

An economic analysis of paddy production in Tiruvannamalai district – Tamil Nadu during the period 1997-2007

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Abstract: Agriculture is the backbone of the Indian Economy. It is the largest sector of economic activity. More than 63 per cent of the total population has been living depending on agriculture in the country. So the agriculture is the most dominant sector of such an economy. India's agriculture export present 9% of the value of total exports while the share of agriculture in total imports is just 5% India's agricultural exports totaled \$9.3 billion in the year 2007. While imports were worth roughly \$5.5 billion, in the sampling 90.0 percent and 96.0 percent of the marginal and small farmers were male. 10.0 percent and 4 percent of marginal farmers were female this confine that 96.0 percent of the small farmers were engaged in paddy cultivation. It reveals that the yield expectancy of marginal farmers were less than small farmer due to lack of irrigation new methods etc. The 71 per cent were applying fertilizer in their land. Among them small farmer were 56.35 percent 43.67 percent contributed by marginal farmer. 29 per cent of the respondents were not applying the fertilizer which mentioned. The increasing trend of paddy production is due to application of fertilizer.

Keywords: Paddy production, Marginal farmers, Small farmer

INTRODUCTION

Agriculture is a backbone of the Indian Economy. It is the largest sector of economic activity. More than 63 per cent of the total population has been living depending on agriculture in the country. So the Agriculture is the most dominant sector of such an economy. In India agricultural process is normally regarded as prerequisite of economic development in the modern times has come to be associated with industrialization. Nevertheless, it is generally accepted the industrialization can follow only on the sound heel of agriculture or to turn the entire superstructure of the growth of industrial and others are largely agricultural in nature [1].

India's Agricultural exports represent 9 per cent of the value of total exports while the share of agriculture in total imports is just 5%. India's total agricultural exports are \$9.3 billion in the year 2007 while imports were worth roughly \$5.5 billion. Thus India is a net exporter of agricultural food products with a small surplus of just under \$4 billion. Between 1997 and 2007, exports nearly doubled while imports grew almost threefold [2].

Tamil Nadu is the second biggest producer of Paddy and is the home land of Dr. M.S. Swami Nathan, known as the "**Father of the Green Revolution**" in India. The state is historically known for its agriculture from ancient times. The

major food crop like Paddy is grown in large excess because rice is the main staple food of the state. There are three crops based on duration. The first one is the "Kuruvali" (Kuruvali) (the short term crop) with duration of three and a half to four months from June to July to Oct - Nov. The second crop is called the "Thaladi" that grown in 5 to 6 months Oct - Nov to Feb - March. Third is 'Samba' and has a duration of almost 6 months from Aug to January. The major source of irrigation is the rivers, tanks and wells [3].

Thiruvannamalai District is known for its two major businesses, agriculture and silk saree weaving. Rice cultivation and processing is the one of the biggest business in this district. 112013 hectares of paddy cultivation is irrigated by 1965 lakes and 18 reservoirs and small dams. It has 18 regulated markets through which the farmers sell their agri-products directly to the government. Through these regulated markets, 271411 metric tonnes of paddy harvested in 2007. There are lot of rice mills to process paddy found throughout the district. The modern rice mill near Cheyyar is the biggest government owned mill and Aarani has around 278 rice mills. Kalambur is known for a variety of rice called Kalambur Ponni rice [4].

MATERIALS AND METHODS

In this paper aims to the cultivators are assess the yield potentials of paddy in the Thiruvannamalai Distirct. It is based on the Both primary and secondary data. The primary data were collected from the selected 100 respondents from the cultivators of Thiruvannamalai Distirct through the pre prepared questionnaire during the 1997-98 to 2007-08 using the stratified random sampling methods. In the regard to selection of block, the selected districts of Tiruvannamalai is moderately concerned by paddy cultivation keeping this in the background. Thiruvannamalai district in Tamil Nadu was

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selected similar socio-economic background in the Tiruvannamalai district and also they have been covered moderately by the paddy cultivation. For primary data sample survey with the help of a schedule was conducted in the study area during the middle of august 2007 to 2009. In the villages background class community dominated and they are accompanying with 58 per cent of the small farmer and the next most backward class community was 38 per cent of the marginal farmers. Scheduled caste was participating at lower level. Their percentage was 28 percent of the marginal farmer and 12 percent of the small farmers.

