

# A Study On The Relationship Between Farm Size And Income Of The Small Farmers In Sebathiyapuram Village, Thoothukudi District

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**ABSTRACT:** *India's rural working population consists mainly of small farmers. Small farmers are classified into two broad categories taking into account the family income obtained from agriculture and allied activities. Therefore, both farm size and income criterion are being used to identify the small farmers. The present study aims at analyzing the firm size and income households of small farmers at Sebathiyapuram Village by taking into account the size of the family, caste, education, income, expenditure, savings, indebtedness, etc, as indicators for evaluation. There are so many problems exist among the small farmers regarding their financial facilities, marketing facilities, agricultural co-operative societies and irrigation facilities, and cost of production. The Income pattern is one of the determinants of the standard of living of the households. This study reveals that most of the farmers are earning higher level of income. The reason is that, most of the small farmers are using intensive cultivation method for their cultivation of land. This study concluded that relationship between farm size and income of small farmers are highly satisfactory in this village.*

**Keywords:** *Small farmers, size of holding, income, cost of production, intensive cultivation.*

## 1. INTRODUCTION

Agriculture being the mainstay of the rural Indian economy around which Socio-economic privileges and deprivations revolve, any change in its structure is likely to have a corresponding impact on the existing pattern of social inequality. India's rural working population consists mainly of small farmers. The problems of the small farmers and the agricultural labourers vary from area to area but the more common problems being fragmented and small holdings, insecurity of tenure, inadequate credit facilities and marketing facilities all of these have immensely hindered the development of agriculture on a sound basis and also stood in the way of improving the economic and social conditions of these people.

The viable farmers is one whose annual income from agriculture and allied activities is above the level which is considered necessary to maintain the farmer and his family at the minimum standard of living. The potentially viable farmer is one whose level of income is below the level which is considered necessary to maintain a farmer and his family at the minimum standard of living. But these farmers are capable of raising their income to a certain extent if they are provided enough amount of capital for investment in Agriculture

and allied activities. Therefore, both farm size and income criterion are being used to identify the small farmers. It is difficult to define a small farmer precisely because size is mostly affected by socio political conditions and the income may be marketly affected by techno-economic factors. These two are not fixed, so, a workable definition of small farmer is generally used i.e., the farmers having area below 2 hectares of land.

Small Farmers Development Agencies (SFDA) and Marginal Farmers and Agriculture Labourers (MFAL) of these programmes, a small farmer is defined as one having a land holding of 2.5 to 5 acres and the marginal farmers below 2.5 acres of dry land. The identified small farmers are allowed subsidies up to 25 percent and marginal farmers and agricultural labourers up to 33 1/3 per cent of the investment cost for various programmes. In view of these findings the National Commission on Labour has suggested that, for the purpose of the programme the maximum, limit of holdings of small farmers should not be above 2 hectares and of marginal farmers above one hectare.

### **1.1 Statement of the Problem**

The researcher States some of the research problems in connection with this research study. The development of the Indian economy depends on the socio-economic conditions of small farmers. Indian economy is an agrarian economy. More than 70 per cent of the population engaged in agricultural activities. This study area is predominantly agriculture oriented. More than 80 per cent of the total population constitutes small farmers. Without knowing the socio-economic conditions of the small farmers, conclusion can not be obtained regarding their economic status. There are so many problems exist among the small farmers regarding their financial facilities, marketing facilities, agricultural co-operative societies and irrigation facilities. The socio-economic conditions of the small farmers must be increased. The problems are to be properly highlighted to the attention of the government. Hence, this study can be considered a complete study of the socio-economic conditions of small farmers.

The socio-economic life centres around agriculture. This makes a deep study of an economic analysis on small farmers in Sebathiyapuram Village.

### **1.2 Objective of the Present Study**

1. To study the living conditions of small farmers in the study area.
2. To study the farm size, income and employment potentials of small farmers in the study area.
3. To examine the consumption, expenditure on cultivation, saving and indebtedness of small farmers in the study area.
4. To find out the assets, and Liabilities of small farmers in the study area.
5. To give suggestions to improve their socio-economic status.

