CHAPTER ONE

INTRODUCTION

The chapter covers the basic background information of the study. The chapter has different sub-sections. The main sub-sections are: general background, statement of research problem, significance, research objective, hypothesis, philosophical backing, theoretical framework, conceptual framework, limitation and delimitation, operational definition, and chapter plan of the whole study.

1.1 General Background of the study

The study focused to explore the sociology of agricultural change and development in the Nepalese context. Society is dynamic so social products are changing because of the rapid change of technology too. Human societies are not uniform. They differ from one another in several respects. Sociologists throw more light on the types of societies for they very often make comparisons between societies. Speaking about the evolution of societies, there is a general historical trend of socio-cultural evolution, a process which is more or less similar to biological evolution. A society, like an organism, has to adapt to its environment in order to exploit food resources. Social structure is similar to the biological structure of human body. Human body is functional because of the equal function of different organs, similarly social structure can function when all functional units of society works together. In this process of socio-cultural evolution, some societies have evolved further and faster than others; some have become "stuck" at a particular level. Social scientists have long recognized that core technology or subsistence strategy has a major impact on values, beliefs, and virtually all social structures, including the family, religion, the political and economic orders and educational institutions.
Society is classified into five types: i) Hunting and Gathering societies, ii) Pastoralism or Pastoral societies, iii) Horticultural societies, iv) Agricultural societies and v) Industrial societies (Rao C. N., 2008, pp. 766-767). Nepalese societies are in agricultural stage but because of the rapid urbanization, globalization led industrialization processes of the world, traditional agricultural system is affected. For example, from the general observation of rural communities of Nepal, it can be presumed that traditional agricultural practice is affected mainly from the two reasons: first reason could be the youth migration for foreign employment. People want to do the easy job to earn money, another reason may cite here is perhaps people who are involved in agriculture also use the modern technology of cultivation, production and storing of goods by using the fertilizers and pesticides which have affected the health and hygiene of people. The Ministry of Labour and Foreign Employment of Nepal reported that till July 2012, approximately 24 Lakh youth had gone for foreign employment whereas 773940 youth were in Malaysia only (KC, et al., July 19, 2012). The number of Nepali workers leaving home for foreign employment is increasing every year. An official figure shows that a total of 527,814 Nepali men and women (number of women are insignificant, though) left the country in a single year, fiscal year 2013-2014, ending mid-July. This is 16.4 percent upward graph than that of previous fiscal year (Gajurel, 2015). According to the latest data of Department of Foreign Employment of Nepal, the total number of Nepali workers went for foreign employment was 527814 (Male 498848 & Female 28966) in the fiscal year Jun 2014 to July 2015 (http://www.dofe.gov.np/new/uploads/article/year2070-71.pdf).

This data support to claim the problem of study that there is lack of productive youth group to do the agriculture. Similarly, the person who does the
commercial agriculture are using the fertilizers and pesticides to increase the production but there was negative effect on health and environment. A study was carried out by Ananta Ghimire & Bed Prasad with Khatiwada with the objective of knowing the pesticides use pattern in commercial vegetable cultivation in the pocket area in vegetable production of eastern Chitwan, Nepal during winter, January 2001. The study clearly reveals that farmers have very little knowledge or have no knowledge about safe use of chemical pesticides. Meanwhile, they are not aware of waiting period, environmental and health hazards and all those accidents led by misuse of chemical pesticides. Pesticides use in commercial farming and freshly marketable commodities appears excessively uncontrolled and without consideration of health of consumers (Ghimire & Khatiwada, 2001).

Agriculture and farming has changed significantly during the past 30 years, from farmers being a social group enjoying political, economic and societal support to the current situation where farmers struggle to find legitimacy for a continued production (Bjørkhaug, 2012, p. 284). Modern product of agriculture is questioned because of its hygiene quality. Modern agricultural farming has used the fertilizers to increase production, used pesticides to protect from insects which are harmful to public health.

