Impact of Organic Farming on the Livelihood of Organic Farmers in Manipur

ABSTRACT

The study was conducted to evaluate how organic farming has affected the livelihood of organic farmers. The research was carried out in Churachandpur and Imphal West districts of Manipur. The ex-post facto research design was adopted for the study. Data were collected using a structured and pre-tested interview schedule through personal interview method. The direct impact consisting of yield, income and cost of cultivation and the indirect impact such as personal, social, economic and environmental impact were considered for the study. The outcomes of the study indicated that regarding overall impact, the majority of the organic farmers were having medium to high level of impact of organic farming. Regarding direct impact, majority of the organic farming has reported an increase in yield, income and a decrease in the cost of cultivation. Whereas for indirect impact the majority of the organic farmers have reported increased confidence in sustainable farming, participation in social organizations, household savings and improvement in soil fertility and quality.

Keywords: Organic farming, direct impact, indirect impact, sustainability, ecology.

1. INTRODUCTION

Organic agriculture has been practiced in India since ancient time. Traditionally, the farmers employed organic practices with fertilizers and pesticides derived from plant and animal sources (Mahapatra et al., 2009). However, the advent of Green Revolution that began in 1960s, no doubt, has given a large boost in agricultural production and productivity, but it also steered Indian agriculture away from its organic tradition towards inorganic farming. The chemical fertilizers and pesticides have mostly substituted organic fertilizers and pesticides. Even though there was an economic boom, increased in global food security and reduction in hunger, the consequential effect of practicing conventional farming was evident with the destruction of the health of soil, microbes, insects, human and environment and appearance of pesticide residues in agricultural produce. Chemical residues began to accumulate in soil and water through leaching and runoff as a result of the excessive use of chemical fertilizers and plant protection agents. So, in the name of producing more food for the whole world, we have gone down the wrong path of unsustainable growth. (Chandrashekar, 2010). Organic farming emerges as a promising alternative farming system which is often advocated as a means of achieving sustainable agriculture and livelihoods (Seufert *et al.*, 2023). The Sustainable Development Goals (SDGs) provide a commonly accepted framework for how the world needs to change. Organic farming, based on the principles of health, ecology, fairness and care, has high potential to contribute to many of these goals, directly or indirectly and can measure success toward achieving the Sustainable Development Goals (SDGs) (FAO, 2018). Organic farming is a farming strategy that promotes the health of soils, ecosystems and people. It relies on biological processes,

biodiversity and cycles that are adapted to local conditions rather than the use of harmful inputs (Desai and Kamkar, 2019). Organic farming practices improve the chemical characteristics of the soil, such as nutrient availability and retention and encourage favorable chemical processes in the soil. Healthy food production is increased through organic farming. It enhances the physical characteristics and granulation of the soil, as well as its high tilth, good aeration and ease of root penetration. It also increases the soil's ability to store water. The production system, which is heavily reliant on agricultural resources, is likewise supported by this farming system. It promotes the best use of natural resources and their preservation for future generations while lowering the amount of pollution in the environment (Thiripurasundari and Divya, 2015). Organic farming can decrease agrarian distress by reducing the burden of debts due to low input costs farming system (Shah, 2010). Therfore in the long-run, there is more scope for minimizing the economic cost and environmental loss, under organic farming system (Rajendran, 2002). It can help the smallholder farmers to improve their quality of life through providing training and the formation of farmer groups. Through training initiatives and the creation of strong institutions, these approaches emphasises on capacity building and community empowerment (Altenbuchner *et al.*, 2018). This farming system can also be an effective risk management tool for small and poor farmers by helping them in reduction of their input costs, diversification of their production and improve their local food security. Similarly, on a larger scale, it can provide rural populations with greater earnings, better resource management and more chances to generate revenue (Paul *et al.* 2006).

