

ORGANIC FARMING AND SUSTAINABLE PRACTICE FOR LIVELIHOOD

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DEDICATION

To my parents

DECLARATION

Hereby, I declare that this dissertation has not been submitted for the candidature for any other degree.

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ABSTRACT

Kavita Karkee for the degree of *Master of Education in Environment Education and Sustainable Development* entitled *Organic Farming and Sustainable Practice for Livelihood* was presented on 18 May, 2014 and

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Suresh Gautam
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This study was carried out with the objective of knowing the perception of owner, farmers (workers) and the consumers regarding organic farming. It was conducted in Trijal Organic Farm, Saanga, Kavre. I have applied interpretative research paradigm. This paradigm offered me to bring the lived experiences of my research participants from the natural setting. I have dominantly used participant observation and in-depth interview to collect information. The participants were selected purposively from this organic farm. The information collected from the field has been analysed by using narrative analysis and the report has tried to incorporate the real narrations told by the research participants as far as possible.

The study clearly reveals that farmers are practising organic farming and they believe that this farming system is a good practice. However, the research explores the contradictions on the perception of research participants that organic farming may be a good practice if it increases productivity. As the farm was established as an industry, is earning well and having prestige in the society; organic farming is perceived as a sustainable farming by the owner. However, many challenges need to be faced by the owner from production to marketing. Bio fertilizers and bio-pesticides are not easily available. The cost of cultivation is also high as everything

needs to be done manually requiring more workers. There is a high demand of organic products but the owner is unable to fulfil the demand of the consumers.

The consumers are not confident about organic products, whether they are truly organic or not. They are in a dilemma whether or not to trust in the food products that they buy from the organic market. Moreover, the consumers find the price expensive and wish to lower it by the intervention of the government or any other responsible persons or organizations. Though the consumers are not fully confident about organic products and find it expensive; they are willing to purchase some more products other than the products available in the market. Because of the less production, consumers' access to organic products is also limited. The consumers have perceived that if more people are involved in organic farming then more products will be available in the market and the price will be decreased automatically. Due to lack of sufficient organic foods in the market and being expensive, mainly the well off people, expatriates and some health conscious people have the access to organic product.

Knowing the perception of farmers, owner and consumers; organic farming system is environmentally sustainable but it does not seem to be an economically and socially sustainable practice. However, some farmers are interested in taking up organic farming in the near future as they feel that people are becoming more aware of the health benefits of organic products. As there is increased demand of organic products more farmers need to be involved in this farming system. Hence, it shows the possibilities of organic farming in the near future which could contribute to the sustainability of farming system.

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ACRONYMS

AAA:	Appropriate Agricultural Alternatives
APP:	Agriculture Perspective Plan
BBC:	British Broadcasting Corporation
EC:	European Commission
EVON:	Everything Organic Nursery
EU:	European Union
FAO:	Food and Agriculture Organization
FYM:	Farmyard Manure
GM:	Genetically Modified
GMO:	Genetically Modified Organisms
GoN:	Government of Nepal
GTZ:	Gesellschaft Technische für Zusammenarbeit
Ha:	Hectare
IFOAM:	International Federation of Agriculture Movements
INGOs:	International Nongovernmental Organizations
IUCN:	International Union for Conservation of Natural Resources
KIOF:	Kenya Institute of Organic Farming
KRMEF:	Kevin Rohan Memorial Eco Foundation
Mha:	Million Hectares
NARC:	National Agriculture Research Council
NGOs:	Non- government Organizations
OFPA:	Organic Food Production Act
PhD:	Doctor of Philosophy

POPs:	Persistent Organic Pollutants
PRMD:	Pesticide Registration and Management Division
Pvt. Ltd.:	Private Limited
NAST:	Nepal Academy of Science and Technology
UNDP:	United Nations Development Program
USDA:	United States Department of Agriculture
VDC:	Village Development Committee
WCED:	World Commission on Environment and Development
WEPCO:	Women Environment Preservation Committee

CHAPTER I

SETTING THE SCENE

Chapter Overview

In this chapter, I have introduced the background of my research and how I became interested to carry out this research. I have problematized the main issue of my research based on my academic understanding and the insights gained about organic farming from the literatures and other different sources. Similarly, I have formulated three research questions to address the problem statement of my research. At last I have highlighted the significance of this research.

My Experiences about Organics since Childhood

I was born in a farmer's house in Hariwan 4, Sarlahi district (one of the districts in Central Development Region of Nepal). Being a daughter of a farmer, I had observed and experienced various practices and performance of agricultural activities in my village very well. I had seen the use of urea and other chemicals in vegetables and other crops by my father and other farmers. I loved to see the farmers carrying tanks of chemicals spraying on the crops when I was a child. I used to work in my sugarcane farm and have an experience of putting urea in the roots of each sugarcane bush after weeding them. At that time I only knew that if we used urea in the sugarcane farm, we would get more production but I was unaware of its impacts on soil environment and public health.

I gained the experience of using such types of fertilizers as I slowly grew over the years. While I was a grade IX student, I knew that such fertilizers harm the production, even though it increases productivity. In my point of view, conventional farming has increased crop production through the development of high-yielding

varieties of crops, expansion of irrigation infrastructure, use of advanced technologies and hybrid seeds and synthetic fertilizers and pesticides. But at the same time, it has caused many disasters and environmental problems such as pollution, loss of natural resources, soil productivity and fertility and biodiversity, adverse impact on public health and many more. I think that from the perspective of environmentalism and I too believe that conventional farming is not a good practice so far as this farming has caused many environmental problems.

I did my Bachelor's in Environment Science and during that time I got opportunities to attend several programs about the issues related to environment. However, among them very few programs were related to the effects of synthetic chemicals to health and environment. Around four years ago, I went to a program that was held in the Academy Hall, Kathmandu, where a lady gave a presentation on organic food. At that time she explained about the harmful effects of conventional farming and food products on human health. She also mentioned that we are consuming 12% of pesticides in our daily food which means to say that we are taking slow poison every day. I still remember the suggestions she shared, about buying vegetables in the market. She said that we should buy those vegetables which do not look fresh or those having small insects and pores in them such as in saag (green leafy vegetable) because they are considered not treated with chemicals while cultivating. She further explained that most of the fresh looking vegetables found in our market are produced by using high inputs of agrochemicals and some are even poured into the pesticides before bringing them to the market.

From that particular day whenever I go to buy vegetables in the market I always think of the vegetables, from where they have come, how much amount of pesticides might have been used by farmers for its production and so on. I usually do

not buy fresh and healthy looking vegetables but go for the *oilina lageko tarkari* (not so fresh looking vegetables). I often get worried why I cannot buy organically produced vegetables in the market nearby my places and in other places.

On the same day, another presentation given was about the Persistent Organic Pollutants (POPs). In that presentation, the presenter explained that the chemicals used in paintings such as in Asian Paints (a multinational company of paints) are toxic in nature and persist in the environment for a long time. And those chemicals accumulate and magnify in the tissue of humans and animals. He also talked about lead, a toxic chemical, also used as pesticides in farming and how it comes in our food as residue. If any animal eats lead disposed in the surrounding, they die immediately. After these presentations and reading news and getting information from different sources, I knew that conventional farming uses harmful agrochemicals and we consume it along with our food. Since then I have a keen desire to know about safe foods and I have come to know that organic farming provides safe and nutritious food.

Just before I did my proposal defence on 13th June, 2013, I was working in a Non Government Organization (NGO) called Women Environment Preservation Committee (WEPCO), where I was responsible for the arrangement of celebrating World Environment Day which is celebrated on 5th of June. Every year WEPCO organizes programs from the first to the seventh of June and it is called World Environment Week. This year also we organized an essay writing competition, Environmental rally, Environmental exhibition, etc till 7th June. On the 6th of June an interaction program was organized with the housewives and some professional women from a few organizations about food hygiene and the importance of organic food. During the program, a staff from the Agriculture Ministry gave a presentation

about the impacts of pesticide use in farming and the importance of organic farming practice. This program was quite fruitful for me to understand about environmental issues. I got more insights about the importance and usefulness of organic farming. It motivated me to find out more about organic farming practice and the perception of people regarding this.

Academic Understanding: Organic Farming

Being a student of Environment and Sustainable Development, I am very much concerned with the environmental problems. I am interested to know more about organic farming which is believed to have the abilities to minimize the adverse effects caused by conventional farming. "Conventional farming has increased the crop yield that ultimately increased food supply with intensive use of chemicals and new technologies" (Pattanapant & Shivakoti, 2009, p. 116). However, the haphazardly used agrochemicals has "increased pest's resistance, left toxic residues in food, polluted water, air and soil and has caused the loss of soil environment and ecosystem, animal and human health hazards ultimately leading to economic losses" (Pokharel & Pant, 2009, p. 89). To minimize the harmful effects of conventional farming, the researchers, producers and the concerned people around the globe were searching for alternatives and organic farming emerged as an alternative from the Conference of Atlanta in 1981 (Ghimire, 2002). However, the term "organic" was coined for the first time by J. I Rodale in 1940 in the U.S. based on the works of Sir Albert Howard in England, Rudolph Steiner in Germany and Dr. William Albrecht of the University of Missouri (Thilmany, 2006, p.1).

Organic farming is simply defined as a farming system with no use of chemosynthetic products (Sligh & Christman, 2003). Similarly, Zinati (2002) has defined organic farming as "a form of healthy agriculture system that excludes the use

of chemical fertilizers and pesticides, growth hormones and live stock feed additives etc." (p. 606). According to Bello (2008) organic farming is a production system based on the precise standards that help in preservation of agro ecosystem and is economically, socially and environmentally sustainable (p. 36). Thus organic farming seems to be a sound production system as it is concerned with the sustainability of farming and the whole environment.

I was taught that agriculture is the key sector for the economic development for most of the developing countries like Nepal. And later I found that it is the highest contributor in Nepalese economy and is one of the main occupations of Nepalese people. More than two thirds of the population depend on the agricultural sector but mainly in subsistence type (Gautam & Prasain, 2012). I have seen that most of the Nepalese farmers are still practicing traditional subsistence agriculture ("Traditional subsistence agriculture uses mostly human labour and draft animals to produce only enough crops or livestock for a farm family's survival" (Miller, 2007, p. 315) and mostly depend on rain for cultivation. Besides doing hard labour farmers are unable to improve their standard of living. Though Nepalese farmers are economically poor, they know the indigenous knowledge of farming (Thapa, 2010). According to Vogl, Kilcher, and Schmidt (2005) farmers' traditional knowledge on ecological and social relationships are the main base for the development of organic farming (p.8). Nepalese farmers are rich in their traditional and indigenous knowledge of farming (Gauchan, 2011). Hence, I feel that indigenous knowledge of Nepalese farmers can be utilized in the practice and promotion of organic farming.

It has been seen that the average Nepalese farmers use very small amount of agrochemicals as compared to other countries. In Nepal, the average use of chemical fertilizer is 32 kg/ha/year whereas chemical pesticides use is 142 gm/ha/year which is

still very low (G. C. & Katuwal, 2011, as cited in Subedi, n.d., p. 1). “More than 70% crop cultivation in Nepal is almost free from the use of chemical fertilizer and pesticide” (KC, 2006, p.12). However the indiscriminate and excessive use of pesticides in some crops mainly in vegetables which are to be sold the market (Jha & Regmi, 2009) has been a major concern at present. Thus in the context of Nepal unsystematic and overuse of pesticides in some crops particularly in commercial vegetables for the supply in urban and semi urban areas has drawn special attention of concerned people. There is increased concern regarding organic farming and its produce in many parts of the world and Nepal is not an exception. I have known that many Nepalese farmers also have switched to organic farming.

Gautam and Prasain (2012) found that commercial organic farming (large scale farming for sale) in Nepal was initiated in 1987 by Judith Chase, an American woman. She started organic farming in Gamcha Village of Bhaktapur under an NGO named Appropriate Agricultural Alternatives (AAA) (p.20). At present, there is increasing interest among commercial farmers especially fruits, nuts and vegetable farmers to convert into organic. Numerous conventional farmers have shifted to organic farming and also many youths have taken up organic farming as their business. There are many success stories of organic farms in Nepal. Navin Gopal Pradhan has established organic vegetable farm namely *Fresh Farm* at Changlakhel, Farping after his retirement from the government job. Similarly, Late Mr. Padam Bahadur Mahat from Jumla was an organic apple grower; his garden is spread in 5.5 hectares (G. Subedi, n.d.). Samir Newa and a group of young and energetic Nepalese entrepreneurs founded *The Organic Village Pvt. Ltd. (Private Limited)* in 2003 with the main objective of promoting organic farming, organic products and environmentally friendly handicrafts (Rana, 2010). The trend of people involved in

organic farming shows that not only elderly people from the villages but also young and educated people from the city are interested in this sector.

Problem Statement

According to my experience, organic farming is most probably a good practice in the context of Nepal and can be sustained in the future as well. But it is difficult to find organic farmers and products easily available in the Nepalese market. Very few people are involved in this farming, thus, resulting in insufficient products. Some health conscious, aware and rich people consume organic products. However, they are still less in number. It is also seen that now more people are interested in organic farming and consumers are willing to buy additional products. Thus, in this line I would like to know the perception of farmers, owner and consumers about organic products and the farming system.

Previous studies have showed that high inputs of chemical fertilizers and pesticides have brought about severe impacts on public health and the environment (Pimentel, Hepperly, Hanson, Seidel, & Douds, 2005, p. 2). The irrational use of agrochemicals over the past few decades has caused chains of problems such as, huge loss of natural resources and soil fertility, degraded water resources, pollutions in soil, air, and drinking water and reduced food quality (Reddy, 2010). In such situation it is pertinent to explore the perception and understanding of farmers and consumers about organic farming. Nowadays in Nepal, the heavy use of chemical fertilizers, advances in technologies, application of high yielding varieties, haphazard irrigation and other chemical inputs have caused remarkable environmental degradation (Desar, 2013, p. 2). Thus, even in case of our country “deteriorating environmental services and irrational and long term use of chemical fertilizers and pesticides and market demand reinforced the movement of organic farming” (Singh & Maharjan 2013, p. 37). Now it

has been realized that sustainability in farming system is crucial and organic farming assumed to be a sustainable practice, is getting special concern from around the world.

Commercial organic farming was initiated long ago in Nepal; however, it is not widely adopted till now. A small fraction of land has been managed organically. The International Federation of Organic Agriculture Movement (IFOAM) reports that 1,247 organic farms are there in Nepal and 1000 hectare is organically managed (Pokharel & Pant, 2009 as cited in Kafle, 2011, p. 604). This is not a significant scenario that may contribute to sustainable organic farming. Some of the major organic products grown in Nepal and available in the market are tea, coffee, large cardamom, ginger, fresh-vegetables, dried fruits, nuts, honey and herbal products (Pokharel & Pant, 2009, p.92). Till now we have been able to produce few organic products and have less access to international as well as local markets.

Health and environmental issues have changed the food consumption patterns thus resulting in the increasing interest of people on organic food (Samkumchaliang & Huang, 2012, p. 2). Consumers have a belief that organic food products are healthier than conventional alternatives. Organic food contains fewer residues of pesticides, growth promoters, antibiotics and other chemicals. It tastes better than the inorganic products (Shrestha & Pant, 2006). A study carried out by Berry (2006) found out that organic food does not contain chemical residue as it is not treated with any chemicals from cultivation to manufacturing, processing, or packaging. According to Bhatta, Doppler and KC (2008) the trends of a growing demand of consumers for organics is becoming visible thus sustainability in production has become the prime concern in agriculture development. Organic food is believed to have good tastes and nutrition as

it is not produced with the treatment of agrochemicals; thus there is an increased demand of consumers for organic foods.

Literatures suggest that organic farming is a sustainable practice and have lots of positive impacts on health and environment. I have many queries regarding organic farming practice and wanted to know the answers of several questions such as- How do Nepalese farmers practice organic farming? What inspires them to adapt this farming system? How do farmers perceive organic farming? How do consumers perceive organic foods and farming system? Why are there only few outlets for organic products? Why is there so little progress in this farming? Whether or not it is a sustainable practice? If not, how can it be sustained in the future? So, all these queries encouraged me to study about organic farming and to know the perception of the owner, farmers and the consumers.

Purpose of the Study

The purpose of this research is to explore the perceptions of the farmers, owner and consumers regarding organic farming and to discover how farmers, owner and consumers understand the sustainability of organic farming. The study explores the controversies of organic farming prevalent in the Nepalese context.

Research Questions

The research tried to find out the answers of the following questions:

- How do farmers (workers) perceive organic farming?
- How do owners and consumers perceive organic farming?
- How do farmers, owners and consumers understand the sustainability of organic farming?

Significance of the Study

Organic farming as a key to sustainable agriculture has captured the attention of many countries worldwide (Food and Fertilizer Technology Center, 2006). “The intensive chemical agriculture that has been followed after the success of the green revolution is causing heavy pollution of our food, drinking water and air. The life expectancy has improved but the quality of life has substantially deteriorated” (Government of India Planning Commission, 2001, p. 2). Organic farming tries to maintain ecological processes that provide plant nutrition while conserving soil and water resources. It eliminates agrochemicals and reduces other external inputs to improve the environment as well as farm economics (Pimentel et al., 2005). Proponents of organic methods believe that organic farming is a less damaging production system thus; they assumed organic farming sustainable practice (Food and Agriculture Organization [FAO], 2012). As organic farming is claimed to be a sustainable production, I was interested to know more about this farming system. I have categorized the significance of my research in three subheadings as personal, professional and policy significance.

Personal Significance

This subject was taken by me to highlight and discuss the important issues related to organic farming and sustainable practice for livelihood connected to my field of study i.e. Environment Education and Sustainable Development. The completion of the report has not only given me self-satisfaction but will add value in the field of research and provide guidance to others as well. More research work is still deemed necessary in this field of study in identifying effective measures for immediate, short term and longer term realistic and sustainable development plan – ‘organic farming’. Once again, I am confident that this research will provide adequate

guidance to others in carrying out further research work in the same field or field similar to this.

Professional Significance

I realize that my research is going to add some knowledge to the academic world about organic farming. It will reveal the perception of the farmers, owner and consumers about organic farming and its produces and the understanding of them about the sustainability of farming system. What I studied is about organic farming, the perception of owner, farmers and consumers and also their perception on how organic farming can be sustained. In this research I have mainly focused on the sustainability of farming practice which is lacking in the previous researches. I believe that my research can be a reading material for those students who are planning to study any subject related to organic farming. And I also believe that this research might help in my own future professional life.

Policy Significance

Agriculture is the backbone of Nepalese economy, contributing 35% share in national gross domestic product (GDP) and forming the source of income and employment to 65% of the population (Ministry of Education, 2011, as cited in Singh & Maharjan, 2013). My research tries to aware the planners, developers and the policy makers to make appropriate plans and policies for the development of organic farming. As the government has not given priority to organic farming, it is less developed. Since only a few people are involved in organic farming; organic products are not easily available in the market. Farmers are unable to fulfil the demands of the consumers therefore; the consumers have no choice but to buy limited products. I hope that this research may offer insights to the owner, farmers, consumers and other people associated with this farming.

Summary of the Chapter

In this chapter, I have introduced organic farming and its situation in Nepal in short. I have also identified my problems and have formed the research questions based on those problems. I came to a presumption that harmful impacts of conventional farming on health and environment have caused the farmers to shift towards organic farming and that there is an increased number of consumers who want to have organic products. Based on these issues, I have formulated three research questions to study about organic farming practice and the perception of the owner, farmers and consumers about organic farming. In addition, I have explained the significance of my research.

CHAPTER II

LITERATURE REVIEW

Chapter Overview

In this section of dissertation, I reviewed many literatures that are useful to my study. According to Creswell (2011), a literature review is a written summary of journal articles, books and other documents that provides past and current information about the topic of anyone's research study. Thus, in this chapter I have reviewed many articles, journals and required documents related to my study to get more insights of the past as well as of the present. I have organized this section based on the themes as I call it thematic review, theories that I call theoretical review, review of the previous researches and reviewed policies as policy review. I am discussing the usefulness and relevancies of these literatures in my research.

Thematic Review

In this research I have tried to understand the perception of farmers, owner and consumers of organic farming and the sustainability of farming system based on the understanding of them. In this review section I have reviewed some themes that I thought to be important for my study. I have mentioned some major themes related to the study such as the meaning of organic farming, national and international practices of organic farming, potential of organic farming in Nepal, the challenges of organic farming and the sustainability.

Meaning of Organic Farming

Organic farming has been defined in various ways. Vogl et al. (2005) define organic farming as a widely appreciated approach that aims to minimize the negative impacts of the green revolution and helps to maintain a balanced relationship among

agricultural production system, humans and the overall environment (p.6). “It is a system for crops, livestock and fish farming that emphasizes environmental protection and the use of natural farming techniques. It is concerned not only with the end-product, but with the entire system used,” said FAO (2012, p. 5). Organic farming uses the local technology and the locally available resources utilizing existing knowledge of farmers with scientific insights (Johannsen et al., 2005, p. 8). I have known from the literatures that organic farming is not only related with the production of food products but also with the production of timbers and fibre etc.

