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Socioeconomic characteristics of certified organic farmers in Tamil Nadu - an analysis

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Abstract
The study was conducted among certified organic farmers of western zone Tamil Nadu. A sample size of 180 organic farmers was selected from the districts of Coimbatore, Erode and Tiruppur districts of Tamil Nadu. Ex post facto research design evolved for this study. Data was collected through personnel interview method with help of semi structured interview schedule. From the findings of the study nearly two-third (68.89%) of the certified organic farmers belonged to old age category followed by middle and young. More than one -third (35.00%) of the certified organic farmers had possessed collegiate education followed by secondary (27.77%), middle (22.22%), primary education (9.45%), functionally literate (3.34%) and only negligible per cent of the certified organic farmers were classified as illiterate. Majority (41.12%) of the certified organic farmers acquired on annual income up to Rs. 1,00,000. Slightly more than two-fifth (44.45%) of the certified organic farmers fell under big farmer category, followed by medium (40.55%) and small farmers category (8.88%). More than one third (35. 56%) of the certified organic farmers had low level of farming experience in organic farming, followed by high and medium. Nearly half (47.22%) of the certified organic farmers were practicing mixed cropping pattern followed by double cropping and mono cropping with 36.12 per cent and 16.66 per cent, respectively. Nearly half (47.78%) of the certified organic farmers were depending on bore well as a primary irrigation source followed by open + bore well (28.33%), open well (17.77%) and only 6.12 per cent were canal alone as irrigation source. Majority (40.00%) of the certified organic farmers have attended more than three trainings in organic farming, followed by one training (20.56%) and two trainings (16.67%). More than half (52.22%) of the certified organic farmers possessed medium level of mass media exposure and majority (64.45%) of the certified organic farmers had medium level of extension agency contact followed by high and low.

Keywords: Annual income, cropping pattern, educational status, irrigation source, mass media exposure, training undergone

Introduction
Until the mid 20th century, all over the world ancient agriculture was based on the principles of eco-friendly organic farming system, which ensured crop and animal production as well as environmental safety. With the advent of green and industrial revolutions, people in developed and developing countries abandoned the traditional ways of agricultural practices. Impetus was given to boost food production and economic growth through chemical inputs ignoring environmental health. Indiscriminate use of chemical fertilizers and pesticides during green revolution era resulted in hazard effects on soil, water and air creating pollution, which reduced the productivity of the soil by deteriorating soil health in terms of soil fertility and biological activity. The excessing use of pesticides has led to the entry of harmful compounds into food chain, reduction of natural enemies and development of resistance to pesticides (Surekha *et al*., 2012) [3].

Scofield (1986) [2] stated that organic farming system primarily aims at managing the agro-ecosystem as an autonomous system, based on the primary production capacity of the soil under the local conditions. It implies treating the system on any scale, as a living organism supporting its own vital potential for biomass and animal production, along with biological mechanisms for mineral balancing, soil improvement and pest and disease control. Organic farming in its holistic view refers to agriculture that aims to reflect the profound interrelationship that exists between farm biota its production and the overall environment.

Organic farming is a system, which avoids use of synthetic inputs (such as fertilizers, pesticides, hormones, feed additives etc) and to the maximum extent reasonable relies upon crop rotations, crop residues, animal manures, off-farm organic waste, mineral grade rock additives and biological system of nutrient mobilization and plant protection. With the increase in population our compulsion would be not only to stabilize agricultural production but also to increase it further in sustainable manner. Hence, a natural balance needs to be maintained at all

cost for existence of life and property. The obvious choice would be judicious use of agro-chemicals and more and more use of naturally occurring material in farming systems.

In India, still farmers are not aware about the importance of organic farming. Promoting organic farming practices among the farming community in a large scale will be a promising strategy to face these challenges (Elavarasi and Ponnusamy, 2015) [1]. This paper discusses the socioeconomic characteristics of certified organic farmers of western zone in Tamil Nadu.

Materials and Methods

Ex post facto research design evolved for the study. A total sample size of 180 certified organic farmers are selected for the study. A sample size of 60 organic farmers was considered for the study in each of the districts such as Coimbatore, Erode and Tiruppur respectively. In each district, three blocks were selected and in each block 20 certified organic farmers were selected through Purposive random sampling method. A well-structured and pre-tested interview schedule was used for data collection. Keeping in view, the objectives and the variables under study, a comprehensive semi structured interview schedule covering all aspects of organic farming practices was prepared. The items included in the interview schedule were structured questions and objective type questions which were suitable to all categories of organic farmers. The most relevant, unambiguous and practical questions were included in the schedule duly avoiding irrelevant items. Each of the selected certified organic farmers was contact personally and interviewed.