Anjana Malla Pradhan, Chandra Bista, Dr. S. Manivannan (2015, p. 924) also stated in their study that the excessive use of chemical pesticides for the management of insect pests has become a matter of public concern in Nepal. According to these researchers, the problem arising from overuse and misuse of pesticides in vegetable include development of pest resistant pesticides, environmental contamination, increased health hazards to applicator and consumers, and rising production costs (2015, p. 924).
As society advances, people become aware about their health and associated consequences so in the process of 'social cycle', meantime society has started to adopt the traditional practices with revision. In this connection, people have started the traditional farming in the form of organic farming. According to Basanta Rana Bhat, the continuously increasing price of chemicals (fertilizers, pesticides, etc.) is another important factor for farmers looking for alternatives in order to sustain their farm productivity and livelihoods (Bhat, 2009, p. 124).

Organic Agriculture (OA) is a production system based on an agro-ecosystem management approach that utilizes both traditional and scientific knowledge. The organic agriculture is defined as:

"Organic agriculture is a production system that sustains the health of soils, ecosystems and people. It relies on ecological processes, biodiversity and cycles adapted to local conditions, rather than the use of inputs with adverse effects. Organic agriculture combines tradition, innovation and science to benefit the shared environment and promote fair relationships and a good quality of life for all involved". (EuropeAid, June 2012, p. 2)

Organic Agriculture offers developing countries a wide range of economic, environmental, social and cultural benefits. Global markets for certified organic products have been growing rapidly over the past two decades. Organic Agriculture also brings valuable contributions to society outside the market place, regardless of whether the products are marketed as organic or not.

The majority of farmers who are living in high hill, mountainous areas in Nepal are small holders in terms of land holding. They have limited resource and have limited income generating opportunities because of the inadequate size of land for farming. Nepal's latest Agricultural Census report 2011 published by the Central
Bureau of Statistic (2011) reported that the five districts of plain area of eastern south of Nepal; Morang, Jhapa, Sarlahi, Siraha and Sunsari have larger areas of agricultural land whereas the five districts of high hill of mid-west of Nepal; Manang, Mustang, Dolpa, Rasuwa and Humla have very few agricultural land (Central Bureau of Statistics, 2011). Nepal is geographically divided into mountain, hill and terrain so land structure with vary temperature and climatic characterises is different and access of farmers is also different. So, farmer can earn good amount of income from the limited land also through the organic farming because of its high demand and comparatively high market price of production. As the survey report of FiBL – IFOAM 2014 [Forschungsinstitut für biologischen Landbau (Research Institute of Organic Agriculture)] reported that there was 10273 Hectares land covered by the organic farming in Nepal which was increased by 18.1% from 2011 (8697 ha.) to 2012 whereas the total organic agricultural land of Nepal shares 0.12% of world organic agricultural land (Willer & Lernoud, 2015).

Organic farming is essentially traditional farming based on knowledge and techniques gathered over thousands of years of agriculture prior to the chemical farming revolution. Vegetable farming is the traditional farming system practiced by farmers in rural village. Although the production is less in large areas but because of higher selling price has compensated with it. In that cost of production is less than of conventional system because the cost of fertilizer is not required. Farmers use cow dung, chicken manure and compost as organic fertilizer. Farmers living in the hilly areas not only produce vegetables for domestic consumption, but also for sale in the market for cash income which they use for their children’s education (Pradhan, Bista, & Manivannan, 2015, p. 924).
The previous research shows that the organic movement began in the 1930s and 1940s as a campaign to minimize the overwhelmingly growing reliance on synthetic fertilizers. Organic farming is a form of agriculture that relies on sustainable production system maintaining feasible crop rotation, green manure and farm-yard manure with paying greater attention towards biological pest control so that soil properties keep improving. Increased interest in environmental issues has sparked a significant movement in favour of organic or ecological farming (Poudel, 18-24 August, 2012).