Organic farming is not only a traditional practice but it also incorporates some technological knowledge to some extent that does not harm the environment but maintains the criteria of the three factors of sustainability i.e. economic, environmental and social sustainability. Organic farming has been defined by several agencies, organizations and personalities differently. However, the most popularly accepted definition of organic farming is given by FAO. It states,

....organic farming is a holistic production management system that aims to promote and enhances agro-ecosystem health, including biodiversity, biological cycles and soil biological activity. It is based on minimizing the use of external inputs, and represents a deliberate attempt to make the best use of local natural resources. Methods are used to minimize pollution of air, soil and water (FAO, 2013, as cited in Asadollahpour, Pirmoradi & Mohammad, 2013).

The concepts of different farming such as alternative agriculture, ecological farming; bio dynamic agriculture, regenerative agriculture, natural farming, permaculture, sustainable agriculture etc. have come across with organic farming (Shivakoti & Magarati, 2005). Though there are different names the common concern of all is to increase production, productivity of soil and good quality and healthy crop

production using locally available resource to mitigate the adverse effects of conventional farming.

Review of many articles gave me more insights about organic farming and I came to know that organic farming has been perceived and defined in various ways but the main reason of reviewing these literatures is to link the perception of my research participants. My focal point is to know how organic farmers define organic farming and how it is perceived by the farmers who are really engaged in the farm. Similarly, it is claimed that organic farming produces healthy and nutritious food but how far do consumers believe that it really is organic food and how do they perceive organic farming, is the main concern of my study.

National and International Practices

Nowadays it is seen that people are facing economic, social and other different kinds of crises. But even at the time of crises organic farming has been able to expand and spread its area which is one of the interesting aspects of it (Firmino, 2010). During the time of crises also increased interest of people from around the globe has become a curious matter. The researchers Kristiansen, Taji and Reganold (2006) stated that organic agriculture has become one of the fastest growing businesses with high growth rate in terms of land under organics, number of farmers and value of organic products (p. 421). “As per the estimates in 2007, organic food is produced in about 32.2 million hectares (Mha) globally, managed by more than 1.2 million producers, including smallholders,” said Reddy (2010, p. 344).

Organic farming is being practiced in large scale globally. It has become the most dynamic and fast growing sector of the global food industry (Sligh & Christman, 2003). The IFOAM is the biggest international organization that works for organic farming. Likewise continents and individual countries are practising organic farming.

Willer, Rohwedder and Wynen (2009) stated that Oceania, with 12.1 million hectares (Mha) comprise the world's most organic agricultural land followed by Europe with almost 7.8 Mha, Latin America (6.4 Mha), Asia (2.9 Mha), and North America (2.2 Mha). However most of the world's organically managed arable land is located in Europe (3.5 Mha), followed by North America (almost one million) and Latin America (150'000 Mha). The organic production at present covers more than 31 million hectares (IFOAM, 2008, as cited in Gautam & Prasain, 2012, pp. 18-19). The area of land under organic management is increasing worldwide and it signifies that organic farming has become a growing business in the agricultural sector.

Different kinds of organic products are being produced worldwide so organic farming has become a matter of concern. Organic farming system is not new to Cuban people. It is promoted actively by Cuban producers, scientists and authorities since the nineties. "Interest in organic agriculture is now being aroused in the Cuban Ministry of Agriculture. Drafts for national legislation are in preparation" (Kilcher, 2001, p.186). The first certified organic crops from Cuba were coffee, honey, citrus and sugar, starting conversion by the end of the nineties (Willer & Kilcher, 2009).

In Kenya, aware and interested people, NGOs and private organizations were responsible for the growth and development of organic farming. The private organizations like Kenya Institute of Organic Farming (KIOF) were formed in 1986 (Kledal, Oyiera, Joroge, & Kiarii, 2010, p.157). Kenya's organic institutes are mostly dependent on foreign donors however they have trained the farmers and many workshops are held for the development of organic agriculture (Taylor, 2006). Now Kenya is producing several organic products and supplies to the international markets as well.

Organic farming has become common to the Indian farmers as well. The diverse soil and climatic variation and ecological regions of India have abundant potential to grow a variety of crops (Nayak & Mukhopadhyay, 2008). Several forms of organic farming are being successfully practiced in the country. In a study done by Dangat (2012) he stated that in the development of organic farming, the Indian government has played an important role and has implemented various agricultural development schemes for the benefits of farmers. The Indian government has provided schemes and assistance to farmers in various ways by providing subsidies and other supports. Farmers are getting support from the government in the adoption of organic agriculture, for biodynamic and vermicompost, integrated nutrient management, while testing soil sample and many more. According to Reddy (2010) India is the second largest producer of vegetables after China in the World. India now has become one of the biggest suppliers of organic vegetables in the global market which is a great achievement in the organic sector of India. The State Government of Sikkim has set a target to make the entire state fully organic by 2015 (Government of Sikkim, 2010). Such type of initiations and support from government could be the source of inspiration for the development of organic agriculture in other countries as well.

In case of Nepal, around 20 % of the total food produced is organic but only 10,000 hectares of Nepalese organic farming area is certified up to now (Thapa, 2005). Nepalese organic products are not getting well access to the international market. However it is noticed that almost all organic products produced in Nepal is supplied to foreign countries. Three to four years back organic products from Navin Gurung, owner of Trijal Organic Farm, also used to be exported to Singapore, Russia and Canada but now he has stopped exporting there. Organic farming is developing

slowly in Nepal and now many people are interested to consume organic products. Now many parts of the country are practising organic farming and the demand of organically produced vegetables is increasing, primarily in urban areas. In the context of Nepal many places in the mountain regions are practising farming system like organic farming as the farmers do not have access to modern technologies and chemical fertilizers.

Potential of Organic Farming in Nepal

Globally, organic farming is an emerging issue and has several important aspects. In the context of Nepal also both government and non-government sectors are showing their interest in the promotion and development of organic farming to some extent. Individual and some group of farmers are growing many organic crops (Pokharel & Pant, 2009, p.92). The practice of organic farming in Trijal Organic Farm is an example of individual effort and interest. This farm is also growing diverse vegetables and other crops. Apart from this farm, many other farms can be seen around the Kathmandu valley. As organic farms are increasing, there is a rising interest amongst consumers for organic products. According to FAO (2012), "the growing interest of consumers and markets worldwide in organic products has created new trade opportunities for developing countries, through internationally recognized certification" (p. 5).

Many traditional farms in Nepal still use organic manures, local seeds and indigenous methods of pest control as there is no availability of chemicals thus it meets many principles of organic farming standardized by European Union (EU) and IFOAM (Shivakoti & Magarati, 2005). Jumla (one of the mountainous districts of Nepal) is already declared as organic farming district by the government where people do not use agrochemical as chemical fertilizer and pesticides have not reached there

(Tamang, Dhital, & Acharya, 2011, p. 4). There are some other districts like Jumla where transportation is not well developed and due to lack of access of synthetic chemicals, farmers are compelled to use organic fertilizers and local seeds and technologies for agriculture. And therefore it seems relatively easy to convert existing farming practices into organic farming. Thus I feel that Nepal has a great potential in organic farming practice.

Challenges of Organic Farming

Organic farming is booming in different parts of the world, especially in developed countries. But the most of the farmers in developing countries face several constraints, such as lack of technical knowledge, lack of market information and access, lack of knowledge about productive seeds and organic manures etc (Druilhe & Barreiro, 2012). There is a slow development of organic farming in Nepal as government does not have clear vision for the organic sector (Tamang et al., 2011). Also there is lack of incentives and supportive organic farming policy including standard and certification (Ranabhat, 2007). As Trijal Organic Farm has been running without any kind of support from the government or other organizations, it can be said that it is also facing numerous challenges from production to marketing. So in my study I have also tried to identify the challenges faced by farmers while practising organic farming.

In organic farming all the works need to be done manually and agrochemicals cannot be used so the farmers need to increase the price to compensate their labour and cost of cultivation. Apart from this, organic commodities are expensive by nature; therefore, not all the consumers can afford to buy them which seem to be another challenge for the farmers. In 2008, a study carried out by Beban revealed that organic farming is productive and sustainable production system but it needs strong support

from the state in the form of subsidies, agricultural extension services and research and many more. So in the context of our country, the government should focus on making suitable plans and policies regarding organic farming and it should be implemented effectively for its development.

Sustainability

Sustainability has many definitions. It is interpreted differently in different nations, locations, areas and context as per their goals. According to Doane and MacGillivray (2001) sustainability is the continuation and the survival of environmental, social and economic aspects. “The term ‘sustainable’ was first used in the context of people using resources, as overusing of resources cannot continue for a long term” (Sustainable Seattle, 2004 as cited in Salk, Nathan, & Reddy, 2008, p.5). The Sustainable Development concept became popular in 1987 by Brundtland Commission report, (Salk et al., 2008, p. 6). Ashley and Carney (1999) stated that sustainability has four key components namely economic, institutional, social and environmental sustainability. All these components are important and there must be a balance among them (p.12). According to Kuhlman and Farrington sustainability is defined as the persistence and the capacity for something to continue for a long time, perhaps even an indefinite period. Refresh Riverside (2012) stated that sustainability provides and maintains the harmonious relation between humans and nature that fulfils the demand of the present and the future generations of the social, economic, environmental and other aspects.

Organic farming is a type of sustainable agricultural development which meets the criteria of sustainable development that is environment, economic and social aspects (Scialabba, 1999, as cited in Pokharel & Pant, 2009). Similarly “organic farming claims to have the potential to provide benefits in terms of environmental

protection, conservation of non-renewable resources, improved food quality, reduction in output of surplus products and the reorientation of agriculture towards areas of market demand” (Lampkin, 1990, as cited in Acs, Berentsen & Huirne, 2005, p. 1). I believe that although it is relatively easy to describe goals for a more sustainable agriculture, it is more problematic to define sustainability which is a complex and contested concept. According to my perception when applied to the environment, sustainability incorporates actions that do not damage or degrade natural resources. So in this context whether the organic farming practised in Trijal Organic Farm is sustainable or not could be declared by knowing the practice and perception of the owner, farmers and the consumers about organic farming.

Theoretical Review

According to Cherry (2014) a theory is an inherent principle that describes some characteristic of the natural world. Here I have applied two theories that I thought important to explain and analyse my data brought from the field. The theories I have applied here are; principle of organic agriculture and the theory of sustainable development. Organic farming has four standard principles. “These principles are the roots from which organic farming grows and develops. They express the contribution that organic farming can make to the world and a vision to improve agriculture in a global context” (IFOAM, 2009a, p. 1). Whether the practice of farming in Trijal Organic Farm and the perception of the owner, farmers and consumers are based on the principles of organic farming or not, has been known by using the principle of organic farming. And the theory of sustainable development has been used to analyze the understanding of farmers, owner and consumers about the sustainability of organic farming.

Principles of Organic Farming

It is believed that agriculture started with the evolution of human civilization and it is one of the most important activities of humans because everyone needs to eat food daily and the source of food is agriculture. Agriculture incorporates the history, culture and community values within it (Vaarst, 2010). Organic farming is based on the four principles (Soil Association, 2013) which were established by IFOAM in September, 2005. These four principles are, the principle of health, principle of ecology, principle of fairness and the principle of care (IFOAM, 2009a). Each principle has been articulated with explanation (Vaarst, 2010). And I believe that these explanations are good enough to describe the four principles in a simple and understandable way.

The principle of health describes that the health of every individual and the whole communities is correlated with the health of the ecosystem. If the soil is healthy then it can produce healthy food to feed people (IFOAM, 2009a). Similarly IFOAM defines the principle of ecology, as the production of food and ecological balance should be maintained (IFOAM, 2009a). In organic farming, agrochemicals and heavy machinery is not used but traditional method is applied, so it maintains the ecological systems. In addition it does not destroy the habitats of many organisms and helps to maintain the genetic and agricultural diversity. In the principle of fairness, the fairness means the equity, respect, justice and stewardship among people and in their relations to other living beings says IFOAM. It emphasizes that all involved in organic agriculture should conduct human relationships in a manner that ensures fairness to all involved; farmers, workers, processors, distributors, traders and consumers. The IFOAM (2009a) has explained principle of care as the principle in which organic agriculture should be practiced in a way that should protect the health

of current and future generations and the environment. It states that precaution and responsibility are the key concerns in management, development and technology choices in organic farming. In organic farming; wisdom, traditional and indigenous knowledge and practical experience should be combined with science and innovation.

All the four principles of organic farming has been tried to link it up with the real practice of farming and the perception of the farmers, owner and the consumers. I have tried to apply the four principles; principle of health, ecology, fairness and care with the research participant's experiences, their understanding and their perception.

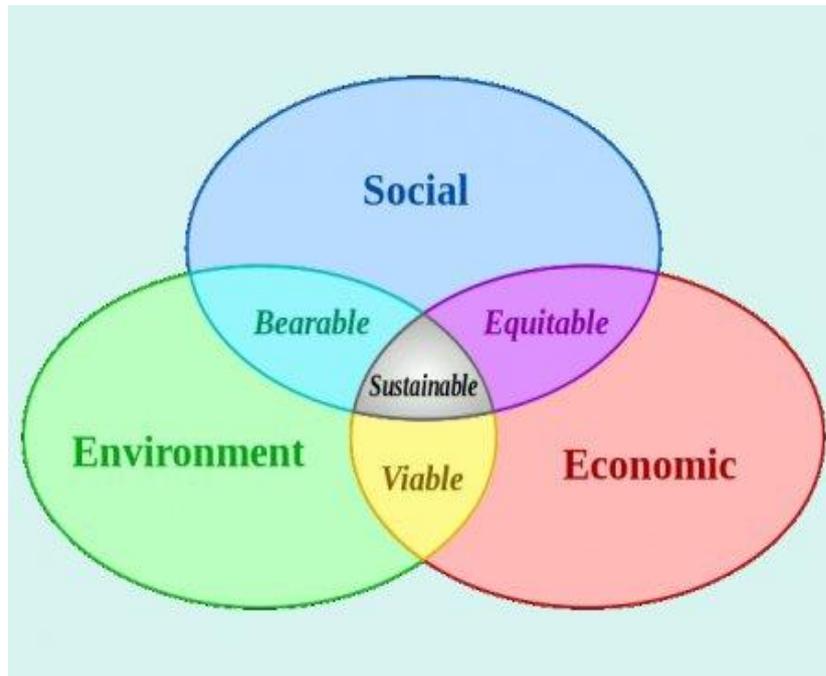
Principles of Sustainable Development

The green revolution was successful to produce sufficient food products and was a major achievement for many developing countries and increasing the national level of food security (International Food Policy Research Institute, 2002). A study carried out by Hazell and Andersen (1985) found that the green revolution did not only increase the food production by technological advancement mostly in developing countries, but also it caused environmental problems. After a long term use of agrochemicals and heavy machineries in agriculture, agricultural lands became less productive and there are global environmental threats such as loss of biodiversity, desertification, climate change etc (Scialabba, 2003). So in response to environmental consequences due to intensive conventional farming, the concept of sustainable development developed.

The term 'sustainable development' was used for the first time by the International Union for the Conservation of Nature (IUCN) during World Conservation Strategy to define equity in ecology (IUCN, 1980 as cited in Salk et.al., 2008). However the report, Our Common Future prepared by World Commission on Environment and Development (WCED) in 1987, first acknowledged the conflicts

between environment and development giving rise to a definition of sustainable development (Roseland, 2000, p. 76). The classic definition of sustainable development prepared by The Brundtland Report states that “Sustainable development is the ability to meet the needs of the present without compromising the needs of the future generations to meet their own needs” (WCED, 1987 as cited in Giddings, Hopwood & O’Brien, 2002, p. 2). Different people with different perspectives have come up with definitions of Sustainable Development. According to IUCN (1991) sustainable development is “To improve the quality of life while living within the carrying capacity of ecosystems” (as cited in Centre for Environment Education, 2007, p. 9). Though sustainable development has been defined in many ways, I believe that its main concern is to take care of the environment during developmental activities and it must be for the well being of the society.

As a result of human activities, the environment started deteriorating in many parts of the world and then sustainable development became a widely recognized goal for humans (Bossel, 1999). Sustainable development is generally thought to have three components; environment, society, and economy. These three areas are interrelated. A healthy and prosperous society depends on a healthy environment that provides food and safe drinking water, clean air and other resources (McKeown, Hopkins, Rizzi, & Chrystalbridge, 2002). Thus the economic sustainability, social development and the environmental responsibility are the major principles to achieve sustainable development. As shown in the pictures, the environment, economy and society have a close interrelationship with each other.



(Source: Adopted from Adams, 2006)

The developmental activities cannot be completed without using natural resources and the development must be inclusive for the well being of the society. The economically sustainable system must be able to maintain the balance between the costs and benefits of economic activity and within the limitations of the carrying capacity of the environment (Munro, 1995, as cited in Nurse, 2006). Economic dimension of sustainable development means it must produce goods and services continuously for the people of the present as well as for the future generations without damaging agricultural or industrial production (Harris, 2003). Economy is one of the important factors of sustainable development.

Social sustainability incorporates political and community values. Social sustainability is achieved only when there is distributional equity, adequate provision of social services such as health and education, gender equity, and political values and

equal participation of all (Harris, 2000, p. 6). Like other aspects, social sustainability is one of the important aspects to achieve sustainable development.

An environmentally sustainable development means it must maintain natural resources, biodiversity, ecosystems and atmospheric stability and in similar manner properly utilizing renewable resources and using non-renewable resources to the extent that it can replenish before its depletion (Harris, 2000). The basic premise of sustainable development is that human and natural systems are dynamically interdependent and cannot be considered in isolation in order to resolve critical issues (Dale & Newman, 2006). We are using natural resources faster than its replenishment thinking that they will never end. Development activities cannot be completed without the use of environmental resources and this is done by the people for the well being of the society. According to United Nations (2013) sustainable development can only be achieved; if there is a harmonious relationship among social equity, environmental responsibility and economic viability.

The major goal of sustainable development in Nepal is to reduce poverty and provide basic needs of facilities to its citizen and the future generation and also opportunities in social, economic, political and ecological aspects of their life (Government of Nepal (GoN), 2003). The classical definition of sustainable development is not specific. It has broad objectives sometimes complex to understand. So there is another way of defining sustainable development which is concerned with the specific objective for its achievement (Kates, Parris, & Leiserowitz, 2005, p. 12). Thus the GoN has set specific objectives to achieve sustainable development in the agricultural sector so as to enhance food security, increase the annual growth of agricultural GDP at least 5% to alleviate rural poverty at a faster rate and to increase rural employment (GoN, 2003, p. 8). The organic

farming becomes a sustainable practice only when it fulfils the objectives of all the aspects of sustainability. It should be economically viable, socially sound and should maintain the ecological systems. When organic farming becomes a sustainable practice then it helps in the reduction of food insecurity, alleviates poverty and can create opportunities for local employment.

To achieve sustainability, in organic farming, it must maintain the criteria of economic, environmental and the social sustainability. Here in this research, I have tried to know the understanding of the owner, farmers and consumers about environmental, economic and social sustainability of organic farming practice.

Review of the Past Studies

Several studies were carried out in different countries with different aims regarding the perception and sustainability of organic farming. A Master's study carried out by Anderson in 2003 in the United States of America dealt with the perception of Genetically Modified (GM) and organic food among the North Dakota college students. The researcher used survey to conduct the research. The researcher explored that his participants perceived organic food as a healthier and safer choice and organic practices were perceived to be environmentally sound. Additionally the researcher discovered that his participants were unknown to the effects of GM food that could have on the environment and society as a whole. However, his participants generally felt that genetic modification could be used effectively and valued some of the associated benefits.

A research conducted by Aryal (2006) deals with the overall aspects of organic farming system in Nepal. It talks about the national and international scenario and prospects and opportunities of organic farming in Nepal. Similarly, another research carried out by Baskota in the same year 2006, mainly focused on scenario of world tea

and organic tea production and productivity in Nepal. It has also described the quality aspects of organic tea and fair trade market in Nepal.

A research of Masters of Philosophy carried out in 2009 by Anifori is relevant for my thesis. The aim of this research was to know the perception of the consumers and their willingness to pay for organic fruits and vegetables in Ghana. For this research, a household level survey was carried out. The study found out that most consumers had positive perception towards organic vegetables and fruits. And the study also revealed that consumers' willingness to pay for organic fruits and vegetables were more than 20% of the prices of the conventional products. The study also showed that age, education, income, gender and household size dominantly influenced the consumers' willingness to pay for organic fruits and vegetables.

A master's thesis that is relevant to my research was carried out in 2010 by Erdelyi. The purpose of the research was to know how different actors (people involved in organic farming) perceive sustainability in the Hungarian organic food sector in the light of conventions theory. To conduct the research, researcher interviewed ten actors with semi structured qualitative interviews. The findings of this study showed that those actors that are closer to the field i.e. farmers and food processing company were more connected with the environment, rural development and the sustainability.