The data collected were subjected to statistical analysis to get inferences. Percentage analysis was used in descriptive analysis for making simple comparisons. For calculating percentage, the frequency of the particular cell was multiplied by 100 and divided by the total number of respondents pertaining to particular cell.

Results and Discussion

It is inevitable to analyse the farmers' characteristics including the background details, which in turn would help in giving appropriate policy implications. Keeping this in view, the information on farmers characteristics were collected, analyzed and presented in the following heads. In the study, ten characteristics were taken up for analysis and were classified into convenient categories for meaningful interpretations of data based on the procedure explained elsewhere. The findings are presented and discussed here under with following sub heads.

Age

Age would reflect the mental maturity of an individual to take decisions for achieving the needs at various stages of one's life. Hence, age is being considered as one of the factors and included in the present endeavour. The distribution of respondents based on their age is presented in the following Table 1.

Table 1: Distribution of respondents according to their Age (n=180)

S. No.	Category	Number	Per cent
1.	Young (up to 35 years)	8	4.44
2.	Middle (36 to 45 years)	48	26.67
3.	Old (more than 45 years)	124	68.89
	Total	180	100.00

A perusal of data in Table 1 shows that nearly two-third (68.89%) of the certified organic farmers belonged to old age category followed by middle and young with 26.67 per cent and 4.44 per cent, respectively.

The old aged farmers usually practice chemical free organic farming due to expertise and experience gained from various types of farming including chemical intensive farming over the period of time. Old aged group always concern with the environment, pollution free agro eco system to safe guard the resources for the future generation. In addition, the inorganic farming had reduced soil health and profit in agriculture. The young age group though practices commercial agriculture, would like to blend both inorganic and organic for higher profit within a shortest span of time, though they had cause of concern for ecology. However, the most of the certified organic farmers found to be old aged group in the study area.

Educational Status

Educational status of an individual plays a pivotal role to enhance his knowledge level by motivating him towards knowing new things and understanding the things learnt. It is generally presumed that higher the educational status, high would be the adoption level. The data collected on educational status are presented in Table 2.

It could be observed form Table 2, that more than one -third (35.00%) of the certified organic farmers had possessed collegiate education followed by secondary education (27.77%), middle education (22.22%), primary education (9.45%), functionally literate (3.34%) and only 2.22 per cent of the certified organic farmers were classified as illiterate. The finding shows that the certified organic farmers in the study area possessed higher education. This may be due to the fact that the education played crucial role to influence the farmers' decision to practice organic farming. Educated farmers normally would like to have more exposure on organic farming and environment safety. Thus, education would help the farmers to broaden their horizon and develop their scope of knowledge in organic farming. Moreover, public and private services employees return back to farming after their retirement, most of them prefer organic farming practices. Hence, majority of the organic farmers had collegiate education in the study area.

Table 2: Distribution of respondents according to their Educational Status (n=180)

S. No.	Category	Number	Percent
1.	Illiterate	4	2.22
2.	Functionally literate	6	3.34
3.	Primary education	17	9.45
4.	Middle education	40	22.22
5.	Secondary education	50	27.77
6.	Collegiate education	63	35.00
	Total	180	100.00

Annual Income

Income is an important factor which influences human activity in many ways. Hence, the distribution of respondents under different categories according to their annual income were analyzed and presented in the following Table 3.

It is evident from Table 3 that 41.12 per cent of the certified organic farmers had annual income up to Rs. 1,00,000 followed by 28.88 per cent from Rs. 1,00,001 to Rs.2,00,000, 20.00 per cent more than Rs. 3,00,000 and 10.00 per cent Rs. 2,00,001 to Rs.3,00,000. The farmers had not only engaged in agriculture but also involved in livestock rearing such as

milch animal and poultry as supplementary income. Apart from farming they were also engaged in other business activities like organic oil extraction, organic soap making, organic food products, organic fruits and vegetables outlets etc. Organic farming and organic produce awareness level was gradually in the increasing trend among consumer with health concern. Hence, majority of the farmers earned up to two lakh as annual income.

Table 3: Distribution of respondents according to their Annual Income (n=180)

S. No.	Category	Number	Per cent
1.	Up to Rs. 100000	74	41.12
2.	Rs. 100001 to 200000	52	28.88
3.	Rs. 200001 to 300000	18	10.00
4.	More than Rs. 300000	36	20.00
	Total	180	100.00

Farm Size

It is generally observed that farm size is another important factor in the acceptance or rejection of improved farm practices, since large size of farm provides a favourable condition for adoption of organic farming practices. Also the farm size possessed by a farmer indicate the socio-economic conditions of the individual. The data collected on farm size are presented in the Table 4.