The historical evolution of organic agriculture goes back to dates from the beginning of the twentieth century when improvements in biochemistry and engineering led to intensified conventional farming. This intensification, the use of synthetic fertilizers and chemical pesticides received criticism and triggered the evolution of organic farming movements from the 1920s onwards, major influences stemming mostly from European countries. Rudolf Steiner (1861–1925), Albert Howard (1873-1947) and Lady Eve Balfour (1898-1990) were some of the most influential pioneers. The first organic agriculture organizations and farmer’s associations were established in the 1940s, including the first organic label Bioland, as well as Naturland and Demeter in Germany, Bio Suisse in Switzerland, Natureet Progrès in France and the Soil Association in the UK. In 1972 the International Federation of Organic Agriculture Movements (IFOAM) was created as a forum for different actors engaged in organic farming. The most simple expression of organic farming is "No chemical pesticides + No chemical fertilizers + Certification = Premium Price". Examples have shown that well-managed organic farming systems can deliver reasonably high yields without depleting natural resources (see 5.1). In some low production context, a low-input-low-effort strategy may be appropriate,
but in many situations organic farming means more work-intensive and more productive farming (in the sense of active soil fertility management and pest management, application of manure etc.) than the system it replaces. OA is a sustainable agricultural production system that builds on ecological processes without using synthetic chemical inputs, in order to obtain food (or other products) meeting certain quality specifications (EuropeAid, June 2012, p. 2).

Organic agriculture is developing rapidly, and statistical information is now available from 141 countries of the world. Its share of agricultural land and farms continues to grow in many countries. The main results of the global survey on certified organic farming done by FiBL-IFOAM showed that organic agriculture was available in 164 countries (increased from 162 in 2011). The Global report showed that 32.2 million hectares of aquaculture land are managed organically by more than 1.2 million producers, including smallholders in 2007 which was increased to 37.5 million hectares of organic agricultural land managed by the 1.9 million producers in 2012 (Willer & Lernoud, 2014, pp. 19-25).

In addition to the agricultural land, there are 0.4 million hectares of certified organic agriculture in 2007 and 0.9% of agricultural land of countries covered by the survey of FiBL-IFOAM was organic in 2012. In 2012, the organic agricultural land was increased by almost 0.2 million hectares or .5%. The regions with the largest areas of organically managed agricultural land are Oceania, Europe and Latin America. Australia, Argentina and Brazil are the countries with the largest organically managed land areas. The highest shares of organically managed land are in Europe: Liechtenstein, Austria and Switzerland. The countries with the highest numbers of producers are Uganda, India and Ethiopia. Almost half of the world’s organic producers are in Africa. About one third of the world’s organically managed
land – almost 11 million hectares - is located in developing countries. Most of this land is in Latin American countries, with Asia and Africa in second and third place. Countries with the largest area under organic management are Argentina, Brazil, China, India and Uruguay (Willer & Lernoud, 2014, pp. 19-25).

It is difficult to find out the accurate data of farmers who are producing organic goods; tea, coffee, vegetables, fruits or other types of production in Nepalese context because without certification of organic farming, there is no way to claim the production as an organic. But, according to the European Commission, there are at least 37 million hectares of agricultural land organically worldwide, managed by 1.6 million certified producers. Non certified producers, for which no data exists, are estimated to be many times (EuropeAid, June 2012, p. 3). Principally, farmers are motivated to involve in organic agriculture because of its high demand in market and returns is good.

**Principles of Organic Agriculture**

Scientifically, there are a number of principles of organic agriculture which are helpful to explain the benefit of organic production in human health and ecology. Organic production not only save the human health but it is also beneficial for the safety of environment too. Key principles defined by European Commission reviewed as below:

1. **Principle of health:** Organic Agriculture should sustain and enhance the health of soil, plant, animal, human and planet as one and indivisible.