A research carried out by Bhandari in 2010 from Kathmandu University explored the practices and constraints of organic farming and also found out the essential factors associated with organic farming. The researcher did quantitative research and used survey as methodology. This study found out that the farmers had their own common practices in organic farming. According to this research, various constraints in the practice of organic farming and the severe problems were to control

the diseases and insects, high consumer price and lack of skilful training. The researcher explained that the age of people practicing organic farming falls from age group twenty to thirty, it means that the young and most probably the educated people are practising organic farming in Kathmandu. Thus, the researcher experienced that education has positive impact to promote organic farming.

A research was conducted to know the consumers' perception of sustainably produced food by two researchers Whorton and Boadu in 2011 from Kansas State University, the United States. A survey method was used to examine organic and local markets to gain a better understanding of consumers' response to these products, their reactions to price differences of those products, and how their preferences change based on changing income level and prices.

Nnamonu and Ali in 2013 conducted a research in Nigeria to evaluate farmers and consumers perception of production and consumption of organic farming food, to elicit farmers and consumers perception of agrochemical use on food crops and environment and to establish if there are significant relationships between gender, age, educational background, type of respondent and perception of agrochemical use and organic farming. They did a survey and found out the positive perception of organic farming and agrochemical use with significant relationships between gender, age, educational background and respondent type (that is whether respondent is a farmer or consumer). This indicates that the communities will have high adoption rate of innovations related to organic farming and other agricultural policies.

My research is also similar to above mentioned researches. These studies are important to review because they gave me the insights for my thesis. Researches I reviewed here are mainly based on the perception of people; farmers or consumers or traders and/or the people involved in organic farming about the organic food and

farming system. And some of the studies talk about the sustainability of farming system. My thesis also aims to know the perception of owner, farmers and consumers about organic food and farming system and how they understand the sustainability of farming system.

Policy Review

Policy and legislation are the important procedures for conducting the work smoothly and efficiently. Many international laws and policies have been made for organic farming. According to Spotlight Nepal (2010) the United States Department of Agriculture (USDA) is the international organization that sets, defines, and regulates the use and meaning of organic on food labels. Similarly “Food and Agriculture Organization proposed The World Food Summit Plan of Action (1999) in recognition with the importance of developing alternative sustainable agriculture such as organic farming” (Bhatta et al., 2009, p. 1). According to a report of USDA (2012), the term “organic” was recognized in 2000, by the National Organic Standards Board of the USDA (p. 5). Iowa State University (2003) states that organic food must be produced without using conventional pesticides, petroleum-based fertilizers, sewage sludge-based fertilizers, herbicides, pesticides, genetic engineering, antibiotics, growth hormones, or irradiation. Also the Genetically Modified Organism (GMO) is not allowed in organic production.

While raising animals they must be fed organic feed and given access to the outdoor. Prohibited substances should not be used in the land for at least three years before the harvest of an organic crop (USDA, n.d.) In the same way in 2005 the Codex Committee on Food Labelling developed the guidelines for the production, processing, labelling and marketing of organically produced foods (FAO, 2012, p.5). These guidelines have provided the regulatory mechanisms for organic farming in

many countries. In addition IFOAM EU Group has introduced the new EU Regulation on organic food and farming (EC 834/2007) which came into force on 1st January 2009 (IFOAM, 2009b, p. 8). All these principles and guidelines have been made to practice organic farming without using forbidden substances from production to marketing and make it a sustainable practice.

Role of Government for the Development of Organic Farming in Nepal

Nepal government has been providing subsidies for seeds and chemicals fertilizer which is a good aspect for the development of agriculture sector. Twenty-years (1995- 2015) Agriculture Perspective Plan (APP) of Nepal has given priority to the increased use of agrochemicals to increase the agricultural productivity. Shrestha (2010) says that the subsidy is provided for farmers on chemical fertilizers on cost sharing basis. This new subsidy policy is already in implementation. But there is no subsidy program for organic farming. Organic farmers are also looking for support and subsidies from the government. If they could get any kind of support from the state and from any private organizations then organic farming could be developed.

An NGO called “The Organic Village” works in collaboration with NGOs, International non government organizations(INGOs) and development agencies including UNDP, Micro Enterprise Development Program, Small Grants Program, GTZ (Gesellschaft Technische für Zusammenarbeit) German Development, and Winrock International for the development of organic farming in different parts of Nepal (Rana, 2010). Though some non government organizations have helped in the promotion of organic farming, the government has not played any crucial role for its development. I feel that the state must make some contribution for the development of organic farming in Nepal.

In the context of our country, Nepal initiatives for organic farming have been taken with the recently formulated agricultural policies and tenth plan document (2002/03- 2006/07). The tenth plan have however emphasized on the promotion of organic farming based on organic manures (Shivakoti & Magarati, 2005). Government of Nepal, Rastriya Krishi Niti (2061 BS [2004 AD]) states that organic farming will be promoted and support will be given to test and clarify the quality of organic products meant for exporting and production. The use of hybrid seeds and the improved variety of agricultural products will be supported while the use of GMO will be regulated (pp. 5-6). The demand for organic certification is gradually increasing in Nepal although it is in its early stage (Ranabhat, 2009). Yet organic farming is not in the priority list of the government. The Ministry does not have any desk with a focal person for organic farming.

A report prepared from the consultation workshop by Tamang et al. (2011) clarifies that the national agriculture policy 2061 (2004) has declared that organic produces is just for export. In the similar manner the organic foods produced in Trijal Organic Farm is not for the consumption of local people. In the previous years the owner used to export his products abroad but currently organic produces are supplied to Kathmandu. The government has not made any plans and programs for the organic farming sector till date. The policy and programs made are only concerned with earnings and not with the health of its citizens. The policies and programs regarding organic farming in our country do not seem farmer and consumer friendly.

The Gap

I found many similarities between the previous researches and mine. I reviewed many researches about the perceptions of people about organic farming and its produces and about the sustainability of farming system. In the studies I reviewed,

the researchers have discovered the perception of either consumers or farmers or of all the people involved in organic farming. But my study does not only focus on the perception of either farmers or consumers but on the perception of the owner, farmers and consumers about organic farming and its produces. It explores the understanding of the owners, farmers and the consumers about the sustainability of farming. My research is mainly focused on the sustainability of the organic farming practice especially the environmental sustainability based on the perception of farmers, owner and the consumers which I did not find in the previous studies.

Summary of the Chapter

In this chapter I have reviewed the articles related to my research. In thematic review section, I have mainly reviewed the themes that are closely related to my research. Similarly, for the theoretical review I have reviewed the theory of sustainable development and the principle of organic farming. I have also gone through previous researches conducted in organic farming and the national and international policies regarding organic farming has been reviewed as policy review. Lastly, I have talked about the research gap in this chapter.

CHAPTER III

MY RESEARCH METHODOLOGY AND METHODS

Chapter Overview

This chapter guides the process of the study. It deals with the philosophical consideration with ontology, epistemology and axiology, research design, research methods, study area, data collection approach, data collection procedures, quality standards, and ethical issues.

Philosophical Considerations

Philosophical considerations include ontology, epistemology and axiology. These three philosophies are regarded as the conceptions of social reality. My philosophical considerations are relative and set up with social constructivism. Thus my research is based on interpretive paradigm of qualitative research design. Qualitative research develops concepts, insights and understanding from the participants in real life situation. It is concerned with how people think and act in their everyday lives. And the aim of interpretive paradigm is to understand the subjective world of human experience (Cohen, Manion, & Morrison, 2007, p. 21). As an interpretive researcher, I bring the experiences of the research participants from the real life situation with an engagement.

Ontology

Ontology is concerned with the nature of reality. The construction of reality is an essential issue for research ontology (Nunes, Bennett, Shaw, & Theodorakopoulos, 2012). Social realities are the product of individual consciousness and cognition. I have unpacked my understanding about the nature of reality that I believe. I believe in possibilities of multiple realities and these realities depend on beliefs, thoughts and

assumptions of individuals. But the reality varies from person to person. What is real or true for me may not be the same for others. The aim of my research is to explore the perception of the owner, farmers and consumers about organic farming. In my research I have drawn various perceptions of people associated with organic farming. Being a qualitative researcher I need to understand the diversities and various realities of the people and do my work accordingly. I have considered organic farming as a good practise and it is good for human health, soil and for the whole environment. But how I perceive organic farming could be different for different participants. The owner might have different perception about organic farming and similarly the farmers and the consumers may perceive it differently. Thus, my ontological assumptions are based on the multiple realities of my understanding and me being in the field to draw the multiple perspectives of owner, farmers and consumers about organic farming.

Epistemology

Epistemology is simply defined as the ways of knowing. Stanford Encyclopaedia of Philosophy (2005) defines epistemology as the study of knowledge and justified beliefs. It studies the origin, nature and limits of human knowledge. Epistemology is mainly concerned with how we acquire knowledge. In my perception people create their own understanding about each phenomenon as the result of their prior experiences in the existing social cultural context. I believe that social realities are constructed with the interaction of people in the society. Hence, for me, epistemological knowledge is produced by constructing my own values, meaning and understanding through interpretation of lived experiences of organic farmers, owners and consumers along with the reflection of my own life. In my research I gained knowledge with engagement in the field and by interacting with my research

participants and by being an active participant observer. So the engagement with my research participants and observation gave me the insights about farming practice, and their perceptions including their experiences provided me knowledge in subjective ways.

Axiology

Axiology is the study of value, or goodness, in its widest sense. The theory of value begins with a subject matter. “There are varieties of concerns and interest that may not be preferable for all. Subjective value may be good or bad according to the individual’s interests and needs” (GC, 2010, p. 35). Human values are subjective and changeable according to the situation, time and necessities (Sharma, 2005, p. 40 as cited in GC, 2010, p. 35). I believe that this research has value in the present context but its value may be more or less according to the changing situation and time. However my axiological assumptions are concerned with my belief that organic farming is a good practice and have a lot of positive impacts on the health and environment. But the farmers have their own traditional values and beliefs about farming and in the same manner consumers might have their own.

Study Area

Kavre is notorious for conventional farming with pervasive use of agrochemicals these days; it is shifting towards organic farming. Panchkhal VDC is popular for vegetable crops, which is sold at high prices in Kathmandu and other nearby towns. Karmacharya (2012) says that now many people concerned with the abuse of pesticides, are afraid of consuming crops (especially vegetables) grown in this area (p.17). It is seen that farmers have been facing serious health hazards due to over and misuse of pesticides and are now aware about the negative impacts of chemicals. Thus realizing the ill effects of inorganic farming, now many farmers are

shifting towards organic farming. Many individuals, institutions and organizations are involved in organic farming in Kavre. Mr. Navin Gurung, one of the persons in organic farming movement in Nepal is running an organic farm named Trijal Organic Farm Saanga, Kavre. The farm is located in a valley surrounded by small hills. And it is 5 km south from Saanga Chowk at Araniko highway, seven kilometres from Banepa Town and 25 km from Kathmandu. I have conducted my research taking this farm as a study area.

Selection of Participants

Selection of participants is done to define the people on which the research will focus. I have used purposive sampling for this research. As its name suggests, the sample has been chosen for a specific purpose (Cohen et al., 2007). The selection of participants is done with a purpose because they are considered to have particular characteristics and would provide detailed information of the required queries. In Trijal Organic Farm, an average of twenty workers is working every day. From them I selected six workers purposively whom I thought could provide a detailed information that would meet my research objectives. Mr. Navin Gurung, owner of the farm and three consumers who consume organic products from Gurung's farm are my core research participants.

I had personally known an organic farmer, Mr. Madhusudan Shakya, a retired employee of United Nations world food program for Nepal who is currently involved in organic farming for his own consumption. I knew him through my friend Shrooti. She calls him Mama (maternal uncle) so I also call him the same. It was a warm day in April when Shrooti and I went to visit him around 2pm in the afternoon. I learnt about composting, eco san toilet and other informative things from him. He explained about eco san toilet and how the urine and faeces collected separately can be used as

organic fertilizers and pesticides. He had collected his own urine and faeces in separate buckets in his study room (I was shocked when I saw this. He described showing the separately collected urine and faeces, how they can be used as organic fertilizer and pesticides after some treatment). He also showed his composting site and we also visited the organic garden talking to him.

My friend and I spent around two hours with Mama. He is a humorous person and he makes us laugh all the time I got a lot of information from him and it was fun talking to him. When I told him about my research title that I was looking for an organic farm; he advised me to meet Navin Gurung and gave me his contact number. Mama told me that he had met Gurung at a seminar, and since then they are in touch with each other. He further added, "I have known Gurung as a true organic farmer so you can visit his farm and meet him". Then I took Mr.Gurung contact number and called him up. I met him later and spoke about my thesis. Gurung impressed me by his talk at the very first meeting. The second time, I met him in his farm. That is how I met Mr. Gurung and selected him as my research participant.

Praveen Tamang is my first participant; he is the first farmer I talked to when I went to the farm. We had a nice talk that day. I had made a good rapport with him the first day I had met him. I found him to be a knowledgeable person to talk about organic farming and he is also a fulltime staff of the farm. Thus I selected him as my research participant so that he could provide me with valuable insights about the farm and the whole farming system. The same day I talked to two more female workers, namely, Sita Tamang and Kusum Tamang. At first, they were hesitant to talk to me but later I was able to build a good relationship with them. I spent the whole day talking to Praveen, Sita and Kusum. Like Praveen, I selected both of the female farmers as my research participants.

The third day, I talked to Saru Tamang the whole day and observed the farm and farming practice. At the first meeting, I just asked her name, how long she had been working in the farm and how old she was. I knew that she was just fifteen years old and that could be the reason why she laughed and talked more than the other farmers. She was so talkative that she used to laugh and speak while others were talking. I went to greet her on the third day of my visit to the farm and interviewed her informally. She answered to my questions so well. Then I thought that she could provide the required answers for my research questions and I selected her as my research participant.

I selected two more participants Krishna Tamang and Sandip Tamang. They also work in the farm from 10am to 5pm. While talking to Krishna, I came to know that he has completed his intermediate level. He talked to me with confidence. He was the second male farmer in the farm who had completed intermediate level. During the visit, I tried to talk to a female farmer who was about thirty five years old but she did not talk to me. She was shy and nervous and told me not to talk to her and went away from me. She was the only elderly farmer in the farm while other farmers were in between fifteen and twenty five years old.

As Krishna was talking to me confidently I knew that he would provide valuable insights to my report. I chose Sandip Tamang because he was a hard working farmer. Every time I saw him, he would be working far from others and he usually did not talk his co-workers. He is a dedicated farmer, so I took him as my research participant to acquire a deeper knowledge about the farm and farming system.

I went to the organic market, where Gurung sells his organic products. I visited the market and observed the people buying organic products. I requested two Nepalese male consumers and an expatriate to be my research participants.

Data Collection Approaches

The research techniques are designed for the collection of certain information. In this research for data collection in-depth interview and participant observation have been used.

In-depth interview. During this type of interview we ask questions for a prolonged time to get the perceptions and ideas of the participants. Here I have used an in- depth interview to collect the ideas and information from my research participants to know their perception about organic farming.

Participant observation. Observation is the process of viewing the things in the field through the eye of the researcher and interpreting the observed things. And participant observation is defined as a field strategy that simultaneously combines document analysis, interviewing of respondents and informants, direct participation and observation and introspection 1989b, pp. 157-158 as cited in Flick, 2009). According to Flick (2009) participant observation should be done so that the researcher should become a participant and gain access to the field. Observation should also be done cautiously that essential aspects for research questions be observed. Thus for my research, I have observed the activities and other things of the participants in the natural setting becoming a participant observer. This method has one benefit that is; the information that does not come from interviews may also be collected.

Field Notes is the process of taking information through various approaches such as taking notes in a field diary and others like recording or taking photos and

videos. I have noted the information in my field diary, recorded the voice and made the videos which I have used during the data analysis.

Data Sources

The sources used for data collection are interview transcripts, observation notes, reflection, images, videos and voice recordings. The information collected from the field is primary sources of data. For the secondary sources different literatures, articles, magazines and other documents required to my thesis have been used.

Data Analysis Procedure

For the analysis of information collected from the field I used narrative analysis. Narrative analysis is mainly concerned with the study of stories or accounts usually of individuals, but also of groups, societies, and cultures (Harvard University, 2008). The narratives of people's experience can be collected by using different means such as in textual, audio or video format so they can be analyzed later on (Bamberg, 2010). I have mostly used field diaries, voice memos, and videos to collect the information in the field which are used later at the time of analysis. I analyzed the information collected from the field and compared and contrasted with what other scholars have said. Mainly I have used the principle of organic farming and the sustainable development theory to analyze my data.

Quality Standards

For every research, quality standard is very important. In educational research the interpretative paradigm enables researcher to build rich local understanding to the participants through prolonged interaction in real life situation. Thus for my research I have used the interpretive paradigm. I have chosen trustworthiness, authenticity, thick description and natural setting as quality standards.

To make my research trustworthy, I have engaged myself in the field for one month. I had difficulties in interacting with my research participants at first but later I was able to make a good rapport with them. I believe that if there is good relation between the researcher and the research participants it becomes easier to draw proper information from them. Similarly, I tried to maintain a free will of the participants. Free will can be maintained only when the researcher listens to the voices of participants. Each person who is approached should be given opportunities to refuse to participate in the project so as to ensure that the data collection session involves only those who are genuinely willing to take part freely. During my field visit, I approached a female worker named Sarita Tamang but she did not want to take part in my research. I even requested her but she refused to participate in my research then I did not force her. Likewise, the participants should be encouraged to be frank. Also it should be made clear that the participants have the right to withdraw from the study at any point. Hence, as a researcher, I have tried to maintain a free will of my participants and did not force those participants who were not interested to take part in my research. This is how I maintained the trustworthiness.

Credibility

Credibility is one of the key quality standards of qualitative research. Credibility is to ensure how credible or truthful our findings are. It is concerned with the matching of the findings with reality (Merriam, 1998, as cited in Shenton, 2004, p. 64). The credibility of the research can be established from the perspective of the participant in the research. According to Krefting (1991) "Credibility requires an adequate submersion in the research setting to enable recurrent patterns to be identified and verified," (p. 217). I collected the data from my research participants from the natural setting. I also met and talked to my research participants time and

again to know if their information was correct or if they wanted to make any changes to it. The participants had constructed the reality or the meaning which I interpreted in this study.

Authenticity

Authenticity is another important quality standard to be maintained. Some of the characters of authenticity are fairness and educative authenticity (LeCompte & Preissle, 1993, as cited in Cohen et al., 2007). For the fairness, there should be a complete and balanced representation of the multiple realities and constructions of a situation in fairness. Fairness is all about maintaining fairness with all the participants involved. I tried to represent the research participants fairly. The views and perception of the participants have been included in the study. Educative authenticity says that the research should generate a new appreciation of understandings. The researcher should understand the feelings of all, each and every participants involved. At the same time s/he should raise the awareness among them about the research objectives and the whole process. To ensure educative authenticity, I made research participants aware about my research objectives and the whole process.

Thick Description

One of the quality standards in my research is thick description. Thick description is a term used to characterize the process of paying attention to contextual detail in observing and interpreting social meaning when conducting qualitative research (Dawsan, 2009). Thick description refers to the researcher's task of both describing and interpreting observed social action within its particular context (Ponterotto, 2006). As the main essence of thick description is to describe and interpret the social actions in appropriate context as far as possible. Thus as a researcher, I have tried to bring the essence of interaction with the research

participants being a participant observer. The real interaction in the farms with farmers and owner and also with consumers has been brought into my research.

Natural Setting: Qualitative research is conducted in natural settings. The researcher study things in their original condition. They do not manipulate the environment. Qualitative researches are conducted in the real field, not in the lab. This process generally involves interacting with people by interviewing them and observing the setting (Norum, 2008). I have also conducted my research in a natural setting. I went to the farm, interacted with my research participants, observed the farming practice and the farm, talked to the consumers and thus the collected information is analyzed later on.

Ethical Issues

Ethical consideration is an important aspect to conduct research smoothly without which the process of doing research cannot be continued for a long time. Thus various ethical issues should be kept in mind while conducting the research. The researcher should always be careful while asking questions. Sometimes researcher's questions may make participant feel uneasy. Thus researcher should try to avoid asking such questions. So as a researcher, I tried to make a good rapport with the participants and did not ask such questions that made my participants uneasy.

One of the criteria of research ethics is that the research should be based on the informed consent. Getting permission before starting data collection is not only a part of informed consent but is also an ethical practice (Creswell, 2011). In order to ensure informed consent, before going to the field I informed the owner of the farm and my research participants about my purpose of the study. Informed consent has been defined by Diener and Crandall (1978) as "the procedure in which individual choose whether to participate in an investigation after being informed of facts that

would be likely to influence their decisions” (as cited in Cohen et al., 2000, p.51).

There should be voluntary participation in the research. If the research participant does not want to participate in the project then they should not be forced. So I did not force some participants who were not interested to participate.

