent of the farmers have borrowed money from private finance and 5 percent of the householders are borrowed from the relatives and 8 percent of the respondents are borrowed against jewel.

Table – 20: Problem Faced by the Respondents

S. No.	Problems	No. of. Respondents	Percentage
1.	Irrigation Problem	41	41
2.	Financial Problem	50	50
3.	Labour Problem	-	-
4.	Irrigation and Financial problem	9	9
	Total	**100**	**100**

Source: *Primary Data*

From the Table 22 shows that the problem faced by the respondents in Banana cultivations 50 percent of the respondents affected by financial availability and 41 percent of the respondents are facing irrigation problem. So all the farmers are facing some problems in the cultivation of banana.

Testing Hypothesis – I

Table – 21: Average Cost and Average Income

X Avg. Cost	Y Avg. Income	x – x(25)	y – y(25)	xy	x^2	y^2
8	8	-17	-17	289	289	289
26	25	1	0	0	1	0
37	37	12	12	144	144	144
29	30	4	5	20	16	25
100	100	0	0	453	450	458

$$= \frac{\text{Per income}}{\text{T. income}} \times 100 = \text{Avg. income}$$

$\overline{x} = 25 \quad \overline{y} = 25$

xy = 453

x^2 = 450

y^2 = 458

C = 25

y = 25

$$r = \frac{\Sigma xy}{\sqrt{\Sigma x^2 x \Sigma y^2}}$$

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Alternative Hypothesis
There is a significant relationship between size of the family and size of the land holdings.

x^2 = 66.75

x^2 (table value at 3 difference 5% level) = 7.815

The calculated value x^2 (66.75) is higher than the table value (7.815)

Since $x^2 > x^2$ (table value)

The Null hypothesis (Ho) is rejected, the alternative hypothesis (Ha) is accepted.

So there is a significant relationship between size of the family and size of the land holding.

III. FINDINGS, SUGGESTIONS AND CONCLUSION
FINDINGS
o   Male respondents have formed 55% of the total respondents.
o   From the study, all the respondents belong to Hindu religion.
o   From the majority of the respondents belong to Backward Caste.
o   From the study, it is found out that the respondent now-a-days prefer nuclear family.
o   The study reveals that, a majority of the banana cultivators families have 0-3 members.
o   85 percent of the respondents are married.
o   18 percentages of the respondents have studied up to degree level.
o   All the respondents are using organic and inorganic fertilizer and pesticides for cultivation of banana.
o   Inadequate irrigation facilities forced the farmers to buy water from those cultivators who have electric pump sets and enjoy free supply of electricity.
o   From the study, 82% of the respondents are owner cultivators.
o   The majority of the respondents cultivate Nendran variety (26%).
o   More number if male labourers engaged in banana cultivation than that of female labourers.
o   The wage given to male labourers is higher compared to female labourers is banana 'cultivation'.
o   74% of the respondents are saving money in nationalized banks.
o   From the study 40% of the respondents saving money for the purpose of the cultivation.
o   57 percent of the respondents have borrowed money from banks.

SUGGESTIONS
o   Cultivate of banana can be increased by using fertilizers and pesticides at the right time.
o   Water supply is very significant for the banana cultivation. So, government should ensure assured water supply, better water management and irrigation facilities.
o   In the study area, the people who cultivate only 4 types of banana such as Poovan, Rasthali, Nendran, Mondan and other varieties to give more profit. So the people who concentrate to cultivate in these varieties.
o   All the farmers should use high yielding varieties of seeds.
o   Government should reduce the price of fertilizers and pesticides.
o   Cultivation of banana can be increased by increased by using better irrigation facilities and it also required availability of labour at the right time.
o   The people who borrow the loan from co-operative society and banks. Band and society are very helpful for workers to give loan.
o   The cultivators should be made aware of the importance of bank finance. The farmers should be provided with quality seeds, fertilizers, pesticides and marketing facilities by co-operatives.
o   The people are heavily affected by price fixing method. The intermediaries fix the price in banana cultivation. If the government and cooperative societies involve in it, which is very helpful for workers.
o   Creation of part time employment opportunities for farmers is needed.
o   Government should take effective steps to eradicate the problems faced by the farmers.

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CONCLUSION

The banana cultivation has assumed a very significant place in Indian Economy. The banana cultivation provides employment opportunities for men and women in improving the standard of life of the farmers.

Banana is the main income for farmers and it has helped the farmers of Thirupparaithurai to earn a reasonable profit and this cultivation has helped the farmers to improve their economic and social conditions in this area in spite of water shortage Nendran Banana is the most promoting variety of banana in terms of earning income to increase the wealth of the country. Banana is the poor people apple. Increase in banana production, helps to improve our economy.

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