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An Analysis of Banana Cultivation in Theni District, Tamil Nadu

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Abstract

Objectives: To examine the production, cost performance, and the factors influencing banana cultivation in Theni District of Tamil Nadu, India.
Methods/Statistical analysis: The study relies exclusively on primary information obtained from the banana cultivators of Theni District. Purposive sampling procedure was followed for the selection of the study area. It is found that there are 90 farmers cultivating banana in the selected village and therefore, all of them are considered as respondents for the study.
Findings: The natural factors affecting the banana crop production include water storage, soil fertility, problems of soil, insects, weeds and crop variety. Water storage and weeds were reported by majority of cultivators as a major problem affecting crop productivity. Among the economic factor affecting banana cultivation, 88 percent of the respondents reported that fluctuations in price as the major reason. Inadequacy in credit and capital are the second major causes affecting crop productivity.
Application/Improvements: Crop insurance scheme can be introduced by the government of Tamil Nadu in order to protect the farmers in critical situation, like crop loss due to natural disorders. The government provides subsidies to the small farmers for adopting the new technology (i.e.) drip irrigation, soil testing etc.

Keywords: banana cultivation, cost performance, cost structure, cost and returns, profitability levels.

1. Introduction

Agriculture is the mainstay of the Indian economy. Agriculture contributes approximately one-fifth of total gross domestic product (GDP). Agriculture and allied sectors contribute nearly 17.8 and 17.1 per cent of Gross Domestic Product (GDP of India) during 2007-08 and 2008-09 respectively [1]. The agricultural output, however, depends on monsoon as nearly 55.7 per cent of area sown is dependent on rainfall. Agriculture provides the means of livelihood to about two-thirds of the country's population [2]. This Sector provides employment to 58.4 per cent of the country's workforce and is the single largest private sector occupation. Agriculture accounts for about 10 per cent of the total export earnings and provides raw material to a large number of industries. Besides, the rural areas are the biggest markets for consumer goods, including consumer durables, apart from a major source of domestic savings. Above all, agriculture is the only source of food security for the nation.

In [3] has used Cobb-Douglas production function and studied the efficiency of inputs and yield of banana which was influenced by size of land, suckers and supporting prices. Land and supporting pole showed diminishing marginal return to their application. The return to scale of production of banana is the operation of diminishing return to scale, which 1% yield of banana. There is more scope for further application of land and supporting poles and there is a case for reduction in use of suckers in the cultivation of banana in the study block.

A [4] study found that the cost of cultivation per hectare was Rs.36.249, the return worked out to cost of both family and hired labour and manure per hectare of banana cultivation. The study showed that the total expenditure for labour was rising. The contribution of family labour showed a decreasing trend as the size of holding increased.

In [5] found out the productivity of resources used in banana and also production environment. Primary data was collected form sample of 19 farmers form the study area. They used Cobb- Douglas production function and locative efficiency methods for analyzing data.

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Crop Cultivation in India

India grows almost each and every crop. All these crops could be classified into two broad types namely, Food Crops and cash crops. Food Crops are further sub-grouped as food grains and non-food grains. Crops such as cereals (Rice,Wheat, Jowar, Bajra, Maize, Ragi and other millets) and pluses (gram, arhar, moong, peas, masoor) that are used for human consumption are grouped under food grains. Food crops other than cereals and pulses are termed as non-food grains. Non-Food grain Crops are sub-grouped as Commercial Crops, Plantation Crops and Horticulture.

Crops which are grown for sale either in raw form or in semi-processed form are commercial crops. Crops which are grown on Plantations covering large estates are termed as plantation crops.

Fruits and Vegetables are classified as horticulture. A large variety of fruits are produced in India. This includes Bananas, Pineapples, Jack-fruits, and Oranges which are grown in tropical region. India is a leading producer in Cashewnut. The major vegetables cultivated in India include Brinjal, Bhendi, Chillies, Cucumber, Pumkin, Gourds, Muskmelons, Red Amaranthus, Raddish, Knol-Kohl, Cabbage, Bottle gourd, Long beans, Cluster beans, etc. Table 1 provides the details of the main crops under production in India.

