



Research Article

AN ANALYSIS OF THE SOCIAL ATTRIBUTES OF TREE GROWING FARMERS

C. CINTHIA FERNANDAZ¹, R. JUDE SUDHAGAR², I. SEKAR³ AND K.T.PARTHIBAN⁴

¹Forest College and Research Institute, Mettupalayam, 641301, Tamil Nadu Agricultural University, Coimbatore, 641003, Tamil Nadu, India

²Forest College and Research Institute, Mettupalayam, 641301, Tamil Nadu Agricultural University, Coimbatore, 641003, Tamil Nadu, India

³Professor and Head (Agroforestry), Forest College and Research Institute, Mettupalayam, 641301, Tamil Nadu Agricultural University, Coimbatore, 641003, India

⁴Dean (Forestry), Tamil Nadu Agricultural University, Coimbatore, 641003, Tamil Nadu, India

*Corresponding Author: Email - cynthia.tnau@gmail.com

Received: February 02, 2021; Revised: February 25, 2021; Accepted: February 26, 2021; Published: February 28, 2021

Abstract: Tree cultivation is an age old practice as well as sustainable environmental well-being as well as sustainable development of the farmers. The social attributes play a very vital role in fixing the knowledge and acceptance of the farmers towards tree cultivation and related practices. In this regard the study was conducted with the objectives to study the social attributes of the tree growing farmers and to study the comparative analysis of the tree growers and the non-growers in the selected districts of Tamil Nadu. The major social attributes selected for the study are age, educational status, experience in farming, experience in tree cultivation, farm size, crop diversification, credit orientation, economic motivation, occupational status, management orientation. The social attributes were analysed as a comparative check for the tree growers and non-growers.

Keywords: Tree cultivation, Sustainable development, Tree Growing Farmers

Citation: C.Cynthia Fernandez, *et al.*, (2021) An Analysis of the Social Attributes of Tree Growing Farmers. International Journal of Agriculture Sciences, ISSN: 0975-3710 & E-ISSN: 0975-9107, Volume 13, Issue 2, pp.- 10673-10676.

Copyright: Copyright©2021 C.Cynthia Fernandez, *et al.*, This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution and reproduction in any medium, provided the original author and source are credited.

Academic Editor / Reviewer: Dr N Umashankar Kumar, P. T. Patel

Introduction

Indian agricultural sector has attained self-sufficiency in food production and productivity through the population rate is increasing. In fact, the Indian "Green Revolution" was one of the earliest success stories which drew attention of International community, which led to the enhancement of production and productivity in the country. Later agriculture has been identified as a business and cultivation of non food crops increased. Growing trees for multipurpose industrial utility have created a revolution among the farmers. Cultivation of tree species has increased the socio-economic conditions of the people as well as sustainable environmental well being [1-5].

Objectives of study

Tree cultivation is an age-old practice which has been found place in the socio-cultural aspects of the rural farming community. In the recent years growing wood and food from the same land use system is increasing and to analyze the social attributes of the tree growing farmers the following objectives have been fixed:

1. To study the social attributes of the tree growing farmers in the selected districts of Tamil Nadu.
2. Comparative analysis of the Tree growers and non-tree growers

Material and Methods

The research study was conducted with the tree growing farmers, consortium members and TCPL project beneficiary members of Coimbatore and Tiruppur districts of Tamil Nadu. Secondary data was collected based on the district level data and statistical data available from the State Forest Department under the TCPL project. A well-structured interview schedule was constructed for collecting the primary data. The social attributes selected for the study were age, educational status, occupational status, farming experience, farm size, experience in tree cultivation, crop diversification, economic motivation, credit orientation, management orientation. Data was collected from 180 farmers 120 from non-tree

growers and 60 from tree growing farmers. The results were tabulated and the data was analysed [6-15].

Percentage analysis

For making simple comparisons, details on yield and cultivation aspects of selected tree species will be analyze through simple percentage analysis.

Results and Discussion

Social Attributes of the tree growing farmers

In behavioural science, it is essential to know about respondent's profile characteristics which would serve as a base for clear and thorough understanding about the subjects. The information about profile characteristics would help in validating the results.

In this study, ten characteristics were taken up for analysis and the distribution of respondents on these characteristics and the relevant discussion have been presented in this paper.

