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OPPORTUNITY OF ORGANIC FARMING TO IMPROVE SOCIO-ECONOMIC LIFE OF NEPALESE FARMERS

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ABSTRACT: *Organic farming is important for the good health of human beings and environment. Number of organic farmers is increasing in Nepal because of the increasing awareness on environment and climate change. The aim of this study was to explore the opportunity of organic farming to improve the socio-economic life of Nepalese farmers. The study was based on the mixed research design. Data was collected from four districts of Nepal and purposively 578 organic farmers were selected. The study shows that main source of Nepalese farmer is agriculture and conventional farming practice was more similar to the organic farming so that there is very easy to practice of organic farming. Demand of organic product is increasing in the National and international market and farmers are getting good return also. increased awareness on climate change, message dissemination from the experiences farmers and experts, economic benefit, social recognition, support of concerned organization are some factors which supporting to create the opportunity of organic farming. There is need of wider dissemination of benefit of organic farming and local development plan should address and implement the activities to train the farmers.*

KEYWORDS: Nepalese Farmers, Opportunity, Organic Farming, Socio-Economic Life

INTRODUCTION

"Organic farming is defined as a form of agriculture, which does not use chemical inputs in its production process, and enhancing the biological and ecological processes to promote soil fertility and good health of animals and plants (Gafsi, Le, & Mouchet, 2010, p. 4)". Beban (2008) defines organic agriculture as "It is generally understood as part of the wider term 'alternative agriculture', an umbrella term for a variety of movements that have sprung up in opposition to the conventional ways of growing, transporting and consuming agricultural products (p. 23)". There were debates on single definition of organic agriculture. One of the debaters was the Codex Alimentarius Commission, but later on proposed a definition. According to the definition proposed by the Codex Alimentarius Commission:

> Organic agriculture is a holistic production management system which promotes and enhances agro-ecosystem health, including biodiversity, biological cycles, and soil biological activity. It emphasizes on the use of management practices in preference to the use of off-farm inputs, taking into account that regional conditions required, locally adapted systems. This is accomplished by using, wherever possible, agronomic, biological, and mechanical methods, as opposed to using synthetic materials, to fulfil any specific function within the system. (p. 5)

There are numerous studies on possibilities of organic agriculture in developed and under developed countries. How is the feasibility of organic agriculture in under developed countries like Nepal? Urs Niggli (2015) writes on that:

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> While the crop productivity of organic farms appears to be 0.7–0.8 of that of intensive farms in temperate zones, the yield ratio in marginal regions of Africa where subsistence farming is still widely spread, has been found to be in favor of organic farms Hence, in resource- and income-poor countries, organic farming seems to offer an appropriate and low-cost way to increase productivity and to improve farm livelihood. (p. 1)

As Niggli has stated that possibility of organic agriculture is easier in those countries where still the practice of agriculture for subsistence is. Almost Nepalese farmers are also practicing subsistence farming.

Family farming is another way of applying alternative agriculture. This type of model occupies limited area and generates job and promotes for organic production. Saldanhaa et al. (9-14 August 2015) write on the possibility and viability of family farming for sustainable farming:

> Family farming is featured as the one growing in which the aim of tasks on the premises is decided by both the producer and his family. Family work force is superior to hired work and the area of the property is within a limit set for each region of the country. Such way of farming has demonstrated characteristics of adaptation and feasibility, once it is not only a way of generating jobs and income in the rural areas but also a way of developing sustainable production. (p. 1)

This type of alternative agriculture is suitable even in Nepal because Nepal has not practiced yet commercialized and industrialized farming. Still family farming is on practice in rural areas. Such model promotes for sustainable farming.

Saldanhaa et al. (9-14 August 2015) have proposed a model for family farming sustainable development, is called AGROINDEX. This model aims to contribute to:

> Monitor the aspects of production, productivity, sustainability and human factors by the farmers themselves thus contributing in the search for sustainability and empowerment of families and the communities respectively; Decision-making by the family farmers that contributes to improve the production management on sustainable bases; Subside decision-making of the fomentation institution managers concerning the need of investments and results; improvement the management of projects of qualification and fomentation projects enabling the comparison of indicators before and after the interventions.; Release a set of information which will subside the managers to formulate and implement public policies that allow adequate conditions for local development. (p. 6)

Such model seems to be worthwhile even in the case of Nepal. The nature of farming in Nepal resembles as mentioned by Saldanahaa et al.

