



# Motivational Factors Influencing a Conversion for Organic Tea Farming In Nepal

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**Abstract:** Organic agriculture in developing countries has increased in past decades especially due to the high demand of organic products in developed countries. This article attempts to present motivational factors influencing the farmers in the conversion to organic tea farming using both primary and secondary sources, for information through interviews with 196 tea farmers in Jitpur and Mangalbare area of Ilam district as well as tea consultants and promoters in this district as a case study. All of farmers have converted their tea farms into organic production for the last five years. It was found that there were different influencing factors for the conversion of their farms into organic tea cultivation. Which include environmental awareness; bright market prospects, economic benefit, health consciousness and sustainability so, while planning programs for the development of the organic tea production in Nepal, policy makers should consider the support of farmers' institutions, provision of training to farmers and raise farmers' awareness about the environmental, economic and health benefits of organic farming.

**Key words-** Organic farming, conversion, motivational factors, orthodox tea.

## I. INTRODUCTION

The pattern of production is basically divided into two major groups- conventional method of production and organic method of production. According to National Tea and Coffee Development Board, Nepal, it is classified into three types; conventional, conversion and organic tea on certification process. In the organic tea farming, chemical inputs are not used. So, it is safe to human health and environmental hazards. As the world market is becoming increasingly concerned with health problems that can come from the use of pesticides, the demand for organic agricultural products are increasing. Organic agriculture is a farmer/environment friendly holistic production system that produces healthy foods and crops by utilizing local resources efficiently and avoiding synthetic agrochemicals, and thereby helping ensure self-reliance, food security and providing access to international market (Dahal, 2009).

Organic agriculture is rapidly growing in all parts of the world. From 2000 to 2009 the organically managed land area increased from nearly 15 million hectares to 37 million hectares of which roughly one third was located in developing countries (Willer, 2011). The growth of the organic land area in developing countries was mainly based on increasing exports of organic food to developed countries (Parrott *et al.*, 2006). The strong demand of European and North American consumers and their willingness to pay higher prices for organic compared to conventional foods enables exporters in developing countries to pay higher prices to organic farmers who have in fact lower yields in organic agriculture. However, the growth rates of organic production depend on different factors and vary from country to country and from region to region (Brodt & Schug, 2008). While the organic land area throughout Asia increased by 24% between 2007 and 2009, there was a slight decline in the Nepalese organic land area in the same period of time (Willer, 2011).

Organic farming seems to be more appropriate, it is important for sustainability of natural resources and environment. It is the production system which favors maximum use of organic materials (crop residue, animal residue, legumes, on and off farm wastages, growth regulators, bio-pesticides etc.) and discourages use of synthetically produced agro-inputs, for maintaining soil productivity and fertility and pest management under conditions of sustainable natural resources and healthy environment. Ghimire (2002) argued that organic farming is practical proposition for sustainable agriculture if adequate attention is paid to this issue. There is urgent need to involve more and more scientists to identify the thrust area of research for the development of eco-friendly production technology.

Organic agriculture has become one of the priority areas for sustainable agriculture development worldwide due to concerns of the negative impacts of chemical intensive agriculture, international trade potential and its contribution to sustainable development. Besides these, small scale organic agriculture is very relevant for a developing country like Nepal due to its diverse ecological niches, fragile and marginal farming characteristics and high labor force availability. A systematic approach to promote sustainable and organic agriculture in Nepal was started in 1986 after the establishment of the Institute for Sustainable Agriculture Nepal (INSAN) (Ranabhat, 2011). It is reported that the total land under organic management in Nepal is estimated to be 8187 ha, which is 0.2% of total agricultural land managed by 1424 producers. Land fully converted in to organic is 7737 ha. and land under conversion is 245 ha. (International Federation of Organic Agricultural Movement [IFOAM], 2009). About 800,000 ha (26%) of agricultural land in Nepal is estimated to be organic by default (Dahal, 2011).

