

Sustainable Livelihood and Rural Development through Organic Farming

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Abstract—Livelihood of rural people is of prime concern for their activities like agricultural practices, labour work and other activities in rural areas. The sustainability in livelihood through agricultural practices, in current scenario, is of concern to agricultural scientists. What could be the best possible option for farmers to do in agriculture? What agricultural system/ management are suitable for their land and surrounding environment to sustain the next generation and fulfill their needs? In this study the discussion on organic farming, how is it sustaining agriculture including soil, water, food quality, agricultural production etc.? The study area is Haridwar district of Uttarakhand, the information is collected from two villages namely Mooldaspur and Shahdevpur. The data of 60 farmers has been collected, within that organic and non-organic farmers are included. The comparisons of two kinds of agricultural practices is done. The result shows that, input cost in organic farming is lower as compared to non-organic farming systems. The chemical use in organic farming is up to zero level, which has the considerable effect on soil and water condition. The livelihood of farmers is more sustainable in organic farming system because income level goes higher for organic products; water quality improves, soil fertility through contamination maintain crop to crop cultivation, food has better taste and is healthier. There is need to improve institutional channels for betterment of organic farming and on other side market structure has to improve for organic products.

Keywords: Organic Farming, Sustainability, Livelihood, Rural Area, Agricultural System.

1. INTRODUCTION

Agriculture is a prime concern for rural people for their livelihood. Livelihood is particularly related with human capital, social capital, natural capital, physical capital, economic/financial capital (DFID, 1999). Farmer's livelihood is directly or indirectly related to these factors which provide the necessities to sustain their life in rural areas. The other people in rural area (except farmers) are also very concerned with agriculture. These people are generally engaged in agricultural activities like field preparation, yield collection, fodder collection and manure preparation etc. From that they can get the financial benefits and other things for livelihood like food, clothes and shelter. In such cases, people often work in the field as a contract labour (not written contract) and in

return of their work they mostly get food, clothes and shelter but this condition is very rare in rural areas. In this context, agricultural methods should be made sustainable because farmers are not the only beneficiary but other people are also dependent on these activities.

The term sustainable has been derived as an activity or discourse, which is not only used in current time but should be available in future too. In case of agriculture, the methods of farming should not be harmful for sustaining natural resources. In agricultural sustainability, the methods have been used to maintain and protect environment, animal health, human health, food and fiber needs.

Three basic features of Sustainability:-

1. Maintenance of environmental quality
2. Stable plant and animal productivity
3. Social acceptability

Sociology of sustainable agriculture deals with the following issues:-

1. Paradigms used to interpret sustainability.
2. Sociological models developed to explain attitudes and behaviours towards sustainability.
3. Adoption of sustainable agriculture practices.
4. Gender and sustainable agriculture.
5. Social impact assessment and sustainable agriculture.

Organic farming is more sustainable and suitable to preserve soil fertility, environment and human health (Rundgren, 2006).

The cultivation strategies and techniques of current agricultural system are not suitable for maintaining the sustainable environment and farmer's livelihood. The main cause of soil degradation and water pollution is the frequent use of chemical fertilizers and pesticides in agriculture. The use of chemical fertilizers and pesticides has come into practice in India through green revolution. Green revolution implemented during 1967 to 1978 with focus on expansion of cultivated area, achieving double cropping, using high

yielding varieties of seeds and chemical fertilizers. After that irrigation significantly increased the production of food grains, especially wheat and rice in Punjab, Haryana and Western Uttar Pradesh. Food grains production was doubled during the post green revolution period with virtually no increase in net cultivated area. The production increased from 95 million tons (MT) in 1967-68 to 209 MT in 1999-2000 from the same net area under cultivation (140.1 m ha) (Singh et al. 2011). The revolution to modify agricultural system not only changed the way of agriculture but, after this, a Genetically Modified Organism (GMO) seed came into market and farmers started using this. After several decades, chemical fertilizers and GMO seeds changed the scenario of human-beings in their health issues, food items, environment, soil degradation, water pollution, bio-diversity changes, and air pollution etc. All these environmental issues had the consequences of conventional farming and the only remedy to sustain all these factors is organic or natural farming. Organic farming is a process, which includes numerous farm activities like crop rotation, green manure, vermin-compost, organic seeds, biological pest control etc. In this method, chemical or synthetic fertilizers are entirely prohibited and the resources become more reliable for agriculture. Organic farming is sustainable farming practice for farmers and environment. Farmers reported a sustainable improvement in their livelihood, through combination of higher prices, higher yield, and reduction in losses from spoilage (Willer et al. 2008). Organic farming in India was introduced by Albert Howard (1873-1974) and Robert McIlvrison (1878-1960). Albert Howard worked in Pusa in New Delhi on plant breeding and plant protection. Then, in an Agriculture Research Station at Indore he developed an aerobic composting technique known as Indore process (Howard, 1953). In his development, he composted urban organic residues and used them to maintain soil fertility (Conford, 1995).