2. Methodology

The study was conducted in Imphal West and Churachandpur districts of Manipur. A total of 4 blocks viz. Sawongbung C.D. block and Keirao C.D. block from Imphal East district and Singngat block and Sangaikot block from Churachandpur district were purposively selected for the study. From each block, four FIGs (Farmers Interest Groups) were selected making up to a total of sixteen FIGs. Further from each FIG, ten organic farmers were selected randomly. As a result, a sample of 160 organic farmers was chosen for the study. Data were collected using a structured and pre-tested interview schedule through personal interview method. The analysis and interpretation of the data was done by using statistical tools such as frequency and percentage. After consulting with extension scientists, researchers and other accessible sources, the direct impacts such as yield, income and cost of cultivation and indirect impacts such as personal, social, economic and environmental impact were chosen for the study. The scoring procedure adopted by Muralikrishnan (2015) was employed for the study with slight modification. The nature of responses of the respondents to the items was ‘increased’, ‘decreased’, and ‘no change’, and scores of ‘3’, ‘2’, and ‘1’ were assigned to the responses, respectively. The percentage and frequency were worked out for each of the items under different components for both direct and indirect impact.

3. Result and Discussion

The impact of organic farming was evaluated to find out the contribution that organic farming has on the livelihood of organic farmers.

3.1 Overall impact of organic farming on the livelihood of the organic farmers

The data in Table 1 indicates the distribution of organic farmers based on the overall impact that organic farming has on them. The data from Table 1 shows that more than half (58.13%) of the organic farmers had a medium level of impact of organic farming while 23. 12 per cent had a high level of impact of organic farming and the remaining 18.75 per cent of the organic farmers had a low level of impact of organic farming. It can be concluded that most of the farmers had medium level of impact of organic farming. The results clearly specify that most of the organic farmers had a stronger interest in engaging in organic farming practices.

Table 1: Distribution of respondents according to their overall impact on organic farming

(N = 160)

S. No.	Category	Frequency	Percentage
1.	Low (<31)	30	18.75
2.	Medium (31-46)	93	58.13
3.	High (>46)	37	23.12
Total		**160**	**100**

Mean = 38.86 **S.D. = 7.39**

The possible reasons why the majority of organic farmers were experiencing a medium level of impact from organic farming can be attributed to a variety of factors including their level of education, the area under organic farming, livestock possession, material possession, social participation, mass media exposure, training received in organic farming, experience in organic farming, extension orientation, innovativeness, achievement orientation, economic motivation, risk orientation, management orientation, their knowledge and adoption level of organic farming practices. These factors might be the causes for the medium to high level of effect of organic farming among the organic farmers.

3.2 Direct and Indirect Impact of organic farming on the livelihood of the organic farmers

The present study has analysed the ‘direct impact’ consisting of yield, income and cost of cultivation; and ‘indirect impacts’ comprising of personal, social, economic and environmental impact to evaluate the effect of organic farming on the livelihood of the organic farmers. The sub-components of the direct and indirect impact were assessed by calculating the frequency and percentage.

3.2.1 Direct Impact

The data presented in Table 2 reveals that more than half (53.13%) of the respondents have reported an increase in yield after the adoption of organic farming practices. Meanwhile, 60.62 per cent of the organic farmers have reported an increase in their income and 59.38 percent were of the opinion that the cost of cultivation has decreased. It can be concluded that the majority of the organic farmers have reported that there was a rise in their net income due to the reduction in the cost of cultivation. Therefore, organic farming practices were ascertained to be more profitable for organic farmers.

3.2.2 Indirect Impact

1. Personal Impact

The data presented in Table 2 indicates that the majority (58.12%) of the organic farmers have reported that their confidence in sustainable farming has increased after the adoption of organic farming practices. The increase in their confidence level might be due to their experience in organic farming, social participation, extension participation, contacts, exposure to mass media and the training they have received in organic farming.

The findings from Table 2 have also shown that more than half (61.25%) of the respondents have reported an increase in consultation by fellow farmers. Meanwhile, 64.37 per cent were of the opinion that their decision-making capacity had been enhanced after practicing organic farming. The majority (49.38%) of the organic farmers have also expressed that their health condition has improved. The exposure of the farmers to hazardous chemicals has been significantly reduced after the adoption of organic farming practices.

2. Social Impact

It can be observed from the data in Table 2 that 74.38 per cent of the organic farmers have expressed that their participation in social organization had increased. The majority (75.63%) of the respondents also reported that their participation in training programs has increased after becoming certified organic farmers.