I have not disclosed the real name of my research participants instead I have used the pseudo names of all the people involved in my research. Not only the name of people but also for the places, I have used pseudo names. Similarly, I applied self compassion and self discipline as an important research ethics throughout my research. The researcher should be passionate to do any research. So if the researcher does any research passionately and in a disciplined manner s/he may make a good result. I tried to prepare a good report considering the ethical issues during the field visits and at the time of analysis.

Summary of the Chapter

The methods of my research have been dealt in this chapter. In this chapter, I have described about the interpretive research paradigm and explained the ontology, epistemology and axiology under philosophical consideration. Similarly, this chapter dealt with the study area, research participants, data analysis procedure, data sources, quality standards and ethical issues respectively.

CHAPTER IV

PERCEPTIONS OF THE FARMERS

Chapter Overview

In this chapter I am going to discuss about the perceptions and experiences of my research participants, mainly the perception of farmers working at Trijal Organic Farm. It is a response to my first research question, “How do farmers perceive organic farming?” Also, I attempt to incorporate my experiences, opinions and understanding about organic food and farming system.

My Days at Work

My friend Smriti and I went on foot to the farm on 5th of September, 2013. It was around 10:30am when we reached there. It took us around one hour and forty minutes as there is no availability of public vehicle around that area. We enjoyed the walk. I had already been informed that Mr. Gurung would not be in the farm that particular day but I was told to go there. When we reached there we saw a man washing his hand from a tap used for irrigational purpose. I told him that I had come



from Kathmandu University to conduct a research. I also informed him that I had already got permission from his owner and it was my second visit to the farm. There is a small bamboo cottage to take rest and have lunch nearby the tap. I asked him whether we could sit and talk to him in the cottage. After getting his permission we kept our bags there and started talking to him sitting on a bamboo bench.

At first I gave my introduction and again shared my purpose of being in the farm. Then I asked his name and how long he had been working in the farm. His name was Praveen Tamang and he had been working in the farm for ten years since its establishment. He is a fulltime worker and works from 7 am to 6 pm. Praveen said that when the farm was started ten years ago there were altogether seven employees. Now they have fifteen fulltime staffs. Seasonally they hire more than thirty staffs especially at the time of mushroom cultivation and also hire other workers as per the need.

I asked Praveen about organic farming and how does he perceive this farming system. In his understanding, in this farming practice the chemo synthetic products are completely prohibited and organic fertilizers and bio pesticides are used. His understandings can be compared to Ghimire (2002) who explains “organic farming has two major aspects that is the substitution of manure and other organic matter as organic fertilizers and the use of biological pest control instead of chemical pest control” (p. 9). Praveen said that organic farming is far better than conventional farming and is good for environment and health of people. He further added, “*Organic tarkari, falful healthy hunchha ni ani swad pani mitho hunchha* (Organic vegetables and fruits are healthier and taste good)”. His understanding is quite similar to the statement of FAO and IFOAM. Organic farming offers a better environmental quality and potentially healthier foods (FAO, 2009). Further IFOAM (2007) explains that organic farming focuses on health of animals and humans and it cares for the environment.

I wanted to know the major differences between organic farming and conventional farming through Praveen. He said that there is not much difference between organic and conventional farming. The difference is in the use of chemical

fertilizers and pesticides in the conventional and not in the organic farming. In the similar manner, Gava and Reardon (2007) differentiate organic farming from conventional farming as, “organic farming is an agricultural practice that does not use chemical fertilizers, pesticides, herbicides, antibiotics or hormones. In comparison conventional farming is an agricultural practice that includes the use of synthetic chemicals” (p. 9). However they have reported some other major differences in terms of impacts on agriculture system, biodiversity loss and conservation and many more.

Additionally Praveen said, “*chemical use nagarda environment lai ni ramro ani else manchhelai ni direct effect gardaina. Urea ani aru rasayanik mall halda jiu chilaune, tesko gandhale wakwaki, ringata lagne aadi hunchha re*” (Praveen said that if chemicals are not used in the farm then it is good for the environment and it does not have direct effects on the people. He has heard that the use of urea and other chemicals causes itching problem, and also the bad smell causes vomiting and dizziness etc). To support his assumptions, I would like to cite a research carried out by Karmacharya (2012). She explains that the chemicals used in farming have direct effects on farmers who use it mostly without safety measures. And 28.57% of her respondents complained that they usually have breathing problem immediately after the use of pesticides (p.19). Organic farming practice has the potential to provide healthier foods and it cares for the humans, animals and environmental condition. According to Praveen Tamang’s perception, it seems to be a suitable practice for the health of people and environment.

Praveen said, “*For me organic farming is a good practice and I have seen its scope in the future.*” He further added, “*Now I am an experienced farmer since I am working in the farm for ten years. I have knowledge of farming techniques and also market strategy. I am planning to establish my own farm soon.*” Praveen has been

thinking of making organic farming as his future business and has seen its scope in the near future. Praveen also said, “Organic farming is not easy because I have to work hard in the farm but it has money and health and environmental benefits.” Thus, in his view organic farming is a good practice and he is planning to work in this sector in the near future.

Organic Farming: A Farming System without Using *Desi Mall*

It was around 2: 30 of the same day that is 5th September, 2013 when all the farmers gathered in the cottage for lunch. My friend and I came out so that they could have their lunch comfortably. There were six workers that day and among them two were female workers who seemed quite shy. After sometime I went inside the cottage and asked, “*Khaja khaisaknu vayo?*” (Did you finish your lunch?) I asked them, “Do you have some time to talk to me.” Both the female farmers seemed nervous but the girl in a green kurtha said, “Don’t ask us anything. We know nothing, instead of asking us you can talk to our male workers over here”. I wanted to talk to the female farmers and I knew that only because of their nervousness, they hesitated to talk to me. Moreover, the male workers had already left for work before I could talk to them.

I started an informal conversation to make them feel comfortable. At first I talked to Sita Tamang who had been working in the farm for five months. She works from 10 am to 5 pm. I interviewed her informally. The first question I asked her was what she knew about organic farming. And she replied, “Organic farming is the farming practice without chemical use.” In her words “*organic khetima desi mal haldaina* (organic farming does not contain chemical fertilizers).” I further asked why this farm does not use chemical fertilizers. The only answer she knew was organic farming means one must not use chemical fertilizers and pesticides. Sita seemed to have less knowledge about organic farming.

When I asked another girl named Kusum Tamang about organic farming, she said that she had no idea what organic farming is. She looked so nervous and shy. She was saying she knew nothing so it would be better if I stopped asking questions. I stopped talking to her for some time and let her feel comfortable. I came out of the cottage and drank water. Sita and Kusum were whispering inside the cottage. Suddenly I entered and said “*K kura gardai hununchha hami pani sunau na?* (What are you girls talking about? Will you share with me?)”. We did some informal talk. By then Kusum was feeling comfortable with me.

After a short informal conversation, I started talking again about organic farming. This time Kusum was interested to talk to me. I tried to provide an option for the definition of organic farming. And she said, “*aa organic khetima ta desi mal haldaina* (Oh! Organic farming is done without using chemicals).” Additionally she said that in the farm they never use chemicals and that was organic farming but she said that they used it in their lands. When I asked her why they use chemicals in their lands, she replied “*desi mal halena vane ta thorai falchha ani kira lagchha*” (If we do not use chemicals then our production becomes less and also the crops are damaged by pests and insects). Here the use of chemicals by two female farmers shows that they believed that agrochemicals increase the production. But organic farming does not contain any chemical fertilizers which is the reason for low production.

This farm is just a place where farmers work and they just know that organic farming does not contain any agrochemicals, but they do not know why this farm does not use chemicals. Both the girls believed that agrochemicals help to grow more crops and the pests would not damage the crops. I asked both of them that if in organic farming production is low then why Gurung was practising such farming for more than ten years. Here both of them replied, ‘*thorai fale pani mahango ma bikchha ni.*’

(Even though organic production is less, it can be sold for a high price). In this case it can be understood that both the girls perceived that organic farming could be a good practice if it increases the crop production. They also knew the fact that the cost of cultivation of organic farming is compensated by high price of products although the production is less.

My Experience working with Farmers

On September 10, 2013 I reached the field with my cousin brother. I talked to Praveen Tamang, at first. He was weeding lettuce (a green vegetable) near the cottage so I went to greet him first. Other farmers were working further away on another side



of the field. I greeted him with a *namaste* and he also greeted me. I asked him, “*Saag godiranuvako?*” (Are you weeding lettuce?).

He replies yes and said that there were a lot of weeds. *Ma ni tapai sangai sag godum hai?*

(Can I help you in weeding?) I asked him. He replied with a smile *hunchha* (ok). I helped him

in weeding and after finishing it, we went towards the other farmers who were digging.

I asked the farmers whether I could help them with the digging. Praveen said that I could but he also added, *kina dukha garnu hunchha hami garihalchau ni.* (Why do you bother? We will do it.) I wanted to communicate with them and also be a participant observer, so I started working with the farmers and helped them with the digging. It was too tough to dig in the field which had not been used for a long time. Praveen said, “We have taken this land a few months ago on lease and we were busy working in other places, therefore could not dig this area.” That is why it was tough to

dig there. I tried but could not work at their pace so I stopped digging. They had to finish digging that area by t noon so Praveen told me to stay in the cottage till they come. When we were digging I saw many earthworms and some insects, pests such as ants, white grub, etc. According to the scientists, thirty four percent more plant, insect and animal species can be found in organic farms than conventional farms (University of Oxford, 2014). I have known that organic farming preserves the animal and plant species whereas pesticides used in conventional farms also kill the pests that are beneficial to the soil and plants.

Agrochemicals to Increase the Crop Production

Krishna Tamang is eighteen years old. He had just completed his intermediate level. He had free time and nothing to do at home so he had started working in the farm to kill his free time according to him. I liked his way of killing time. He could not remember the exact date when he started to work however he told me that for around eight months he had been working in the farm. He is also a fulltime worker. While talking to him I came to know that he didn't want to continue his further study and this upset me. I asked the reason but he hesitated to answer, so I stopped asking.

Like other participants, Krishna's view towards organic farming is also the same. According to his understanding, organic farming is the production system without using chemical fertilizers and pesticides. He said that in this farm he has not seen the use of chemicals that is why production is less here. But in his farm his family members use chemicals mostly, like urea and potash. I told him, "You are working in the farm where chemicals are not used but why do you use chemicals in your land." He replied, "If we do not use chemicals then our production becomes less. We use chemicals in our crops but not in the crops that is for our own consumption. We only use in the crops that we sell." Additionally I said, "Don't you know that

chemicals have harmful impacts on our health?” He replied with a smile, “Yes I do but what do we do with pests and diseases? They damage our crops.” Generally it is said that the attack of pests and diseases are more in conventional farms in comparison to organic farming, therefore farmers need to apply different kinds of pesticides. In the present context, chemical pesticides are common weapon to control crop pests. More than one hundred and fifty types of pesticides are being used in Nepal (Thapa, 2010). As there are an increased number of pests, the farmers need to increase the amount of pesticides as well. The pests again build up their resistance against pesticides, so it requires even stronger pesticides to kill them.

Krishna knows that agrochemicals used in the farming are not a good practice as it has ill effects on the health of humans and in the environment as well. However, he knows that the use of agrochemicals help to increase the crop production. From his understanding about organic farming, it can be said that organic farming is good for health and preserves the soil environment but it is not economical.

Sandip Tamang had started working in the farm around two months ago. He also works from 10 am to 5 pm. He was watering the mushrooms when I first saw him. In the first meeting I did not get an opportunity to talk to him. The day I met him, the first question I asked was how old he was because he looked very young. I came to know that he was sixteen years old and a school dropout. I asked the reason why he had discontinued his studies but he did not answer. He felt uncomfortable to talk about it so I stopped asking him about his studies. Then I turned our conversation towards organic farming. I asked him what he knew about organic farming and he said, “I do not have any idea about organic farming. I just do whatever I am told to do.” I knew that he was hesitating to answer so I started some informal conversation with him and tried to make him feel comfortable.

After a while again I asked how Sandip perceived organic farming. He also said the same things as said by other farmers. The only thing he knew about organic farming was that this farming system does not allow agrochemicals. And he also said that not using chemicals in the farm was the reason for low crop production. I asked him, “*Ani thorai falne kheti ni ramro hunchha ta, kina yo kheti garirako hola?*” (Is low producing farming good? Why this farming is being practiced?) He replied, “*Khai thorai falne vaye pani yo kheti huna lageko dash barsa vaisakyo. Esko bajar mulya ramro chha.*” (Even if the farm produces less, this farming is being practiced for ten years. The products have good market price). I wanted to know more about his experiences but he told me that he did not know much about this farming. And he was busy at his work so I could not talk to him much that day. I let him go and sat on the *aali* (boarder made in between two patches of land).

I sat on the *aali* for a while and thought why most of the farmers were hesitating to talk to me. And I answered to myself that it could be because they had not even received basic education. Praveen and Krishna who has completed their intermediate were not behaving like others. They were curious and spoke well. I remembered another confident girl in the farm named Shrijana Tamang who was studying in class 12. She was just a part time worker and also a relative of the owner. I did not take her as my core research participant as she worked there only during her free time. I asked her on what basis she was getting paid and what were her timings? Etc. She told me that she worked during her holidays and on Saturdays and was paid on a daily wage basis.

Minimum Production Compensated With High Price

Saru Tamang is a lovely girl of fifteen years. When I saw her for the first time she was wearing red and green bangles and beads. I thought she was wearing just for

fashion but later I came to know that she had got married three years ago. I was shocked when I heard this. She is also a school dropout. She is too young to be married and also to work. Her husband lives in Kathmandu and works in a hardware factory. Saru had been working in the farm for more than a month. She was talkative and used to laugh frequently during the conversation. She made our conversation quite interesting. She knew many things about organic farming like other participants even though she was a novice in this field. It had been just a month since she had started her job so she seemed to be still learning from her co-workers and from her own experiences.

Saru knows that the only difference between organic farming and other traditional and conventional farming is the use of chemical fertilizers and pesticides. She told me that organic farming is practiced without chemical fertilizers but production is less in comparison to conventional farming. She said, “We use urea in our land to increase the production but in this farm we do not, therefore, production is less here.” Saru is also of the same opinion as of Sita and Kusum that organic farming produces less crops. However, Saru knows that organic products get higher price in the market. Thus, the minimum production is compensated with high price.

Off Season for Vegetables

The size of some vegetables like cauliflower and broccoli were too small. I asked the farmers why they were so small in size as compared to the vegetables we see in the market. I also added, *organic tarkari vayera sano faleko ho?* (Why are these vegetables small in size? Does an organic crop grow smaller?) Saru replied laughing, “*haina off season ma sanai falcha* (during off season vegetables grow smaller).” She also said that most of the organic vegetables grow smaller than vegetables grown through conventional farming. I told them that once I had gone to Bhatbhateni

departmental store and bought organic garlic and carrot and they were also small in size. Praveen added, “*testo haina sabai tarakari rasayanik mall prayog gareko vanda sano falne haina thulo pani falchha. Ahile off season vayera ra mal halna nasakera ho*” (No, this is not true. Organic products also grow bigger and more in amount than conventional farming. This is off season for cauliflower and broccoli and also we are unable to use sufficient fertilizers therefore they are in small size).

Farmer’s knowledge about the size and quantity of organic products goes with Halweil (2006) who states that there are numerous studies from around the world showing that organic farms can produce about as much, and in some settings much more, than conventional farms. Here, I would like to cite an example from an African country which has proven that organic farming can grow more amounts of crops than conventional farming. In Kenya, organic maize yields increased by 71 per cent and bean yields by 158 per cent that worked under the Environmental Action Team Project (United Nations Conference on Trade and Development, 2009). Similarly Everything Organic Nursery (EVON) at Patalekhet, Kavre has done a research in their farm by planting same plants with the same amount of land with different techniques. The yield showed that chemically grown plants was consistently lower for every plant (Bisht, 2011). Bio intensive technique, a type of organic farming is used in this nursery which resulted in maximum production than conventional and traditional farming system. It shows that organic crops do not grow smaller and less. However, the farmers could not deny the fact that organic farming produces less in comparison to conventional farming. I believe that the major disadvantage of organic farming is the likelihood of reduced output per hectare. But if the soil gets proper care and sufficient fertilizers then productivity might be more.

Summary of the Chapter

In this chapter I have drawn the perception of farmers about organic farming. The farmers believed that if chemical fertilizers and pesticides are used in the farm then it is good farming. There was contradiction in the behaviour and practice of farmers. The entire farmers who work in the organic farm except Praveen do not have proper knowledge about organic farming system. Similarly, farmers do not practice this type of farming in their own land. They are of the belief that the use of chemical fertilizers and pesticides increases crop production. They further said that this organic farm was free from chemicals because of which there was less production. The farmers know the fact that even if the farm produces fewer amounts of crops in comparison to conventional farming; the cost of cultivation is compensated with higher price for the crops produced.

CHAPTER V

OWNERS' AND CONSUMERS' PERCEPTIONS

Chapter Overview

In the previous chapter I have talked about the perception and experiences of farmers. Farmers have shared their experiences and explained their perception on organic farming. Here in this chapter, I am going to share and interpret the perceptions and experiences of the owner of the farm and the consumers of organic products, how they perceive organic farming and the food. This chapter holds the answers to my second research question.

Conversation with the Owner

It was nearly 11am in the morning of September 12, 2013 when I reached the field with my friends. As I had already taken consent from Mr. Gurung, we found him working in the farm. It was my second meeting with Mr. Gurung in the farm. The first time I had met him was in the organic market at Kupondole where he sells the organic food products from his farm. I spent around half an hour talking to him in the market. He was busy in selling his products (vegetables and fruits and some herbal plants) so I could not get much time to talk. Therefore he told me to visit his farm later. Before going to the farm to meet Mr. Gurung, I had done a kind of research and had acquired some information about the people who were involved in organic farming in Nepal and I had found Mr. Gurung's name on the list of people practicing commercial organic farming.

During my first visit to Trijal Organic Farm, I spent a few hours talking to the owner of the farm, Mr. Navin Gurung. On that day, I came to know that the farm where I am going to conduct my research is an organic industry. Thirteen hectares of

land has been used for farming and it belongs to one person, to the owner (own and hired land). On an average, twenty young and energetic youths work in the farm on a monthly wage basis from 10am to 5pm and some are part time workers. The farm is an industry where organic food products are produced.

My conversation with Mr. Gurung was mainly based on some general themes about the practice of organic farming in Nepal with the owner. He told me that Nepal is in its early stages in the organic field. However organic farming is not a new concept for Nepalese farmers. “Our existing farming system is quite similar to organic farming. Many farming methods used in the past are based on indigenous knowledge and are still useful today. So the same indigenous knowledge is being applied in organic farming,” said Gurung. I liked the way Gurung defined organic farming and how it is different from traditional agriculture. He said that organic agriculture combines indigenous knowledge of farmers with some scientific knowledge. Hansen and Sjouwerman (2007) have also defined organic farming as a holistic method of agriculture, based on scientific, traditional, indigenous and experimental knowledge. “Organic farming is also based on the indigenous knowledge and experiences of farmers but with a slight modification,” said Gurung. His understanding can be supported by the statement of Villegas (2013) who says that indigenous knowledge is the actual knowledge of the given population that reflects experiences based on traditions and includes more recent experiences with modern technologies.

Organic Farming: A Difficult Farming System

Navin Gurung, the owner of Trijal Organic Farm, does not find organic farming easy. He said that it is very difficult to start organic farming and one should invest a lot at the starting phase. He said, “In my perception, a medium class farmer having less area of land; less than forty/fifty ropanis (Ropani: unit of land, 1 hectare =

19.965 ropani) of Nepal, starting organic farming is difficult because the investment is too high. Also our government is not supportive to organic farmers.” In this case, Bhatta et al. (2009) have the same opinion as Mr. Gurung. They state that farmers’ capability to invest for organic farming is far below and there is virtually no support from the government in this sector (p.8). Moreover, Gurung added, “*Euta matra crop , aalu wa saag wa aru kunai ek chij ubjayera kaam chhaina. Costumerle ek chij matra kinna aaudaina sabai chij khojchha. Customerko chitta bujhauna saknu paryo. Alkati jaggama k matra ropne ani k bechne, dherai garo chha.* (Just growing a single crop, either potato or saag (green leafy vegetable) or something else is useless. Customers do not want a single kind of food, so they demand for different varieties and they must be satisfied. It is very difficult to decide what to grow in a small area of land and what to sell.