2. LITERATURE REVIEW

Hattam and Holloway evaluated the organic market in Mexican avocado producers using Probit model, as case study. Information was gathered from 183 small-scale farmers (<15 ha) in Michoacan. Adoption is positively influenced by management and economic factors (e.g. production cost per hectare and making inputs) and social factors also (e.g. membership of producers' association) (Hattam and Holloway, 2004). McCarthy et al. examined the determinant factor of adoption of organic farming through Theory of Planned Behaviour (TPB). The findings point to an evolution in the type of organic farmer from a small-scale farmer very focused on environmental and agro-ecological issues, to a larger-scale more commercially orientated farmer (McCarthy et al., 2001). Trewavas studied critical assessment of organic farming and food with respect to potential environment benefits of no-till agriculture in UK. The study concluded that in UK, when the problem with agriculture emerge high about poor management, cannot sustain agriculture mode properly

(Trewavas, 2004). Muller explored the benefits of organic agriculture as a climate change adaptation and mitigating strategy for developing countries (Muller, 2009). Pimentel et al. found the environmental and economic costs of soil erosion and conservation benefits and US government spent \$ 1.7 billion per year in the conservation programme to remove highly erodible land from production to cure the problems of conventional farming (Pimentel et al., 1995). Semwal et al. studied the pattern and ecological implication of agricultural land-use change in central Himalaya, India, in which, he found changes in household income but at the cost of increase in intensity of biomass removal from forest and loss of forest cover (Semwal et al., 2002).

Land is losing its fertility and demanding larger quantities of fertilizers. Pests are becoming resistant and warrant frequent sprays, which resulted in residues in the agricultural output much above the safety level (Singh et al. 2011). Imbalance in production, dependency on synthetic chemical fertilizers, increase in secondary and micronutrient deficiencies, more use of pesticides, unscientific water management and distribution, reduction in productivity, reduction in quality of the produce, extinction of gene pool, environmental pollution and imbalance in social and economic status are some of its adverse consequences in India and all over the world (Maity and Tripathy, 2005; Rundgren, 2006).

The objective of this study is to compare the input costs in both farming systems. The study has been an effort to find out the benefits of farming in term of rural development. In this study, livelihood is the main concern in regards of farming activities. The hypothetical statement of this study states that the organic farming is more beneficiary for sustainable livelihood and rural development as compare to other framing systems.

3. METHODOLOGY AND DATA COLLECTION

The study will be based on both primary and secondary data. Secondary data will be collected from various published sources, including statistical handbooks of the state government. Primary data will be collected from the individual farmers through pre-tested questionnaire schedule of both of the farming systems. The information has been collected from interviews of 60 farmers from the villages- Mooldaspur and Shahdevpurof Haridwar district of Uttarakhand. The data has been collected through field visits and direct interaction with the farmers, stalk holders and landlords and other family members to frame out the basic scenario behind farming methods, their needs and barriers in the adoption. The data of organic farming have been collected from Mooldaspur village and the Conventional farming data has been collected from Shadepur to evaluate the major aspects of their livelihood through sustainable agriculture.

State government has taken an initiative to develop Organic farming through UOCB (Uttarakhand Organic Community Board) in 2003. The UOCB has run training programs for

awareness about organic farming among farmers. Selected study area Shadevpur is in the list of bio-villages, which is known as the organic village.

The hypothetical condition may arise in Shadevpur farmers, which defines that either farmers continue with organic farming or they leave this method, so the study has been an effort to know the reliability of the farmers.