Age

Age is an important variable as it reveals the mental maturity of individual to take up decisions for achieving their needs. It also plays a vital role in demanding the risk proneness for taking up farming. Hence, age of the selected respondents has been considered in this study. Data collected on the age of the tree growing farmers have been presented in [Table-1].

It could be observed from the [Table-1] that two-third of respondents (65.00%) belonged to old age group followed by middle (25.00%) and young age groups (10.00%). Almost similar such proportion was also noticed in the two categories of growing and non-growing of trees. Majority of the tree growing farmers belonged to the old age group. The probable reason might be that the youngsters might be having good orientation towards the avenues in secondary and territory sectors in rural economy rather than primary sector namely agriculture.

Table-1 Distribution of farmers according to their age

| SN | Category | Non Tree growers (n=120) | | Tree Grower (n=60) | | Total (n=180) | |
|--|----------------------------|--------------------------|-------|--------------------|-------|---------------|----|
| | | No | % | No | % | No | % |
| 1 | Young (Less than 35 Years) | 14 | 11.67 | 4 | 6.66 | 18 | 10 |
| 2 | Middle (35-45Years) | 26 | 21.67 | 19 | 31.67 | 45 | 25 |
| 3 | Old (More than 45Years) | 80 | 66.76 | 37 | 61.77 | 117 | 65 |
| t value=0.223 ^{NS} NS - Non Significant | | | | | | | |

Table-2 Distribution of farmers according to their educational status

| SN | Category | Non Growers n=120 | | Growers n=60 | | Total n=180 | |
|---|------------|-------------------|-------|--------------|-------|-------------|-------|
| | | No | % | No | % | No | % |
| 1 | Illiterate | - | - | 0 | - | - | - |
| 2 | Primary | 13 | 10.82 | 7 | 11.66 | 20 | 11.11 |
| 3 | Middle | 26 | 21.67 | 21 | 35 | 47 | 26.11 |
| 4 | Secondary | 38 | 31.67 | 22 | 36.67 | 60 | 33.34 |
| 5 | Hr. Sec | 26 | 21.67 | 7 | 11.67 | 33 | 18.33 |
| 6 | Collegiate | 17 | 14.17 | 3 | 5 | 20 | 11.11 |
| tvalue=2.232* * Significant at 0.05 level | | | | | | | |

Table-3 Distribution of farmers according to their occupational status

| SN | Category | Non Growers (n=120) | | growers (n=60) | | Total (n=180) | |
|---|---------------------------------------|---------------------|-------|----------------|-------|---------------|-------|
| | | No | % | No | % | No | % |
| 1 | Farming as fulltime Profession | 32 | 26.66 | 20 | 33.33 | 52 | 28.88 |
| 2 | Farming +Agricultural labour | 52 | 43.34 | 31 | 51.67 | 83 | 46.12 |
| 3 | Farming + Business | 27 | 22.5 | 7 | 11.67 | 34 | 18.88 |
| 4 | Farming + Services (Salaried Persons) | 9 | 7.5 | 2 | 3.33 | 11 | 6.12 |
| tvalue=0.927* * Significant at 0.05 level | | | | | | | |

Table-4 Distribution of paddy farmers according to their experience in farming

| SN | Category | Non Growers n=120 | | Growers n=60 | | Total n=180 | |
|--|--------------------|-------------------|-------|--------------|-------|-------------|-------|
| | | No | % | No | % | No | % |
| 1. | Less than 13 Years | 23 | 19.16 | 13 | 21.66 | 36 | 20.00 |
| 2. | 13-30 Years | 78 | 65.00 | 42 | 70.00 | 120 | 66.67 |
| 3. | More than 30 Years | 19 | 15.84 | 5 | 8.34 | 24 | 13.33 |
| t value=0.131 ^{NS} NS - Non Significant | | | | | | | |