Gurung further added that vegetables cannot grow well in all seasons, so plants need to be protected from excessive water, heat, fog, and hail stones. Therefore, farmers have to make shed of plastic for the protection of vegetables and it costs around thirty thousand to construct one shed. Additionally he said that if someone has his/her own land for farming then there is no problem but if one takes the land on lease, then every year they have to pay the rent for it. “*Organic khetima suru suruma utpadan kam hunchha, fale pani nafale pani rent tirnai parchha. Kira lage pani aausadi halna vayena, jati falchha tei nai bechne ho. Garo chha nani organic kheti garna,*” (In the starting phase of organic farming, production becomes less, despite low production, rent of land must be paid anyhow. Chemical pesticides cannot be used even if the crops are damaged by pests. Whatever the products we get, have to be sold. Thus, it is difficult to do organic farming) said Gurung. He kept on saying that lands cannot be ploughed thus it needs to be dug by hand tools. As everything needs

to be done manually, more farmers are needed to do the work. Moreover, the farmers have to be paid on time as well, thus, the practice of organic farming is costly.

During my research journey, I got an opportunity to talk to a person named Tshering Sherpa who is involved in organic sector for more than ten years. During the conversation she said, “Organic farming does not cost a lot during the starting phase. Rather the cost is minimized as it does not contain costly chemical fertilizers, pesticides, insecticides etc. and locally available resources are mostly used as fertilizers and pesticides. However it is true that one must work hard” (T. Sherpa, personal communication, August 13, 2013). To support her arguments I have cited Pimentel et al. (2005) who state that sustainable agriculture system such as integrated pest management systems and organic farming makes agriculture environmentally and economically sound by reducing reliance on agrochemical inputs.

In my point of view as well, organic farming decreases the dependence on expensive agrochemicals and it might not be costly if we utilize the resources appropriately. There are huge possibilities for finding numerous plant species, which grow naturally in abundance and may provide quite effective safe and economical bio-pesticides (Palikhe, 2002, p.130). But many farmers are unaware about this fact. To talk about the area of land for farming, it is true that in a smaller area of land one cannot produce different varieties of crops so it definitely requires more land to grow varieties of products to fulfil the demand of consumers. As modern technologies cannot be used in organic farming, simple hand tools are used which certainly requires more labour and hard work for the cultivation.

Mr. Gurung said that there are many challenges in organic farming as this sector is not the main concern of the government. “Organic fertilizers, bio pesticides and seeds are not easily available. Additionally maintenance of soil fertility is an

important factor but due to the lack of bio fertilizers and pesticides, practice of organic farming has become difficult,” said Gurung. As local manufacture is in small quantities in Nepal; it depends on other countries for chemical pesticides and fertilizers (Shrestha, Koirala, & Tamrakar, 2010, p. 96). According to Pesticide Registration and Management Division (PRMD) of Nepal, pesticides are imported from six different countries like India, China, Malaysia, Singapore, Italy and Japan (as cited in Shrestha et al., 2010, p.96). In the context of our country, Nepal where chemical fertilizers and pesticides are not easily available and also costly for most of the Nepalese farmers, the concept of organic farming is a suitable option. Organic farming means farmers do not have to buy expensive chemicals and pesticides (Bisht, 2011). Thus, regarding the expenses incurred in buying chemicals, organic farming seems to be an appropriate solution to improve the livelihood of farmers.

Mr. Gurung complained, “Though I have thirteen hectares of land, I have not been able to use adequate bio- fertilizers. I cannot get cow dung which is a very good fertilizer even if I am ready to pay more.” He informed me that he has kept two buffaloes, two cows and four/five goats for the use of dung and urine. However, they are not sufficient to provide urine and dung as required for the farm. Cow dung is a good organic matter that supplements the quantity of mineral fertilizers needed for plants (Asawalam & Onwudike, 2011). “I mostly use Kwain thong as fertilizer and sometimes also use bio liquid spray as pesticides,” said Gurung.

Gurung mentioned that organic farming seems easy but actually it is not. All the work in the farm has to be done manually and (that they producing many more products according to the demand of consumers). “Many people complain that organic products are expensive but we have to work hard to produce them,” said Mr. Gurung. According to Shrestha and Pant (2006) organic farming is a labour intensive

farming so it often requires more manual labour to compensate the loss of synthetic fertilizers and pesticides. In the urban and suburb areas due to scarcity of labour, the cost of cultivation may be high. Gurung also said that agriculture is a major occupation of Nepal; organic farming being a part of agriculture is not getting priority from the government. He further said, “Organic farmers do not get subsidies and incentives from the state.” Hence, the understanding and the statements of Gurung show that he is having difficulties in the cultivation of organic crops.

Organic Farming to Minimize Foreign Immigration

Mr. Gurung shared his experiences and the story about the establishment of the farm. He said that he was worried about the trend of Nepalese youths leaving for gulf countries and how the condition has become even worse. It is noticeable that the number of youths leaving the country is increasing every year. Adhikari (2008) elucidates that “Due to lack of regular income source, there is a serious trend of muscle drain among rural youth to different cities of India, Malaysia and Middle East countries” (p.4). Nowadays particularly youths are distancing themselves from the agriculture field. “They think once they have some academic degree, it’s not good to work in the agriculture field and playing with mud, plough, farmyard manures (FYM) etc” (Tamang et al., 2011, p.4). Gurung said, “I wanted to do something that could help minimize this trend somewhat and so the main objective of starting this farm was to minimize foreign immigration of youths to some extent”. I was quite impressed by his thoughts that he was worried about the current trend of youths leaving the country and wanted to do something to minimize it. The rapid rate of youths leaving the country also makes me upset thus I was quite pleased with the thoughts and the practical action taken by Mr. Gurung.

The trend of youths leaving the country to make their career and getting foreign employment is increasing every year. If this trend continues then only children and elderly people will remain in the country. So it is pertinent to think about this issue seriously by the state and even by every concerned citizen. According to Gautam and Prasain (2012) the practice of organic farming in a large scale can extensively reduce the problems of mass poverty and unemployment. Further, Adhikari (2009) has explained that organic agriculture being cost effective and affordable does not require expensive technologies but provides more opportunities for employment (p. 23). In this context practice of organic farming seems to be able to minimize immigration of youths to some extent by creating employment opportunity at the local level. Currently, on an average, twenty youths are working in Gurung's farm from the same community where the farm is located. The farmers have no special training regarding organic farming but the use of indigenous knowledge and experience is the major tool for the sustainability of the farm.

The migration of youths to foreign countries for employment and career building is one of the major reasons why Nepal is not progressing in the agricultural field. In addition youths feel embarrassed when they have to work in the fields. Farming is not a respectable job in the context of our country especially for those youths who graduate from universities. It is the trend and belief that who has an academic degree should not work in the farm. But nowadays the involvement of youth and educated people in the organic sector has changed the trend of Nepalese who thought that illiterate people especially from the country side practise farming. Most of the people involved in organic farming now in Nepal are young and educated youths. However, there is no age limit; young, adult and even elderly people can be seen in this sector.

Gurung said, “*Aafnai gharma basera ali ali kamauna saknu pani dherai ramro ho. Yaha kam garna thalera dherai jana yuwa bidesh jana chhadeka chhan* (It is good to work in a place nearby one’s residence and to get well paid. Many youths have stopped leaving for foreign countries when they started working in this farm). On an average the staffs in the farm gets a salary of Rs 9000 per month which is a good amount of money, getting paid by working in such farms. Thus, it is clearly evident that Gurung has provided local employment opportunity which seems to minimize foreign immigration of youth to some extent.

Shiitake Mushroom

I saw different types of vegetables and herbal plants in the farm. The major vegetables produced in the farm were cauliflower, cabbage, garlic, tomato, pumpkin, bitter guard, asparagus, cucumber, potato, chilli, broad leaf mustard, dundu saag and lettuce. Similarly the major fruits include ground apple, Gojiberry, orange and kiwi. Some herbal and medicinal plants such as *Stevia*, lemon grass, Tulsi (holy basil), mint etc can be seen in the farm. Mushroom

cultivation is another major vegetable. In limited area several varieties can be seen. Amongst all, I was more interested in mushroom farming. It was quite an attractive farming in terms of monetary returns in a short period of time and easy to cultivate as well. Mr. Gurung showed and



explained about mushrooms that were growing on wooden logs, “This mushroom is called Shiitake mushroom and its price ranges from 1000- 1200 rupees per kg.” Oh my god! It’s so costly”, exclaimed one of my friends in surprise. ‘Yes, it is costly and its demand is also high.’ answered Mr. Gurung. I too was surprised when I heard the

price range of the mushroom. (In the mean time I dreamt of starting a mushroom farming and earning a lot of money in a short period of time). He kept on saying that the mushroom has several health benefits, like it is anti carcinogenic, controls pressure and diabetes, contains high protein and vitamins and that is why it is so costly. “Most of the consumers of this mushroom are patients of cancer and diabetes. It acts as a medicine,” he further added.

Mr. Gurung explained briefly the process of Mushroom cultivation briefly. “All we need to do for mushroom cultivation is to water them twice a day. Mushroom does not need any fertilizers and pesticides like other vegetable farming,” said Mr. Gurung. He said that it just needed small logs of about one metre length of trees such as Utis (*Castanopsis nepalensis*), Katus (*Castanopsis indica*), Okhar (*Juglans regia*) Banjh (*Quercus lanata*) and Saur (*Betula cylindrostachys*) of at least eight years. In the logs small holes are made with the help of drilling machine and mushroom seeds are kept into the hole and then sealed with melted wax. Once this process is done the same logs can be used for four to five years. Mushroom can be harvested regularly for four/five years only providing those logs with shelter and moisture. According to Garret (2008) the cultivation of shiitake mushrooms on logs requires a significant amount of shade and wind protection, but not significant amount of land. Therefore, it is an excellent opportunity for landowners with smaller land holds. This mushroom farming seems to be quite easy than any other vegetables farming and it can be done by small land holding farmers as well which is a good aspect of this farming.

My Perception Regarding Gurung

Navin Gurung is one of the most experienced persons in the organic farming field. He is much aware about the norms and values of organic farming. He has devoted a decade in this field. Before entering into organic farming, he was involved

in handicraft business of Nepali Paper and is still involved there partially. Once he suffered from arthritis diseases (inflammation and pain in bone joints), and had to spend a lot of money for the treatment but could not recover properly. In the mean time he heard about the health benefits of organic food (G. Subedi, n.d.) Then he returned to his home in Saanga and started eating organically produced food. When he knew organic food is good for health and it has scope in national and international markets, he thought of starting an organic business. He started organic farming on his own land and got some land on lease. Now he is quite a successful person in this sector.

Trijal Organic Farm has been registered as an industry named Trijal Organic Farm Private Limited by Navin Gurung. In Gurung's farm, crops are produced to supply to Kathmandu not for the consumption of local people or for the workers. He seemed a business oriented person and owns Trijal Organic Wine Private Limited as well. Mr. Gurung is so busy in the marketing of his products and promoting the business that he lives in Kathmandu and during his busy schedule; he goes to the farm once or twice a week.

During my field visits I met Gurung three times in the farm while I was visiting the farm and talking to the farmers. When we met for the second last time, i.e., on 31st September, 2013, he was not happy about me visiting his farm and talking to the farmers frequently. He told me that when I interview a worker for about an hour it hampers his/her work and also disturbs others. He said, "One hour time is very important and you are disturbing my workers for a long time which is not good for my business. So it would be better to stop this if you have finished your work." He was calculating the average time his workers spend on his farm. He went on saying that the farmers come at around 11 am and spent an hour for their lunch and leave the

farm before 5 pm. They hardly work four to five hours a day. And Sunday is a holiday for them. I just listened to whatever he was saying. Mr. Gurung further said that almost every month foreigners, students and researchers visit his farm. But once when I had asked Praveen how often outsiders visited the farm, he had replied that it was not so frequent, only four to five times a year some students from school, researchers, foreigners and also some farmers came to visit the farm. Gurung further said to me “If I allow researchers like you to visit my farm, the workers will stop working and my business will be at a loss.” I felt depressed when he said such things to me. He might have said it because he was facing some troubles or it could be anything else I could not understand. After telling this long story, he kept quiet for some time and spoke to me softly.

The same day, the last day of September 2013, Mr. Gurung offered us a lift in his goods carrying vehicle from his farm up to Koteswor, Kathmandu and also spoke to me nicely. During the last meeting also he was hospitable. He talked to me for about two hours. He asked me about my studies and thesis and future plans. We had a good conversation about organic farming and its sustainability. That day he also offered a lift and drove us (I had gone with my two friends) up to Saanga Chowk from his farm. Mr. Gurung is very much concerned about his business and how to make a profit. Moreover, it is good that his business is not harmful to the environment. So whatever he is doing it is good for the health of people and environment.

Consumers of Organic Products

Till now Nepalese farmers have been able to produce only a few organic products. Thus it is obvious that consumers of organic product are also limited. When I asked what type of people consume organic products? Mr. Gurung replied, “Organic food loving, aware and health conscious Nepalese people from rich families,

diplomats and foreigners are the major consumers.” He said that now quite a number of people are aware about the benefits of organic products so there is a high demand for it, however, he is unable to fulfil the demands of the consumers. Harris, Brusses and Eicher have explained the factors that play a vital role in the demand of any commodities based on economic theory. Economic theory categorizes four fundamental factors which affect demand for a commodity as income, price, quality of the commodity, and differences in tastes and preferences (Harris, Brusses, & Eicher, 2000). Gurung also said, “In the early years organic products used to be exported to Singapore, Canada and Russia but the demand is increasing in my own country so I have stopped exporting to foreign countries.” Now Gurung sells his products in the Nepali market though it is consumed by most of the foreigners and a few Nepalese.

More Pesticides on Vegetables Encourage Consumers to go for Organic Products

Fresh vegetables and fruits are essential for a healthy diet as they are an important source of vitamins and minerals. They should be healthy and free from toxic substances but the vegetables can be a source of poisonous toxic substance pesticides (Knezevic & Serdar, 2008, as cited in Shrestha et al., 2010). Reports suggest that the use of pesticides in vegetables in Nepal is higher than any other food products (Koirala et al., 2009). Shrestha et al. (2010) state that endosulphan is one of the common pesticides used in Nepal and it is used to attain polished appearance in vegetables such as tomato, brinjal, and mustard leaves (p. 96). Kavre district is a potential area for agricultural production and it serves as a pocket for vegetables for Kathmandu valley. And it is also famous for the use of chemical fertilizers and pesticides. I have heard that now many people hesitate to buy vegetables from Kavre as farmers use excessive chemicals in the crops there. So there are an increased

number of people who want to buy organic vegetables and fruits. And one of the objectives of my thesis is to know the perception of consumers about organic food and farming system.

A Visit to an Organic Market

On 5th of October, 2013, I went to visit the organic market with my sister Prabikshya. This market is located at Kupondole and Gurung is the leading person for the establishment of this market in the city. It opens every Saturday from 8am to 1 p.m. I saw many people busy buying and selling products in the market there. Some people were eating and some were talking. Few foreigners had already done their shopping and were having breakfast in the Aaradhana restaurant as the market is located in the premise of this restaurant. It was Ghatasthapana (first day of dashain festival) and some preparations were going on for an event to be held during dashain. Many people were busy with the arrangement and the atmosphere inside the market was quite fascinating. There were many stalls and among them I especially noticed the stall of Navin



Gurung. I went around the whole market and after some observation I chose three consumers to know about their perceptions about organic farming and its products. I went to the market to talk to them again on the first Saturday after Dashain and talked to same three consumers again.

Dr. Thapa: An Aware Consumer

The first person I talked to was Dr. Ganesh Thapa from Minbhawan. He is the professor of Economics. He has been buying organic products from Gurung since two years. Every Saturday he comes to the market to buy organic foods. I had a very good

talk with him. I found him to be a kind and knowledgeable person to talk about organics. Dr. Thapa seemed more aware about organic farming and its production. He talked about the negative impacts of chemicals used in agriculture on human health and environment.

Dr. Thapa comes to the market just because he can buy foods that contain more or less no chemical residues. And he also said, “What I like about organic vegetables and fruits is that they do not get damaged soon and last longer than conventionally grown foods. I buy vegetables for a week and even after a week they look fresh and do not rot.” A video clip published on December 9, 2009 on youtube says that one of the beneficial aspects of organic farming is that it produces longer lasting products. When I asked him, whether he believes that the foods he buys are truly organic He replied, “I do not trust them completely but I think that the food I buy here are more than 50% organic.” Among the entire stalls I had more trust on Navin Gurung as I had personally known him.” He further added, “These days many people are selling non organic products at a high price saying that it’s organic and cheating consumers like us. That is why it is difficult to trust all the people here, too.”

Only a few food products are supplied from the organic market. So Dr. Thapa buys some more organic products from a small shop at Lagankhel which he finds cheaper than any other organic outlets in Kathmandu. He said, “*Marketma sufficient organic food nai chaina. Alikati badi paisa tirera ni kinnu hunthyo tara paidaina* (There is not sufficient food in the market. Even if I am ready to pay more I cannot get them). Thapa seemed worried because he cannot find enough organic products in the market even if he wants to pay more. He was saying that if the entire farmers shift into organic farming then there would not be crisis of organic products and also the prices would be affordable. I agreed with him because I also believe that if many

farmers start practising commercial organic farming then we can get enough organic food at reasonable prices.

I asked Thapa, his opinion about the price of organic foods in comparison to other food that we buy in the market. He said that it was expensive but from the perspective of health and the nutritional value organic foods, it was not so. He also said that many people spend a lot of money on those things which are not good for our health such as alcohol. I was impressed and convinced with the perception of Dr Thapa. He further added, “*Utpadanko hisable herda lagat jhan sasto parchha organic khetima. Tara demand ra supply mechanismko hisable herda mahango parekoho. Maag dherai chha. Foreignerle dherai demand garchhan tesaile price mahango vakoho tara price high hunu pardaina kinaki chemica ko costnai parena ni* (If seen from this perspective of production, organic farming is cheaper. But from the perspective of demand and supply mechanism it is expensive. Demand is high. Foreigners demand for organic products that is why it is expensive but organic foods shouldn't be so expensive because there is no cost of chemicals).

Praveen was of the same opinion as Thapa when I had asked him if organic products are expensive than non organic products, then how could people from middle or lower middle class afford organic products. He had replied, Many people spend money on alcohol and other unnecessary things. If they can buy expensive drinks then why can't they afford to buy organic products which are beneficial for health?” I also believed that it is a matter of interest and awareness what we want to eat. Buying organic products might be a personal choice of people but I felt that how can we think of products that kills insects, be good for people. Pesticides remain in the food products and when consumed by humans it affects human health as well.

Hence, people concerned with their health, and those who have the knowledge of the benefits of organic food are interested to buy them.

Consumers Are Not Confident

Another organic food buyer that I talked to in the market was Dr. Rajendra Basnet (a retired medical doctor) who is sixty two years old. He lives in Thapathali. He also comes to the market regularly. It has been around a year that he has started coming to the market. He is also a knowledgeable consumer who knows about the harmful effects of conventionally grown food. He says, “*Bish haleko tarkarile health bigarirakheko chha. Else mutu bigarna sakchha ani cancer hunasakchha* (vegetables produced with the use of chemicals is making our health worse. It can damage our heart and can cause cancer). He believes that none of the stalls in the market are truly organic. He further added, “*kasko biswash garne sabaile bish halna thalisake*” (Whom to believe? All the farmers have started using chemicals in their farm.) It is true that most of the farmers at present use agrochemicals in their farm though the amount of chemical used may vary. Some use more and some use less amounts of chemical pesticides and fertilizers in their farm.

I informed Dr. Basnet that I was doing a research on Gurung’s farm. And I asked him how much he trusted on Gurung’s products. He replied, “I do not trust anyone here, you have been to Gurung’s farm, so you can tell me how he has been growing crops there.” Basnet was saying with irritation that we cannot get truly organic foods. No one cares for the health of people. Though he further added, “However, I can say that this market supplies natural and fresh fruits and vegetables than any other market even though it may not be purely organic, therefore I come here regularly.” Though, Basnet does not fully trust the products he buys from the market, he believes that foods are fresh and natural than conventionally grown foods.

Dr. Basnet was not satisfied with the expensive price of vegetables and fruits in the market. He said, “*Yo organic chahi dherai mahango chha. Esma dhanadhya byaktiharuko matra access dekhinchha. Mahangi badirakheko chha, tarkari khana Dashain nai kurnu parne bela aaisakeko chha. Organic lai ali sasto parunuparyo. Esma sambandhit nikaaye wa governmentle hernuparchha. Organic food lai chai sabaile kinnasakne mulyama available garnaunuparyo.*” (Organic products are very expensive. It seems that it is accessible only to the rich people. Price is rising and it seems that we have to wait for a festival to buy and eat vegetables. Organic products should be sold at a cheaper rate and it should be made easily available and affordable to all. For this, support from concerned authorities or government is needed). These kinds of opinion of consumers have been growing in the market of organic farming. Consumers do not feel confident using organic products. Thus knowing the perception of consumers I feel that it is high time to think about growing more organic products and before bringing them to the market, they should be labelled well so that consumers can trust on it and buy them confidently.

