Asian Journal of Agricultural Extension, Economics & Sociology

Volume 41, Issue 10, Page 119-124, 2023; Article no.AJAEES.105694
ISSN: 2320-7027

Impact of Organic Cultivation on the Livelihood Changes of Farmers

Dhasbega Dhagashine S. [a++*], Velusamy R. [a#], Ramakrishnan K. [a†], Jegadeesan M. [b‡] and Prabakaran K. [c^]

[a] Department of Agricultural Extension and Rural Sociology, Agricultural College and Research Institute, Madurai, India.
[b] Department of Agricultural Extension, Krishi Vigyan Kendra, Madurai, India.
[c] Department of Agricultural Economics, Agricultural College and Research Institute, Madurai, India.

Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

Article Information

DOI: 10.9734/AJAEES/2023/v41i102149

Open Peer Review History:
This journal follows the Advanced Open Peer Review policy. Identity of the Reviewers, Editor(s) and additional Reviewers, peer review comments, different versions of the manuscript, comments of the editors, etc are available here: https://www.sdiarticle5.com/review-history/105694

Original Research Article

Received: 13/06/2023
Accepted: 25/08/2023
Published: 29/08/2023

ABSTRACT

The study mainly focuses on the livelihood changes among organic farmers those who adopted the organic cultivation practises. The study was carried out in Erode district of Tamil Nadu in all the 14 blocks, with a sample size of 140 respondents of certified organic farmers were selected by adopting simple random sampling method is used. The Quantitative components examine a data from various certified organic farmers before and after organic cultivation, the livelihood variables is found in five capitals such as human capital, social capital, financial capital, physical capital, and natural capital. For determining the livelihood capitals of organic farmers "Z test "was used. The findings infer that there is a significant positive change in the livelihood of farmers from the

[++]PG Scholar;
[#]Professor and Head;
[†]Professor;
[‡]Associate Professor;
[^]Professor, Prabakaran (Agricultural Statistics);
**Corresponding author: E-mail: dhasbegadhagashine@gmail.com;*

cultivation of crops (Sugarcane, Banana, Turmeric, Brinjal, Chilli, and Tomato) after the intervention of organic farming practices. So, the adoption of organic agricultural practices has contributed for the livelihood changes among the certified organic farmers.

Keywords: Livelihood changes; certified organic farmers; organic cultivation.

1. INTRODUCTION

Organic cultivation is a traditional method of natural farming without use of chemical pesticides and fertilizers. In organic cultivation, the most important problem is sustainability and ecological stability, which renewed the interest of farmer and researchers in using organic source of nutrient such as panchakavya, jeevamirtha, amirthakaraisal, fish amino acid, 3G extract, neem seed kernel extract, bio-fertilizers and organic manures viz., farmyard manure, vermicompost, poultry manure, goat manure and green manure [1,2]. Livelihood assets, their conversion and the ability to use their assets are observed under the study. This can not only provide the livelihood information about the farmers but also play an important role in promoting an organic farming and the growth of economic development [3,4].

Organic cultivation will change the livelihood of the certified organic farmers by the combination of livelihood capitals for good health status of farmers, increasing the household materials, capital stocks and the assets were likely to increase the interest of farmers by practising the organic cultivation [5,6]. Therefore it is necessary that holistic perspective on the difference of certified organic farmer's livelihood changes in both before and after organic cultivation.

Nations Conference on Environment and development (1992) put forward the idea of sustainable livelihoods as an approach to maintain or increase productivity, secure ownership, or access these sources and income generating activities as well as to ensure adequate and sustainable flow of food and money to meet the basic needs. Additionally, the risk of livelihood failure determines the vulnerability level of the household's income, food, health and nutritional security. So the livelihood comprises the capabilities, assets (resources, claims and access) and activities required for a means of living.

Nations Conference on Environment and development (1992) put forward the idea of sustainable livelihoods as an approach to maintain or enhance resource productivity, secure ownership, or the access to the resources and income earning activities as well as to ensure adequate and sustainable flows of food and cash to meet basic needs. And the risk of livelihood failure determines the level of vulnerability of a household to income, food, health and nutritional security. So a livelihood comprises the capabilities, assets (resources, claims and access) and activities required for a means of living [7-10].

This study examines the characteristics of farmers' livelihood capital, activities, and it discusses the variations between farmers' livelihood capital before and after adopting organic cultivation. It is also based on the sustainable livelihood analysis framework developed by DFID.

1.1 Objectives of the Study

To find out the Livelihood changes of organic cultivation.

1.2 Hypothesis

There exists positive and significant difference in livelihood of certified organic farmers in before and after adopting organic cultivation practices.

1.3 Purpose of the Study

Knowledge of the study helps to understanding about organic farmers undergoing in transition of their life style, contact with peer groups, and way of spending expense.