“Organic agriculture can contribute to meaningful socio-economic and ecologically sustainable development, especially in poorer countries (Kilcher, 2007, p. 31)”. This is still difficult on the one hand to the application of organic principles, which means effective managing of local resources for example, local seed varieties, manure, etc. and therefore cost efficiency. On the other hand, the market for organic products at local and international level has great growth prospects and offers creative producers and exporters in those areas then it creates excellent opportunities to improve their income and living conditions.

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Organic products gain more income than conventional one. Kilcher (2007) states "Certified organic products provide access to attractive local and international markets for developing countries, while the producers generate higher incomes. In addition, due to long-term contracts, income is generated more continuously than in conventional trade (p. 43)".

There are many more possibilities and benefits of adopting organic agriculture. However, farmers usually experience a decline in harvests after leaving the use of artificial inputs and converting their farm to organic production. "Once the agro-ecosystem is restored and organic management systems are fully implemented, the farmers get good harvests" (Kilcher, 2007, p. 41). The development of crops fluctuates, and depends on inherent biological factors and natural resources, the farmer's expertise and the extent to which synthetic inputs were used under previous conventional management. If conversion to organic takes place on the basis of a low-input system, which is often the case for poor farmers in developing countries, yields under organic management tend to be more stable compared to the previous management system (Kilcher, 2007, p. 41).

Various previous studies have shown the benefit of organic farming so in this connection; the study is going to explore the opportunity of organic farming to improve the socio-economic life of farmers in Nepalese context.

Method

The study is based on the descriptive analysis of opportunity of organic farming in Nepal. Mixed design was adopted to collect the data. Both quantitative and qualitative data was generated from the primary as well as secondary sources. The study was conducted in the four districts: Kathmandu, Lalitpur, Bhaktpur and Dhading of Nepal. Purposive sampling technique was used to select the respondents. One person was taken from the one household. Structured questionnaires survey was done to collect the opinion of farmers. Statistical tool; frequency table and Chi-square test were used to analyze the quantitative data and narrative approach was used to analyze the qualitative data. Both data were used to find out the conclusion of the study.

RESULT AND DISCUSSION

From the demographic characteristic, there was 66.9% male followed by 33.1% female participated in the study. The district wise data showed that in total 8.5% organic farmers from Kathmandu, 28.3% from Lalitpur, 19.1% from Bhaktpur and 44% from the Dhading district participate in the study. Minimum 15 to maximum 85 years old people were involved in the organic agriculture. There was 25.9% farmers were illiterate followed by 30.5% had primary level education, 9.7% had lower secondary level, 14.5% had secondary level, 10.9% had intermediate level, 6.3% had Bachelor level and 2% had master and above level education.

Possibilities to extend the organic agriculture

Principally organic agriculture is good for the health and environment as well as to promote the socio-economic status of farmers also so it is necessary to extend the organic agriculture. The farmers were asked about the possibilities of extension of organic agriculture. In the data given by the farmers showed that in total 58.2% farmers said that there was very high possibilities to extend the organic agriculture whereas 38.4% said that there was normal chances to extend organic agriculture. Very few (only 3.4%) farmers said that there was very

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low possibilities to extend the organic agriculture in Nepal. As a reason of problem of extension, the farmers shared some technical problem like the availability of agriculture land near by the market areas so that product can be easily sold in time. Similarly, they said that initial cost of organic agriculture is high when farmers need support from the government or others to manage the cost which is also not so easy. But it was good that more than 96% farmers were optimistic to extend the areas of organic agriculture in future.

Table 1: Possibilities to extend the organic agriculture

Possibilities to extend the organic farming							
			Name of Districts				Total
			Kathmandu	Lalitpur	Bhaktpur	Dhading	
Possibilities to extend the organic farming	Very high	Count	17	121	21	182	341
		% within total	5.0%	35.5%	6.2%	53.4%	100.0%
		% within districts	34.0%	72.9%	18.8%	70.5%	58.2%
	Normal	Count	30	41	84	70	225
		% within total	13.3%	18.2%	37.3%	31.1%	100.0%
		% within districts	60.0%	24.7%	75.0%	27.1%	38.4%
	Very low	Count	3	4	7	6	20
		% within total	15.0%	20.0%	35.0%	30.0%	100.0%
		% within districts	6.0%	2.4%	6.2%	2.3%	3.4%
Total		Count	50	166	112	258	586
		% within total	8.5%	28.3%	19.1%	44.0%	100.0%
		% within districts	100.0%	100.0%	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	114.701[a]	6	.000