Table 1.Production of Major Crops during the Recent Years (Million Tonnes/Bales)

CROPS	SEASON	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
RICE	KHARIF	82.66	84.91	75.92	86.65	92.75	90.69
	RABI	14.03	14.27	13.18	15.33	12.56	11.11
	TORAL	96.96	99.18	89.10	95.98	105.31	101.80
WHEAT	RABI	78.57	80.68	80.80	86.87	94.88	92.30
COARSE& CEREALS	KHARIF	31.89	28.54	23.83	33.08	32.46	28.51
	RABI	8.86	11.49	9.72	1.32	9.58	9.96
	TOTAL	40.75	40.03	33.55	43.40	42.04	38.47
TOTAL CEREALS	KHARIF	114.55	113.45	99.75	113.73	42.04	38.47
	RABI	101.46	106.45	103.70	112.52	125.21	119.19
	TOTAL	216.01	219.90	203.45	226.25	117.02	113.37
PULSES	KHARIF	6.40	4.69	4.20	7.12	6.06	5.48
	RABI	8.36	9.88	10.46	11.12	11.03	12.09
	TOTAL	14.76	14.57	14.66	18.24	17.09	17.57
FOOD GRAINS	KHARIF	120.96	118.14	103.95	120.85	131.27	124.68
	RABI	109.82	116.33	114.15	123.64	128.05	125.47
	TOTAL	230.78	234.47	218.10	244.49	259.32	250.15
OILSEEDS	KHARIF	20.71	17.81	15.73	21.92	20.69	19.45
	RABI	9.04	9.91	9.15	10.56	9.11	10.01
	TOTAL	29.75	27.72	24.88	32.48	29.88	29.46
SUGARCANE		285.03	292.30	342.38	361.04	334.54	348.19
COTTON		25.88	22.28	24.02	33.00	35.20	33.08
JUTE		11.21	10.37	11.82	10.68	11.40	11.13

Source: Directorate of Economics & Statistics, Ministry of Agriculture

Crop Production

During 2011-12, there was a record of production of food grains at 259.32 million tonnes, of which 131.27 million tonnes was during Kharif season and 128.05 million tonnes during the Rabi season. Of the total food grains production, production of cereals was 242.23 million tonnes and pulses 17.09 million tonnes (See Table 1). The total food grains production is estimated at 250.14 million tonnes (124.68 million tonnes during Kharif and 125.47 million tonnes during Rabi seasons) in 2012-13. The production of rice (both kharif and rabi) is estimated at 101.8 million tonnes, pulses at 17.58 million tonnes, oilseeds at 29.46 million tonnes, sugarcane at 334.54 million tonnes and cotton at 33.80 million bales (of 170 kg. each). Though, production of rice, sugarcane and cotton during kharif 2012-13 has been lower than that of the last year, these are better than the average production during the last five years. Production of jute is estimated at 10.56 million bales (of 180 kg each) which are marginally lower than that of last year (10.74 million bales).

2. Statement of the Problem

A review of the performance of Indian agriculture revealed that cash of both major and minor are gaining importance in the cropping pattern and it is a more striking aspect in the present context of globalization. However, it

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is also revealed that the productivity levels of Indian agriculture are far low when compared with that of developed nation and the world average. The low productivity levels leads to higher cost of production and there by the economics of cultivation become unfavorable for the cultivators.

In this context, it is a felt need to examine the production and the cost performance of cultivation by crops and by regions. This calls for an in-depth study of this problem enlisting the cost and return structure, analyzing factors influencing cost of production and examining the socio-economic conditions of the cultivators- all at a micro level, specific to crops. Keeping this aspect in mind, the present study attempts to examine these issues for the commercial crop "banana", with reference of Theni district of Tamil Nadu.

3. Objectives of the Study

The overall objective of this study is to examine the production and cost performance, and the factors influencing banana cultivation at a micro level. However, the specific objectives are:

1. To examine the socio- economic condition of the banana cultivators.
2. To analyze the cost structure and various cost components of banana cultivation,
3. To examine the factors influencing the cost of production of banana.
4. To compare the cost and returns and analysis the profitability levels in banana cultivation.

4. Scope of the Study

A study on the cost and return would be useful for identifying the factors influencing cost of production and profitability levels. This kind of study would provide guidelines to banana growers in maximizing their profit by optimizing resources in the study area. This study would also facilitate to conduct similar in other areas and for crops.