1.4 Five Capital Assets of Livelihood

Swati [11] revealed that majority of the tribal farmers had medium level of livelihoods with higher access towards the financial capital index (62.14%) followed by physical capital Index (60.20%), social capital Index (58.66%), natural capital index (57.56%) and lastly human capital index (48.92%). Similar study with some modification of livelihood changes of organic farmers has been done.

By reviewing literature, discussion with scientists the five capitals was selected for this study.

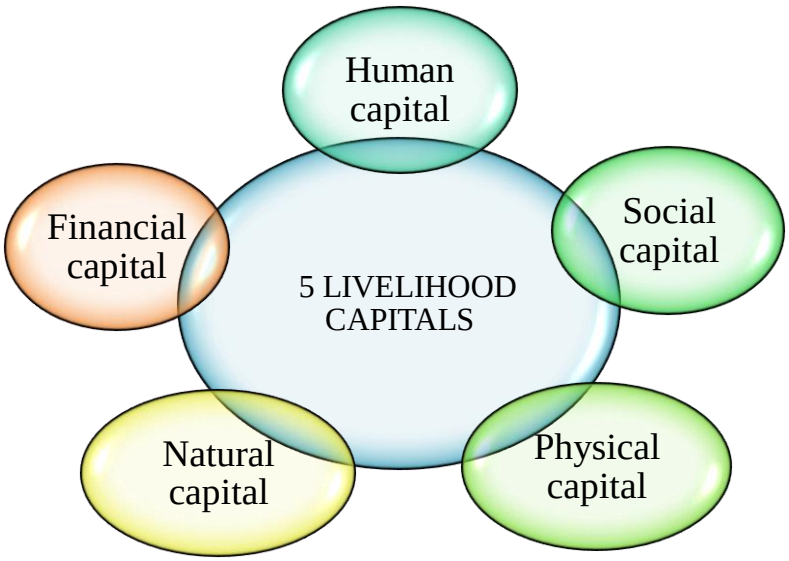

Fig. 1. Five capital assets of livelihood

Human capital is defined as the stock of skill, knowledge, value, and habits which are embodied an ability to perform labour so as to produce economic value by the way of working experience and skills.

Social capital refers to the social contact ability of organic farmers and degree to which they can obtain help from the friends, relatives and social organizations. It includes contact with extension agency, relationship status with others, and concern towards weaker section.

Physical capital is operationally defined as the primary infrastructure and various resources needed to hold up to support the farmer's livelihood. The resources such as transport, household material, livestock material, type of houses, water facilities and sources for cooking.

Natural capital is the amount of land and kind of farmland that is owned by the organic farmers. The available natural resources such as common land, pastures, pond, fruits, timber and the farming such as soil type, system of cropping, and depth of soil. These are helpful to increasing the income and maximum revenue.

Financial capital is defined as the money, saving, and income which is required assets for people to increase their livelihood.

Based on the above facts, the study on "Impact of organic cultivation on the livelihood changes of farmers" was undertaken with the objective.

2. REVIEW OF LITERATURE

Shincy [12] reported that financial capital contributes the most to the index of livelihood capital followed by social capital. These two capitals contribute to livelihood assets by68.50 per cent followed by physical capital, human capital and natural assets.

Prabhu (2020) revealed that more than three fourth 67.50% of tank irrigation had medium level of livelihood in the way of access all the five capitals, followed by 16.70% of farmers had high level of livelihood and 15.80 per cent of them had low level of livelihood.

Binkadakatti [13] that among the components of livelihood security, physical capital (72.55%) and financial capital (68.28%) performed better category, followed by human capital (63.59 %) and social capital (55.24%) performed moderately category and natural capital performed poorly (48.77%).

Immanuel et al., [14] concluded that out of the five livelihood capitals, social capital and physical capital possessed the highest value of 70 in both the districts and financial capital index in Pathanamthitta (53) and natural index in Thiruvananthapuram (53) had relatively lesser value respectively.

3. MATERIALS AND METHODS

The study was conducted in Erode district of Tamil Nadu, taking into consideration of certified

organic farmers those adopting the organic cultivation practices. All the 14 blocks namely Ammapettai, Anthiyur, Bhavani, Bhavanisagar, Chennimalai, Erode, Gobichettipalayam, Kodumudi, Modakkuruchi, Manbiyur, Perundurai, Sathyamangalam, T.N. Palayam and Thalavadi in the Erode district were selected for this study. Based on the farmers those who practising the organic cultivation, six crops are selected for the study namely Sugarcane, Banana, Turmeric, tomato, brinjal and chilli. Using simple random sampling method, 140 respondents were chosen out of 177 organic farmers from all the 14 blocks. The information from the organic farmers was gathered by using a pre tested interview schedule. The overall livelihood changes on the organic farmers were studied under the classification of five capitals such as Human, social, physical, natural and financial capital and the analysis was done by using the Z-test and the findings were interpreted.