RESULT AND DISCUSSION

In this present study there are 100 respondents were selected from the different categories of paddy cultivation from the study area during the study period under the stratified random sampling method. This sampling survey covered in both the categories from the sampling villages comprising of 50 paddy cultivators under small farmers and another 50 from the marginal farmers. This section aims to analysis to find out the level of yield potential of paddy production and additional income generated to the marginal and small farmers through paddy cultivation in the study area.

Table – 1: Paddy production in India during the year 2003-04 to 2009-10

Sl. No.	Year	Production in Million Tones
1.	2003-2004	88.53
2.	2004-2005	83.13
3.	2005-2006	91.79
4.	2006-2007	93.35
5.	2007-2008	93.00
6.	2008-2009	95.68
7.	2009-2010	96.43

Source: Ministry of agriculture.

Reveals that the paddy production 88.53 million tones during the year 2003-2004, the production of paddy had increased 93 million tones in 2007-2008 and the next to raise

the paddy production highest 96.43 million tones in 2009-2010 and lowest 83.13 million tones during the year 2004-2005 (Fig. 1).

Table – 2: Details of yield rate of paddy crops: Top four states (kgs/hectare)

Rank	Paddy In Rice	Kgs/Hectare
First	Punjab	3380
Second	Tamil Nadu	3056
Third	Haryana	2744
Fourth	Andhra Pradesh	2454

Source: India’s Agriculture sector: A consolidated of statistics

The table 2 illustrate the going by the per hectare yield 3380 kgs of principal crops of paddy in Punjab had occupied the first place in respect of paddy production second position with regard to paddy in Tamil Nadu. The third and fourth

ranks are occupied in Haryana and Andhrapradesh [5]. The improvement noticed in the paddy course in recent years was not a new addition but only a recoument of area which had been already lost (Fig. 2).

Table – 3: Village wise distribution of sampling villages

Village	Marginal Farmer				Small Farmer			
	SC	MBC	BC	Total	SC	MBC	BC	Total
Kadaman	10	12	3	25	3	7	15	25
	(40.00)	(48.00)	(12.00)	(100.00)	(12.00)	(28.00)	(60.00)	(100.00)
Virukkuvilanganin	4	7	14	25	3	8	14	25
	(16.00)	(28.00)	(56.00)	(100.00)	(12.00)	(32.00)	(56.00)	(100.00)
Total	14	19	17	50	6	15	29	50
	(28.00)	(38.00)	(34.00)	(100.00)	(12.00)	(30.00)	(58.00)	(100.00)

Source: Computed

From the table 3 that 50 percent each from small farmer and marginal farmers, it is contains 50 marginal farmers an 50 small farmers from two sampling village like Kadaganan and Virudhuvilangan. In the village backward class community dominated and they are accompanying with 58 percent of the small formers are the next most backward class community was 38 percent of the marginal farmers. Scheduled caste was participating at lower level. Their percentage was 28 percent of the marginal farmer and 12 percent of the small farmers (Fig. 3).