Source: Field Survey, 2015

The statistical analysis of Pearson Chi-square test rejected the null hypothesis that there was no association between the farmers regarding their perception on possibilities to extend the organic farming in Nepal because the P value is less than .05 at 95% confidence interval. The analysis of frequency table shows that the increasing demand of organic production is the opportunity of organic farming which motivates the farmers to involve in organic farming, because more than 96% farmers had seen the possibilities of extension of organic agriculture and 99% farmers asked to continue the organic agriculture.

Training of organic agriculture

Organic agriculture has not given the economic value only for farmers; it has provided the opportunity to enhance their knowledge. Organic agriculture also supported to change the social status of farmers by providing the opportunity to gain new knowledge of technology. The study had asked to farmers that whether they had received the training of organic agriculture or not. The data presented in the table no. 2 shows that in total 49.9% had received the training of organic agriculture.

From the discussion with farmers, there are some training centres located in the Kathmandu valley, which provides the skill development training on organic agriculture.

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Table 2: Training of organic agriculture

Training of organic agriculture							
			Name of districts				Total
			Kathmandu	Lalitpur	Bhaktpur	Dhading	
Training of organic agriculture	Yes	Count	16	115	14	147	292
		% within total	5.5%	39.4%	4.8%	50.3%	100.0%
		% within districts	32.0%	69.7%	12.5%	57.0%	49.9%
	No	Count	34	50	98	111	293
		% within total	11.6%	17.1%	33.4%	37.9%	100.0%
		% within districts	68.0%	30.3%	87.5%	43.0%	50.1%
Total		Count	50	165	112	258	585
		% within total	8.5%	28.2%	19.1%	44.1%	100.0%
		% within districts	100.0%	100.0%	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	100.108[a]	3	.000

Source: Field Survey, 2015

The statistical analysis of Chi-square test showed that there was significant association between the farmers of all four districts regarding their status of getting the involvement in training of organic agriculture at P = .000 significant level.

Exposure visit for the information of organic farming

Exposure visit is one of the practices to enhance the knowledge of people. People learn many things from the interaction with people of different culture and setting. As the theory of Social construction, knowledge is created from the social contact. In this connection, the study also asked to farmers about their exposure visit for the information of organic agriculture. The response of farmers showed that in total only 10.1% had got chance of exposure visit. Rest around 90% had no opportunity so the study also recommends to concerned stakeholders to provide the chances of exposure visit to the organic farming so that they can be encouraged to continue and ask other interested people also to involve in organic agriculture. It will be the bridge to extend the organic agriculture.

District wise, comparatively high numbers (18.7%) farmers of Lalitpur followed by 9.7% of Dhading and 2.7% of Bhaktpur district had received the chance of exposure visit. This data showed that no one farmer of Kathmandu had got that opportunity of exposure visit. Farmers of Lalitpur and Dhading was seen the more advance than the other districts' farmers in relation to the training and exposure visit of organic agriculture. It shows the high chances to encourage them to be highly professional organic farmers.

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Table 3: Exposure visit for the information of organic farming

Exposure visit for the information of organic farming							
			Name of districts				Total
			Kathmandu	Lalitpur	Bhaktpur	Dhading	
Exposure visit for the information of organic farming	Yes	Count	0	31	3	25	59
		% within total	0.0%	52.5%	5.1%	42.4%	100.0%
		% within districts	0.0%	18.7%	2.7%	9.7%	10.1%
	No	Count	50	135	109	233	527
		% within total	9.5%	25.6%	20.7%	44.2%	100.0%
		% within districts	100.0%	81.3%	97.3%	90.3%	89.9%
Total		Count	50	166	112	258	586
		% within total	8.5%	28.3%	19.1%	44.0%	100.0%
		% within districts	100.0%	100.0%	100.0%	100.0%	100.0%

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	25.973[a]	3	.000

Source: Field Survey, 2015

The Chi-square test showed the significant association between the farmers of four districts in relation to their exposure visit of organic agriculture at P = .000 significance level.

Suggestion from community people to new interested people

It was important for the study to know the perception of organic farmers whether they wanted to continue or discontinue the organic agriculture. From the Diffusion of Innovation Theory, people decide to accept the new when they are convinced from the relative advantage of new technology.