4. RESULTS AND DISSCUSSION

The livelihood changes among the certified organic farmers was measured the livelihood change of both before and after adoption of organic farming. Z-test was used because the sample size was high (n > 30) and the sample variance were known while the sample includes comparing two sample means. The result obtained is depicted in the Table 1.

From the table it could be determined that the computed Z (two tailed) is greater than critical value thus revealing significant difference in human, social, financial, physical, natural capital of before and after organic cultivation. Also, Probability (P Value) with the sample is highly significant (P<0.05) in all the five capitals of livelihood changes and hence null hypothesis can be disproved. Thus, we draw the conclusion that there is a significant difference between changes in livelihood of organic farmers in before and after adoption of organic cultivation practices.

As the changes in livelihood of organic farmers were studied in five capitals, for each capital set of related questions were incorporates into it and carried out for analysis for each sub question. According to the result, it can be concluded that for human capital the changes in mass media exposure, leadership quality and labour availability of all the questions have revealed that significant difference at 1% level of significance of changes in before and after cultivation of organic crops except medical treatment availability and addictive health behaviour with no changes in their livelihood.

In the group of social capital, relationship status with others and concern towards the weaker section the each sub questions were raised to the organic farmers and recorded then taken into analysis. The relationship status with others have showed that 1% level of significance for both before and after practising organic cultivation and concern towards the weaker section have no significance differences.

In the category of changes financial capital, the question asked to the organic farmers related to debts, savings, access to bank per year, loans in emergency. From that, debts and access to bank per year resulted there is no significant livelihood changes in before and after organic cultivation. They have changes in savings and loans in emergency at 1% and 5%level of significance.

Considering the changes in physical capital, asked sub questions such as affordable transport, type of house, source of energy, household material possession and livestock possession have recorded livelihood changes difference in significant at 1% level of before and after organic cultivation.

Finally, in the group of natural capital, it is found that natural assets utilization such as common land, pond, Pasteur, fruits, and timbers has significant difference at 5% level. Type of soil and soil depth has no significant change in their livelihood of before and after organic cultivation.

The result of this study can be clearly presumed that livelihood changes of organic farmers involved in before and after adoption of organic cultivation had actually played a significant role in organic farmers.

From the Table 2, it can be represented that the majority (92.85%) of the organic farmers were having medium level of livelihood changes followed by low (5.00%) and (2.14%) in the high level categories. Therefore the result concluded that organic cultivation plays a major role in livelihood changes.

Table 1. Impact of livelihood capitals on the organic farmers (n=140)

S. No	Category	Mean (Before)	Mean (After)	Z-Value	P-Value
I	**Human capital**				
1.	Mass media exposure	5.47	6.76	4.63**	0.00003
2.	Leadership quality	11.3	10.5	4.75**	0.00002
3.	Medical treatment availability	7.95	7.45	1.8 (NS)	0.06
4.	Addictive health behaviour	5.99	5.70	1.74 (NS)	0.081
5.	Labour availability	2.38	2.607	2.07**	0.037
II	**Social capital**				
1.	Relationship status with others	9.97	9.65	2.08**	0.036
2.	Concern towards the weaker section	13.12	13.42	0.82(NS)	0.40
III	**Financial capital**				
1.	Debts	1.75	1.757	0.06(NS)	0.95
2.	Savings	2.46	2.87	4.07**	0.0005
3.	Access to bank per year	2.07	1.92	1.29 (NS)	0.195
4.	Loans in emergency	1.58	1.8.	2.08*	0.037
IV	**Physical capital**				
1.	Affordable transport	3.88	3.67	2.34*	0.018
2.	Type of house	3.3	3.52	2.71**	0.006
3.	Source of energy	2.72	2.97	5.25**	0.000001
4.	Drinking water facility	2.40	2.47	1.082 (NS)	0.279
5.	Household material possession	10.02	11.37	7.17**	0.007
6.	Livestock possession	6.2	6.50	3.16**	0.001
V	**Natural capital**				
1.	Natural assets utilization	4.85	4.52	2.19*	0.027
2.	Type of soil	2.36	2.36	0 (NS)	1
3.	Soil depth	2.05	2.05	0 (NS)	1

*** denotes significant at 1% level; * denotes significant at 5% level; NS – Non significant*

Table 2. Distribution of organic farmers according to their livelihood changes (n=140)

S. No.	Category	Number	Percentage
1.	Low	7	5.00
2.	Medium	130	92.85
3.	High	3	2.14
	Total	**140**	**100**

(Figures in the parentheses denotes the per cent to total)