Table-5 Distribution of farmers according to their farm size

| SN | Farm size(acres) | Non Growers n=120 | | Growers n=60 | | Total (n=180) | |
|--|------------------|-------------------|-------|--------------|-------|---------------|-------|
| | | No | % | No | % | No | % |
| 1 | Less than 2.50 | 14 | 11.66 | 12 | 20 | 26 | 14.44 |
| 2 | 2.51-5.00 | 52 | 43.34 | 26 | 43.33 | 78 | 43.33 |
| 3 | 5.01-10.00 | 30 | 25 | 17 | 28.33 | 47 | 26.11 |
| 4 | More than 10.00 | 24 | 20 | 5 | 8.34 | 29 | 16.12 |
| t value=2.574* * Significant at 0.01 level | | | | | | | |

The remaining old age and middle age group of farmers would have vested with agriculture profession as they were traditionally occupied. This finding is in line with the findings of Shanmugasundaram (2007) [16] and Sendil Kumar (2012) who also reported the same.

Educational status

The literacy level of farmers starts from illiterate to collegiate levels and the collected data have been presented in [Table-2].

From the above [Table-2], it could be concluded that comparatively a significant proportion (77.78%) were found to be ranging between middle level education and higher to secondary levels of education. Further little more than one-tenth (11.11%) of respondents had college level education. Mostly these proportions of respondents were from the retired employees from Government service who have agriculture as secondary business. These findings are in conformity with the findings of Ranganathan (2013).

Occupational status

Occupational status is one of the important indicators which reflects the degree of involvement in the profession. The collected data pertinent to the occupational status are presented in [Table-3].

From the above Table, it is seen that nearly half (46.12%) of the respondents were found to have taken up farming as well as working as agricultural labourers.

Farming was the full-time profession for less than one-third (28.88%) of respondents. A little less than one-fifth of the farmers were found to be employed in agriculture along with the business. A very few (6.12%) were found to be salaried persons of Government or Private services/sectors.

Nearly half of the respondents were practicing agriculture and simultaneously working as agricultural labourers. This trend was seen both in tree grower and non-grower category. The prevalence of tenancy system in the study area based on oral tenancy or written agreement would account for the emergence of such type of findings. This is in line with the findings of Chitradevi (2006) [17].

Farming experience

The farming experience is a vital variable related exposure to agriculture by virtue of number of years engaged in farming. The data related to farming experience is presented in [Table-4]. From [Table-4], it could be inferred that two-third (66.77%) of the respondents were found having thirteen to thirty years of experience in farming. As these group of farmers were mostly middle to old aged, their experience would also be for two decades or even more.

Exactly one-fifth (20.00%) of the farmers were found to possess less than thirteen years of experience in farming. The obvious reasons might be that the availability and mindset of younger generation to agriculture got declined and this would have resulted to push more old age group circumvent to continue the farming without any other options. This supports the findings of Lavanya (2009) [18].

Table-6 Distribution of farmers according to their crop diversification

| SN | Category | Non Growers n=120 | | Growers n=60 | | Total (n=180) | |
|-----------------|-----------------|-------------------|----|-----------------------------|-------|---------------|-------|
| | | No | % | No | % | No | % |
| 1 | Diversified | 24 | 20 | 8 | 13.34 | 32 | 17.77 |
| 2 | Not diversified | 96 | 80 | 52 | 86.66 | 148 | 82.23 |
| t value=-0.657* | | | | * Significant at 0.05 level | | | |

Table-7 Distribution of farmers according to their experience in tree cultivation

| SN | Experience | tree growers (n=60) | |
|----|---------------------|---------------------|----|
| | | No | % |
| 1 | Less than two years | 14 | 23 |
| 2 | 2-4 years | 24 | 40 |
| 3 | 4-6 years | 15 | 25 |
| 4 | 6-8 years | 7 | 12 |

Table-8 Distribution of farmers according to their economic motivation

| SN | Category | Non Growers n=120 | | Growers n=60 | | Total (n=180) | |
|------------------|----------|-------------------|-------|-----------------------------|-------|---------------|-------|
| | | No | % | No | % | No | % |
| 1 | Low | 35 | 29.17 | 3 | 5 | 38 | 21.12 |
| 2 | Medium | 72 | 60 | 49 | 81.66 | 121 | 67.22 |
| 3 | High | 13 | 10.83 | 8 | 13.34 | 21 | 11.66 |
| t value= -1.148* | | | | * Significant at 0.05 level | | | |