Table 4: Distribution of respondents according to their Farm Size (n=180)

S. No.	Category	Number	Per cent
1.	Marginal farmer (< 2.50 acres)	11	6.12
2.	Small farmer (2.5-5.00 acres)	16	8.88
3.	Medium farmer (> 5.00-10.00 acres)	73	40.55
4.	Big farmer (> 10.00 acres)	80	44.45
	Total	180	100.00

A glance on the Table 4 revealed that slightly more than two-fifth (44.45%) of the certified organic farmers fell under big farmer category followed by medium (40.55%) and small farmers category (8.88%). The remaining certified organic farmers were categorized as marginal farmers' category (6.12%).

Big and medium category farmers always prefer organic farming due to their risk taking venture and experience in cultivation of more number of crops and agriculture related business. Hence, they had rich experience in various crop cultivation methods. This experience leads to adopt the organic farming practices in their farm. Moreover, the big farmers could bear the cost of certification process and their economic status could wait for the few years to get return from organic farming. The small and marginal organic farmers may not to be able bear the cost of cultivation and their need, than medium return since their economic situation is not up to the mark compared to big farmers. This may be the probable reason that the majority of the certified organic farmers belonged to big and medium farmers' category in the study area.

Farming Experience in Organic Farming

"Experience is the best teacher," says a proverb. Farming experience acquired over a period of time paves the way for success in organic farming. It also helps the farmers in making rational decisions in farm activities by playing a major role in the perception and adoption behaviour of an individual. The pertinent data on this variable were collected and furnished in the following Table 5.

Table 5: Distribution of respondents according to their Experience in Organic Farming (n=180)

S. No.	Category	Number	Per cent
1.	Low (up to 5 years)	64	35.56
2.	Medium (> 5 years to 10 years)	58	32.22
3.	High (more than 10 years)	58	32.22
	Total	180	100.00

The results depicted in Table 5 that more than one third (35. 56%) of the certified organic farmers had low level of farming experience in organic farming, followed by high and medium level with a similar proportion (32.22%) of certified organic farmers had experience in organic farming. Majority of the certified organic farmers belonged to medium level of farming experience in practicing organic farming. This may be probable reason for that majority of certified organic farmers belonged to old age category.

Cropping Pattern

Cropping pattern plays a key role in identifying the effectiveness of a farmer in practicing agriculture. The participants were classified based on their cropping pattern and the results are presented in Table 6.

Table 6: Distribution of respondents according to their Cropping Pattern (n=180)

S. No.	Category	Number	Per cent
1.	Mono cropping	30	16.66
2.	Double cropping	65	36.12
3.	Mixed cropping	85	47.22
	Total	180	100.00

A glance at the Table 6 revealed that nearly half (47.22%) of the certified organic farmers were practicing mixed cropping pattern, followed by double cropping and mono cropping with 36.12 per cent and 16.66 per cent, respectively. Practicing differential cropping pattern would create organic based farming; mixed cropping pattern and these was as the important components in organic farming.

Cultivating a variety of crops in a specific sequence to optimize their mutual interactions (monocot and dicot plants) will help the organic farming. In addition to that, the plant functions, important effects such as weed control, resistance to soil-borne pest and diseases, soil coverage and complementary in meeting nutrient demand as a whole was possible trough mixed cropping. For maintaining biodiversity and soil property in the field condition, organic farmer adopted mixed cropping pattern. These may be probable reasons that majority of the organic farmers adopting mixed to double copping pattern in the study area.

Irrigation Source

Irrigation is the artificial application of water to soil, in the exact amount and frequency, for optimal soil infiltration and plant growth. The sources of water for irrigation can include canal, open well and bore well. The distribution of respondents based on their irrigation source is presented in Table 7.

Table 7: Distribution of respondents according to their Irrigation Source (n=180)

S. No.	Category	Number	Per cent
1.	Canal	11	6.12
2.	Open well	32	17.77
3.	Bore well	86	47.78
4.	Open + Bore well	51	28.33
	Total	180	100.00

It could be inferred from the Table7 that nearly half (47.78%) of the certified organic farmers were depending on bore well as a primary irrigation source, followed by open + bore well (28.33%), open well (17.77%) and only 6.12 per cent were canal alone as irrigation source.

Bore well irrigation brought dramatic improvement in the welfare and well-being of the farmers. As the majority of the organic farmers are rural based, irrigation facilities play a vital role in promoting the economy. Due to monsoon failure, scarcity of water in open well, forced the farmers to go for more number of bore wells to sustain their farming activities that continuous flow of water into farms. Hence, majority of them depended on bore well and open well + bore well for their irrigation purpose.