The data showed that in total 96.6% said that they had suggested to new interested people to involve in organic agriculture whereas very few (2.7%) suggested not involving in organic agriculture. The data sensitized that around 3% farmers were not satisfied from the organic agriculture that had chance to discontinue it. So, it is recommended to understand the problem of those farmers who do not suggest involving in organic agriculture so that organic agriculture can be extended and can sustain it in long term. Similarly, farmers of Bhaktpur had also the similar condition to the Kathmandu. Regarding the perception of farmers of Dhading gave some different reasons that because of the problem of easy market and transportation, and occasional political strike affected their business so sometimes they felt from the organic agriculture so they did not want to make involvement of other new people. The reason of not suggesting to involve in organic agriculture was found similar between the Lalitpur and Dhading districts.

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Table 4: Suggestion from community people to new interested people

Suggestion from community people							
			Name of Districts				Total
			Kathmandu	Lalitpur	Bhaktpur	Dhading	
Suggestion from community people	Involve in organic farming	Count	46	164	108	248	566
		% within total	8.1%	29.0%	19.1%	43.8%	100.0%
		% within districts	92.0%	98.8%	96.4%	96.1%	96.6%
	Not involve in organic farming	Count	2	2	2	10	16
		% within total	12.5%	12.5%	12.5%	62.5%	100.0%
		% within districts	4.0%	1.2%	1.8%	3.9%	2.7%
	Others	Count	2	0	2	0	4
		% within total	50.0%	0.0%	50.0%	0.0%	100.0%
		% within districts	4.0%	0.0%	1.8%	0.0%	0.7%
Total		Count	50	166	112	258	586
		% within total	8.5%	28.3%	19.1%	44.0%	100.0%
		% within districts	100.0%	100.0%	100.0%	100.0%	100.0%

Source: Field Survey, 2015

District wise, it was seen that farmers (4%) of Kathmandu followed by 3.9% of Dhading, 1.8% of Bhaktpur and 1.2% of Lalitpur district said that they did not want to suggest involving in organic farming for the new interested people. It can be assumed from this data that the farmers of Kathmandu may be frustration because of the lack of adequate training and exposure visit. The assumption can be claimed from the above data of training and exposure which showed that there was 0% of farmers received the chances of exposure visit.

The study conducted the face to face interview to collect the opinion of farmers, business men of organic agriculture, government and non-government experts to know the opportunities of organic agriculture in the Nepalese context. The information was as below:

Respondents	**Opportunities**
Sheshakanta Gautam - Executive Director , Nepal Tea and Coffee Development Board	• Demand of organic goods are increasing because people are conscious in their health, • Farmer can earn good amount from the organic agriculture in long term,
Pradeep Maharjan - Executive Director, Agro Enterprise Centre, Federation of Nepalese Chamber of Commerce and Industry	• Demand of Nepalese Organic tea & coffee, ginger (Aduwa), Jadibuti and essential oil are high in international market and getting high price, • Customer are ready to pay double price also to organic product than the other non-organic which can support to up lift the economic life of farmers, • Beneficial for health and environment,
Hon. Gagan Thapa - Chairman, Agriculture and Water Resources Committee Member of Constituent Assembly, Nepal	• Customers are conscious about the benefit of use of organic goods, • Market can be extended if we can ensure the quality of goods by doing the organic certification,

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Basanta Ranabhat - Chairman, Organic Certification Nepal Pvt. Ltd (Nepal Govt. approved national organic certifying agency in Nepal)	• Nepalese Organic products can do competition with international products, • Can mobilize the local resources, • Can create the employment opportunity in local market, • It develops the concept of group-work, leadership and technical skill in farmers, • It can improve the social status of farmers also by providing the knowledge of health, environmental and socio-economic benefit of organic agriculture,
Khem Bahadur Pathak - Chairman, Nepal Agriculture Cooperation Central Federation Chairman, Small Farmers Development Bank	• Traditional agricultural practice of Nepal was similar to the organic agriculture so Nepalese farmer can easily do the organic agriculture, • It can promote the integrated livestock also which can fulfill the demand of meat and dairy products, • It can contribute in economic and social development
Chandra Kumar Lama and Shree Krishna Pahari - Nayapati Multipurpose Agro Firm, Kathmadu	• Low cost for production, • Healthy, • Improve the quality of soil, • Positive contribution in climate change,