5. Research Methodology

The study aims at describing the socio-economic condition of banana farmers, analyzing the cost and return of banana production, and further analyzing the problems and prospects of banana cultivation. As such, the nature of research design followed is descriptive and analytical in nature.

Components of Research Design

This study relies exclusively on primary information obtained from the banana cultivators from the selected study area. The research design of the percent study included: Selection of study area, Selection of sample farmers, b Collection of data, Analysis of data and Presenting finding.

Selection of Study Area

Purposive sampling procedure was followed for the selection of the study area. Accordingly, Theni district was selected for the present study. Considerations which were kept in mind for the selection for the study area include (a) Conveniences of the research, taking into account the time and money factors, and (b) availability of banana producers in the related area.

Selection of Farmers

From the village administrative officers of the village concerned, the list of banana cultivators in Theni district is obtained. It is found that there are 90 farmers cultivating banana in the selected village and therefore, all of them are considered as respondents for the present study.

Collection of Data

A detailed schedule was used during the field survey to collect farm level data, through personal interview. The schedule used for conducting the survey is provided as annexure A. The objectives of the study were clearly explained to the farmers personally and their co-operation was ensured. Even though the respondents did not

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maintain adequate farm records and accounts, they were able to furnish the particulars in view of their long association with farming. However, to minimize recall bias cross check and recheck carried out.

Required secondary sources of data relating to location, climate, rainfall, soil type, land utilization pattern, production, yield of major crops cropping pattern, and the like are obtained from Village Administrative Office.

6. Results and Discussions

Age Profile

Age is an important social character that reflects the basic feature of the specific group of cultivators studied. Accordingly, the sample respondent are grouped as farmer belonging to less than 35 years, 35-45 years, 45-55 years, 55-65 years and 65 &above. The results are presented in table 2.

Table 2. Distribution of respondents by age wise classification

S.NO	AGE GROUPS	NO.OF RESPONDENTS	PERCENTAGE
1	Less than 35	-	-
2	35 -45	15	16.7
3	45 -55	21	23.3
4	55 -65	25	27.8
5	65 AND ABOVE	29	32.2
TOTAL		90	100

Source: Computed from primary data.

The age wise classification of banana cultivators revealed that 16.7 per cent of respondents belong to the age group 35-45 years, 23.3 percent belong to 45-55 years, 27.8 percent belong to the age group 55-65 years, and 32.2 percent belong to the age group of 65 years above. It revealed that a major share of farmers 32.2 percentage belong to the age group 65 above years. It indicated that there is very low participation of younger age group members involved in banana cultivation.

Sex

Gender participation is an important social dimension that reveals the socio-economic status of a society. Usually both men and women participate in almost all aspects of agriculture. But, in the case of banana cultivation men are the only active participants. It is observed that 100 percent of the respondents are male cultivators. This observation could me peculiar to banana cultivation in the study area. However, it does not mean that women do not participate in banana cultivation. The male alone observed to be claiming as banana cultivators.

Marital Status

Marital status is one among the social indicators that reflects the potential category of participants in banana cultivation. It is observed that 100 percent of the respondents are married cultivators. This observation also supports our earlier finding of age profile of the cultivators. As the age group of the cultivators is also relatively higher, all the respondents were found to be married.

Religion

It is observed that all the respondents are from Hindu religion. This could be a reflection of the village profile.

Community

The respondents belong to the community categories such as Backward Caste (BC), Most Backward Caste (MBC) and Scheduled Caste (SC). The distribution of the respondents by community categories is presented in Table 3.

Table 3. Distribution of Respondents by Community

Sl. No	Community	Number of respondents	Percentage Share
1	BC	45	50.0
2	MBC	41	45.6
3	SC	4	4.4
Total		**90**	**100**

Source: Computed from Primary Data

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It is observed that 50 percent of respondents are belonging to BC community and 45.6 percent are from the MBC community. Respondents belonging to the SC communities are very low, say 4.4 percent. This sort of caste distribution of farmers could be the reflection of the composition of the total population of the village.

Education Level

The level of education is an important yardstick of evaluating the quality of life. Literacy makes the life meaningful and productive. The following table provides the educational status of sample respondents. The result is presented in table 4.