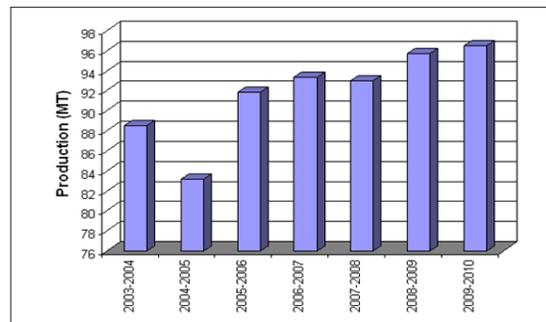


Fig. 1. Paddy production in India during the year 2003-04 to 2009-10

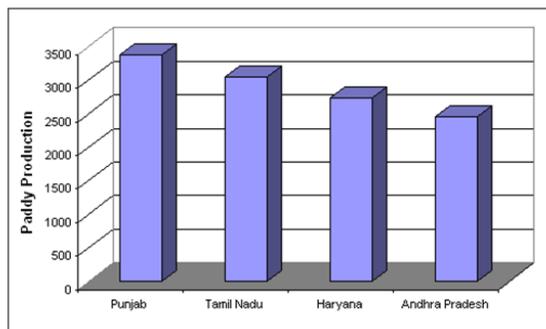


Fig. 2 Details of yield rate of paddy crops: Top four states (kgs/hectare)