2. **Principle of ecology:** Organic Agriculture should be based on living ecological systems and cycles, work with them, emulate them and help sustain them.
3. **Principle of fairness:** Organic Agriculture should build on relationships that ensure fairness with regard to common environment and life opportunities.

4. **Principle of care:** Organic Agriculture should be managed in precautionary and responsible manner to protect the health and well-being of current and future generations and the environment (EuropeAid, June 2012, pp. 2-3).

Increased domestic and global demand for organic products has led to a rapid expansion in the organic agriculture sector in Nepal. Most of the Asian countries have formalized their organic standard, thereby establishing an organic certification service. This offers significant opportunities to improve the conditions of trade for Nepali farmers. In general, farmer adoption of organic agriculture is considered to hold a large potential for the development of more sustainable production systems, while an added benefit is improvement of farmers’ livelihoods. There is direct relationship between the increased quantity of organic production and improvement of socio-economic life of farmers because of the increasing demand of organic product in market finally leads the high profit too.

1.2 **Statement of Research Problem**

Traditional practices of farming is gradually been dominated by the modern agricultural practices with the high use of chemical fertilizer and pesticides which is hazardous to the health so people again started the traditional farming without using the chemical which is known as the Organic Farming. Organic agriculture is still in the early stages in Nepal. The importance of organic agriculture is being realized not only by farmers who have been using chemical fertilizer and pesticides for the last four decades but also by the policy makers, intellectuals and sensitive citizens after observing the deteriorating situation in the agriculture sector (Bhat, 2009, p. 124). In the Nepalese context, on the one hand, traditional practitioner of farming are
gradually changing their farming practice into organic and on the other hand, migrant returnees are found to involve in organic agriculture. Besides that, there is facility of skill based training institution in Nepal which gives more priority in promotion of skill based training. Council for technical Education and Vocational Training (CTEVT) of Nepal Government is one main skill based training provider institution which has standard curriculum of agriculture farming course. It provides the theoretical and practical knowledge of farming as well as gives the course completion certificate also. Nepal Government has provision to provide loan facility for the certified farmers to start their own business. All these opportunities has contributed to increase the numbers of organic agriculture farmers.

A previous study was conducted among 48 respondents in Dadhikot VDC; ward No 7, Gamcha village in Bhaktapur District, Nepal to evaluate the effects of organic vegetable farming on Socio-economic condition of farmers involved in organic farming. The findings showed that the trend of land holding of organic vegetable farmers had shown increase of 52.085%. Age groups of 20-24 and 50 above were found to be productive groups involved in farming. A total of 66.66% of respondents were having 0.5-1.0 ropani land. Organic vegetable production had increased the total production to 60.42% and is expected to increase more. Based on the research of Anjana Malla Pradhan, per month income of 37.5% farmers were NRs. 5000/- whereas those with income of NRs. 3000-3500 were 31.25%. Income from vegetables was utilized in various aspects like food, land purchase, house construction, health and sanitation, social function, and education. Among the various sources of income, vegetable production constituted 79.17% of total share. Cost of production with regard to seed, fertilizer, agricultural tools and human resources was mostly less than Rs. 500. Accessibility to market was 100 % for them.
which made them more convenient to sell their products (Pradhan, Bista, & Manivannan, 2015, p. 924). Because of the high demand of organic product, farmers are found encouraged to do the organic agricultures but in the starting phase of organic farming, farmers have to bear loss also because of the low production and low profit in comparison of investment. Besides that there is problem of certification too. Organic certification is a written assurance given by an independent third party about the production methodology and quality of products to confirm special requirements. The demanding nature of regulatory requirements makes it difficult as well as expensive for local certification initiatives in developing markets to establish themselves to offer export certification. Certification cost, limited awareness of group certification, small and medium-sized farms and inadequate understanding of how organic certification works are some of the constraints for organic certification (Bhat, 2009, p. 124). Because of the lack of knowledge or lack of access on certification, farmers are doing organic agriculture in their own initiation, and consumed and sold the production. The organic vegetables are sold in tourist hotels and supermarkets within the country. Such organic vegetables are produced in scattered and small areas and not organized properly. Therefore, at present, it is difficult to estimate production statistics of such organic productions. Owing to the costs involved in organizing organic production systems (i.e managing internal control system etc.) and the high costs incurred in obtaining the certificate itself, most of small – scale farmers are unable on their own to obtain certification and thus, stand in danger of being pushed out of the market entirely.