Table 4. Distribution of Respondents by Educational Status

SL. No	Educational Qualification	Number of respondents	Percentage
1	Illiterate	30	33.3
2	Primary school	29	32.2
3	High school	14	15.6
4	Higher secondary school	13	14.4
5	College	4	4.4
Total		90	100

Source: Computed from Primary Data

It is observed that major shares of 33.3 per cent of the respondents are illiterate farmers and 32.2 percent of them have gone up to primary level. It is also seen that 14.4 percent of the respondents are higher secondary school and only 4.4 percent of them have gone up to college level.

Family Type

Family type is one of the social indicators that reflect the potential category of participants in banana cultivation. Moreover, it also reflects the quality of data collected. The respondents are group into categories such as joint family and nuclear family. The results are presented in table 5.

Table 5. Type of Family

Particulars	No. of respondents	Percentage
Joint	34	37.8
Nuclear	56	62.2
Total	90	100

Source: Computed from Primary Data

It is observed that 62.2 percent of the respondents are belonging nuclear family and 37.8 percent are in the joint family. It also revealed that both joint and nuclear family groups are getting involved in banana cultivation in study area.

Family Size

Family size is again an important social indicator. This information obtained from the respondents is given in table 6

Table 6. Family Size of Respondents

Family Size	No. of Members	Percentage	Cumulative Percentage
2	3	3.3	3.3
3	12	13.3	16.7
4	24	26.7	43.3
5	16	17.8	61.1
6	14	15.6	76.7
7	10	11.1	87.8
8	6	6.7	94.4
9	5	5.6	100
TOTAL	**90**	**100**	

Source: Computed from Primary Data

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It is seen that farmer with large family size is found in few numbers only. That is only 5.6 percent of the sample respondent mentioned that their family size is 9. 26.7 percent of the respondents reported their family size ranging 2- 4.

Experience in Agriculture

Experience in any occupation makes perfect in one's work. Experience in agriculture helps the growers to carry out their cultivation activities systematically, obtain higher yield, reduces cost of production and higher level of income. The total experience of agricultural cultivators (sample respondents) are classified based on their years of experience in agricultural cultivation and are presented in Table 7.

Table 7. Distribution of Respondents By Experience In Agriculture

Sl. No	Years	No. of Respondents	Percentage
1	3 Below	5	5.6
2	4 – 6	13	14.4
3	7 – 9	20	22.2
4	10	52	57.8
Total		90	100

Source: Computed from Primary Data

It is observed that less than 3 year experienced farmers are only 5.6 percent and 14.4 percent of farmers have experience above 4-6 years. Major shares of the farmers have experience of 10 years and above in cultivation.

Experience of Banana Cultivation

The long experience in banana cultivation helps the growers to carry out their crop cultivation activities systematically, obtain higher yield, reduce cost of production and earn higher level of income. The banana cultivators (sample respondent) are classified based on their years of experience of in banana cultivation and are presented in Table 8.

Table 8. Distribution Of Respondents By Experience In Banana Cultivation

Sl. No	Years	No. of Respondents	Percentage
1	3 BLOVE	7	7.8
2	4 – 6	16	17.8
3	7 – 9	17	18.9
4	10	50	55.5
TOTAL		90	100

Source: Computed from Primary Data

It is observed that 55.5 percent of the respondents have 10 year above experience in banana cultivation. About 18.9 percent of farmers are having 7-9 years and 17.8 percent of farmers are having 4-6 years' experience. we could observed that a major share 55.5 percent have above 10 years of experience in banana cultivation and also the fact that this occupation has attracted new farmers too.

Nature of Land Holding

The sample cultivator's land ownership particulars are presented in the Table 9.

Table 9. Distribution Of Respondents By Nature Of Land Holding

Sl. No	Landholding	No. of respondents	Percentage
1	Owned	86	95.4
2	Tenant	4	4.4
Total		90	100

Source: Computed from Primary Data

It is observed that major share of respondents 95.4 percent are owned land. Followed by tenant farmers are 4.4 percent. Majority of people are in the study area having own land.

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Total Land Holding

Land holding is one among the natural indicators that reflects the potential categories of land holding in banana cultivation. Moreover, it also reflects the quality of data collected. Into categories such as owned irrigated, owned unirrigated, leased irrigated and leased unirrigated land holding. The results are presented in Table 10.