This study is focusing on organic tea farming in Nepal where tea has got a great potential for employment generation and export earnings. In 2006, the tea sector employed 105,000 Nepalese people, particularly women (ITC, 2007). Moreover, most of the Nepalese tea is grown by poor smallholder farmers (Heiss & Heiss, 2007) and tea cultivation and marketing can be an effective driving force for poverty alleviation (ITC, 2007). The Nepalese tea sector has experienced an average growth of 14 % per annum since 2000 and the area under cultivation has reached 15,168 hectares in 2007 (FAO, 2009a). In the same year more than 90 % of the orthodox tea produced in the hills of Nepal was exported to India and overseas markets (AEC/FNCCI, 2009). A total of 9,697 tons of Nepalese tea was exported in 2007 (FAO, 2009b). Till now (2014), the total plantation area of orthodox tea covered 104835 ropani in Nepal, where 8768 farmers are involved. It is reported that the production of orthodox tea is 3037694 kg in this year (NTCDB, 2014). The cost of production for green tea leaf is approximately 19.55 Nepali Rupees (NPR) per kilogram (kg). The cost for organic tea production is 39.43 to 52.20 NPR per kg. The average price for organic leaf is 40 to 55 NPR/kg, and for conventional leaf is 20 to 26 NPR/kg; however, the price varies depending on flush and leaf quality. The estimated average manufacturing cost is 140 to 200 NPR/kg for conventional tea and 260 to 300 NPR/kg for organic (USAID, 2011).

Ilam is the leading district of orthodox tea production, followed by Panchthar, Dhankuta and Terahthum. At present 8,767 farmers (households) are involved in tea cultivation in Nepal. The total plantation area of Nepal is 104835 ropani. Ilam alone occupies more than 80 percent of total tea plantation area in which 6137 farmers are involved (Nepal Tea and Coffee Development Board [NTCDB], 2014).

The organic tea movement which was initiated in 1995 has become more or less stagnant and thus the organic initiative of HOTPA is now considered a failure. Organic agriculture in developing countries has increased in past decades especially due to the high demand of organic products in developed countries. The rate of conversion to organic production in Nepal, however, is observed much slower than expected. A large percentage of Nepalese farmers are reluctant to adopt organic tea production (Chapagain, 2010). This situation calls for an investigation on the factors influencing the development of organic tea farming in Nepal. This study aims to increase and deepen the knowledge to understand the factors influencing conversion to organic production to answer the following different questions which are given in statement of the problem. Therefore, quantitative surveys with organic tea farmers and additional qualitative interviews with different stakeholders in the Nepalese tea sector have been conducted.

Due to the varied weather conditions and soil composition orthodox tea is grown in Ilam. A large number of small holder farmers are engaged in tea growing in this district and their contribution in total production is increasing over the years as more small farmers are being attracted towards tea cultivation. Small farmers are organized into their respective groups through which they sell their leaves to the bought-leaf factories. These groups are federated into Tea Producers Cooperatives with such cooperatives in Ilam. Now, most of the farmers are gradually transferred their quality of production. It seems that the small farmers are interested to convert their product into organic products.

The objective of the study is to analyze the socio-economic characteristics of organic tea producers, and identify the motivational factors to adapt organic tea farming practices in Ilam.

## II. METHODOLOGY

This study was based on descriptive as well as analytical research design. Similarly, this study tried to explore the motivational factors to convert organic tea farming practices in Ilam district of Mechi. Both primary and secondary data were used in this research. The primary data were collected by interacting with different individuals from the selected respondents representing tea experts and promoters who were directly involved with the tea industry of Nepal and has knowledge about tea. The secondary data were from reviewing relevant documents available on internet, provided by various agencies, like bureau of statistics, NGOs involved in the tea sector development of Nepal. Interview schedule, check lists, structured/unstructured interview, focus group discussion, key informant interviews were adopted as research tools and techniques.

A total of four tea experts were interviewed. The interviews were semi-structured that addressed the challenges and opportunities of organic tea production in Nepal. Altogether 100 farmers were interviewed. A focused group discussion (FDG) was also conducted for data collection in which 3 executive members (chairperson, secretary and manager) from a cooperative were participated. Both quantitative and qualitative data have been created qualitatively or descriptively and by using Statistical Package for Social Science (SPSS).