Information note of organic agriculture prepared by EuropeAid also highlighted the problem of third party certification and its alternative. It stated that third party certification appears to be the most reliable tool for guaranteeing the
organic status of a product in the anonymous market, but it has the significant
drawback of cost, usually born by the producer. However, this is not the universal
tool for organic quality assurance; other systems include participatory guarantee
systems – managed at low cost by local groups of producers themselves (EuropeAid,
June 2012). Certification is important from the perspective of sustainability and
market expansion of organic goods. Organic agriculture Certification policy of Nepal
Government has also very clearly guided about the certification of organic product
through 'Participatory Guarantee System (PGS) as the alternative of Third Party
Certification system. The policy has clearly given the authorities to customize the
certification rules to the local growers and stakeholders (GoN:Agribusiness
In practices, it was observed that the PGS is still a very new concept to the producers
so a lot of effort has to do for the promotion of the program for the proper
implementation in Nepal.

Considering the importance of organic farming to uplift the socio-economic
status of farmers, the study is going to explore the effect of organic farming in
overall livelihood of small holders, basically farmers who are involved in organic
farming. The stand point of the study is determined by the following specific
research questions:

1. How Organic Agriculture affects in the changes of socio-economic
   status of farmers who are involved in organic farming?

2. What are the opportunities and challenges of Organic Agriculture to
   the small farmers in developing countries like Nepal?

3. How does organic farming sustain for long run in Nepal?
1.3 Significance of the Research

The traditional system of agriculture in Nepal was organic but by passing of time, the practices changed more towards inorganic which is a direct threat to agriculture productivity, environmental quality and human health (Krishna P. Paudyal, 2010).

Organic Agriculture has a focus on environmental issues and food security. Organic Agriculture claims to provide benefits in terms of environmental protection, conservation of non-renewable resources, improved food quality, improve health status and the reorientation of agriculture towards areas of market demand.

Additionally, organic farming increases the quality of soil, water, air and biodiversity. Soil building practices such as crop rotations, inter-cropping, symbiotic associations, cover crops, organic fertilizers and minimum tillage are central to organic practices. These encourage soil, fauna and flora, improving soil formation and structure, and creating more stable systems. In turn, nutrient and energy cycling is increased and the retentive abilities of the soil for nutrients and water are enhanced, compensating for the non-use of mineral fertilizers. Such management techniques also play an important role in soil erosion control. Similarly, it is also supporting to increase the quality of water. In many agriculture areas, pollution of groundwater courses with synthetic fertilizers and pesticides is a major problem. As the use of these is prohibited in organic agriculture, they are replaced by organic fertilizers (e.g. compost, animal manure, green manure). Organic agriculture reduces non-renewable energy use by decreasing agrochemical needs. Organic agriculture contributes to mitigating the greenhouse effect and global warming through its ability to sequester carbon in the soil which finally makes the clean air (IFOAM, 2015).
The study has provided the detail information on contribution of organic farming on socio-economic status of farmers to those who are directly involved in organic agricultural. Principally, organic farming has significant contribution on the health, environment, social life, economic status and care of future. Various previous literatures has also proved that organic farmers are economically sound in comparison of their traditional practice as well decision making power and level of confidence is also increased because of their sound economic status. Literatures have also explored the increase in self-esteem of farmers after involving in organic farming. A study of Parrott, N. & Wright, J. (2007) showed that 10-80% decrease in health-related expenditure after joining an organics group.