The previous studies have also showed the contribution of organic farming to uplift the social life of farmers. It has built the confidence of farmers. FAO stated that increased capacity to experiment and problem-solve has been observed in farmers engaged in organic cooperatives (FAO, 2002). Study conducted by GTZ among Cambodian farmers suggests that farmers self-steam has increased, and many felt that the new skills and knowledge of organic techniques were one of the main benefits received (Schmerler, 2006). Although organic farming also has a gender dimension, however the research on the relationship of organic farming with men and women is inconclusive. Some studies suggest that women could be empowered through higher incomes, more power in decision making due to the increase in horticulture production under some organic systems, which are often women‘s work (CGAP, 2005), and employment (for example, as internal inspectors for organic certification). A long-term socioeconomic study of organic farmers in Chile, from 1994-98, found that farmers‘ quality of life improved due to better gender relations, as a bigger focus on horticulture production (which grew by 240%) allowed more space for woman to develop, and social capital increased through training, education and the transfer of organic techniques (IFAD, 2003). However, benefits are said to depend on initial gender relations and divisions of labour (Pretty, 2002). Organics may also increase the time poverty (i.e. take up more time and leave less time for other activities) of women due to the high labour requirements (Dolan & Sorby, 2003).

An increasing number of reports claim that organic agriculture can be a vehicle for poverty reduction, and empirical research approves a definite relation between organic agriculture, food security and poverty decline in developing country contexts (IFAD, 2003; Araya & Edwards, 2005; Egziabher, 2005). The Food and Agriculture Organisation (FAO) steered a wide report of organic agriculture’s potential to contribute to food security in 2002, concluding that organics is a positive strategy not only for trade, but for sustenance farmers attempting to meet

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family food necessities and perhaps sell surplus in local markets. Research from numerous developing countries points to lower production costs in organic systems because less external inputs are used (Rosegrant & Ringler, 2005) and price premiums of up to 300% may be gained on the international market (Setboonsarng, 2006, p. 8). Other studies have found that even without price premiums, farmers are adopting organic agriculture to save costs and achieve viable yields (Scialabba, 2002). Studies also show health improvements for farmers under organic systems. Farmers in India said that symptoms associated with pesticide poisoning disappeared after conversion to organics (IFAD, 2005), and a Latin American study showed that farmers perceived themselves to be better after adaptation to organics (IFAD, 2003). On a macro scale, a comparative paper published in 2007 compiled data on crop yield from 293 studies, and found that organic methods could produce enough food on a global per capita basis to sustain the current human population, and possibly an even larger population, without increasing the agricultural land base (Badgley, et al., 2007). Research is still biased towards certified market-led organic approaches, and the literature on the work of numerous organizations promoting organics for subsistence and local production-consumption networks is poorly developed (Parrott & Wright, 2007).

CONCLUSION

From the discussion of quantitative and qualitative data, it can be said that there is significant contribution of organic farming to protect the health and environment. It preserves the quality of soil and improves the quality of water and air also. In Nepalese context, conventional farming system was more similar to the organic farming. There is family farming practice in Nepal. Family farming system is more individual centered. Family decides about the farming practices on the basis of their needs and traditional practices. The main aim of such farming is to address the problem of food security of their family. In such condition, there is a very rare chance to use the modern fertilizers and pesticides to increase the productivity so that there is good opportunity to transfer the family farming system into professional organic farming system. Majority of the farmers reported the high possibilities to extend the organic farming in near future and more than 90% farmers encouraged the new-comers to involve in the organic farming. Organic experts also opinioned that organic farming can improve the social status of farmers also by providing the knowledge of health, environmental and socio-economic benefit of organic agriculture. It can promote the integrated livestock also which can fulfill the demand of meat and dairy products. Organic farming can create the employment opportunity in local market, as well as it also develops the concept of group-work, leadership and technical skill in farmers. From the social perspective, organic farmers are highly respected because they are contributing to build the healthy environment and society. Nepalese society has also concerned to protect their surrounding environment so gradually moving ahead to make clean environment. People are thinking on the different alternative to make the life better. In such case, organic agriculture is one best option to protect the environment and make life better. But, there is need to develop the sustainable plan to sustain the organic farming. Local government should be responsible to identify the need and interest of farmers, quality of soil, climate, appropriate crops, availability of organic seeds and fertilizer, managing the technical experts …etc for the promotion of organic farming.

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