A German Lady Consumer

Catherine is from Germany and she has been staying in Nepal for twelve years. She often comes to the market to buy organic foods. Since the establishment of this market she has been buying products from there. She does not know anyone personally in the market so she buys products that she likes from any stalls. When I asked her how much trust she has on the organic products that she buys in the market. She replied, “I cannot say that all the food I buy here are truly organic but I believe on them 50% or more.” Like other consumers she is also not confident about the products available in the market. I asked the reason why she did not have full confidence on the products. She said that in this competitive age nobody cares for the

health of the people; every farmer wants to grow more crops so there is no doubt that they have used chemicals in the farm. Her knowledge reveals that she knows the difference between organic and conventional farming and the impacts of chemicals on human health.

Catherine has a one year old baby girl. She was with her daughter when I met her the second time. She said, “Health of my baby is the most important factor that draws me to this market. The only reason I come here is to get healthy foods.” Here I would like to cite Samkumchaliang and Huang (2012) who say that people buy organic food because they have expectations that organic products are healthier and environmentally friendly means of production (p. 87). Catherine further added:

I am very concerned about h the health of my baby. I do not know much about organic farming but I know that foods produced by using chemical fertilizers and pesticides are not healthy because they contain chemicals in them. But organic food is healthier than food grown by using chemicals. So I come here to buy food that is free from chemicals or contains less of it.

Catherine is not confident that the market provides truly organic food. However she trusts that they are healthier than conventionally grown foods. The only reason she comes to the market is because she is conscious about her health. She does not find organic products expensive as she is working in a multinational company and of course she is economically rich. If she doesn't find sufficient organic food for herself she goes to other markets where she can get organic products such as Saleways and Bhatbhateni departmental store. She further added, “But there is less variety of organic foods in Saleways and Bhatbhateni” She was also not happy with the insufficient food available in the market. She wanted to get some more organic food for her baby and for herself.

Summary of the Chapter

Though Gurung is a business oriented person he has taken the organic business quite seriously. He is much more concerned in the farming practice. He is always worried as to how he can produce more products and of good quality that can fulfil the demand of consumers. He has perceived this farming as one of the best practises in the context of Nepal and has devoted himself in this sector completely. He has also felt the insensitivity of the state towards organic farming, lack of organic fertilizers and the high cost during cultivation as major constraints for the practice of this farming. Though he felt some constraints during cultivation, the expenses can be compensated with the good price of products. He believes that organic farming is good for environment and can produce healthy food as he is not using any agrochemicals in the farm. Hence, in his perception organic farming is economically and environmentally sound production system.

The organic market is always full of people who are aware and health conscious Nepalese, foreigners, and some well to do people of the city. I understood from my observation, experience and through conversation with the three consumers that there are fewer outlets of organic products and the consumers also limited. I came to know that the price is also high and sometimes it is also double the normal market price so there is less access of people to organic food. They are costly because organic food supply is limited as compared to demand; production costs are typically higher because of greater labour inputs and marketing and the distribution chain is relatively inefficient and costs are higher because of relatively small volumes (FAO, 2014). My entire participants (consumers of organic products produced by Gurung's farm) have perceived organic foods healthier and farming an environmentally friendly practice. Consumers are willing to get more organic products. However, Gurung's farm has not

been able to produce enough organic food for the consumers. Therefore, consumers are deprived of organic sufficient food products.

From the perception of consumers, I have understood that organic food products are expensive and that is why the average Nepalese cannot afford to buy them. In the market, I could see that most of the people were foreigners and rest of them were quite well off. I had purposively selected three consumers a German lady and the other two Nepalese; a medical doctor and a PhD (Doctor of Philosophy) holder. I also came across a few Nepalese consumers who were health conscious and some consumers who were aware of organic products.

CHAPTER VI

SUSTAINABILITY OF ORGANIC FARMING

Chapter Overview

This chapter deals with the perception of the owner, farmers and consumers about organic farming linking it with sustainability. The opinions and perception of farmers, consumers and owners lead a question to the sustainable organic farming in Kathmandu. As a student of environment and sustainable development, I think it is pertinent to think about the sustainability of organic farming. In this line, organic farming, compared to conventional farming shows fundamental differences from agricultural, environmental, social and economic points of view. Similarly, I am trying to show the link of all the four principles of organic farming; principle of ecology, health, fairness and care with the perception of farmers, owner and consumers.

Principles of Sustainable Development

Rundgren (1997, 2002) has stated that organic farming meets the criteria of sustainability outlined by Brundtland Commission thus can be taken as sustainable farming system which has the capacity to solve several problems raised in agriculture production system (as cited in Schnug, Haneklaus, Grahmann and Walker, 2006, p.57). Thus, here I try to uncover the facts about sustainability of organic farming, with the major three components; environmental, economic and social sustainability linking with the perception of owner, farmers and the consumers.

Environmental Sustainability

Environmental sustainability, in the case of organic farming is all about maintaining the ecological processes while practicing organic farming. To achieve environmental sustainability in organic farming, the farming should be based on ecological processes and the recycling of nutrients. Here, I have tried to show the linkage between the practice of organic farming and whether or how it meets the criteria for environmental sustainability of organic farming with the perception of owner, farmers and consumers.

Soil fertility management. The best way to maintain soil fertility is through soil conservation. And it can be done by using three types of organic fertilizers namely animal manure, green manure and compost. Another important method is crop rotation (Miller, 2007, pp. 322-323). When I asked all the participants what did they use for the management of soil fertility? Their answers matched with Miller's concept from the book *People and Environment*. Praveen, Kusum and Sita said that they used bio fertilizers, compost and vermicompost for soil fertility management.

Vermicompost was purchased from the market as they had not done vermicomposting on their own. Practice of vermicomposting requires some technical knowledge and it should be handled carefully so that could be reason why they were not practising it. They dominantly use a kind of bio fertilizer called Kwain thong which is imported from Thailand. About five- six kg is used per ropani.

The farmers said that they also use urine and cattle dung if available. Sita further added, "We sometimes use urine of cattle and it is sprayed in the vegetables with the use of *Jhadu* (broom)." And if urine is sufficient, it is poured in the field. In the farm I had seen four drums filled with urine like liquid. At first I thought it was urine but later I came to know from Praveen it was not. Actually the drums were filled

with water and decayed vegetables. After some time it is converted into liquid fertilisers and is sprayed on the plants. But it is only used when other fertilizers are not easily available.

Inadequate use of organic fertilizers. I noticed that there was lack of fertilizers in organic farming. Farmers told me that due to the inadequate organic fertilizers used in the farm, the production is less. As told by the farmers they only apply Kwain thong once during the plantation or sowing seed and once at the time of weeding. And a bio pesticide called newlight (liquid bio pesticide mainly used for potato plants) is used sometimes. They also use vermicompost which is expensive and farmers were saying that because of scarcity they have stopped using it since four months. According to Praveen, the owner has two cows, two buffalos and 4/5 goats but the manure produced by them is not sufficient for the thirteen hectares of land. They are not using cattle dung which is important for the maintenance of soil fertility and productivity because it is scarce and cannot get it even if they want to buy it. Organic fertilizers and bio pesticides are not available for organic farming which seems one of the major constraints for its practice. Because of the insufficient use of organic fertilizers this organic farm is unable to produce enough products.

Crop rotation for healthy soil environment. Most of the farmers have less knowledge about crop rotation. But Praveen knows it very well. He said, “Crop rotation is an important agricultural practice for the management of pests, and diseases. It is good for soil and plants as it helps to loosen the soil and makes it fertile. Similarly plants get essential nutrients from the soil.” To support his understanding I would like to cite Higgins and Krokowsk (2012) who stated that crop rotation is one of the oldest agricultural practices. It is used to reduce damage from insect pests, diseases and to manage soil fertility. *European Commission's* report published in

2010 has explained about crop rotation. According to this report, crop rotation ensures the conditions which help in the development of crops by promoting soil fertility and minimising the pests and weed problems and also by ensuring better nutrient management. After sharing his ideas about crop rotation Praveen looked at me and said that we had been taught in school about it. I just nodded my head. And asked him in which level he was studying now. And he replied:

I have just completed my +2 (intermediate level) and did not continue my further studies. After completing +2, I was staying at home and at the same time my uncle came up with the idea of organic farming. Then we made a decision to start organic farming since then I am fully involved here.

Sandip said, “We rotate our crop often. When one crop is harvested in the same place we sow seeds of other plants. Before sowing the seeds we dig and apply Kwain thong so it helps to make the soil fertile.” Same things were told by Saru about soil fertility management. What she knew about crop rotation is that when one crop is harvested then the soil is made ready for another crop. This is how they did crop rotation there. She said that most of the vegetables and fruits grown there was according to the needs and demand of the consumers. About crop rotation, the owner of the farm said:

It is a good method of maintaining soil fertility and one of the mostly used methods over here. We rotate crop in every season. In fact when one crop is harvested we prepare the soil for another. In this way we do the rotation of the crops.

Mr. Gurung said that, “In conventional farming mono cropping is prevalent and agrochemicals are used to maintain the soil fertility and manage pests and diseases. But here we apply natural methods to do the same.” Organic farming promotes

diverse cropping and uses traditional and natural methods of farming to maintain soil fertility and to kill pests and cure diseases. Boincean (2010) states that the conventional farming with high inputs of agrochemicals, hybrid and GMO seeds has made farmers to forget about the traditional practices such as use of organic fertilizers and crop rotation to manage pests and diseases and restoring soil fertility. Similarly, the adoption of appropriate soil fertility management practices such as shifting cultivation is currently slow due to population pressure on land (Fleskens & Jorritsma, 2010). Though conventional farmers have stopped practising traditional practices of soil fertility, pest and disease management; Gurung has applied these practices in his farm.

Less attack of pests and diseases. Fortunately the farmers have not experienced serious disease, weed and pest problem in the farm. If any plant is attacked by some diseases or pests; the only thing they do is remove the infected part or the whole plants and keep them in a place to make compost. Some pests attack more during the rainy season and a little bit in winter too. During the winter season, a pest called aphid, infects the leaves and other parts of the plant. Praveen said that organic plants are less prone to diseases as well, however, *dadhuwa* (late blight) is one of the common diseases and it mostly attacks potatoes. Krishna further added that sometimes houseflies eat the leaves of tomatoes. “*Khumre kira* (white grub) and ants are also enemies of our vegetables,” said Saru. Borgen (2004) stated that in organic farming, pests and diseases should be dealt with through prevention rather than treatment. As the farm has not used any chemical pesticides and insecticides etc and having less problems of pests and diseases, the rule, prevention rather than treatment seemed to be applied there. Similarly, for weed control, they remove the unwanted weeds and use them for making compost.

I was taught that an ethical point of view, each animal and insect should have their own natural enemy in the ecosystem and the naturally grown plants have their own defending mechanism against pests and diseases. I have read that there are many naturally occurring toxic substances that plants produce to protect from the attack of insects and diseases. There are several theories that explain how plants protect themselves from pests and diseases by producing certain chemicals. “A prime example is DIMBOA, a chemical compound found in young corn plants that protects against fungi, bacteria, and a range of insect pests, including European corn borer (Anon, 2008; McLeod, 1992 as cited in Kuepper, 2010, p. 6). As naturally growing plants have their own defending mechanism against pests and diseases thus Gurung has not experienced any serious problems in the farm. Normally the attack of pests and diseases is seen more in hotter region than cooler region. As the climate of Kavre is suitable for vegetable production and the climate is cool, there is less probability of pests and diseases.

Gurung and Praveen said the same thing about pests and diseases. Normally, pests do not attack vegetations in cold region than in the Terai (hotter regions). However in the rainy season some pests attack the plants. “Usually *Chaitra*, *Baisakh*, *Jestha* and *Ashad* (the last and the first three months in the Nepali calendar respectively) months are the peak season for pest,” said Gurung. I liked his statement;

Rog sabailai lagchha (everyone suffers from disease). But those people who have strong immunity power rarely suffer from diseases. The same thing happens in the plants as well. In organic farming plants are strong from their root to the tip, thus pests cannot attack them easily.

Similar thing is told by Albert Howard, who is known as the father of organic farming, about the pest and disease problem in plants. “In *The Soil and Health*,

Howard, writes that health is the ‘birthright of all living things’ and that health of humans depends on a chain of health that begins in the soil” (Kuepper, 2010, p.5).

Howard says, “The organic method is a means for restoring and sustaining soil health, thereby reducing and even eliminating most pest problems” (Howard, 1947, as cited

in Kuepper, 2010, p. 6). Gurung went on to say that

pest’s problem arises in places where there is a high

input of chemicals. Once we use chemicals in our

land we need to increase the amount and much

stronger pesticides. Pests develop resistance against

applied chemicals. Every year the amount of

pesticides need to be increased because some pests become more resistant against

pesticides so farmers need to use much stronger pesticides (G. C, 2012). “But we

cannot find this kind of problem in organic plants,” said Gurung. Thus, Gurung’s farm

is more or less not attacked by pests and diseases.



Imported seeds vs local seeds. In the farm I saw the imported varieties of vegetables and fruits. Mr. Gurung said, “Most of my consumers are from foreign countries and also I supply products to hotels and restaurants. Therefore I grow products according to the needs and wants of customers”. Gurung prepares the seedlings and seeds in his own farm. At first he plants new varieties in a limited area and if consumers like them and if it is favourable in that place, he plants those varieties in a wider area. He usually uses the open pollinated seeds however seeds are not the local ones. He said that it is very difficult to find local seeds in the market. “The hybrid and GMO seeds have dominated the local varieties,” said Gurung. But the use of GMOs is forbidden in organic production (McEvoy, 2011). Koechlin (2002) and Riddle (2005) explain that “Organic principles are holistic and based on

cooperation with nature. Genetic engineering is highly reductionist, seeking single-factor solutions to complex problems; it seeks to control and manipulate nature” (as cited in Kuepper, 2010, p. 13). These days in the market local food products can hardly be seen because hybrid and mostly GMO seeds have replaced them. But the use of GMO products are not useful for developing countries like ours, in fact it is a curse for the whole world as it applies the monopoly of only limited seeds.

Monsanto, a multinational agricultural biotechnology corporation, by 2005 was the world’s largest seed company providing 90 percent Genetically Modified (GM) crops around the world (Robin, 2010 as cited in Zacune, 2012, p. 3). Monsanto mostly provides soy seeds, however it provides genetically modified maize and cotton seeds as well (Zacune, 2012). Monsanto is spreading all around the world and mostly in developing countries providing GM crops which I believe is not good for the poor farmers of developing countries. The Supreme Court of Nepal has ordered a prohibition on the import of GM seeds from Monsanto, the controversial US-based seed company which had been supplying corn and vegetable hybrid seeds to Nepal (“Monsanto appeals for unbanning hybrid seeds,” 2014). I feel that it is the only right decisions made by Nepalese government in the agriculture sector. In this process, advocate Arjun Aryal had filed a writ on December 29, 2013 in quest of the court’s intervention knowing a number of companies were reported to be preparing to import GM seeds in Nepal (“Monsanto appeals,” 2014). The use of genetically modified crops pushes out local seed varieties and affects biodiversity. They are also reported to be harmful to health of humans and animals (Buffin & Jewell, 2001). As Gurung is practicing organic farming he has already prohibited GMO and hybrid seeds in his farm.



As told by Praveen, though seeds are open pollinated most of them are not local ones. They are brought from other countries mostly from Japan and Korea. Organic products are supplied to the organic restaurants, hotels and to the organic market which is also targeted to foreigners, so most of the consumers of organic product are foreigners. And also some elite Nepalese families and aware people consume organic products. Therefore according to the demand of consumers, vegetables, fruits and herbal plants are grown in the farm. Praveen further added, “The local vegetables and plants are not large in size as imported varieties and some spices like coriander starts flowering soon so their leaves cannot be used any longer.” Sometimes seeds are purchased from the market as well. Because of the low production by local varieties they prefer local seeds but from foreign countries. Productive and healthy seeds are the basis to sustain farming system. So the seeds should be healthy to make more and healthier products. When I asked about the seeds to the rest of my research participants they were not aware about it; from where they come from. All of them told me that they had no idea about seeds. Kusum said that Navin uncle brought the seeds but had no idea from where it was brought. “I think he buys from the market in Kathmandu” she further added.

Irrigation system. The farmers do not have any problem of irrigation. A small stream called Khahare flows nearby the farm and they also have private tap. Besides that they have two different pipe lines that come from the hills. The plants are watered by spraying and water sprinkle. As plants can be watered by the water pipes directly, irrigation is less expensive for them. According to Pimentel (2006)

conversion to organic farming systems will reduce the dependence of farmers on energy and organic farming can increase the efficiency of energy use per unit of production (p.2). As Gurung does not use electricity for irrigation the cost is minimized in production.

Consumers find organic farming an environmentally sustainable practice. The consumers of organic products have perceived that growing organically is an environmentally sustainable practice and is good for soil and public health. Dr. Thapa has believed that organic farming is environmentally sustainable farming system and it can be continued in the future as well. He says that all the farmers should practise organic farming which is a sustainable practice thus good for the preservation of soil fertility and productivity. During a conversation with Thapa, he informed me about the traditional farming practise of Bhaktapur district. Bhaktapur is one of the pocket areas for the supply of vegetables in Kathmandu Valley. Thapa told me a story of the farmers of Bhaktapur:

Long ago, may be around twenty to twenty five years ago, farmers used to collect human faeces and urine from public. They used to keep big drums nearby public toilet which would be filled by urine and faeces. People who used to go to that toilet got paid by the farmers. The next day the farmers would come to collect the drums filled with human excreta and would keep another one. Farmers applied those human excreta mixing with saw dust or leaf litter or left over plants in their farmland. This is how farmers used to grow vegetables and that was the reason why vegetable of Bhaktapur used to be tastier.

Dr. Thapa told me that vegetables grown by using human excreta are tastier and truly organic but now the farmers have left that tradition and have started using chemicals in their farm. He was worried about the trend of haphazard and excessive

use of synthetic chemicals in the farm which degrades the soil health, surrounding environment and health of people. Thapa also explained about the organic roof top gardening. He told me about *2 tale 3 tale kheti* (different layered plantation in vase). For example, if we plant a trailer plant like bean, it goes upward and below those plants having shorter height such as saag can be grown. He also informed me about the program of Nepal Academy of Science and Technology (NAST). Thapa said, “Now NAST has launched a program that says if we grow vegetables in 50 pots then we can get vegetables all the year round. We can collect urine from our own family members and use them in those plants.” He said that we have to do nothing to sustain organic farming but we have to be aware and start from ourselves. And we can preserve our environment promoting organic farming.

Like Dr. Thapa, Dr. Basnet also has similar opinion about organic farming and maintaining the environmental sustainability. Basnet said that organic farming is an environmentally friendly practice so it should be promoted. Many people are not aware about organic food and farming system. Basnet said, “*Rasayanik mal prayog nahune vayekole organic farming jhan sasto parna aauchha ra chemical free hunale environment ni ramro banairakhchha.*” (In organic farming, no use of synthetic chemicals, it is less expensive farming practice and also makes the environment good). He also said that for the promotion of organic farming the government must be supportive and should take e actions soon.

The perception and experiences of farmers and the owner show that organic farming is an environmentally sustainable farming system. Practice of organic farming in Trijal Organic Farm is free from chemicals and is based on traditional and indigenous knowledge of farmers and their experiences. Consumers say that organic farming is an environmentally friendly practice and can be sustained in the future

easily. For the promotion of organic farming more people should start organic farming from their home and the state must make plans and take it to the action.

Giddings et al. (2002) state “In most debates about sustainable development either the environment or the economy is given priority” (p.3). For all the developmental work even for conventional farming least priority has been given to natural resources. Modern conventional farming is only concerned with the farming of mono cropping especially rice, wheat and corn and high inputs of agrochemicals. Conventional farming does not care about the degradation of natural resources. It is mainly concerned with economic development. But organic farming advances natural environment including improvement in water retention in soils, increased water table and reduced soil erosion. It makes soil fertile and healthier which can sustain plant growth better and have a higher nutrient content (United Nations, 2008, p.10). The organic farming practice in Trijal Organic Farm with diverse cropping and prohibited agrochemicals has helped in making the soil healthy, in the preservation natural habitats and ecological balance of the surrounding ecosystem. Thus the farm is environmentally sustainable.

Economic Sustainability

Economic sustainability is achieved only when organic farming is economically efficient for the owner, farmers and consumers. It includes the economic development of farmers and owner by the practice of organic farming. And this component of sustainability explains whether and how consumption of organic foods can be economically efficient to the consumers.

Some happy farmers. Praveen is involved in the organic farm for ten years. He seems quite satisfied with his job. He was saying that some of his friends are now in gulf countries but he is happy to work on his own land. He said, “The environment

is good to work here. I have seen the scopes and opportunities of organics in Nepal, so I am thinking of devoting myself in this sector.” In the near future he is also planning to start organic farming on his own. He says that now he is experienced and trained in this sector which would be beneficial to work in his own farm. He is thinking of making money from the organic business.