## **2. METHODOLOGY**

The present study aims at analyzing the farm size and income conditions of households of small farmers at Sebathiyapuram Village, Thoothukudi District. The value of any research is closely related to the methods used in a study. The survey method was used as a tool for data collection to analyse the economic conditions on small farmers of the households of the selected village. The study depends up on both primary and secondary data. Primary data are collected from different sources. Secondary data are collected from official records and primary data from about 60 small farmers' households at Sebathiyapuram Village. Random sampling technique is used in this study. The collected data were arranged on the

basis of the definition of small farmers which was given by the National Commission on labour. SFDA and MFAL.

**a. Scope of the study**

The present study aims to examine the firm size and Income of the small farmers in Sebathiyapuram Village by taking into account the size of the family, caste, education, income, expenditure, savings, indebtedness, etc. as indicators for evaluation. The study also gives certain findings and conclusions from the interpretation and certain suggestions for further improvement.

**b. Review of Literature**

Ashok Rudra study on “Indian Agricultural Economics”. In his study, emphasized that we never expressed the view that the inverse relationship was not to be observed in any circumstances in Indian agriculture. Our view was that such a relationship could not be regarded as a universally valied law operating in Indian agriculture, and that there were indications in the Farm Management survey data themselves that in certain area yield per acre, instead of declining with increasing size might actually be increasing. Also, that in certain cases where an inverse relationship could be recognized to hold it might do so among the smaller size class of farmers but not among others. It was over view that in many areas, one could possible observe any systematic pattern of dependence between yield per acre and farms size.

Ashok Rudra and A.K.Sen, study on “Farm size and Labour use: Analysis and Policy”. In their study, they pointed out that, “The totality of empirical research on the relationship between farm size and productivity has yielded a farm from uniform picture. Even though who have emphasized confirmation of the inverse relation on the basis of individual household data have noted failure to see such a pattern in several regions. The general conclusion to emerge is the diversity of Indian agriculture, regarding the existence of the negative relation between size and productivity: ‘the negative relation may hold in certain parts of the country at certain times but not everywhere and not at all times’ it may hold in certain ranges but not in others, and in many cases it is particularly notice ‘only for small size classes’.

**c. Small Farmer**

Those operating 2.5 acres to 5 acres or below 2 hectares of irrigated land are categorized as small farmers. Both farm size and income criterion are being used to identify the small farmers. It is difficult to define a small farmer precisely because size is mostly affected by socio-political conditions and the income may be markedly affected by techno-economic factors. These are not fixed. So, a workable definition of small farmers is generally used, ie the farmers having area below 2 hectares of land.

**d. Size of Population**

The researcher’s study area in sebathiyapuram which is situated in Srivaikuntam Taluk of Thoothukudi District. In this study area 80% of the total population are engaged in agricultural as their main occupation. Being a Village, Sebathiyapuram Village is considered as an agriculture oriented, consisting mostly the small farmers. The researcher has taken this village to analyse the small farmers and the farm size in this study area. It provides more employment opportunities to the small farmers. Most of the people are depending depend up on agriculture as their primary occupation which provides more employment opportunities.

The main source of income comes from agriculture. The growth of population is increasing from year to year as a result of the rapid growth of population. As per village population report, there are 2,600 families in this village. The following table shows the size of the population in the study area.

Table: 1  
 Size of the Population

SI. NO	Sex	Population	Percentage of total Population
1.	Male	4,350	47.77
2.	Female	4,755	52.23
	<b>Total</b>	<b>9,105</b>	<b>100.00</b>

Source: Village Panchayat office

The table 1 shows that the total population in this village is 9,105 in which the male population is 4,350 (47.77%) and the female is 4,755 (52.23%). The female population is higher than that of the male population.

### 1.9 Pattern of land ownership

Land is a very important asset in this village. It provides employment to the people and life them above poverty. The possession of land also provides a social status in the rural area. Land size is also one of the important determinant factor for the productivity and income of the small farmers.