Table 10. Distribution Of Landholdings By Irrigation

S.No	Land	Owned	Percent	Leased	Percent
1	Irrigatted	344	62.61	11	100
2	Unirrigated	205.5	37.39	0	0
	Total	549.5	100	11	100

Source: Computed from Primary Data

It observed that 62.61 percent of the respondents have own irrigated land and 37.39 percent is unirrigated land. 11 respondents have leased irrigated land holding. It also revealed that both own irrigated and own unirrigated land holdings are involved in agricultural in the study area.

Plots and Land Size

Banana cultivation by plots and land area are analyzed by plot 1, plot 2 and plot 3. The distribution of plots is presented in Table 11.

Table 11. Number Of Plots And Land Size

Sl.No	Plots	Total Acres	Percentage
1	PLOT1	242.5	68.31
2	PLOT2	75	21.13
3	PLOT3	37.5	10.66
TOTAL		355	100

Source: Computed from Primary Data

Categories of Farmers

Farm size analysis of the banana cultivators can be classified into small farmer, medium farmer and large farmers. The results are presented in table 12.

Table 12. Category of Farmer

Category Of Farmer	No. Of Respondents	Percentage
SMALL	66	73.3
MEDIUM	15	16.7
LARGE	9	10
	90	100

Source: Computed from Primary Data

It is found from the analysis that 73.3 percent of the respondents are small farmers, 16.7 percent of the respondents are medium farmers and remaining 10 percent of farmers are large farmers. The analysis shows that major part of the banana cultivators are basically small farmers.

Economics of Banana Cultivation: Farm Analysis

In specific, it analyses the banana crop cultivation, banana production, cost of production, revenue and profit levels, and, problems and prospects of banana cultivation based on the farm level data obtained through the primary survey in the study area.

Nature of Cultivation

The nature of banana cultivators is classified into two categories: mono crop and inter crop. The distribution on the categories is given in Table 13.

Table 13. Nature of Cultivation

Nature Of Cultivation	No. of Respondents	Percentage
Mono Crop	42	46.7
Inter-Crop	48	53.3
Total	90	100

Source: Computed from Primary Data

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It was observed that 53.3 percent of the cultivators adopted inter crop system and the rest 46.7 percent of the respondents adopted mono crops.

Variety of Banana Cultivation

Though banana has several varieties such as red banana, Poovan, Nendran, Rasthali and Robusta, it is observed that all respondents were cultivating only Robusta variety.

Reasons for Cultivating Banana Crop

Farmers cultivate banana crop due to various reasons, Major reasons indicated by them are moth than one reasons by each respondent. The number of such responses are compiled and presented in Table 14.

Table 14. Reasons for Cultivation Banana Crops

Sl.No	Reasons	No. of respondents	Percentage
1	Tradable plant	89	98.8
2	No other experience	85	94.4
3	Suitable to the nature	85	94.5
4	High productivity	56	62.22
5	Higher demand	10	11.1
6	Less maintenance	88	97.7

Source: Computed from Primary Data

Majority of the respondents reported that they under took banana cultivation as it is a tradable plant (99 per cent), No other experience (94 per cent), Suitable to the nature (94 per cent) and less maintenance (98 per cent). 56 respondents opined that banana crop has high productivity and 10 respondents only indicated that there is high demand.

Introduction to Banana

Banana being a commercial crop with peculiar plan protection and maintenance practices, there is need for someone to introduce this crop variety to the cultivations; the sources of such introduction may be from agricultural officers, parents, relatives and friends. The source- wise introduction of the banana Variety to the cultivators is presented in Table 15.

Table 15. Source Wise Introduction of banana Variety

Sources	No.Of Respondents	Percentage
Agricultural officer	22	24.4
Parents	55	61.2
Friends	4	4.4
Relatives	9	10
Total	90	100

Source: Computed from Primary Data

It was observed that a major share of cultivators (61 per cent) was introduced to banana crop by their parents. 24 per cent of the farmers were introduced by agricultural officers. It is noted that friends and relatives have played relatively limited role in introducing the crop variety to the banana cultivators.

Type of Irrigation

Irrigation is an important factor contributing for the cultivation and production of banana. Methods of irrigation also influence the cost of cultivation. Farmers depend either on open well or bore-well for irrigating the banana crop. The details are given in Table 16.