Saru finds the job in the farm good for her. She said before she came to the farm, she used to do some household chores in the morning and evening and rest of the day she was free. So her mother-in-law sent her to work here. She said, “It is helping a lot in my family.” Before coming to the farm, she used to do household chores and sometimes worked in her own farm and rest of the time she was doing nothing. Now she finishes her work at home and comes to this farm and gets paid for the same kind of work. So she is happy with this job. Although she is employed and getting good salary she is not planning to work there for too long. She said that she cannot work for long but for the time being it was alright for her. And she is satisfied with what she gets.

Both Praveen and Saru have taken job in the organic farm which is good for them as they are happy with their income but other farmers were not much satisfied like Praveen and Saru. Sita and Kusum were not satisfied with their salary. They said, “*Yeti paisale ta kei garna ni pugdaina. Sadhai vari yehi kam garera ta chaldaina arko thauma khojnuparchha ani kam pani garo chha. Ghaam paani kei navani kam garnu parchha.*” (The money we get is not sufficient for us and the work is also difficult so we cannot continue doing this for a long time. We have to work hard whether rain or sunshine). Hence, in the future Sita and Kusum are not going to work in the farm but would be searching for another job.

Deepak Tamang has left his studies without completing tenth grade. He is not my core participant but I used to talk to him sometimes. He was a close relative of the owner. He has the responsibility of taking care of the farm during the absence of Gurung. He comes to the farm at 8 a.m. in the morning and finishes his work at 5 p.m. As he had to take care of the farm, he kept moving from one place to another to check whether other farmers were working properly or not. He gets good money for his work so he is quite happy with his job in the farm.

During my field visit I had a short conversation with Shrijana Tamang who is studying in class 12. She told me that she is a part time worker and works in the farm when she is free. She usually works on Saturdays and during holidays. She gets paid on a daily wage basis; for one day work she gets paid two hundred rupees and she is quite happy with this money. She said “I do not have to ask my parents for pocket money so I am happy with what I get.” Shrijana seems pleased in working in this farm.

Confident owner. The owner of the farm was confident that organic farming practise is sustainable and can be sustained in the future as well. He said that, “organic farming does not require any chemicals so farmers like me do not need to depend on government for the expensive chemical fertilizers and pesticides.” In the study by Shrestha (2010), fertilizer in Nepal has always been a political commodity. Supplying adequate quantity of fertilizer to the farmers in the country has always been a challenge for the governments. According to Gurung if other countries stopped importing chemical fertilizers, pesticides and seeds then non organic farmers would be in trouble. But in organic farming locally available resources can be used as fertilizers and pesticides, thus it is environmentally and economically feasible production system. Here, Gurung’s view is similar to Hine and Pretty (2006) they

believed that organic farming aims to create integrated, humane, environmentally and economically viable agriculture systems in which the farming relies on local or on farm renewable resources and the management of ecological and biological processes. Hence, organic farming can be said to be more economical and environmentally sustainable in terms of use of fertilizers and pesticides as compared to conventional farming.

As Gurung has practiced organic farm as an industry he is quite satisfied with his business. He has twenty workers in his farm paying them Rs. 9000 as salary on an average. Though he has less production, organic products are sold at high prices. He is earning well from his business. And thus from the perspective of the owner, organic farming is economically sustainable practice and he thinks that it can be easily sustained in the future as well.

Consumers and economic sustainability. Schnug et al. (2006) state that conventional farming is associated with the problems such as pesticide residues in soils and plants, contamination of meat with antibiotics and hormones, and with water bodies. Thus purchasing organic products is an alternative for consumers (p.57). The belief that organic food is healthier than conventional fare is a foundational belief of organic farming that continues to drive the market today Kuepper, 2010, p. 4). Global demand for organic products remains robust, with sales increasing by over five billion US dollars a year (Willer, Yussefi-Menzler, & Sorensen 2009 as cited in Samkumchaliang & Huang, 2012). In case of Nepal also there are an increased number of organic consumers. And they are willing to get more organic products.

As told by Dr. Thapa, there are an increased number of people who would want to eat organic products. But organic products are not easily available in the market and also expensive. He only buys vegetables from Gurung's farm and also

goes to a shop at Lagankhel (a place in Lalitpur district, Nepal) for more organic foods. He finds organic shop of Lagankhel less expensive than organic market of Kuponhole. In the organic market, products have maximum price range. This market is mainly targeted for foreigner that is why it is expensive. Dr. Thapa said, “I am close with Mr. Gurung so I get some discounts while buying organic products. This market is not for average Nepalese. *Yaha ek mutha saag ko pachas Rupiya parchha. Pachas rupiyale manchheko ek chhak nai tarchha. Dherai mahango chha organic food*” (The cost of one bunch of saag is 50 Rupees. 50 rupees is enough for some people for their day’s meal).

Dr. Thapa said “If more people are involved in organic farming, then organic foods will be affordable and more people will have access to organic products”. He also said that organic farming has a scope in the local, national as well as in the international markets. He continued saying that “I think organic farming is cheaper and easier than conventional farming where farmers can use local resources. As Nepal is rich in natural resources many plants can be used as bio pesticides which some farmers do not know.” A research carried out by Jha in 2008 explored that most of his participants (farmers) are unknown about the use of bio pesticides. Thapa said that there is lack of awareness in farmers about the local resources and how to utilize them properly. He said, “*Ek litre human urinelai das litre panima misayera spray matra garda ni pugchha. Tara fresh urine haina teslai ek dedh maina rakhnuparchha. Rog lageko chha vane ni marchha ani plant healthy hunchha* (Mixing one litre human urine with 10 litres of water is sufficient. But fresh urine cannot be used; it should be kept for one and a half month. Then by spreading urine in the farm, a diseased plant can be cured and becomes a healthy plant.) Thapa also said that organic farming can be sustained easily in the future and this is also a need.

Social Sustainability

Social sustainability is achieved by maintaining the equity, preventing marginalization, prestige and respect in the society. In the case of organic farming, social sustainability is gained by how it has helped in the improvement of standard of living of farmers, owner and consumers and their status and prestige in the society provided by organic farming and food. However, social sustainability is one of the complicated components of sustainability which cannot be easily measured. And it is difficult to say that social sustainability is achieved.

Challenges faced by farmers. Many challenges need to be faced by farmers while doing organic farming. Praveen said that they are facing several difficulties with the practice of organic farming. Running a purely organic farm is not easy. In organic farming heavy machineries cannot be used. “We cannot plough or use tractor here. As agrochemical is not being used, we need to use cattle dung, urine, compost and vermicompost which are not easily available. Kwain thong is brought from Thailand which is quite expensive,” said Praveen. He further explained that as they are not using any agrochemicals; plants are strong enough naturally thus no need of any pesticide which is one of the benefits of organic farming. He kept on explaining that there are fewer problems with the pests but they have problem in getting bio pesticides and organic fertilizers. He said, “We need to work hard in the farm weeding, watering, harvesting and all. Besides that we are not facing other challenges. We are doing on our own; none of the organizations or the government is providing any help.” He was expecting that if the government could provide some incentives and also make bio fertilizers available it would be great.

When I asked two of my research participants, Sita and Kusum, what type of difficulties they were facing, both of them replied that working in the organic farm

was very difficult. Sita said, “We have to work on hot days too from 10 a.m. to 5 p.m. We do all types of work here such as digging, cutting grasses, breaking large sized soil, weeding, harvesting, washing and packing of vegetables and fruits. ” They also told me that there is no problem of seeds, manure or any other thing. If anything is about to run out they tell Navin uncle. “The only challenge that we are facing is that we have to work six days a week whether rain or shine. . And the salary we get is not sufficient for us. We do not think that we can sustain our life like this. We are searching for jobs,” said Kusum. I further questioned, “If Navin uncle increases your salary, and then what would you do?” Both of them replied that the job was not good for them; it required a lot of hard work. Thus, they would still search for other jobs.

Krishna Tamang is not planning to work in Trijal farm. He said “I love to work in this farm but not any longer. I was doing nothing at home so I started working here. However, I will not spend my future in this sector rather I will search for a new job.” He further added, “*yaha sadhai vari ta kam garna sakinna. Mahangi esto chha eti salaryle ta Jeevan chaldaina. Pachhi ta arkai kam khojchhu. Tara aileko lagi chai thik chha.* (I cannot keep on working here. Price of everything is rising; my salary is not enough for my survival. Later I will search for another job. But for the time being, this job is ok for me)”. Krishna also told me that organic business cannot be done by an individual. It requires hard work and also a big investment. Moreover he said, “For the marketing of organic products we need links to many people of higher class like Navin uncle has.” Krishna finds doing organic farming a challenging job so he will not be taking up organic farming as his future business.

Prestige in the society. Gurung had started organic farming in Saanga ten years ago. Now he is quite a renowned and successful person in his locality and in the field of organic farming in Nepal. Gurung has provided local employment

opportunities for the local youth in his farm. And he is quite happy with his work. “I think I have done something for my community where I grew up. I have provided employment for twenty youths of my locality. Two employees here are working since the establishment of the farm; some have been working here for a few years and some have just started a few months ago,” said Gurung with a smiling face. He has earned name and fame in the society and this has also helped in making good money for his business. As Gurung has provided employment for the local youths, he has quite high status in the society. The prestige in the society and good relationship with the locals, financially sound business has made Gurung’s organic farming practice socially sustainable.

Organic foods only for rich people. The consumers of organic products are mostly the rich, some health conscious people and diplomats and other expatriates. Organic foods are not affordable for low income families and are accessible only to the well to do. In the organic market, most of the consumers had come with their helpers (housekeeper). They were carrying the basket and bags full of vegetables and fruits bought from the market. Mr. Gurung had mentioned that organic foods are mainly for expatriates, diplomats and people of high class family. And some health conscious and aware people consume organic products. Dr. Thapa and Dr. Basnet both of them understood that organic foods are not for the average Nepalese, it is for the elite. The consumers I spoke to in the organic market were a German lady, a professor of a University with a PhD and the third one a medical doctor. All of them represented the elite. Thus, the people who consume organic products have prestige in the society. But organic food has created discrimination in the society as it cannot be afforded by everyone. Thus, I believe that organic farming maintains the criteria of

social sustainability in case of three consumers but not for all type of consumers from middle and lower income family.

The Guiding Principles of Organic Farming

The organic farming has four standard principles, principle of health, ecology, care and fairness (IFOAM, 2009a) and some of them can be observed and experienced in real practice of organic farming. Here, I am trying to show the linkage of these principles with the practice, experience and perception of farmer's owner and consumers.

Principle of Health

A study carried out by Vaarst (2010) states “the principle of health covers many facets of organic farming in tropical countries and elsewhere,--*e.g.*, animal health promotion and management and the relationship of human health to a bio-diverse production allowing a well-balanced and nutritious diet” (p.41). However, the main agenda of this principle is that organic farming should maintain the health of the soil, plants, animals and humans. A healthy soil can produce healthy crops that are essential for the healthy life of humans and animals (IFOAM, 2009a). The health of the soil is maintained when the farm does not use chemical fertilizers, pesticides, insecticides, etc. This is how organic farming is practiced where chemical fertilizers, pesticides, etc are strictly prohibited.

In the present context many people are interested in buying organic products and have a belief that organic food is good for their health. Though the concern about organic food and farming system is increasing, it is not free from some controversies. There are many claims made of organic food that say that organic food does not make people healthy. A research funded by Stanford University claims that organic food is not healthier (British Broadcasting Corporation (BBC), 4 September, 2012). The

study revealed that there was no distinct difference between the nutritional content, although the organic food was 30% less likely to contain pesticides (“Organic food is not any healthier”, 2012). Similarly the article *Nutritional Quality of Organic Foods: A Systematic Review* states that the British authors conclude that there is no difference in nutrient quality between organic and conventional foods (Dangour, et al. 2009 as cited in Kuepper, 2010). Although there are many contradictions and controversies on organic farming, in my perception it is also true that those toxic chemicals used for killing pests and insects cannot be beneficial for humans.

In organic farming, the condition of soil is maintained and all the required elements are provided without using chemicals. It is believed that mono cropping and the increased use of agrochemicals have caused the loss of soil fertility and the extinction of many animals and birds like sparrows and parrots and insects such as earthworm, ants etc. The health of people, animals and birds has a direct link to the soil and the food grown in the soil. Organic farming is thought to maintain the health of the soil and produces healthy food for the entire people, animal, insects and birds. In Trijal Organic Farm I did not see any use of agrochemicals. And the farm performs diverse cropping, crop rotation and the use of bio fertilizers and pesticides. The soil is healthy thus producing healthy crops. Apart from this, the farmers also said that by not using chemicals it has made the environment of the farm healthy thus they are not directly affected by the chemicals while applying in the farm. A farmer named Sandip said, “*Yaha chemical use nahune vayekole hamro healthma rasayanik aausadiko direct asar ni pardaina. Natra chemical spray garda ganhaune jiu chilaune hunchha ni.*”(We are not facing direct effect of chemicals in our health as we do not use chemicals in the farm. Otherwise chemical spraying causes itching and it smells bad).

Dr. Thapa, a consumer of organic products said “*organic ra nonorganic foodko farak khadakheri nai tha hunchha ni. Swadma dherai farak parchha. Yo chemical haleko khana khada petma acid formation vako jasto, kasto undigestion feel hunchha. Tara organic food khada testo kei hunna ramrosanga digest hunchha*” (

The difference between organic and nonorganic food can be found while eating. The difference can be found in the taste. After eating chemically grown food, it causes acid formation and a kind of indigestion. But organic food gets easily digests). He also said that very few people are aware about the facts of harmful impacts of conventionally grown foods. Possible cancer hazards have been the most debated health issue related to pesticide use for more than fifty years (Gold, Slone, & Ames, 2001). The adverse effects of pesticides exposure are more likely to occur in children (Gary, 2004); major effects by the consumption of conventional foods are neurobehavioral toxicity, endocrine disruption, childhood cancer and adverse reproductive outcomes as cited in Oates & Cohen, 2009). In addition, Winchester et al. (2009) has revealed that agricultural toxicants present in surface water are responsible for higher risks of birth defects (as cited in Oates & Cohen, 2009, pp. 49-50). The pesticides used in the farming are causing several health hazards through the consumption of conventional foods. The continuous consumption of those foods may lead to severe problems in public health.

Principle of Ecology

The principle of ecology explains that organic farming should maintain the ecological balance in the nature (IFOAM, 2009a). It means, in the name of agriculture humans have no right to disturb the naturally balanced cycles. The major argument is that organic farming should be based on natural cycles and should maintain the interconnection among soil, plant, animals and humans (Cwiek & Cruz,

2008, p.5). I believe that the farmers should not only think about their production but they should also consider about the harm they cause to the environment.

In the farms where strong chemo synthetic products are used, the insects, butterflies and birds can rarely be seen. Toxic chemicals kill not only harmful pests but also those pests that are beneficial for soil and crops (Rivera, 2004-2009). It has been noticed that the more fertilizers farmers use in conventional farming, the more they need. Thus use of agrochemicals often decreases insects thereby decreasing those species that feed on insects, such as bats and some birds (Wickramasinghe et al., 2003 as cited in Gava & Reardon, 2007) and resulting on more destructive pests with more resistant to pesticides (Rivera, 2004-2009). Overall, species richness increased by 30% on organic farms (Bengtsson et al., 2005). Conventional farm has decreased the species richness on the other hand organic farm has preserved them. When one species or the element of the nature disappears, the whole ecological balance is disturbed.

In Trijal Organic Farm, I could see some pests and insects such as ants, white grub, aphids, grasshoppers, large number of earthworms (known as the friend of farmers which helps to maintain the soil fertility and productivity). I also saw three different varieties of butterflies, some birds like sparrows and parrots as there was a forest nearby. “Organic farming is reported to increase diversity in the agricultural landscape, including, for example, carabid beetles (Dritschilo & Wanner 1980; Kromp 1989; Pfinner & Niggli 1996), vascular plants (Hyvönen & Salonen 2002) and birds (Freemark & Kirk 2001)” (as cited in Bengtsson, Ahnstrom & Weibull, 2005, p. 262). Organic farming has a tendency to increase the species diversity whereas the conventional farming as I know damages the habitats of birds and animals and kills the soil friendly insects. All these small insects, earthworms and birds can be rarely seen

in the farms where chemical fertilizers have been used for a long time. Conventional farming is good in terms of increased production but me, as a student of Environment and Sustainable Development cannot take it as good for environment.

Principle of Fairness

According to IFOAM (2009a) the principle of fairness is to maintain good human relationships that are fair for all involved from farmers to workers, processors, distributors, traders and consumers. Organic farming should produce a sufficient supply of good quality food and other products to everyone involved with a good quality of life. But in the context of Nepal the organic sector is just in its /initial phase. Insignificant amount of land has been utilized for organic farming. It is a different matter that some parts of Nepal in hilly and mountain areas, due to lack of availability of chemical fertilizers and pesticides and machineries they are compelled to practice traditional farming which would be better to call natural agriculture. Otherwise, the portion of organic land in Nepal that signifies organic farming is not able to produce sufficient food products.

Organic products from Trijal Organic Farm are not for the consumption of local people of Saanga or for the farmers. Praveen said, “*Yaha faleko tarkari ta khadainau hami. Aafulai kahna ta aafnai karesabarima ropeko chha. Yo ta bechnako lagi ho.*” (We do not eat vegetables grown in this farm. we have grown vegetables in our backyard for our consumption. These are for sale). Vegetables and other crops grown in the farm are supplied to the expatriates, well to do and some health conscious people of Kathmandu. Consumption of organic products represents a separate segment of the society. Only some elite group of the society has access to organic food products. Mr. Gurung says that he is not able to fulfil the demand of consumers with sufficient foods and the consumers are not fully confident whether the

products they buy are truly organic or not. But the principle of fairness means to provide sufficient food of good quality and for all, which is not applicable in this context. If more farmers are involved in this sector then obviously an abundance of good quality food could be produced. Thus, the principle of fairness is not significantly applied in organic farming practise in Nepal and especially in Trijal Organic Farm.

Principle of Care

Principle of care is one of the principles of organic farming. It explains that science is necessary to ensure that organic farming is healthy, safe and ecologically sound. However, scientific knowledge alone is not sufficient. Practical experience, accumulated wisdom and traditional and indigenous knowledge offer valid solutions, tested by time (IFOAM, 2009a) Organic farming should adopt appropriate technologies and with elimination of genetic engineering, GMOs and other prohibited substances. Organic farming is the method that uses indigenous knowledge and wisdom with the association of scientific knowledge.

In Trijal Organic Farm, the indigenous knowledge can be seen with a slight modification. In the farm many plastic sheds can be seen for the prevention of excessive water, heat, fog, snow etc. This type of protection cannot be seen in traditional farming. I saw small gaps left in between the patches of crops. As told by Praveen Tamang, those small gaps help to make their work easier for weeding and digging. The crops will not be damaged by feet and it also helps in the easy run off of water. Similarly water pipes have been used to pump the water in the upper areas as the farm is located in the hills and terraces and flat lands. The seedlings are prepared in the farm by the owner in small plastic bags and the seeds are sown in the fields in different period of time so that they can be harvested all year round. When one crop

was harvested then the seedlings to be planted were already prepared. All the seeds used in the farm are open pollinated. So this farm seemed to have utilized the traditional, indigenous method with the mix of some modern techniques. Thus, it proves that Trijal Organic Farm has maintained the three principle of care.

Summary of the Chapter

The practice of organic farming in Trijal Organic Farm maintains the criteria provided to organic farming. No agrochemicals have been used in the farm. As chemicals are not used, and there is the practise of diverse cropping and crop rotation; farmers have not experienced serious problems of disease, pests and weeds. These problems are treated naturally using bio pesticides. Since, the farm has not harmed the health of the soil and the surrounding environment, organic farming practise is environmentally friendly.

Though some farmers are happy to work in the farm, like Praveen; other farmers do not want to work in this sector. It seemed a difficult job especially for the female farmers and they have thought of searching other jobs for themselves. In our country, Nepal, farming is not taken as a respectable profession. In the farm, some female farmers are not happy with their salary so for them a job in an organic farm is not sufficient for their survival. Similarly some male workers are also not interested to work in the farm for a long time. The farmers are not completely satisfied with their job and the amount of money they get. The work in the farm is not a prestigious job and a farmer's income is not sufficient for them. So from the perspective of the farmers, this type of farming is not a sustainable practice however, some hope is there for its sustainability.

Gurung has been practicing environment friendly farming and he is doing well in his business. He has provided employment opportunities to the youths of his

locality and has respect and prestige in the society. Hence, for the owner, organic farming is environmentally, economically and socially a sustainable practice.

Consumers who take organic products from Gurung's farm do not seem to be satisfied. They demand for more products but Gurung is not able to grow sufficient products and fulfil the demands of the consumers. The two consumers I talked to seemed well to do Nepalese, however they were complaining that organic products are expensive than non organic products. Though the consumers have realized that organic products are expensive, they want to pay a little more if they get the desired products. All three consumers believe that organic products are healthier and organic farming practice is good for the environment. But in general organic products are not economical and the middle and lower income group cannot afford the organic products. Although some aware people are consuming organic products, in general they are not inclusive in this category thus organic product seems to have classified the society. Organic farming can be sustainable if organic products are affordable for all categories of people and if demands are met by the suppliers.