The findings of the study will be useful for the policy makers to formulate the sustainability plan of organic farming as well as findings will make the traders or collectors aware about their responsibilities to sustain the organic farming. The study, as an authentic research, will be useful basis for researcher also to identify the gap of study in the field of organic farming. The study explores the contribution of organic agriculture in socio-economic status of farmers as well as challenges and opportunity of organic farming and its sustainability which aim to create a knowledge on organic farming that will sensitize to farmers and other national and international concerned authorities regarding the significant contribution of organic agriculture and its sustainability model.

1.4 Research Objectives

The general objective of this study is to identify the effect of organic farming in livelihood of small holders of Nepal. Following the general objective, the following specific objectives are prepared:
1. To identify the socio-economic changes of farmers after involvement in organic farming
2. To access the opportunities and challenges of organic farming to the small farmers in developing countries like Nepal
3. To explore the strategic model for sustainable organic farming in Nepal

1.5 Research Hypothesis

Research is based on the following hypotheses

1. There is no significant difference between the farmers of four districts regarding their income of organic farming,
2. Certification of organic farming is the main challenge of farmers,
3. Increasing demand of organic production is the opportunity of organic farming which motivates the farmers to involve in organic farming,
4. 'Easy certification, loan facility, improvement of market, trained human resources may be the main indicators to sustain the organic farming for long run'.

1.6 Philosophical backing of the study

Philosophy is the global idea which explains the nature of reality. Popularly, scholars adopt the positivist, post-positivist, constructivist, advocacy/participatory, pragmatist, post-modernist philosophy to explain the research problem. Basically, positivist philosophers believe in 'absolute reality' on the basis of observation and measurement of data. Positivists are dominated by the quantitative approach; deductive approach. Similarly, constructivist philosophers believe in 'relative reality'
who try to understand the meaning of phenomena. Constructivists are driven by the qualitative approach; inductive approach. There is huge debate between the quantitative and qualitative approach to ensure its scientific reality. In the process of paradigm shift of philosophy debate, some scholars advocated about the use of 'Pragmatic Philosophy' which believe in 'multiple reality'. It is dominated by the mixed approach; Abductive approach. According to the John W. Cresswell and Vicki L. Plano Clark, "pragmatism, is typically associated with mixed methods research. The focus is on the consequences of research, on the primary importance of the question asked rather than the methods, and on the use of multiple methods of data collection to inform the problems under study. Thus, it is pluralistic and oriented toward "what works" and practice" (Cresswell & Clark, 2011, p. 41).

The study is based on pragmatic philosophy and based on the idea of 'sociology of agriculture'. The concept is generated from the sociology and agriculture. Study is centred on the real problem of field in relation to the socio-economic contribution of organic agriculture in particular context of small holders of Kathmandu, Lalitpur, Bhaktpur and Dhading districts of Nepal. There are various types of organic product in Nepal and its contribution in socio-economic status of farmers may be varied so there are multiple realities in study. To explore the multiple reality of study, the study has adopted the mixed method to collect the quantitative and qualitative data.

1.7 Theoretical Framework

The theoretical framework has explained about the established theories which are more related to the study. There are various theories in the sociology which explains about the change and development of societies. Structural-functional theory
of R. K. Merton and Emile Durkheim also briefly explains about the social structure and functional unit of society. Similarly, Conflict Theory of Karl Marx also explains the social changes from the conflict perspective. But as the objective of this study, the changes of agricultural practices of farmers from the conventional farming to organic farming is found mostly explained by the 'Diffusion Model – Diffusion of Innovation' and 'Social Development Theory' which are explained in detail.