4. RESULTS AND DISCUSSION

The comparison of two farming methods has been done in this study, one is organic and other one is conventional farming. The results show that the cost of cultivation in organic farming is much lower than conventional farming (Table-1). The study is based on wheat and paddy cultivation in both farming methods. The cost of Paddy cultivation is around Rs2951 in organic farming and Rs9591 in Conventional farming (cost in Rupees per Bigaha). The cost of wheat cultivation in organic farming is Rs3950 per Bigha and around Rs5389 per Bigha in conventional farming.

Cost of Production and Market Rate of Main Product					
S.N.		Cost		Market Rate	
		Organic in (Rs)	Conventional in (Rs)	Organic in (Rs)	Conventional in (Rs)
1	Crops				
2	Wheat	3950	5388.878	2000	1450
3	Paddy	2950.588	9591	3600	3200

The cultivation costs are also affected and differed due to input costs. In Organic farming, the farmers generally use farm produced manure, bio-post, and other natural manure. These manures are prepared by group of framers or purchased from government agencies or NGOs. On the other hand, in conventional farming fertilizers and pesticides are bought by farmers at higher costs. These fertilizer and pesticides are used in higher amount than the previous time and soil demands more and more amount of fertilizer as compared to earlier otherwise production may be reduced.

Farmers also get exposure in marketing through UttrakhandCommunity Board for selling organic products and they sell their products in international market. This institution provides them a basic foundation to sell theirproducts. Other private organizations and NGOs are also engaged in these activities. Organic products are directly bought from these non-governmental organizations fromfarmers and used commercially in numerous products including cosmetics and medicine too. They can accessthe products through thepermission of UttrakhandCommunity Board (UOCB).

Women empowerment has also been somehow promoted through organic farming because they get employment opportunities because manure preparation is not done in conventional farming.

In organicproducts, farmers get much benefit than non-organic products because the prices of organic products are higherthan non-organic products. Organic farmers get around Rs.2000 per

quintal for wheat while non-organic farmers get around Rs.1450 per quintal in market, which shows the significant difference between both of the farming products. Similar situation exits with rice too. Organic farmers get Rs. 400 bonuses per quintals on basmati rice. This bonus in price has been given to farmers for providing better food in taste, health and quality.

Going through the results, this can be considered that if farmers engaged in organic farming they will get more benefits from agricultural practice. Farmers will not only get income benefits but they also get good health after consuming organic products. This procedure may help them to sustain their livelihood in rural area because if they get healthy diet they can work properly in fields to maintain their livelihood. In this way, their immune systems have been improved and they can also save themselves for spending money on medical treatments. In conventional farming farmers are facing the problems of higher cost of production with lower market prices. In this condition, they are suffering from the issues of unsustainable livelihood in rural areas and this may be a cause of their migration to urban areas.

According to the findings, water and soil conditionsare much better in organic farming and bio-diversity can be preserved properly as compare to conventional farming. The sustainability in livelihood may lead to rural development through organic farming while conventional farming have negative effects on environment and other factors, which may be a big cause for the collapse of rural development.

In current scenario, farmers are much aware regarding the benefits and consequences of framing, so they are moving toward organic method. They have started to realize the importance of health, food, flora and fauna, soil and other surroundings. In organic farming, the water is also used on a small scale because soil is moisturized in this process for long duration, which helps to reduce irrigation cost.

5. CONCLUSION

Organic farming is an essential phenomenon to sustain the livelihood of human-beings because this issue is not only limited with the lives of farmers but it is a prior concern for the life of each and every aspect related with the earth. In this field study, both of the villages have been evaluated on the perception of farmers. In Mooldaspurvillage, farmers are not satisfied with the conventional farming system. There is a lack of institutional bodies for the advancement of organic farming. The only existing governmental channel for maintaining organic farming is UOCB and there is an urgent need to develop such institutional practices for the benefits of sustainable livelihood in rural areas.

In Shadevpur village, Organic farming is in practice on a larger scale. There should also be some improvements in marketing structure of Organic products because basmati rice is the only crop, which is on high demand in the markets than

other Organic products. In the field of marketing of Organic products, Government should be more concerned and reliable for other products like wheat, Sugar, potato, Millets, etc.

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