### III. RESULT AND DISCUSSION

#### 3.1. Current Situation of Nepalese Tea Industry

The tea sector experienced significant growth following its liberalization over a decade ago. According to latest data from the NTCDB, the total area under tea plantation as estimated on 2018/2019 is 28732 hectares with the production volume of 25205858 kilograms of tea production (NTCDB, <https://www.teacoffee.gov.np/statistics>).

Table 4.1 Plantation and production trend

Fiscal Year (AD)	Plantation (Ha.)	Production (Kg.)
1999/00	10,249	5,085,237
2000/01	11,997	6,638,082
2001/02	12,346	7,518,575
2002/03	12,643	8,198,000
2003/04	15,012	11,651,204
2004/05	15,900	12,606,081
2005/06	16,012	13,688,237
2006/07	16,420	15,167,743
2007/08	16,594	16,127,490
2008/09	16718	16,208,127
2009/10	17127	16,607555
2010/11	17451	17437933
2011/12	18149	18309824
2012/13	19036	20588145
2013/14	20120	21076366
2014/15	26165	23186726
2015/16	27688	24263710
2016/17	28241	24409290
2017/18	28595	24803567
2018/19	28732	25205858

(Source: NTCDB, <https://www.teacoffee.gov.np/statistics>).

Conferring the data, the tea industry has been expanding in recent years along with an expansion of its plantation areas approximately from 12,000 hectares in 2001 to 28732 hectares in 2018/2019 and is increasing on a yearly basis.

Table 4.2 District-Wise Plantation and Production (fiscal year 2018/019)

SN	Districts	Estates		Small Farmers		Total	
		No.of Estates	Plantation Area (ha.)	No. of small farmers	Plantation Area (ha.)	Plantation Area (ha.)	Production (Kg.)
1	Jhapa	69	7725	2962	3718	11443	19108000
2	Ilam	16	2945	7003	5920	8865	5096030
3	Panchthar	4	619	1143	720	1339	508076
4	Dhankuta	6	478	491	474	952	184725
5	Terhathum	1	95	670	361	456	91159
6	Bhojpur	1	158	50	50	208	410
7	Nuwakot	2	49	226	33	82	44220
8	Sankhuwasabha	2	48	112	35	83	11658
9	Sindhupalchok	1	80	0	0	80	20119
10	Dolakha	2	30	32	17	47	1206
11	Lalitpur	0	0	120	40	40	8844
12	Taplejung	1	20	20	12	32	3235
13	Other	11	2540	2405	2565	5105	128176
	--	116	14787	15234	13945	28732	25205858

(Source: NTCDB, <https://www.teacoffee.gov.np/teaproduction>).

Majority of smallholder farmers are active in production and they dominate the present plantation scenario. The current socio-economic impact in terms of employment or job creation is very high in this sector, with significant potential to contribute to national income growth and providing direct employment to more than hundred thousand people.

#### 3.2. Demographic Characteristics Of Organic Tea Farmers

The socio-demographic data and data on farm size and basic conditions for farming and marketing shows that all of the 196 farmers converted their tea farms from the conventional farm to organic one for the last five years. Among 106 farmers, near about 10% of the farmers are below 30 years old. Similarly, 29% of the total farmers are aged between 41 and 50 years.

Table 1 Composition Of Tea Producer Cooperatives By Sex And Ethnicity

	Sex	Name Of The Cooperatives			Total	%
		Ajambare Tea S Cooperative Ociety	Nawami Tea Producer Cooperative Society	Hilltop Tea Producer Cooperative Society		
Janajati	Female	8	5	4	17	8.67
	Male	28	9	18	55	28.06
	Total	36	14	22	72	36.73
Dalit	Female	0	4	1	5	2.55
	Male	1	0	4	5	2.55
	Total	1	4	5	10	5.10
Other	Female	3	16	1	20	10.20
	Male	26	40	28	94	47.96
	Total	29	56	29	114	58.16
Grand Total		66	74	56	196	100.00

(Source: Field survey, 2019)

The table shows that the majority of the male farmers (about 80%) have managed their tea farms. In this case, only 42 (20%) female have hold their tea farming.