1.7.1 Adoption or Diffusion Model

Everett M. Rogers is widely known as the inventor of the "Diffusion of Innovation" theory from his research on how farmers adopt agricultural innovations. Diffusion is defined as the communication process by which a new idea or new product is accepted by the market, while the rate of diffusion is defined as the speed that new idea spreads from one consumer to the next. Adoption, similar to diffusion, also deals with the psychological decision making processes of the individual, rather than those of an aggregate market (Rogers, 2003).

Diffusion is the process by which an innovation is communicated through certain channels over time among the members of a social system. Diffusion is a special type of communication concerned with the spread of messages that are perceived as new ideas. An innovation, simply put, is “an idea perceived as new by the individual.” An innovation is an idea, practice, or object that is perceived as new by an individual or other unit of adoption. The characteristics of an innovation, as perceived by the members of a social system, determine its rate of adoption (Rogers, Diffusion of innovations (4th edition), 1995). As expressed the definition of diffusion model, innovation, communication channels, time, and social system are the four key components of the diffusion of innovations (SAHIN, 2006, p. 14). Rogers has
defined the four key elements of diffusion of innovation. Rogers described an innovation: “An innovation is an idea, practice, or object that is perceived as new by an individual or other unit of adoption” (Rogers, 2003, p. 12). The second element of the diffusion of innovations process is communication channels. For Rogers, communication is “a process in which participants create and share information with one another in order to reach a mutual understanding” (2003, p. 5). Use of mass media and interpersonal communication are the main sources of dissemination of information. According to Rogers, the time aspect is ignored in most behavioural research. He argues that including the time dimension in diffusion research illustrates one of its strengths. The innovation-diffusion process, adopter categorization, and rate of adoptions all include a time dimension. The social system is the last element in the diffusion process. Rogers defined the social system as “a set of interrelated units engaged in joint problem solving to accomplish a common goal” (2003, p. 23). Since diffusion of innovations takes place in the social system, it is influenced by the social structure of the social system. For Rogers (2003), structure is “the patterned arrangements of the units in a system” (p. 24). He further claimed that the nature of the social system affects individuals’ innovativeness, which is the main criterion for categorizing adopters (SAHIN, 2006, pp. 14-15).

The following conceptual Model of diffusion of Innovation was designed and explained by the Rogers, E.M. in his book. It explains about the process of diffusion of innovation and its acceptance or rejection by individual.
In the process of diffusion of innovation, before confirmation of acceptance or rejection of innovation, individual collects the relevant knowledge of new innovation. The knowledge can be affected by the receiver’s characteristics (attitude, needs, experiences, age, education, location) as well as social system (norms, practices, communication, and marketing). On the basis of knowledge and information, receivers develops their perception towards the innovation when they analyze the relative advantage, compatibility, complexity etc. The perceived characteristics of innovation determine the positive or negative decision of receiver. In this phase, either they accept or reject then finally they confirm the status of new innovation in their practice. The study is basically linked with the point of 'adoption' that the farmers who had already accepted the new technology of organic agriculture and adopted the farming practices. The study measured the socio-economic status of
organic farmers. Rogers (2003) has also discussed about the cumulative numbers of adopters in the phase of adoption process through the S-curve in 'Diffusion Model'. He has explained about the five types of adopters in the adoption process: Innovators, Early Adopters, Early Majority, Late Majority and Laggards. Rogers has distinguished five groups of adopters as ideal types:

1. INNOVATORS

The first 2.5% of adopters are called "Innovators". Innovators are venturesome and educated, have multiple sources of information and show greater propensity to take risks. They appreciate technology for its own sake and are motivated by the idea of being a change agent in their reference group. They are willing to tolerate initial problems that may accompany new products or services and are willing to make shift solutions to such problems.

2. EARLY ADOPTERS

The next 13.5% of adopters are "Early Adopters". They are the social leaders, popular and educated. They are the visionaries in their market and are looking to adopt and use new technology to achieve a revolutionary breakthrough that will achieve dramatic competitive advantage in their industries. They are attracted by high-risk, high-reward projects and are not very price sensitive because they envision great gains in competitive advantage from adopting a new technology. They typically demand personalized solutions and quick-response, highly qualified sales and support.