Table 16. Types of Irrigation

Type Of Irrigation	No. of Respondents	Percentage
Open Well	55	61.1
Bore Well	35	38.9
Total	90	100

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It was observed that majority (61 percent) of the cultivators make use of open well for irrigation purpose and only the remaining 39 percentage of the cultivators use bore-well for irrigation.

Nature of Fertilizers

Farmers use both farm yard manure and chemical fertilizers for the cultivation of banana. The distribution of respondents using the fertilizers is presented in Table 17.

Table 17. Nature Of Fertilizers

Fertilizers	No. of Respondents	Percentage
Farm Yard Manure	74	45.12
Chemical	90	54.78
Total	164	100

Source: Computed from Primary Data

It is found that a major share of respondents use chemical fertilizers (54.78 per cent) and the rest (45.12 per cent) reported to have been using the farm yard manure. The total number of responses is more than the total respondents, implying that farmers use both the type of fertilizers.

Cost of Production of Banana

The cost of banana production includes varies item of expenditures such as imputed land cost, cultivation cost, instrument cost, irrigation cost and interest on investment cost. Table 18 shows Cost Structure of Robusta Banana Cultivation.

Table 18. Cost Structure of Robusta Banana Cultivation

Item Of Cost	**Total Cost In Rs**	**% Share**
Imputed Land Cost	6957.00	6.64
Cultivation Cost	67184.08	64.15
Cost Of Instruments	12653.58	12.08
Cost Of Irrigation	10149.86	9.69
Interest On Investment	7782.33	7.43
Total Cost	104726.85	100

Source: Computed from Primary Data

Among the cost components, cultivation cost accounts for a lion share 64.15 percent of the total cost, followed by cost of instruments 12.08 percent, irrigation cost 9.69 per cent, interest on investment 7.43 percent and imputed land cost 6.64 percent.

Profit

The cost, returns and profit of banana cultivation per acre are estimated and presented in Table 19.

Table 19. Per Acre Cost, Return and Profit of Banana Cultivation

Particulars	Amount
Total cost	104726.85
Total return	779447.18
Net profit	674720.33

Source: Computed from Primary Data

Factors Affecting Yield Of Banana Crops:

As far as the factors affecting the yield of banana crop, the respondents indicated certain natural and economic factors. These factors are analyzed and presented in Table 20 and 21.

Table 20. Natural Factors

Sl. No	Natural Factors	No. Of Respondent
1	Water Storage	87
2	Soil Fertility	42
3	Problem Of The Soil	30
4	Insects	43
5	Weeds	87
6	Variety	7

Source: Computed from Primary Data

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Table 21. Economics Factors

Sl.No	Economic Factors	No. Of Respondents
1	Credit	64
2	Inadequate Capital	64
3	Input Availability	46
4	Fluctuation In Price	88

Source: Computed from Primary Data

The natural factors affecting the banana crop production include water storage, soil fertility, problems of soil, insects, weeds and crop variety. Water storage and weeds were reported by majority of cultivators as a major problem affecting crop productivity.

Among the economic factor affecting banana cultivation, 88 per cent of the respondents reported that fluctuations in price as the major reason. Inadequacy in credit and capital are the second major causes affecting crop productivity.

In sum, the economic analysis about banana cultivation revealed that cultivation of banana is really profitable. However, the cultivators are the opinion that there is scope for improvement in production and productivity if the natural factors are properly taken care and the economic factors are given due attention.

6. Summary of Findings, Suggestions and Conclusion

Banana is an important tropical fruit known for its nutrition value. India ranks first in the production of banana in the world and accounts for about 18 percent of the total world banana production. It is an important fruit crop in India and has great socio- economic significance. Tamil Nadu has the largest area under banana and it is cultivated in about 83800 ha with annual production of 27.82 lakhs tons. Banana is a good source of vitamins C, D Carbohydrate / fiber, proteins and fast free.