Table 2: Distribution of the respondents according to their impact on organic farming

(N = 160)

S. No.	Impact	Increased		Decreased		No change	
		F	%	F	%	F	%
A)	**Direct impact**						
1)	Yield	85	53.13	43	26.87	32	20.00
2)	Income	97	60.62	26	16.25	37	23.13
3)	Cost of cultivation	51	31.87	95	59.38	14	08.75
B)	**Indirect impact**						
I)	**Personal impact**						
1)	Confidence in sustainable agriculture	93	58.12	22	13.75	45	28.13
2)	Consultation by fellow farmers	98	61.25	11	06.88	51	31.87
3)	Decision-making capacity	103	64.37	25	15.63	32	20.00
4)	Condition of health	79	49.38	43	26.87	38	23.75

II)	**Social impact**						
1)	Participation in social organization	119	74.38	15	09.37	26	16.25
2)	Participation in training	121	75.63	27	16.87	12	07.50
3)	Entrepreneurial qualities	93	58.13	10	06.25	57	35.62
4)	Recognition and appreciation from society	82	51.25	13	08.12	65	40.63
III)	**Economic impact**						
1)	Access to government subsidies	53	33.12	95	59.38	12	07.50
2)	Households saving	94	58.75	25	15.62	41	25.63
3)	Investment in business enterprises	117	73.13	14	08.75	29	18.12
4)	Purchase of agricultural equipment and livestock	87	54.37	41	25.62	32	20.00
5)	Price of organic farm produce	79	49.37	45	28.13	36	22.50
VI)	**Environmental impact**						
1)	Soil fertility and quality	132	82.50	12	07.50	16	10.00
2)	Clean Environment and water sources	121	75.62	10	06.25	29	18.13
3)	Healthy livestock/animal	107	66.87	19	11.88	34	21.25

The data in Table 2 also revealed that 58.13 per cent of the organic farmers have reported an increase in their entrepreneurial qualities and 51.25 per cent of them were of the opinion that their recognition and appreciation from society have increased after the adoption of organic farming.

The social motivation factors have a significant role in improving the decision-making ability of the farmer and increasing the adoption level of organic farming practices. The social participation of the farmers in various organizations and trainings has provided them the platform to gain more knowledge and skills regarding sustainable farming practices.

3. Economic Impact

The data presented in Table 2 reveals that 59.38 per cent of the organic farmers were of the opinion that their access to government subsidies had decreased. This perception arises from the fact that organic farmers primarily receive direct financial assistance only through the MOVCDNER scheme for acquiring off-farm organic inputs and establishing small processing units. Unlike conventional farming, which offers various avenues for subsidy access, organic farmers have limited options available to them to avail subsidies for organic farming.

The review of the data from Table 2 also revealed that 58.75 per cent of the organic farmers have reported that their household savings have increased due to less spending on external inputs for organic farming. Further, 73.13 per cent of the organic farmer have expressed that their investment in business enterprises has also increased. The organic farmers were engaged in the sale of both raw materials and processed organic products, catering to both domestic and international markets.

The data presented in Table 2 further reveals that 54.37 per cent of the farmers expressed that there was an increase in the purchase of agricultural equipment and livestock. Increased investment in equipment and livestock improves the efficiency of organic farming by increasing the on-farm production of organic inputs like manures and compost. It helps to maintain the fertility of the soil and increase the production of organic products.

It can be seen from Table 2 that the majority (49.37%) of the organic farmers have also reported that the price of organic farm produce has increased. Organic products tend to fetch premium prices in the market. It must also be due to the organized system of production, processing and marketing strategies developed for the organic farmer by MOMA under the MOVCDNER scheme.

4. Environmental Impact

Table 2 indicated that the majority (82.50%) of the organic farmers expressed that the soil fertility and quality have improved after the adoption of organic farming. Most of the organic farmers have conveyed that there was prevention in nutrient depletion, soil erosion, and an increase in the presence of beneficial soil microorganisms after the adoption of organic farming. The increase in the biodiversity of the organic farm has also been reported by the respondents.

The findings in Table 2 has revealed that 75.62 per cent of the organic farmers have reported that clean environment and water sources have increased after the adoption of organic farming practices. Synthetic pesticides, herbicides and fertilizers that can pollute the land and water are not used in organic farming. Therefore the risk of chemical runoff into neighboring water bodies is diminished while maintaining better soil health.

The data from Table 2 further indicated that 66.87 per cent of the farmers were of the opinion that there was an increase in healthy livestock after the adoption of organic farming practices. The livestock in the organic farm are frequently fed with organic feed that is devoid of synthetic additives and GMOs (Genetically Modified Organisms). This might have led to a more natural and healthier diet for the animals, which benefitted their health.