Table: 2  
 Pattern of Land Ownership

SI. NO	Size of Land	No. of Families	Percentage
1.	Below 1 acre	24	40.00
2.	1 acre to 2 acres	22	36.67
3.	2 acre to 2 ½ acres	14	23.33
	<b>Total</b>	<b>60</b>	<b>100.00</b>

Source: Field survey

The table 2 shows that out of 60 households, 24 households are having land below 1 acre but the size of the land in their possession is very small which constitute 40 per cent. About 22 households' posses land between 1 acre to 2 acres which constitute 36.67 per cent and 14 households posses land between 2 acres to 2.5 acres which constitute 23.33 per cent. Most of the farmers cultivate small size of the land. The reason is that, the law of inheritance is one of the important causes for the small size of lands holding. It leads to subdivision and fragmentation of cultivating area. In this study area most of the small farmers cultivate properly their own land and gets more income from this land. A few number of the farmers cultivate own land plus tenant land in this village.

### 1.10 Education

The level of literacy is one of the important factors which determine the socio-economic conditions of small farmer.

Table: 3  
 Educational level of Respondents

SI. No	Educational Level	No. of Families	Percentage
1.	Primary	18	30.00
2.	Secondary	16	26.67
3.	Higher studies	26	43.33
	<b>Total</b>	<b>60</b>	<b>100.00</b>

Source: Field survey

The table 3 shows that the majority of the people in the study area are educated at Higher Studies which constitutes 26.67 per cent and Primary level 30.00 per cent. It reveals that the respondents have more awareness about the importance of education.

### 1.11 Annual Income of the Households

The income pattern is one of the determinants of the standard of living of the households. The level of income depends up on the level of employment. A positive direct relationship between the employment and the level of income. The following table shows the different sources of income of the household of small farmers.

Table: 4  
 Annual Income of the Households

SI. No	Income Group in (Rs)	No. of household	Total income of The households	Percentage of Households
1.	Below 2,00,000	32	38,80,000	53.34
2.	2,00,000 – 3,00,000	16	38,00,000	26.66
3.	3,00,000 – 4,00,000	8	24,40,000	13.33
4.	4,00,000 and above	4	16,50,000	6.67
	<b>Total</b>	<b>60</b>	<b>1,17,70,000</b>	<b>100.00</b>

Source: Field survey

The table 4 shows that, 53.34 per cent of the households are having the income groups of below Rs.2,00,000 and 26.66 per cent of the households have come under the income groups of Rs.2,00,000 – 3,00,000. 13.33 per cent of the households have come under the income group of Rs.3,00,000 – 4,00,000 and remaining 6.67 per cent of the households have come under the income group of Rs.4,00,000 and above. The table clearly reveals that most of the households are earning higher level income. The reason is that, most of the small farmers are using intensive cultivation method for their cultivation of land. In order to find out the correct estimation Gini concentration ratio is applied. The Gini concentration is 0.64165. This reveals that the degree of inequality is more i.e., 0.64. This means that, the inequality of income among the groups are very large.

### 1.12 Cropping pattern and production

Cropping pattern can be made more rational through appropriate changes in economic motives of higher production. The total productions for the farmers in the study area are given in the table 5.

Table: 5  
 Cropping Pattern and Production

Verities	Area (in acres.)	Production (in Rs. )	Percentage to Total production	Productivity (in Rs.)
Kadali	36	18,09,050	20.26	50,251.39
Rasthali	17	17,07,000	19.12	1,00,411.76
Nadu	35	24,83,000	27.80	70,942.86
Nendran	22	29,30,000	32.82	1,33,181.81
<b>Total</b>	<b>110</b>	<b>89,29,050</b>	<b>100.00</b>	<b>3,54,787.82</b>