Table 2: Composition of Household Heads By Age And Sex

Age Group	Household heads					
	Male	%	Female	%	Total	%
20-30	14	9.09	5	11.90	19	9.69
31-40	31	20.13	17	40.48	48	24.49
41-50	45	29.22	11	26.19	56	28.57
51-60	37	24.03	3	7.14	40	20.41
61 Above	27	17.53	6	14.29	33	16.84
Total	154	100.00	42	100.00	196	100.00

(Source: Field survey, 2019)

The majority of tea farming caste groups (58%) in the study area belong to *BrahmanChhetri* groups. The ethnic groups (*Janajatis*) are the second largest group (37%) in tea cultivation followed by only 5% *Dalits* are involved in tea cultivation.

Table 3: Characteristics of Organic Tea Farmers

SN	Socio-Economic Variables	Organic Farmers (N=196)	
		Mean (Std. Deviation)	(%)
<b>Personal Data</b>			
1.	Gender of household head		
1.1	1= Male, 0= Female	0.79 (0.41)	
2.	Age (years)	46.86 (12.95)	
2.1	Less than 30 years	-	9.69
2.2	31 to 40 years	-	24.49
2.3	41 to 50 years	-	28.57
2.4	51 to 60 Years	-	20.41
2.5	61 and above	-	16.84
3.	Educational level		
3.1	0= illiterate, 1= literate only, 2= school level, 3= college and university	2.06 (0.90)	
3.1.1	Illiterate	-	0.00
3.1.2	Literate	-	37.24
3.1.3	School level	-	19.90
3.1.4	College and university level	-	42.86
4.	Caste/Ethnicity		
4.1	1= Janajati, 2= Dalit, 3= Other (Brahman/Chhetri/Bhujel)	2.21 (0.95)	
4.1.1	Janajati	-	36.73
4.1.2	Dalit	-	5.10
4.1.3	Other	-	58.16
5.	Family size (No. of household members)	5.08 (1.77)	
5.1	Less than 5 members	-	69.39
5.2	6 to 10 members	-	29.59
5.3	11 to 15 members	-	1.02
6.	Experience in tea farming (years)	15.87 (4.91)	
6.1.1	5 to 10 years	-	19.39
6.1.2	11 to 15 years	-	40.82
6.1.3	16 to 20 years	-	22.45
6.1.4	21 to 25 years	-	10.20
6.1.5	26 to 30 years	-	7.14

(Source: Field survey, 2019)

A large portion of farmers (43%) have got a college or university education, but about 38% of the total farmers do not have any formal education. They are under the “literate only” category.

Table 4: Farm Data

SN	Farm data	Organic farmers (n=196) Mean (Std. deviation) (%)
1	Land covered with tea (ha)	0.45 (0.42)
1.1	Less than 0.5 ha	68.37
1.2	0.51 to 1 ha	19.90
1.3	1.1 to 1.5 ha	6.63
1.4	1.6 to 2 ha	4.08
1.5	More than 2 ha	1.02
2	Affiliation with institutions	
2.1	0 = No affiliation, 1 = Affiliation	1.00 (0.00)
3	Loan	
3.1	0= No borrowed, 1= Borrowed	0.23 (0.43)
4	Access to agricultural technicians	
4.1	0 = No access to agricultural technicians, 1 = Access to agricultural technicians,	0.93 (0.25)
5	Training participation	
5.1	0 = No participation 1 = Participation	1.00 (0.00)
6	Transportation time to selling point (hours)	0.95 (0.50)

(Source: Field survey, 2019)

The data reveals that the small farmers are attracted to orthodox tea production. It is found that the average size of the organic tea farms is 0.45 hectare. The majority of the organic farms (68 %) comprise less than 0.5 hectare farm land (cropped with tea).

### 3.3. Organic Tea Production

It was found that the total area of organic tea plantation under three cooperatives of Ilam district up to 2015 is 87.92 hectares with the green leaf production volume of 206640 kilograms.