As seen from perspective of the principles of organic farming; Trijal Organic Farm has maintained the criteria for the principle of health, ecology and care but it is unable to meet the criteria of principle of fairness.

CHAPTER VII

CONCLUSION OF MY RESEARCH

Concluding My Research

I was interested to gain an insight into the beliefs of the farmers regarding organic farming. The farmers have understood organic farming as the farming system without using agrochemicals and they have believed this farming as a good practice for health and environment. However, there are some contradictions in the farmers' belief. They are working in an organic farm but are not practicing organic farming in their own land. They are just working as farm workers and have less knowledge about organic farming. Though the farmers are working in an organic farm they know that chemical fertilizers and pesticides increase the crop production so they apply chemicals in their own land.

Additionally, farmers believe that organic farming produces lesser than conventional farming however the products can be sold in a good price. Out of six, only one farmer wants to work in this sector in the future. Rest of the farmers would prefer another job. But at the moment some are satisfied with their job in the farm. Thus, according to the perception and experiences of farmers about organic farming, it does not seem to be a sustainable practice. However, there is some hope of sustainability of this farming in the near future as some of them perceive organic farming as a good practice and want to establish their own farm soon.

In the owner's perception, organic farming is far better than conventional farming and can be sustained in the future as well. For the owner, organic farming is environmentally and economically sound production system as Trijal Organic Farm is an industry where local people work on monthly and daily wage basis. The owner is

happy because he has provided employment opportunities to some local youths. Though the owner is doing well in business, he is not satisfied with the lack of interest from government towards organic farming in Nepal. He is finding difficulties in getting bio fertilizers and pesticides but he does not have a problem with the market as he has initiated his own market in the city. For Gurung organic farming is an environmentally friendly business, earning good money and respect and prestige in the society. Therefore, Gurung's organic industry is a sustainable practice for him.

The consumers find the organic products healthy though they are not fully confident about it. The consumers in this case seem to be the victims. Victim in terms that they are consuming organic products paying expensive price and moreover there is no variety and sufficient products in the market according to their demands. Even if consumers want to pay more they are unable to get the products. Based on the conversation with three consumers I could see the scenario of all the consumers of organic products. They are not confident whether the products they buy are truly organic or not and the insufficient products in the market get them worried. Therefore, the consumers are expecting the government or the concerned people or organization to do something for the development of organic farming and to make the organic products easily available in the market in a reasonable price.

Gurung's farm is able to maintain the principles of organic farming. As no chemicals are used in the farm, use of bio fertilizers, pesticides, multi cropping and crop rotation has fulfilled the criteria of the principle of ecology. As farming system is based on ecological processes, the soil is healthy and producing healthy crops. Organic farming of Trijal Organic Farm has also maintained the principle of care, by caring the health of people and environment. Though organic farming and produces meet the principle of health, ecology and care, it is unable to meet the principle of

fairness that means organic farming and its produces are not fair to all the people involved. Organic products are affordable to only the well-off families so in this case organic farming does not incorporate the principle of fairness.

The perception and the experiences of farmers, and consumers regarding organic farming, in overall, show that organic farming is environmentally sustainable but not economically and socially sustainable. But for the owner organic farming has fulfilled all three dimensions of sustainability i. e. economic, environmental and social sustainability. For the farmers and consumers, there is some hope for the sustainability of organic foods and farming in the future. Some farmers are interested to practice this type of farming in the near future and now more people are interested to buy organic products and the usual consumers are aware and willing to buy more organic products that can open the door of opportunities for some more farmers to practice organic farming. As there is a high demand of organic products it is obvious that more farmers need to be involved in this farming and their product will not go to waste as an increasing number of people are going for organic foods.

My Research Journey

During my research, I learned many things, met new people and also visited some places that I had never been before. There were many ups and downs but my entire research journey was quite interesting. I started thinking about my research title when I was in the third semester of my Master's course. After completing this semester I started researching about organic farms and the people involved in this sector. For the first time I visited an organic farming practice at Kevin Rohan Memorial Eco Foundation (KRMEF) at Chalnakhel, Kathmandu. It is an NGO established in 2008. It aims to create a healthy, sustainable environment that practices eco-friendly behaviours for the well-being of local communities. One of the practices

of KRMEF is bio dynamic farming which is a method of organic farming originally developed by Rudolf Steiner. Biodynamic agriculture is based on the knowledge that the soil, plants, animals and farmers work together in one agricultural cycle (Singh, 2008). Rudolph Steiner developed the method in Germany during the 1920's and "his basic theory was that nature is a mystical, spiritual thing, and to garden it well, one must treat it as a whole entity and system, both physical and spiritual" (Birnbaum, 2003, p. 6). During the visit to KRMEF, I liked most about biodynamic farming.

The second organic farm I visited was of Madhusudan Shakya. He has been practising organic farming for three years around in two ropanies of land for his own consumption. I visited his farm with my friend Shrooti. During the visit Shakya explained about the farming practice and making compost for the crops. His farm was too small to carry out my research because he had not been doing organic farming in a large scale. Thus, he told me to find some other farms. Shakya told me that it would be very difficult for me to find a pure organic farm because many people sell non organic products at a high price saying that it's organic. He also added, "Gurung is practising organic farming for ten years and he is doing pure organic farm so you can visit his farm at Saanga".

Besides Gurung's farm, I visited other farms as well and met some people who are well known in organic farming in Nepal, mainly in Kathmandu. I talked to farmers in Gurung's farm. They were all nice to me. I loved being in the farm and talking to the farmers. To reach Gurung's farm, public vehicles are not easily available. So I talked to a shopkeeper at Saanga Chowk where I used to buy dry food for my lunch, about the possibilities of any vehicles to reach Trijal farm. He was very kind and told me that a school bus and a milk carrying jeep go there every day. He further added

that I could talk to the principal of the school or if possible I could reach Saanga Chowk at 7am to catch a bus.

Similarly, the consumers of organic product at organic market were kind and supportive people. They tried to provide as many information as I needed. Everyone I met during my research was helpful to me. Without their help, time and support my research would not have been completed.

Challenges I Faced During the Research

I did not face any major challenges during my research. However my research journey was not free from a few challenges. The first challenge was to find an organic farm. I did not know any people practicing organic farm before starting my research. I did a kind of research and surf the internet about organic farms. Later, I found lists of people involved in organic field and several organic farms in Nepal.

I had already visited three organic farms before visiting Mr. Gurung's farm but they were not practising it on a large scale. I had been to "Everything Organic Nursery" which is a nursery and an organic farm located at Patalekhhet, Kavre before starting my research formally. It was established in 2010 by Judith Chase, an American woman. At that time they had four ropanies of land where they have grown vegetables, fruits and nuts but most of the plants were not Nepalese plant. Judith told me that they also provide training to the farmers about biodynamic and bio intensive farming (a type of organic farming).

KRMEF, Shakyas' private farm (explained in the previous subtitle "My Research Journey") and an organic farm and a nursery of Judith Chase were not for commercial organic farming. KRMEF is just for demonstration. Shakya's farm is for his own consumption and Everything Organic Nursery of Judith Chase is for demonstration and training of biodynamic and bio intensive farming. Judith's farm

does not grow many products for sale so her farm does not have significant contribution for economy. As all above mentioned three farms do not have significant impact on economic development I did not choose them for my study area.

On my first visit to Gurung's Farm, I had gone there with my two friends in a taxi and it took more than an hour to reach the farm from Saanga Chowk. We spent around three hours in the farm. My friend wondered how I would carry out my research in the farm as it is very far away and moreover the road is not pitched I also thought in the same way. How would I do my research in this farm? There are no public transportation and the farm is too far to go on foot. If I'd take a taxi it would be too costly for me. Hence, I thought of finding some other farms where I could commute in a public vehicle or use my scooter. At the same time, I thought of going outside Kathmandu to conduct my research because I thought that I would get an opportunity to visit new places.

I was searching for other organic farms other than Gurung's farm because I thought that I should visit some other farms to get more insights about organic farming. I met some people involved in this farming and spent around a month in this activity. But I did not take any farms nor the people involved as my research site and participants whom I met later on.

One day, I got a message from my ex colleague Edita Frankova on my facebook. She wrote to me inquiring about my studies and also wrote that if I had come across any organic farm for my research. I had already told her that I was going to do my research in organic farming while we were working together. She also wrote that at that moment she was working in an NGO named Organic Village Private Limited located at Bakhundole. She further told me that her boss was Samir Newa (who is a well known person in organic farming field. I had read about him in

newspapers and magazine) and that I could visit him to get information about organic farming. I was glad to receive her message and replied that I would visit her office the next day. Edita has also said that they had a project on organic farming in Surkhet. At that moment I thought that I would do my research in their farm in Surkhet and would be visiting a new place in the western region where I had never been. The next day, I called Edita and went to her new office.

I reached the Organic Village where it also runs an organic restaurant and an organic shop. Edita's office was in the next building behind the restaurant. She came to receive me and we both went to her office. I spoke to her for a while and came to know that her boss had gone out and would be returning soon. She told me that in Surkhet, farmers are mainly growing organic garlic and ginger. At that time, my research purpose was to know the practice of organic farming and how organic farming can contribute for food security. I thought how could the cultivation of organic garlic and ginger help to improve the food security. Then I changed my mind not to go to Surkhet and I wanted to return from there without meeting Samir Newa but then I thought that I could get some information about organic farming from him. I was told to wait till her boss returned. I waited for about thirty minutes and then Mr. Newa arrived. Edita introduced me to her boss and told him the reason of me being there. But he was so busy that he could not give much time. However he provided information about the people who were involved in organic farming in Kathmandu valley and gave me the contact number of Sheela Dhakal and told me to meet her. Mr. Newa also told me to visit him some other day.

I went to Dwarika Hotel on 6th August, 2013 at 11 am with my sister to meet Mrs Sheela Dhakal with prior appointment to talk about organic farming and my thesis. I was facing some problems regarding my research site because I was unable to

find any organic farm economically and physically suitable for me. I sat with Mrs. Dhakal for about an hour and a half. Before meeting her I had no idea that she was an expert in organics and one of the organic inspectors of Nepal. I thought that she was involved in organic farming practise. During the talk she provided me information about inspection process, certification system, organic stores, restaurants and many people who were involved in organic farming in Nepal in brief.

When I discussed my research objectives and purpose with Mrs Dhakal she advised me to change or breakdown my research questions. She added that during her ten years of experience, she never realized that organic farming could contribute for food security. She further explained that Nepal is just in its initial stage in the field of organic farming and so we come across only a handful of farmers who practise organic farming. She said that organic farming linked with food security would be a challenging job for me. So it would be better if I broke down or opt for any other topic for my research. This meeting further confused me so I could do nothing for a week and kept on thinking about what I should do further. Should I change the research title or should I stick on to it?

Mrs Dhakal had given me information about Eco Organic Farm of Darimboat, Dhulikhel. She also gave me the contact number of Tshering Sherpa a responsible person of that farm. I went to meet Tshering Sherpa on 13th August, 2013 with my cousin. It was raining continuously since morning and it was around 12:30 pm that we reached Dhulikhel. We needed to catch a bus from Dhulikhel to Kavrevanjyang but due to a strike or some other reason the bus did not come that day. We went there by a small lorry with some local people of that area.

When we reached Kavrevanjyang the rain had practically stopped. We asked the local people the way to Eco Organic Farm of Darimboat. They showed us a

slippery shortcut route through the jungle. We didn't come across anyone on the way and it seemed as if no one had walked that way for quite sometimes. Only two of us were walking that way. It was so quiet and eerie that we could only hear the songs of the cricket and the sound of the bus horns far away, I was very scared as we walked along but my sister was enjoying the walk. We saw a lapsi tree (*Choerospondias axillaris*) and my sister started gathering lapsies. I did not let her collect more because I was too scared and wanted to reach the farm as soon as possible as we had to return to Kathmandu the same day. Since the road was slippery my sister fell once and I twice on the muddy path. The locals had said that it would take around twenty minutes to reach the farm but we had already walked forty minutes with no sight of the farm house. After some time we reached a house and asked them the way to the farm. In the meanwhile we met a school girl coming the same way we had taken who volunteered to help us to reach the farm.

Eco Organic Farm was started just one and a half years ago in January 2012. I had a very nice talk with Mrs Sherpa. She talked about organic farming and shared her ten years of experience in organic sector. She said that before taking up organic farming she had worked for an NGO related to organic farming. She also said that organic farming is less costly and easier than conventional farming. She shared many things regarding organic farming and many more. I liked the way she talked and the things she delivered.

I liked Mrs Sherpa because she was a knowledgeable person regarding organics and delivered the information quite nicely. And also I liked the farm and the environment of course, besides the lonely and slippery road. But the farm had started practising organic farming just two years ago so it could not be considered as an organic farm. According to the U.S. Department of Agriculture (1990) any farms

should be practiced without using agrochemicals at least for three years to convert into fully organic farm. And during the conversion period products cannot be sold as organic (as cited in Zinati, 2002, p. 607). As this farm was unable to fulfil the criteria of organic farming, I decided not to carry out my research in this farm. Therefore, I did not take the farm as my research site and again thought that I should continue my research in Mr. Gurung's farm.

During my research journey I also met a person named Ramesh Maharjan. He is a government officer and also involved in organic farming. His farm is located at Chalal VDC of Khopasi, Kavre. In the first interview with him I understood that he was practising in organic farming as a business and for personal. I met him in his organic outlet in Kuleswor where he sells organic products from his farm. Maharjan also heartily welcomed me to visit his farm but I preferred Gurung's farm for my research. Because Maharjan has been practising organic farming for four years in forty ropanis of land but Gurung has been practising organic farming for more than ten years and in thirteen hectares of land. I thought I would get authentic and more information from Gurung's farm than Maharjan's farm. So I did not carry out my research in Maharjan's farm and finally returned to Trijal organic farm of Gurung.

During the reviewing of articles I found some articles that says organic farming has many controversies. Some said organic food is not good for health. Some said organic farming is not economically and environmentally friendly and etc. I found out about such controversial articles in the internet. Some of my friends also asked me why I had chosen such a controversial topic and not any other topic. All these made me think that I should change my research topic and find some non controversial topics. And I said to myself why I should change my mind. I had found hundreds of article that said positive things about organic farming. Organic is a truly

good term and practise which does not use harmful chemical fertilizers, pesticides, insecticides etc how can it be a bad practice. Thus, again I became rigid in my decision and did not change the topic.

Generation of Research Questions

Generating research questions and writing problem statement has always remained a great problem for me. My research questions have been changed three times so did I change the problem statement. For the defence of my proposal I generated four research questions. After getting a feedback from the research committee I slightly changed them. Then my research questions focused on the practise, sustainability of farming system and whether or how they contribute to the improvement of livelihood of farmers in sustainable ways. The questions were as such - 1. How is organic farming practiced? 2. What are the measures of sustainability as perceived by the practitioners? And 3. Whether and how an organic farm provides sustainable improvements in the livelihood of the farmers? When I met my supervisor he told me that these research questions were too vague; three researches could be carried out with each research questions. I also realized that they were not specific and would be difficult to find out the result. Then I had to change my research questions.

Now my research question has been changed and it focuses on food security. Again I wrote new problem statements and my three research questions were as such _ 1. How do farmers practise organic farming in Kailas VDC, Kavre? 2. How does organic farming serve the interest of food security? 3. How do farmers cope with the challenges to sustain organic farming for food security? This time I prepared for the field and went to collect the information. I spoke to my participants in an informal interview. But my collected data from the Trijal Organic Farm showed that organic

farming does not contribute to food security. Again I had to change my research questions.

Finally my new research questions have been formed. Now it focuses on the perception of farmers, owners and the consumers of organic products and also the sustainability of farming system. My new research questions are 1. How much do farmers (workers) believe in organic farming? 2. How do owners and consumers perceive organic farming? And 3. How do farmers, owner and consumers understand about the sustainability of organic farming? This time my research questions are rigid. I have collected information, analyzed and concluded my research based on these research questions.

Obstacles of Data Collection

I did not face many obstacles during data collection phase. But it was not free from some obstacles. At first I had difficulties in finding a research site. For the first time I went to Gurung's farm. But later I thought that I should visit some other farms and people related to organic agriculture to get some insights from them. I met some people involved in organics and went to some organic farms but I did not find them suitable for my research. And finally I decided to carry out my research in Gurung's farm. As my research questions have been changed many times I had to prepare different guiding and probing questions.

I am not good at communicating with people so it was very difficult for me to establish a good rapport with the participants in the beginning. In qualitative researches, themes emerge at the field while talking to the participants. We do not prepare the questions that have yes or no type answers. Hence, I faced some difficulties during conversation with the participants at first and in bringing up new concepts while talking to them.

I faced some difficulties while trying to reach the farm as none of the public vehicles to reach Trijal Organic Farm and its adjoining area. It takes around two hours to reach the farm on foot. However, it was not so difficult. I thought of all the people of that area commuting on foot every day. School children walk to school every day. One school is in Saanga Chowk and the other school is in Bhainsepati (a place, one step ahead from Saanga Chowk on the way to Banepa). I had gone there just for my research but the local people had to walk the same road every day. Then I did not face any difficult in walking two hours way to reach the farm.

Future Implications

Agriculture is a major occupation of Nepal and organic agriculture being part of it, is not in the priority list of government. Farmers are facing many challenges during the time of cultivation till the product reaches market. There is no easy access of organic fertilizers and bio pesticides and also the seeds are not available for the farmers. Lack of awareness is one of the constraints for the development of organic farming in Nepal.

I feel that there is an urgent need of national organic policies and strategies. The Nepalese government should provide incentives to the farmers for the development of organic farming. If farmers grow sufficient organic products then they should have well access to local, regional as well as international markets. Marketing infrastructure for organically produced commodities should be developed. Ghimire (2002) has suggested that research priorities for formulating organic farming practice should be framed by NARC (National Agriculture Research Council) and other agencies (p. 22). I also feel that it is one of the important things needed to be done for the development of organic farming in Nepal.

The farmers are not getting sufficient organic fertilizers and pesticides in order to practise organic farming. In organic farming a bio fertilizer Kwain thong is very popular which has to be imported from abroad? So it is quite expensive for the farmers. As told by the owner now vermicompost is available but the factory that produces vermicompost is also limited in the country. It has to be brought from outside the valley such as Chitwan. Hence, the state should support the organic industries that produce bio fertilizers. Nepal is rich in natural resources. Thus, some herbal plants such as Neem (*Azadirachta indica*), Titepati (*Artemisia vulgaris*) etc can be utilized to extract bio pesticides. The incentives should be provided for the production of good quality organic manure, bio-pesticides, bio-fertilizers and green manure and many more.

Pesticides are not as extensively used in Nepal as in other Asian countries in terms of the ratio of active ingredients used per hectare of cropland (Diwakar, Prasai, Pant, & Jayana, 2008). However, the application of pesticides in commercial vegetables is 1450g/ha which is exceptionally high in Nepalese context (Sharma, 1994 as cited in Diwakar et al., 2008). Thus, the hazards caused by pesticides application in Nepal is not only due to overuse of pesticides but also due to misuse of pesticides (Shrestha et al., 2010). Thus the indiscriminate use of inorganic fertilizers and pesticides need to be discouraged and bio fertilizers and pesticides use should be encouraged.

In Nepal for the development of organic farming more researches education and training is required. Encouragement to the farmers to visit model organic farms, organic seminars, workshops, conferences to create awareness regarding organic farming would be useful for its development. Many people do not know what organic agriculture is. People are eating vegetables and other food products that contain huge amount of chemicals in Kathmandu. And they do not have any idea that consumption

of those conventionally produced foods has adverse effects in our health. So I feel there is need of a greater public awareness as well.

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ANNEX

Research Questions	Theme	Participants
R.Q 1. Perception of organic farming	<ul style="list-style-type: none"> ❖ Organic farming has no use of desi mal (agrochemicals) ❖ Healthier organic Food ❖ Good practice for environment ❖ Less production than conventional farming ❖ Difficult to work in the farm ❖ Some farmers are happy with their job 	Farmers
R. Q. 2 Perception on organic farming	<ul style="list-style-type: none"> ❖ Organic farming a sustainable practice ❖ Good for health of humans, animals and environment ❖ Some difficulties in production ❖ Government is not supportive of organic farming ❖ Difficulties in getting bio fertilizers and pesticides ❖ High demand of organic products ❖ Unable to fulfil the demand of consumers 	Owner
	<ul style="list-style-type: none"> ❖ Organic products are healthier ❖ Limited outlets in the city ❖ Insufficient products ❖ Expensive price ❖ Access to wealthier people only ❖ State should help in the development of 	Consumer

	organic agriculture	
R.Q. 3 Sustainability of organic farming	❖ Little hope for sustainability of farming	Farmers
	❖ Economically, Socially and Environmentally Sustainable Practice	Owner
	❖ Effort should be taken from the state, institutions and individuals then farming can be sustained	Consumers