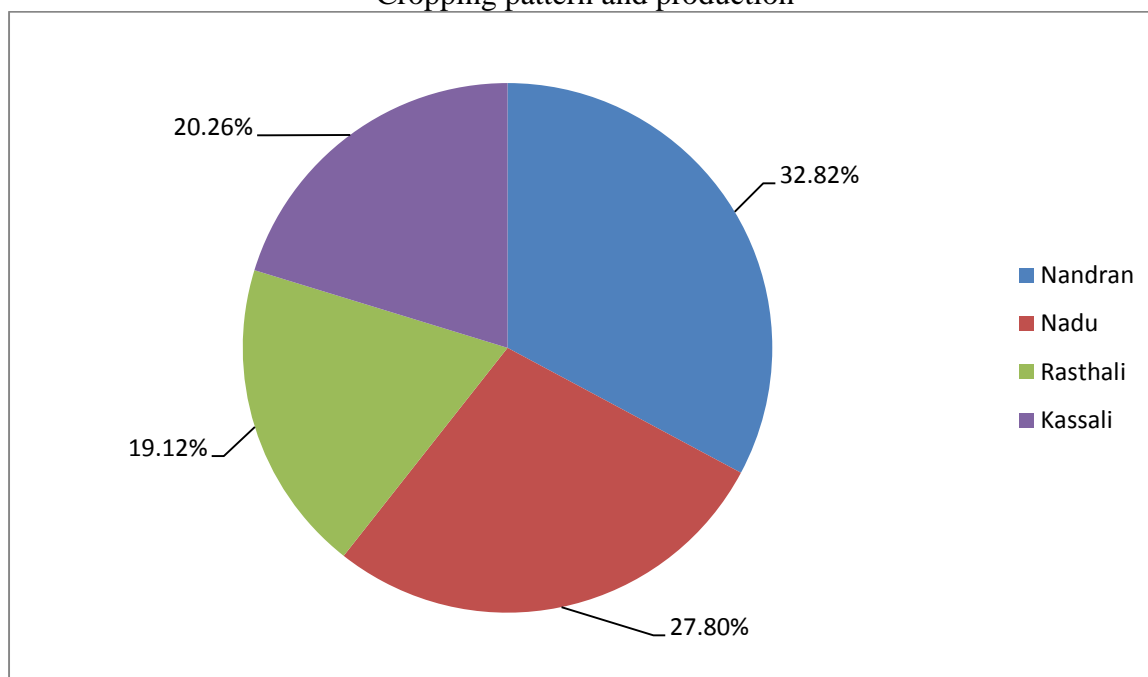
Source: Field survey

The table 5 gives the details of the production pattern of the banana. Production is more in malayathan banana compared to other varieties like kassali, rasthali and nadu but the area cultivation in only 22 acres. Nendran which requires large expenditure when compared to the other varieties. Cost of cultivation of Nendran variety, one acre land is Rs.32,000 where as Rs.27,000 for Nadu variety and Rs.25,000 for other varieties. Similarly, in terms of return is Nendran which enjoy the dominant place in the cultivation of Nendran, Farmers are able to get a return of Rs.96,000 from one acre of land, where as Rs.63,000, and Rs.50,000 per acre is reported as the returns in the cultivation of kadali and other varieties.

In terms of profit, Nendran variety which is more attractive. Farmers report that they get a net income of Rs.64,000 by way of cultivating Nendren variety. The net revenue is earning to the farmers out of the cultivation of kadali and other varieties seems to be less from one acre of land. Nearly 65 per cent of the farmers prefer Kadali variety which fetches steady price. In the case of cultivation of Kadali, they cultivate continuously for 3-5 years. No preparatory work is necessary. There is no need for any change in the cultivation pattern; further, the cost of suckers is very low when compared with Nendran and other varieties. It is because of these reasons cultivators give preference to the Kadali variety.

All the respondents are cultivating more than two varieties. Majority of the respondents i.e. 70 per cent are cultivating Nadu variety. But the production efficiency is very low compared to Nendran variety. The Rasthali variety is cultivated by limited respondent's i.e. 30 per cent because in this area the demand for this variety is low. The researcher concluded that in this area the Nendran variety is more profitable compared to other varieties followed by Nadu variety. The average production per acre is Rs.81,173. The following diagram 1 explains the cropping pattern and production.

Figure: 1  
 Cropping pattern and production



**Producing in Percentage**

**1.13 Economic Returns**

For a long time, marketing conditions in India were primitive and farmers were exploited by traders and middlemen. The farmers feel that they are not in a position to get competitive prices for their output as the price is fixed by commission agents and retailers. They cannot fix sale price over and above their cost price. They face the problems of unsatisfactory prices, market expenses etc. The economic returns of the banana cultivation is represented in table 6.

Table: 6  
 Economic Returns (per acre)

Total production	Total Cost of Cultivator	Gross Profit
Rs. 81,173.00	Rs. 28,485.00	Rs. 52,688.00

Source: Field survey

Table 6 explains that, the total production is Rs.81,173 and the total cost of cultivation is Rs.28,485 and the gross profit is Rs. 52,688. In banana cultivation is more profitable than other crops. So that, the farmers are getting more income while they are cultivating the small size of land than the large size of land.