Table 5.5: Annual Green Leaf Production, Productivity and Income

		Minimum	Maximum	Sum	Mean	Std.Deviation
Farm size (Ha.)		0.05	2.29	87.92	0.45	0.42
Annual Green leaf production(Kg)	2013	0	4530	771660	393.67	602.89
	2014	0	10522	256877	1310.6	1700.57
	2015	22	6565	206640	1054.29	1150.42
Annual Income(NRS)	2013	0	194790	3289129.3	16781.27	25923.72
	2014	0	452446	11070806	56483.70	73248.75
	2015	924	275730	8599115	43873.04	47813.75

(Source: Field survey, 2019)

Conferring the data, the tea production has been increasing on a yearly basis. According to the statistics, the total areas of 87.92 hectares were under plantation with the output of 77160 to 206640 kilograms of organic orthodox tea for the year 2013 to 2015. The average productivity of tea has been 2350 per hectare. It was found that the annual income from green leaf has been fluctuated. The average selling price per kilogram is Rs. 42.00 in last year (2015 AD).

### 3.4. Farmers' Motivation for Organic Tea Farming Practices

Almost all farmers answered in the affirmative way to whether or not they liked organic agriculture and the great majority said that the future for organic tea has good. Answers were relatively split equally between organic tea being successful or mediocre. When asked about the difficulty of organic agriculture, some farmers explained that it was very difficult and expensive to farm organically. Explanations by farmers of what organic agriculture is and why it is used were relatively similar; focusing on health, environment, bright market and the sustainability in production; and a high level of confidence was common in explanations of organic agriculture. Several farmers discussed the current low price (Rs. 40 to 45) offered for green leaf, explaining that a higher price is needed for the farmers to gain a profit. One of the farmers went on to say that prices would be better if more than one factory would buy organic green leaf. It was found that many farmers seemed dissatisfied with the current price. Principal component factor analysis was performed in order to find group farmers' motivations towards their conversion to organic production methods (Table). It is possible to summarize motivations as in the following 10 motivational statements.

Table 5: Motivational factors for organic farming

Variables /	Frequency	(%)
<b>Factor 1 Environmental awareness</b>	<b>31</b>	<b>(15)</b>
Environmental protection.....	10	
Reduction of soil erosion.....	7	
Better soil fertility.....	14	
<b>Factor 2 Bright market prospects</b>	<b>44</b>	<b>(22)</b>
Good image of Nepalese tea in the international market.....	23	
Satisfying the need of the processors.....	21	
<b>Factor 3 Economic benefit</b>	<b>44</b>	<b>(22)</b>
Better profitability.....	1	
Easy and better marketing.....	43	
<b>Factor 4 Health consciousness</b>	<b>15</b>	<b>(7)</b>
Healthy product for the consumers.....	15	
<b>Factor 5 Sustainability</b>	<b>53</b>	<b>(27)</b>
Maximum utilization of farm internal resources.....	16	
Sustainability in production.....	37	

(Source: Field survey, 2019)

The result shows that five different motivational factors for the conversion were found. Factor 1 consists of motivating reasons dealing with *environmental awareness* of the farmers. 15% of the total farmers are under this category.

Factor named *bright market prospects* comprises the positive view of farmers with regard to the demand of organic tea and the sustainability of production. Not surprisingly, another important factor that has a motivational effect on farmers is *economic benefit* of organic tea production that plays a role for the conversion to organic farming. The factor *health consciousness* contains *healthy product for the consumers*. Factor 5 consists of motivational reasons dealing with sustainability of the product. In this factor consists two variables: "maximum utilization of farm internal resources" and "sustainability in production". Maximizing internal farm resources means that farmers are not using external resources such as pesticides and chemicals which are harmful for human health and the environment and it has helped to promote concept of sustainable development. The modern definition of sustainability compiles the implications of triple bottom lines (3BL): economic, social and environmental sustainability. With the emphasis given on social, economic and environmental aspects for assuring average quality of life, it has been identified as the key pillars of sustainable development (Kalchschmidt & Syahrudin, 2011). Sustainability can be achieved when all three environmental, social and economic performances could be placed together for achieving long-term development and benefits (Carter & Rogers, 2008). In the same way, the intersection of 3BL aspects in sustainable performances is in the supply chain.