Table-9 Distribution of paddy farmers according to their credit orientation

| SN | Category | Non Growers n=120 | | Growers n=60 | | Total (n=180) | |
|-----------------|----------|-------------------|-------|------------------------------|-------|---------------|-------|
| | | No | % | No | % | No | % |
| 1 | Low | 11 | 9.16 | 8 | 13.34 | 19 | 10.55 |
| 2 | Moderate | 14 | 11.67 | 48 | 80 | 62 | 34.45 |
| 3 | High | 95 | 79.17 | 4 | 6.66 | 99 | 55 |
| t value=8.785** | | | | ** Significant at 0.01 level | | | |

Table-10 Distribution of farmers according to their management orientation

| SN | Category | Non Growers n=120 | | Growers n=60 | | Total n=180 | |
|-----------------|----------|-------------------|-------|------------------------------|-------|-------------|-------|
| | | No | % | No | % | No | % |
| 1 | Less | 16 | 13.33 | 8 | 13.34 | 24 | 13.33 |
| 2 | Moderate | 86 | 71.67 | 41 | 68.33 | 127 | 70.55 |
| 3 | Good | 18 | 15 | 11 | 18.33 | 29 | 16.12 |
| t value=6.674** | | | | ** Significant at 0.01 level | | | |

Farm size

The data relevant to the size of farm holdings have been furnished in [Table-5]. It is observed from the [Table-5] that nearly half (43.33%) of the respondents were found to hold between 2.51 and 5.00 acres and more than one-fourth (26.11%) of respondents were found to operate between 5.01 and 10.0 acres of land holdings. The categories of more than 10.01 acres and less than 2.5 acres categories were observed among 16.12 per cent and 14.44 per cent of respondents respectively. The temporary reduction in the cultivable area of farm size in the district might be due to various reasons such as non-availability of resources and migration of labourers. This derives supports from the findings of Shanmugasundaram (2007) and Sendil (2012).

Crop diversification

In this study, the crop diversification has been operationalised as the number of crops raised per unit area per unit time to the extent of land possessed. Based on the data collected, the respondents were categorized as diversified and not diversified and shown in [Table-6]. Diversification was not a phenomenon for more than three-fourth of respondents, as it is quite interesting to see from the results (82.23%).

The same trend was noticed in the identified categories viz., tree growers and non-growers. This fact was mainly because of the farmer's orientation and positive value towards tree cultivation. The farmers who have assured irrigation through filter points would diversify their crops and accordingly sugarcane, banana and vegetables were found to be the diversified crops in locale of research.

Experience in tree cultivation

The experience acquired over a period of time would pave a way for success in farming and this may be one of the key factors influencing the adoption or rejection of cultivation of tree species. The data relevant to the years of

experience were collected and given in [Table-7]. It is quite evident from the above [Table-7] that (40.00%) of the respondents had two to four years of experience in tree cultivation, followed by one-fourth (25.00%) who possessed four to six years. One-fifth (23.00%) were observed with a less than two years of experience and little more than one-tenth (12.00%) of respondents had experience between six and eight years. The experience of the respondents in tree cultivation was found to be satisfactory level which was evident from the increasing number of beneficiaries for every year.

Economic motivation

Economic motivation is one of the inducers to foot into venturesome risky activities. The data collected pertinent to economic motivation is given in [Table-8]. The results in [Table-8] infer that two-thirds (67.22%) of the respondents possessed medium level of economic motivation, while the low level was observed among less than one-fourth (21.12%) respondents. High level of economic motivation was seen among one-tenth (11.66%) of respondents. It could be interpreted that respondents would have had inner urge to grow economically rewarding varieties like Melia MTP2 and Casuarina MTP 1 as these varieties fetch higher economic remuneration in the market.

Credit orientation

Finance is one of the major inputs in farming. Approaching to get credit is one of the prime activities to meet out the financial requirement. The data relevant to this variable were gathered and presented in [Table-9]. [Table-9] reveals that more than half (55.00%) of the respondents were found to have high credit orientation followed by moderate (35.45%) and low levels (10.55%). The high level of credit orientation might be due to the easy accessibility of Primary Agricultural Credit Banks and Commercial Banks in the distribution of crop loan in the study area.

But loan facilities for tree cultivation is very limited and Government policy intervention should be initiated under this.