4. Conclusion

It can be concluded that regarding overall impact, the majority of the organic farmers had a medium level of impact of organic farming. Regarding direct impact, majority of the organic farming have reported an increase in yield, income and cost of cultivation. Whereas for indirect impact concerning personal impact, the majority of the organic farmers have reported an increase in confidence in sustainable farming, consultation by fellow farmers, decision-making capacity and improvement in health conditions. The data pertaining to social impact reveals that the majority of the respondents have expressed that there is an increase in their participation in social organizations and training programs. Additionally, more than half of the respondents are of the opinion that their entrepreneurial qualities have improved and they have gained more recognition and appreciation from society. In relation to economic impact, the majority of the organic farmers have reported an increase in household savings, investment in business enterprises, purchase of agricultural equipment and livestock and price of organic farm produce but they have reported a decrease in

access to government subsidies. Whereas in consideration of environmental impact, a large number of organic farmers have reported improvement in soil fertility and quality, cleaner environment and water sources and healthier livestock.

Reference

Altenbuchner, C., Vogel, S., & Larcher, M. (2018). Social, economic and environmental impacts of organic cotton production on the livelihood of smallholder farmers in Odisha, India. *Renewable Agriculture and Food Systems*, *33*(4), 373-385.

Chandrashekar, H. M. (2010). Changing scenario of organic farming in India: An overview. *International NGO Journal*. Vol.5(1). pp.034-039.

Desai, A., & Kamkar, V. B. (2019). Organic Farming in India: A Need of a Minute. *Advance and Innovative Research*, 87.

FAO, (2018). Transforming Food and Agriculture to achieve the SDGs - 20 interconnected actions to guide decision-makers. Food and Agriculture Organization of the United Nations. Rome, 2018.

Julia, J., Willhelm, B., & Schone, F. (2008). Organic farming: A contribution to sustainable poverty alleviation in developing countries. *Reading Material on Organic Farming, DDS-Krishi Vigyan Kendra, Zaheerabad, Medak district, Andhra Pradesh*.

Mahapatra, B. S., Ramasubramanian, T., & Chowdhury, H. (2009). Organic farming for sustainable agriculture: Global and Indian perspective. *Indian Journal of Agronomy*, *54*(2), 178-185.

Mendoza, T. C. (2004). Evaluating the benefits of organic farming in rice agroecosystems in the Philippines. *Journal of sustainable agriculture*, *24*(2), 93-115.

Muralikrishnan, L. (2015). Eco Friendly Conservation Practices in The Nilgiris District of Western Ghats - An Analysis. *Unpublished Ph.D. (Ag.) Thesis*, submitted to TNAU, Coimbatore.

Naik, R., Sivapragasam, C., & Patoju, S. K. S. (2020). Impact of Organic Farming on Sustainable Livelihood of Farmers. *Building Sustainable Communities: Civil Society Response in South Asia*, 361-375.

Paul, K., Taji, A. and Reganold, J. (2006). Organic Agriculture: A Global Perspective CSIRO: Collingwood, Victoria, Australia.

Qiao, Y., Martin, F., Cook, S., He, X., Halberg, N., Scott, S., & Pan, X. (2018). Certified organic agriculture as an alternative livelihood strategy for small-scale farmers in China: A case study in Wanzai County, Jiangxi Province. *Ecological Economics*, *145*, 301-307.

Rajendran, S. (2002, November). Environment and economic dimensions of organic rice cultivation in South India. In *RDA-ARNOA International Conference Development of Basic Standard for Organic Rice Cultivation* (pp. 12-15).

Seufert, V., Austin, S. E., Badami, M. G., Turner, S., & Ramankutty, N. (2023). The diversity of organic farmer motivations and livelihoods in the Global South–A case study in Kerala, India. *Geoforum*, *138*, 103670.

Shah, P. (2010). *Comparing economic and environmental sustainability of intensive and organic agricultural systems to support land use policy formulation aimed at reducing agrarian distress in Karnataka, India* (Doctoral dissertation, Wageningen University and Research centre).

Thiripurasundari, K and Divya, V. (2015). Factors Determining the Aoption of Organic Farming Among the Farming Community in Tamil Nadu. *International Journal of Commerce, Business and Management.*Vol. 4(2). 1039-1044.

Udin, N. (2014). Organic farming impact on sustainable livelihoods of marginal farmers in Shimoga district of Karnataka. *American Journal of Rural Development*, *2*(4), 81-88.