However, as shown by farmers' responses to interviews, organic production involves a high level of investment and are much more difficult than conventional tea farming. They argued that the organic farmers' input prices are higher. So, profits may not necessarily be higher under organic production. Similarly, the farmers have been facing the problem of reliable workers. Due to mass migrations of men to foreign countries for work, there is a shortage of skilled work force for cultivation and production in this sector. However, on the positive side, it has created job opportunities for the female population of the study area. Due to the lack of working men in the tea sector, majority of workers are trained local women.

### 3.5. Opinion of tea experts

Tea experts argued that the factory is converting to organic production because pesticides affect the quality of tea and ruin the environment. They further explained that there is high foreign demand for organic tea, which puts the tea farmers who produce organically in a better financial position than conventional tea farmers. Changes that came with the organic conversion mainly include stopping the application of any chemical pesticides and fertilizers. Organic fertilizer has no chemicals, but is animal dung and compost. The soil fertility is very important but that it has been very hard to motivate farmers to go organic; the factory runs a pesticides awareness program which has very slowly raised awareness among the farmers. According to the tea experts, organic tea production is hard and that it is very labor intensive and it is also very hard to achieve good quality because one cannot rely on chemicals. With organic tea farming, one must pluck early, the leaves are smaller and harder, and bushes are shorter, making quality tea much more difficult to produce. As productivity for each laborer is much lower and there has been a lack of labor in this area, farmers in the area have been struggling to produce enough tea.

Expectation of the tea expert is that in the future this whole area will be organic and if Ilam region is completely organic, it can compete with Darjeeling. If

Nepal's tea sector can fulfill the rising demand, it will succeed to bring future prospects in the field of production. Though Darjeeling is world-famous, Darjeeling and Ilam tea as almost exactly the same, the main difference is that Nepal's tea market is not well established. They held the belief that Nepalese tea market will only succeed if quality is consistent and all tea production is organic.

The Indian government is heavily supporting for the promotion of Darjeeling tea and organic conversion, while the Nepali government is not supporting for organic tea production and most factories in Nepal are not interested in converting to organic production. Almost all the experts expressed their belief that organic tea is good for health and environment and has a good market. It is a huge potential, but a lot of work and a lot of commitments are needed on many fronts. One of the experts described the biggest problems in Nepalese tea sector as being the difficulty in obtaining pesticides that are not banned, lack of cheap or easy organic input, lack of support from government, lack of available loans to farmers, and lack of infrastructure.

As per the opinion of the tea experts, the importance of organic tea farming can be viewed from different perspectives, which are discussed below.

**Environmentally Safe:** In organic tea farming, farmers largely avoid use of synthetic chemicals (fertilizers and pesticides) and rely on natural pest controls, manuring and cultural practices which help to reduce different forms of environmental pollutions. Reductions in the use of these toxic synthetic chemicals also help to improve human and livestock health and other beneficial organisms.

**More sustainable:** In organic production system, farmers are less dependent on external inputs (e.g. pesticides, fertilizers, credit etc.). They manage sound production system based on locally available resources which are economically and ecologically viable. This implies a sustainable management of natural resources; soil water and bio- diversity.

**Source of employments:** It is indicated that organic agriculture requires significantly greater labor input than conventional farmings. However, when labor is not a constraint, organic agriculture can employ underemployed labor.

**Health consciousness:** It is shown that organic food contains more vitamins, nutrients and cancer-fighting antioxidants than non-organic. Organic foods have less residues of pesticides, growth promoters, antibiotics and other chemicals. It tastes better than the inorganic products. Nowadays, consumers are becoming more aware of organic products from health point of view. They have learnt that organic products are safe to health and environment as well.

**Enhance biodiversities conservation:** Organic tea farming helps to preserve biodiversity. It contributes to whole farm health, provides conservation of important genotypes, and creates habitats for beneficial species.

**Use of local resources:** Local inputs are largely used in organic farming. Therefore, the farmers need not depend on the external inputs most of the time.