Management orientation

The data pertinent to management orientation inclusive of sub-components viz., planning, production and marketing were collected and presented in [Table-10]. [Table-10] would reveal that most (86.67%) of the respondents have had good management orientations while the poor orientation was exhibited among 13.33% of respondents.

The virtue of possessing more years of experience in farming would have sharpened the management orientation behaviour of farmers. The poor management orientation might be due to less years of experience in farming possessed by a section of respondents.

Conclusion

Tree cultivation has been practiced by the farmers as sustainable income generation option by growing wood and food from the same land use system. The social attributes play a very vital role in enhancing the knowledge and acceptance level of the tree growing farmers. The multi-purpose utility of tree species has attracted the farmers towards tree cultivation and allied practices.

Application of research: This would evidently increase the socio-economic status of the farming community. Policy initiatives has to be taken to increase the area under tree crops and intensify tree cultivation through incentives.

Research Category: Agroforestry

Acknowledgement / Funding: Authors are thankful to Forest College and Research Institute, Mettupalayam, 641301, Tamil Nadu Agricultural University, Coimbatore, 641003, Tamil Nadu, India

****Principal Investigator or Chairperson of research: Dr C. Cinthia Fernandaz**

University: Tamil Nadu Agricultural University, Coimbatore, 641003, India

Research project name or number: Research station study

Author Contributions: All authors equally contributed

Author statement: All authors read, reviewed, agreed and approved the final manuscript. Note-All authors agreed that- Written informed consent was obtained from all participants prior to publish / enrolment

Study area / Sample Collection: Coimbatore and Tiruppur districts, Tamil Nadu.

Cultivar / Variety / Breed name: Nil

Conflict of Interest: None declared

Ethical approval: This article does not contain any studies with human participants or animals performed by any of the authors.
Ethical Committee Approval Number: Nil

References

- [1] National Commission on Farmers (2006) *Revised National Policy for Farmers- Fifth and Final report of the National Commission on Farmers, Ministry of Agriculture. Government of India, New Delhi.*
- [2] ISA (2021) *International Society of Arboriculture. Newsletter, January 2021.*
- [3] GOI (2006) *Towards faster and more inclusive growth: An approach to 11th Five- Year Plan, Planning Commission, Government of India, New Delhi.*
- [4] Chambers R. (1994) *World Development*, 22(9), 1253-1268.
- [5] Chand R.(2003) *Economic and Political Weekly*, 38(20), 3027-3028.
- [6] Goode W.J and Hatt. P.K. (1981) *Methods in Social Research.*

McGraw-Hill book Company, Singapore.

- [7] Karen (2020) *Journal of applied Ecology*. September
- [8] Kothari C.R. (2008) *Research Methodology: Methods & techniques, New Age International publishers, New Delhi.*
- [9] Ray G.L. (1999) *Research Methods in Social Sciences and Extension Education. Naya Prakash publications, Calcutta.*
- [10] Reddy Narayana (2007) *LEISA*, 9(3), 25.
- [11] Roland (2015) *Journal of Biology, Agriculture and Healthcare*, 5, 24.
- [12] Shanthi S. (1991) *M.Sc. (Ag.) Thesis, Tamil Nadu Agricultural University, Coimbatore, 641003, Tamil Nadu, India.*
- [13] Shiyani R.L. and Pandya H.L. (1988) *Indian Journal of Agricultural Economics*, 53(4), 627-639.
- [14] Siddique K. (2008) *Challenge and Opportunity in Agriculture. The Hindu*, dt. 02.05.2008.
- [15] Singh A.K. (2008) *Test, Measurements and Research Methods in Behavioural Sciences. Bharati Bhawan Publishers & Distributors. New Delhi.*
- [16] Shanmugasundaram (2007) *Ph.D. Thesis, Tamil Nadu Agricultural University, Coimbatore, 641003, Tamil Nadu, India.*
- [17] Chitradevi S.M. (2006) *M.Sc. (Ag.) Thesis, Tamil Nadu Agricultural University, Coimbatore, 641003, Tamil Nadu, India.*
- [18] Lavanya (2009) *Ph.D. Thesis, Tamil Nadu Agricultural University, Coimbatore, 641003, Tamil Nadu, India.*