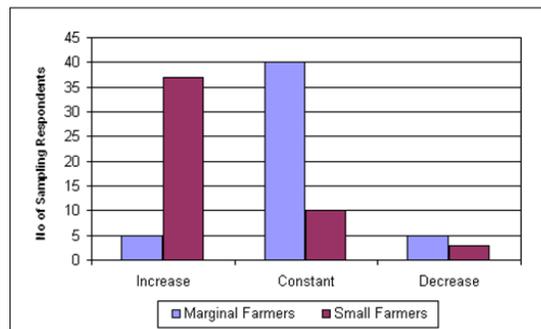


Fig. 6 Details of Group wise yield expressed of Paddy Cultivation

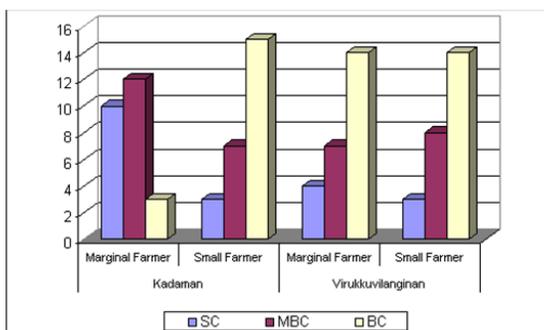


Fig. 3 Village wise distribution of sampling villages

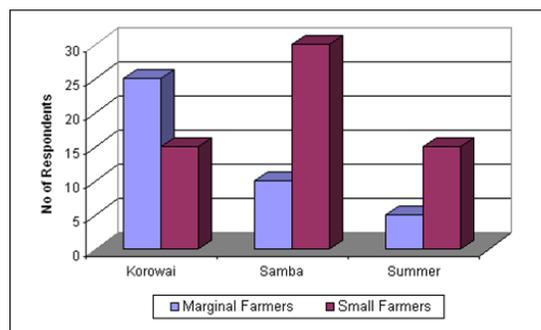


Fig. 7 Details of Season wise Production of Paddy Cultivation

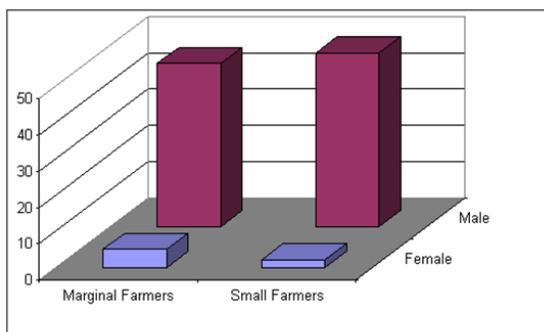


Fig. 4 Paddy production in India during the year 2003-04 to 2009-10

Fig. 5 Details of Group wise yield of Paddy Cultivation

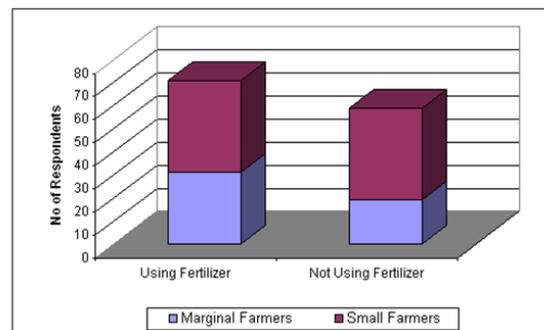
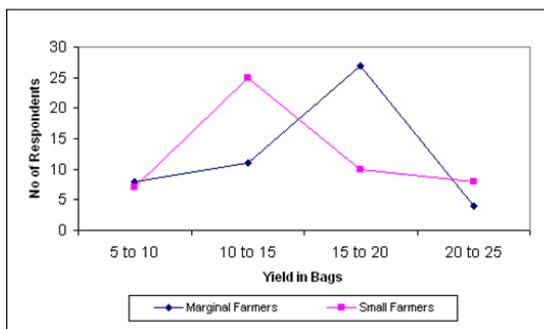


Fig. 8 Details of Chi-Square Test for Fertilizer utilization of Paddy Cultivation

Socio Economic character of the Sampling Respondents

The socio-economic characteristics of the sample respondents were classified into seven categories such as gender, age, educational status, community, family type and number of earning member which are imply to home influence on entrepreneurship as shown in the following section (Fig. 4).

Table – 4: Paddy production in India during the year 2003-04 to 2009-10

Sl. No.	Gender	Marginal Farmers	Small Farmers
1.	Male	45 (90.00)	48 (96.00)
2.	Female	5 (10.00)	2 (4.00)
	Total	50 (100.00)	50 (100.00)

Source: Computed.

In the sampling 90.0 percent and 96.0 percent of the marginal and small farmers were male. 10.0 percent and 4.0 percent of marginal farmers were female this confine that 96.0

percent of the small farmers were engaged in paddy cultivation

Table – 5: Details of Group wise yield of Paddy Cultivation

Sl. No.	Packages (50 kgs)	Marginal Farmers	Small Farmers	Total
1.	5 to 10	8 (53.33)	7 (46.67)	15 (100.00)
2.	10 to 15	11 (30.56)	25 (69.44)	36 (100.00)
3.	15 to 20	27 (72.97)	10 (27.03)	37 (100.00)
4.	20 to 25	4 (3.33)	8 (66.67)	12 (100.00)
		50 (50.00)	50 (50.00)	12 (100.00)

Source: Computed.

The table 5 (Fig. 5) indicates that 37 percent of the respondents producing 15 to 20 packages (1 package = 50 kg) among them majority of the percentage (73%) cultivated by

marginal formers. 12 percent of the respondents were producing 20 to 25 packages (33.33 percentage were marginal farmer and 66.67 percent were small farmers).

Table – 6: Details of Group wise yield expressed of Paddy Cultivation

Sl. No.	Details	Marginal Farmers	Small Farmers	Total
1.	Increase	5 (11.90)	37 (88.10)	42 (100.00)
2.	Constant	40 (80.00)	10 (20.00)	50 (100.00)
3.	Decrease	5 (62.50)	3 (37.50)	8 (100.00)
	Total	50 (50.00)	50 (50.00)	12 (100.00)

Source: Computed.

The table 6 (Fig. 6) reveals that 50 percent of the respondent were point out their yield from the land were constant only 8 percent of the respondents were pointed out

that, expect any goes down. It reveals that the yield expectancy of marginal farmer as less than small farmer due to lack of irrigation, new methods, etc.

Table – 7: Details of Season wise Production of Paddy Cultivation

Sl. No.	Season of Cultivation	Marginal Farmers	Small Farmers	Total
1.	Korowai	25 (62.50)	15 (37.50)	40 (100.00)
2.	Samba	10 (25.00)	30 (75.00)	40 (100.00)
3.	Summer	5 (25.00)	15 (75.00)	20 (100.00)
	Total	50 (50.00)	50 (50.00)	100 (100.00)

Source: Computed.