**Profitable and bright market:** Organic tea farmers can manage to reduce production costs by avoiding expensive cost of agrochemicals. Even if the organic crop yields are lower, the overall economic yields of the farm will be competitive since organic system benefits from market premiums (fair prices) and sometimes lowers the input costs. At present, the world trend is towards the organic farming. Many positive actions have been taken globally for the development of organic farming. So, there is a good scope for organic products in the future. Nepal, as a member of WTO, can have good opportunities in the global markets. Good quality organic tea products can be marketed globally.

**Indigenous knowledge:** The farmers are equipped with the indigenous knowledge of farming organically. The indigenous knowledge can be utilized in the organic farming today.

The district is rich in its natural resources with a lot of diversity making it in the International markets for a wide range of Agro-commodities. It is existing remarkable scope of biotechnological applications in the district's agriculture.

The "traditional farming" practices can be converted with less effort to organic farming, with the introduction of improved composting techniques and bio fertilizer and bio-pesticides etc. Similarly, the organic tea products are sold in the global market

#### IV. CONCLUSION

Organic tea production may play a vital role in the economy of the developing country in the long run. The conversion of a conventional farm into an organic tea farm needs at least three years. If a whole farm is not converted at one time, it may be done progressively from the start of conversion. There are sufficient opportunities to increase area under organic tea farming. It depends on appropriate conversion method of conventional farming into an organic farming, establishment of national certification program and government support. The fertility and biological activity of the soil should be maintained or increased by cultivation of legumes, green manuring or deep rooting plants in an appropriate multi-annual rotation program.

The study showed that training plays a vital role for conversion to organic production. Another remarkable result was that the huge majority of tea farmers has no access to loans and cannot afford additional investments required for organic tea production. The farmers can promote their tea farming through saving and credit program of their cooperatives only.

It was found that the average size of the organic tea farms is 0.45 hectare. The majority of the organic farms (68 %) comprise less than 0.5 hectare farm land. It is found that the farmers are affiliated to cooperative institutions which are the positive indicators for conversion to organic farming. Similarly, the participation in the training is positive showing that more trained farmers have greater tendency to adopt organic farming. Another remarkable fact of the study is that the coefficient of the time required to reach the market is highly positive. It was found that the average transportation time to selling point is less than 1 hour. The caste and ethnicity is also positive indicating that ethnic groups are seemed to be more interested in organic adoption.

It was found that five different motivational factors for the conversion to organic farming viz. environmental awareness, bright market prospects, economic benefit, health consciousness and sustainability in production have played a vital role. Another fact is that the organic farming has created job opportunities for the female population of the study area. Due to lack of working men in the tea sector, majority of workers are trained local women.

However, as shown by farmers' responses, organic production involves a high level of investment and is much more difficult than conventional tea farming. Farmers seemed dissatisfied with the current price. Several farmers discussed the current low price offered for green leaf, explaining that a higher price is needed for the farmers to gain a profit. According to the farmers' opinion, prices would be better if more than one factory was buying organic green leaf.

They argued that the organic farmers' input prices are higher. So, profits may not necessarily be higher under organic production. Similarly, the farmers have been facing the problem of reliable workers. Due to mass migrations of men to foreign countries for work, there is a shortage of skilled work force for the cultivation and production in this sector.

It was found that the organic farming is more sustainable farming but there are still several issues that have to be addressed. Lack of government initiatives, policies and assistance for promotion of organic tea farming is still in existence. The norms and standards on inspection and certification in organic agriculture have not been established yet at government level. Appropriate technology and marketing system were found weak. According to the tea experts and promoters, the soil fertility is very important but it has been very hard to motivate farmers to go organic. So, the factory runs a pesticides awareness program which has but very slowly raised awareness. Organic tea production is hard in the sense that it is very labor intensive and it is very hard to achieve good quality because one cannot rely on chemicals with organic tea farming. One must pluck early, the leaves are smaller and harder, and bushes are shorter, making quality tea much more difficult to produce. It is believed that Nepalese tea market will only succeed if quality is consistent and all tea produced is organic. There is more potential of organic tea cultivation in Ilam district, but a lot of works and commitments are needed.



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