Trainings Undergone in Organic Farming

The term training refers to the acquisition of knowledge, skills and competencies as a result of the teaching of vocational or practical skills and knowledge that relate to specific useful competencies. The data on training undergone by the farmers were collected and presented in the Table 8.

Table 8 depicts that majority (40.00%) of the certified organic farmers have attended three and more trainings, followed by one training (20.56%) and two trainings (16.67%). The remaining 22.77 per cent of the certified organic farmers have not attended any single training on organic farming.

The government initiated various schemes related to organic farming for promoting and creating awareness on organic farming, to augmenting and promoting soil health, sustainable agriculture and ecofriendly cultivation practices in the package of trainings offered to organic farmers. Organic farming as per the certification process needs special knowledge, skill and mental ability. For that, the farmers who registered as organic farmers need to attend more number of training programmes at TNAU centers, Department of Agriculture or Organic Certification Department and NGOs. In addition to that, trainings offered by KVKs and ISCOP about the cultivation practices and plant protection measures by means of organic way and also motivated farmers to attend the training pay to gain more knowledge on organic farming. Hence, the majority of the organic farmers have attended more than two trainings.

Table 8: Distribution of respondents according to their Trainings Undergone in Organic Farming (n=180)

S. No.	Category	Number	Per cent
1.	Not attended	41	22.77
2.	One training	37	20.56
3.	Two trainings	30	16.67
4.	Three and more trainings	72	40.00
	Total	180	100.00

Mass Media Exposure

Mass media play an important role in disseminating the farm technologies. Agricultural information is disseminated through magazines, newspaper, radio and television. Hence, it becomes mandatory to know about the level of mass media exposure. The data pertinent to mass media exposure are presented in Table 9.

Table 9: Distribution of respondents according to their Mass Media Exposure (n=180)

S. No.	Category	Number	Per cent
1.	Low	35	19.45
2.	Medium	94	52.22
3.	High	51	28.33
	Total	180	100.00

It could be seen from Table 9 that more than half (52.22%) of the certified organic farmers possessed medium level of mass media exposure followed by high (28.33%) and low (19.45%) levels.

Certified organic farmers were secured to be habituated readers of farm magazines like *Uzavarin Valarum Velanmai* which is published from TNAU, TV programmes and ratio talks. Likewise listening agricultural programmes in Doordharshan and other commercial television channels also motivated them to adopt organic farming. Moreover, newspapers published the organic farming articles highlighting importance of organic cultivation, marketing and success stories in regional language. This might be for probable reasons for the majority of the certified organic farmers fell between medium to high level of mass media exposure.

Extension Agency Contact

Extension agency contact refers to the contact of respondents with extension functionaries. Extension workers help the farmers to become aware of the relevant new technologies and also keep them to gain adequate knowledge about the technologies. Hence, more the contact of the farmers with extension agency the participation in their innovative programmes. This variable is measured in terms of frequency and purpose for which the contact was made. Details on the level of extension agency contact were collected and presented in Table 10.

Table 10: Distribution of respondents according to their Extension Agency Contact (n=180)

S. No.	Category	Number	Per cent
1.	Low	27	15.00
2.	Medium	116	64.45
3.	High	37	20.55
	Total	180	100.00

An overview the Table 10 revealed that majority (64.45%) of the certified organic farmers had medium level of extension agency contact followed by high and low, by 20.55 per cent and 15.00 per cent, respectively. The reason for majority of the farmers with medium level of extension agency contact might be due to the regular visits made by the extension personnel to organic farming field for monitoring and inspection of organic farming standards, which were to be followed by certified organic farmers. Moreover, organic farmers need consistent and periodical guidance through extension functionaries throughout the year for getting timely technical advisory services on crop selection, organic inputs preparation, crop protection and weather advisory on training aspect of cropping and allied enterprises related to agriculture.

Conclusion

Study conclude that majority of the certified organic farmers had high to medium level of socioeconomic status. Hence, the policy makers keep in mind to empower organic farmers through new interventions. Provision of proper trainings to the farmers on organic input preparation and value addition in organic produce may be further improved. Policy interventions should be made in order to develop healthy partnerships between the public and private stakeholders to take advantage of opportunities and/or prop up existing technological/ institutional/organizational weaknesses in the marketing systems especially for promoting organic produce among globe. The government should fix premium price for organic produce and establish more number of organic outlets in all the districts through commodity groups/ Farmer Producer companies (FPOs), which will encourage the farmers to adopt organic farming practices.

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