The table 7 indicates that most of the sample respondents weer sowing in Kurvai season (40 percent). Among the respondents 65.5 percent were marginal farmers and 37.5 percent were small farmers. 40 percent of the respondents

were sowing in samba season. Among them 75 percent were small farmers and a 25 percent were marginal farmers. Less or the respondents were sowing in summer season (Fig. 8).

Table – 8: Details of Chi-Square Test for Fertilizer utilization of Paddy Cultivation

Sl. No.	Utilization	Marginal Farmers	Small Farmers	Total
1.	Using Fertilizer	31 (E = 35.5)	40 (E=35.5)	71
2.	Not Using Fertilizer	19 (E=14.5)	10 (E=14.5)	29
	Total	50	50	100

Source: Computed.

The table 8 (Fig. 8) indicates that majority of the respondents in 71 percent were applying fertilizer in their land among them small farmer were 56.35 percent 43.67 per cent contributed by marginal farmer. 29 percent of the respondents were not applying any fertilizer which mentioned above. The increasing trend of paddy production is due to application of fertilizer.

$$\chi^2 = \frac{\sum(o - E)^2}{E}$$

$$\chi^2 = \frac{4.5^2}{35.5} + \frac{-4.5^2}{35.5} + \frac{4.5^2}{35.5} + \frac{4.5^2}{35.5}$$

$$\chi^2 = \frac{20.25}{35.5} + \frac{20.25}{35.5} + \frac{20.25}{14.5} + \frac{20.5}{14.5}$$

$$\chi^2 = 0.57 + 0.57 + 1.39 + 1.39$$

$$\chi^2 = 3.92$$

There is a significant association in using the fertilizer by the paddy cultivation. So the using of fertilizer are accepted.

CONCLUSION

Agriculture is the most dominant sector of such an economy. It commands priority in the strategy of growth. This primary activity has great importance in the Indian economy. India has made a lot of progress in agriculture sector since independence in terms of growth in output, yield and area under many crops. Agriculture progress is normally regarded as a prerequisite of economic development in the modern times has come to be associated with industrialization, nevertheless it is generally accepted that industrialization can follow only one the sound level of agriculture or to turn the entire superstructure of the growth of industrial and other are largely agriculture in nature. The economic development of under developed country largely depends upon the development of agriculture. Increasing agriculture productivity is one of the preconditions [6].

The Socio-economic characteristics is often elusive and difficult to deal with, but an easily be the determining factor of production. The farmer may not grown groundnut because of because of high risk, not regard as a major fold source and low return. In the study area 96 percent of respondents were male and 4 percent of the respondents were female. 60 percent of the respondents were illiterate and 40 percent were illiterate [7].

Rain fall temperature, nutrients and pests and diseases are the 4 major environmental stress limiting paddy of groundnut. It is there fore necessary to adjust crop period to these stresses.

The season for the cultivation of this crop varies considerably in the study area each 40 percent of the respondents were sowing in both Kharif and Rabi. 30 percent of the small farmers were sowing in Rabi only 10 percent of the marginal farmers were sowing Rabi season. There fore small farmers were surfeited more than marginal farmers. 50 percent of the respondents were expressed that yield of their land had been constant. 37 percent of the small farmers were experienced that yield of their land had been increased. Modern technology was introduced more by small farmer than marginal farmers. Low yield was due to inadequate minimum nutrition. Improper seeding dates and rates, low soil plot, competition from weeds, 36 per cent of the respondents were produced 10 to 15 percents of paddy from their land. 46.44 percent of the small farmers are producing 10-15 packages. Only 30.56 percent of the marginal farmers produced 10-15 packages from the land in the study area. The yield capacity of the land favours for only small farmers rather than marginal farmers [8].

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