**1.14 Cost of Cultivation**

The cost of cultivation is also analysed in this study, which is determined the standard of living of the small farmers.

Table: 7  
 Cost of cultivation pattern

Sl. NO	Catefory	Amount (in Rs)	Percentage
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1.	Ploughing	45,000	16.37
2.	Casual Labour	50,500	18.37
3.	Bullock and Tractor Labour	5,000	1.82
4.	Seeds	17,000	6.18
5.	Fertilizers	90,300	32.86
6.	Manures	41,050	14.94
7.	Harvesting	7,000	2.54
8.	Others	19,000	6.92
	<b>Total</b>	<b>274,850</b>	<b>100.00</b>

Source: Field survey

The table 7 shows that the universal picture of the cost of cultivation. The major portion of the cost of cultivation of the small farmers which constitute nearly 50 per cent for fertilizers and manures. The other items like the cost of ploughing, casual labour, bullock and tractor labour, seeds, harvesting and others constitute 16.37 per cent 18.37 per cent, 1.82 per cent, 6.18 per cent, 2.54 per cent, and 6.92 per cent respectively. Most of the small farmers spent more amount of money for the cost of cultivation. The reason is that, to get a high yield, and gets more income from their cultivation lands the small farmers have borrowed more money.

In order to find out the correct estimation Gini concentration ratio is applied. The Gini concentration is 0.825089. It reveals that the degree of inequality is more i.e., 0.83 so, the small farmers spent more amount of money for their cultivation.

### 1.15 Testing of Hypothesis:

There exists a negative relationship between land size and income of small farmers.

Measures of t-Test indicates the variables in the factors are uncorrelated, t-Test can be used with the help of the following formula.

$$t = r / \sqrt{1 - r^2} \times \sqrt{n - 2}$$

T is based on (n-2) degrees of freedom

r = 0.336

r = +2.0045

For degree of freedom (df) 28 at 5% level, the table value is 2.048. 'The correlation (r) is not significant at 5% level. It concludes from the testing of hypothesis, that there is no reason to doubt the hypothesis. Hence, there exists a negative relationship between land size and income of the small farmers. The reason is that, in the study area majority of the small farmers cultivated their own land by intensive method of cultivation. Hence, this hypothesis is established.

A similar conclusion is put forth in this study by Ashok Rudra and A.K. Sen, "the general conclusion to emerge is the diversity of Indian Agriculture, regarding the existence of the negative relation between size and productivity: 'the negative relation may hold in certain parts of the country at certain times but not everywhere and not at all times. It also appears that even when the inverse relationship holds, it may hold in certain ranges but not in others and in many cases it is particularly noticeable 'only for small size classes' "while counting the different regions, one would find that the inverse relation is more frequently confirmed than rejected"

Another study by C.H. Hanumantha Rao has argued that, small farmers are compelled to work harder. This raises the productivity per acre on the small farmers to a higher level as compared to the large farms. This description of the reasons of the alleged inverse



relationship between farm size and productivity shows that one can distinguish between forces that drive small farmers to intensive efforts and forces that permit them to undertake such efforts. Accordingly, “to the extent the smaller farms in many parts of Indian yield higher output per hectare than the larger farms.

A.M. Khusro, Krishna Bhardwaj and Usha Rani have put forward the argument that small farmers make a more intensive use of their inputs as compared to large farmers because they are faced with the compulsion of providing for themselves and their families from whatever small holdings they possess. As against this the large farmers are not faced with any such compulsion and consequently do not use their inputs as intensively as small farmers.