1.6.1. Findings

- It revealed that a major share of farmers 32.2 percentage belong to the age group of 65 above years. It indicated that there is very low participation of younger age group members involved in banana cultivation.
- It is observed that 100 percent of the respondents are male cultivators. This observation could me peculiar to banana cultivation in the study area. However, it does not mean that women do not participate in banana cultivation
- It is observed that 100 percent of the respondents are married cultivators. This observation also supports our earlier finding of age profile of the cultivators.
- It is observed that all the respondents are from Hindu religion. This could be a reflection of the village profile.
- It is observed that 50 percent of respondents are belonging to BC community. This community Majority of banana cultivators in the study area.
- It is observed that major shares of 33.3 per cent of the respondents are illiterate farmers.
- It is observed that 62.2 percent of the respondents are belonging nuclear family. It also revealed that both joint and nuclear family groups are getting involved in banana cultivation in study area.
- It is seen that farmer with large family size is found in few numbers only. The majority of family member 26.7 percent of the respondents reported their family size ranging 2- 4.
- Major shares of the farmers have experienced between the 10 years above in agricultural cultivation.
- we could observed that a major share 55.5 percent have above 10 years of experience in banana cultivation and also the fact that this occupation has attracted new farmers too.
- It is observed that major share of respondents 95.4 percent are owned land. Followed by tenant farmers are 4.4 percent. Majority people are having own land.
- It observed that 62.61 percent of the respondent are belonging owned irrigated land holding and 37.39 percent in the unirrigated land holding. 11 respondents are leased irrigated land holding.
- In the above table, number of plots and land size of plot 1 the total acres 242.5 the 68.31 percentage, plot 2 the total acres 75 the 21.13 percentage and plot 3 total acres 37.5 the 10.66 percentage of banana cultivation in land.

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- It is found from the analysis that 73.3 percent of the respondents are small farmers. The analysis shows that major part of the banana cultivators are basically small farmers.
- It was observed that 53.3 percent of the cultivators adopted inter crop system and the rest 46.7 percent of the respondents adopted mono crops.
- It is observed that all respondents were cultivating only Robusta variety.
- Majority of the respondents reported that they under took banana cultivation as it is a tradable plant (99 per cent).
- It was observed that a major share of cultivators (61 per cent) was introduced to banana crop by their parents.
- It was observed that majority (61 percent) of the cultivators make use of open well.
- It is found that a major share of respondents use chemical fertilizers (54.78 per cent). The total number of responses is more than the total respondents, implying that farmers use both the type of fertilizers.
- Among the cost components, cultivation cost accounts for a lion share 64.15 percent of the total cost, followed by cost of instruments 12.08 percent, irrigation cost 9.69 per cent, interest on investment 7.43 percent and imputed land cost 6.64 percent.
- It indicates that the total cost of cultivation of Robusta variety per acre was RS.104726.85. Total return of banana as realized by the sale of the banana fruit was RS. 779447.18. The net profit per acre was RS.674720.33.
- The natural factors affecting the banana crop production include water storage, soil fertility, problems of soil, insects, weeds and crop variety. Water storage and weeds were reported by majority of cultivators as a major problem affecting crop productivity.
- Among the economic factor affecting banana cultivation, 88 percent of the respondents reported that fluctuations in price as the major reason. Inadequacy in credit and capital are the second major causes affecting crop productivity.

1.6.2 Suggestions

The present study clearly shows that the cultivation of banana is highly profitable farming activity in the study area. In order to encourage other farmers to cultivate banana in large level the following suggestion are made.

- Crop insurance scheme can be introduced by the government of Tamil Nadu in order to protect the farmers in critical situation, like crop loss due to natural disorders
- Farmers may be providing with crop insurance knowledge through advertisement in mass Medias.
- Separated banana market can be setup in the study area.
- Soil testing lab can be made accessible to the farmers in the study area.
- Subsidized rate of pesticides and fertilizers have to be given to small farmers.
- Bank can be play effective role in extending credit to the entire farmer in the study area.
- Government can be minimum stable price for banana.
- The farmer should be encouraged to follow intercrop cultivation as it not only increase the total income but is also used natural manure.
- Training programme can be conducted for the small about the latest and mechanized farming methods and techniques so that they can produce more bananas with quality at a reasonable cost.
- The government provides subsidies to the small farmers for adopting the new technology (i.e.) drip irrigation, soil testing etc.

1.6.3 Conclusion

India is known for its best agricultural activities, with lot of valuable natural resources and human resources. The agricultural growth strategy of the past has intensified the interclass inequalities. The study reveals that the banana cultivation is most profitable to the small and large farmers. The government can pay attention by providing transports facilities, good facilitated market and providing subsidies for fertilizer, and also providing the organic manure at the appropriate time. This will enable the farmers to get a good yield of banana.

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