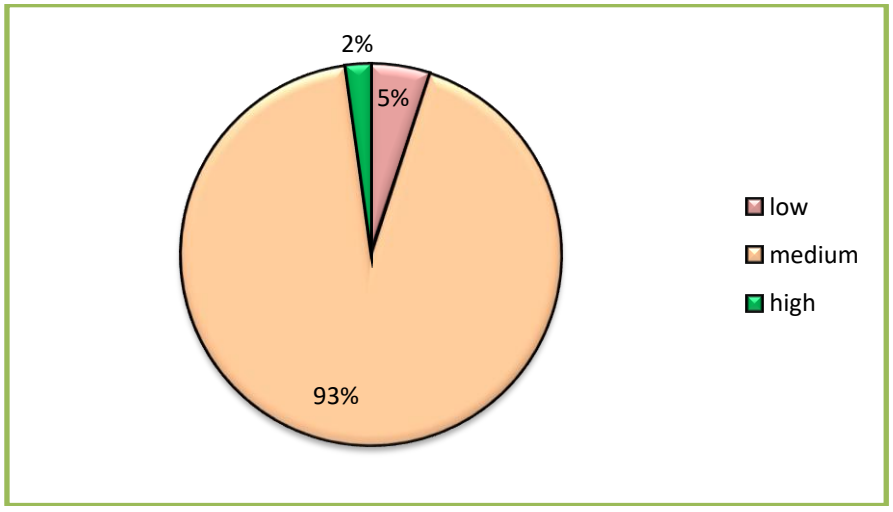

Fig. 2. Overall impact of organic farming on the livelihood changes of farmers

4. CONCLUSION

The exploration of the effect of study has shown up significant and outstanding outcome of both before and after organic cultivation of farmers in their livelihood changes. The livelihood had considerable positive changes on the organic farmers. From the study, it helps to know about the transition of both before and after organic farming. It is essential to remember that the government should provide a separate marketing channel, organizing training related to organic cultivation, conducting some awareness programme among the people, giving some guidelines to control the weeds and the subsidy for organic farmers can also be responsible for the success of changes in their livelihood of organic cultivation.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Kumar M, Gupta J, Radhakrishnan A. Sustainability of dairy based livelihoods of the tribes in Ranchi and Dhanbad districts of Jharkhand. Indian Journal of Dairy Science. 2016 Jan 1;69(2):220-5.
2. Yi X, Xixi T, Lu P. Difference of farmers' livelihood capital before and after rural tourism development. Computational Intelligence and Neuroscience. 2022 Mar 27;2022.
3. Wu Y. Study on the impact of livelihood capital on livelihood strategies of farmers in poor mountainous areas -- Based on the survey data of Pingwu County and Nanjiang County in Sichuan Province. Agricultural Economic Issues. 2016;37(3).
4. Patidar J, Kumhar B, Mhaske S, Jat S. Importance of Sustainable Agriculture in Tribal Community of India. International Journal of Bio-resource and Stress Management. 2018;9(2):253-6.
5. Wei HL, Han X, Wei P. The impact of livelihood capital on Farmers' satisfaction with life: based on the village survey of decertified land in Gansu Province. Development Research. 2018 3;124–130.
6. Elakkia N. Training needs of vegetable growers on organic farming practices in Western Zone of Tamil Nadu. Unpub. M. Sc.(Ag.) Thesis, AC & RI, TNAU, Coimbatore; 2007.
7. Namboothiripad P. Impact assessment of certificate training programme on organic agriculture organized by tnau.
8. Sivaraj P. Impact of organic farming on livelihood security of farmers -An analysis. M.sc (Ag) Thesis Department of agricultural extension & rural sociology, AC&RI, TNAU, Coimbatore; 2017.
9. Jayawardana JK. Organic agricultural practices in coconut based homesteads in Thiruvananthapuram district (Doctoral dissertation, Department of Agricultural Extension, College of Agriculture, Vellayani).
10. Muttalageri M, Mokshapathy S. Constraints in production and marketing of organic vegetable growers in Balagavi District in Karnatka. Asian J Manag Res. 2015; 5(4):558-64.
11. Swathi G. Astudy on livelihoods of trial farmers in Andhra Pradesh." Acharya NG Ranga Agricultual University; 2016.
12. Shincy NI. Livelihood analysis of IRULA tribe of Attappady (Doctoral dissertation, Department of Agricultural Extension, College of Agriculture, Vellayani).
13. Binkadakatti J. Analysis of livelihood security of rehabilitant farmers. Unpublished PhD Thesis submitted to University of Agricultural Sciences, Dharwad; 2013.
14. Immanuel S, Jaganathan D, Sivakumar S, Muthuraj R. Livelihood assessment of cassava and paddy growing farmers in Tamil Nadu-A comparative analysis; 2017.

Peer-review history:
The peer review history for this paper can be accessed here:
https://www.sdiarticle5.com/review-history/105694