## **2.0 Findings and Suggestions and Conclusion**

### **Findings**

1. It is found that the size of the population in this village is 8,105. Most of the people (nearly 82 per cent) belong to Backward community.
2. The literacy level in this village is satisfactory. Nearly 30 per cent have completed elementary level education. In this study area, higher study level is 43.33 per cent. The education facilities available in this village is satisfactory.
3. In case of annual income of the households of the small farmers, 53.34 per cent of the households are having the income group of below Rs.2,00,000 and 26.66 per cent of the households are having the income group of Rs.2,00,000 – 4,00,000. Further 13.33 per cent of the households are having the income group of Rs.4,00,000 – 6,00,000 and 6.67 per cent of the households are having the income group of Rs.4,00,000 and above. This shows that most of the small farmers are being middle income groups.
4. Major Portion of their income nearly 75 per cent is spent on food and cloth items. The other items like expenditure on education, fuel and lighting, social religious, Medicine and others which constitute 7.35 per cent, 5.17 per cent, 3.73 per cent, 4.03 per cent, 4.03 per cent and 4.26 per cent respectively.
5. The cost of cultivation of small farmers, it is found that major amount of money is spent for fertilizers, which accounts for 32.86 per cent, The other items like expenditure on ploughing, casual labour, bullock and Tractorlabour, seeds, manures, harvesting and others which constitute 16.37 per cent, 18.37 per cent, 1.82 per cent, 6.18 per cent, 14.94 per cent, 2.54 per cent and 6.92 per cent respectively.
6. In Nendran cultivation the farmers are able to get a return of Rs.96,000 from one acre of land, where as Rs.63,000, Rs.50,000 per acre is reported as the returns in the cultivation of Kadali and other varieties.
7. In terms of profit, Nendran variety which is more attractive farmers report that they get a net income of Rs.64,000, by way of cultivating Nendran variety.
8. All the respondents are cultivating more than two varieties. Majority of the respondents ie 70 per cent are cultivating Nadu variety. But the production efficiency is very low compared to Nendran variety.
9. As far as saving pattern is concerned small farmers are willing to save with chit fund, Bank, Post office, L.I.C. and other source which accounts for 5.62 per cent, 44.92 per cent, 22.46 per cent, 13.10 per cent and 13.90 per cent respectively. Hence in this study area bank plays an important role in the disbursement of loan and accepting the deposit for the small farmers.
10. In case of the pattern of land ownership. 24 households are having the size of the land below 1 acre which accounts for 40 per cent. 22 households are having 1 acre to 2 acres of land

which accounts for 36.67 per cent. 14 households are having the size of land 2 acres of land which accounts for 23.33 per cent.

11. In case of liabilities, money lenders play an important role as they provide 40.39 per cent of loan. 38.99 per cent of the households borrowed from bank.
12. There is no organization for small farmers.

### **Suggestions**

1. Small farmers should be encouraged by providing more credit facilities for poultry and cattle.
2. Government must protect the small farmers from the exploitation of business men.
3. Proper irrigation facilities should be provided by the government, so as to increase the higher yield.
4. Small farmers should be encouraged in subsidiary occupations like, Bee keeping, poultry, farming cattle farming etc.
5. In this village, the Government should be established the small scale industry and cottage industry in agri oriented.
6. Co-operative societies and stores must be started to provide consumer durable goods, manures and other fertilizers to the agriculturists at a concessional rate.
7. Fair price markets may be started in this area to sell out their marketable surplus.
8. The sources and availability of finance for agricultural operations are inadequate in this area. Therefore, the nationalized banks should come forward to provide finance at a low rate of interest to the small farmers to increase their holding capacity of the agricultural product.

### **3. CONCLUSION**

The present study on the relationship between farm size and income of small farmers are satisfactory in this village. Small farmers are compelled to work harder. This raises the productivity per acre on the small farmers to a higher level as compared to the large farms. There is higher intensity of irrigation in smaller farms; the researcher has found a statistically significant inverse relationship between the level of irrigation and size of holding in this village. Inverse relationship as indicating "higher efficiency". The small farmers make a more intensive use of their inputs as compared to large farmers because they are faced with the compulsion of providing for themselves and their families from what ever small holdings they possess. Further, small farmers are using superior technique as well as more efficient methods of production. If credit facilities are given sufficiently to the small farmers, they can undertake their farm in effective manner. The researcher concluded that in this study area the Nendran variety is more profitable compared to other varieties followed by Nadu variety. The average production per acre is Rs.81,173 and the total cost of cultivation is Rs.28,485 and the gross profit is Rs.52,688. The banana cultivation is more profitable than other crops. So that, the farmers are getting more income while they are cultivating the small size of land than the large size of land.

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