3. EARLY MAJORITY
The next 34% of adopters are formed by the "Early Majority". They are deliberate and have many informal social contacts. Rather than looking for revolutionary changes to gain productivity enhancements in their firms, they are motivated by evolutionary changes. They have three principles in the adoption of new technology:

1. “When it is time to move, let’s move all together”. This principle defines why adoption increases so rapidly in the diffusion process and causes a landslide in demand.
2. “When we pick a vendor to lead us to the new paradigm, let us all pick the same one”. This principle explains which firm will become the market leader.
3. “Once the transition starts, the sooner we get it over with, the better”. This principle shows why the transition stage occurs rapidly.

4. LATE MAJORITY

The next 34% of adopters are the "Late Majority". They are skeptical, traditional and of lower socio-economic status. They are very price sensitive and require completely preassembled, Bullet proof solutions. They are motivated to buy technology just to stay even with the competition and often rely on a single, trusted adviser to help them make sense of technology.

5. LAGGARDS

The last 16% of the adopters consists of "Laggards". Laggards are technology skeptics who want only to maintain the status quo. They tend not to believe that technology can enhance productivity and are likely to block new technology purchases. Roger’s model has found wide appeal and application in such disciplines as marketing and management science.
It is found from the study of European Society for Rural Sociology conducted by Susanne Padel that the theory of Diffusion of Innovation was tested in several countries over a period of approximately 20 years and critically assessed the relevancy of the framework of adoption model in the context of conversion to organic farming. The findings of study concluded that the diffusion model is effective to explain the process of conversion to organic farming in general, but subject to the conversion decision of the individual farmer cannot be explained on the basis of traditional personal characteristics of the adopters alone; other factors need to be considered, such as policy support and the development of the markets as well as the attitude towards organic farming in the agricultural community and the institutional development (Padel, 2001). The study supported to adopt the adoption model.

1.7.2 Social Development Theory

The principles and process of development theory governs the development in different fields of social life – political, economic, technological, scientific, cultural, etc. The same principles and process govern development at the level of the individual, the organization and the society. Social development is driven by the subconscious aspirations/will of society for advancement. Social development is defined as an upward directional movement of society from lesser to greater levels of energy, efficiency, quality, productivity, complexity, comprehension, creativity, choice, mastery, enjoyment and accomplishment. Development of individuals and societies results in increasing freedom of choice and increasing capacity to fulfill its choices by its own capacity and initiative. Society is the field of organized relationships and interactions between individuals. It is understood that only a small
portion of human activity is organized for utilization by society, so only a small portion of development potential (of technology, knowledge, information, skills, systems) is tapped. There are a lot of diversified resources available in the society. All resources are the creation of the human beings they're socially constructed and culturally sensitive. Something becomes a resource when human beings recognize a productive or more productive use for it. Human beings are the ultimate resource and ultimate determinant of the development process. It is a process of people becoming more aware of their own creative potentials and taking initiative to realize those potentials. Human awareness, aspiration and attitudes determine society’s response to circumstances. Development occurs only at the points where humanity recognizes its power to determine results. Development is a process, not a program. Development is an activity of the society as a whole. It can be stimulated, directed or assisted by government policies, laws and special programs, but it cannot be compelled or carried out by administrative or external agencies on behalf of the population. Development strategy should aim to release people’s initiative, not to substitute for it (Cleveland, 1999).
1.8 Conceptual Framework

The conceptual idea is the overall framework of the study which shows the input, process and output of the study. It is the own idea of researcher generated based on the theoretical ideas of existing theories.

![Conceptual Framework Diagram]

Theoretically, the study is guided by the 'Diffusion Model'. As the idea of previous theory, the technological change of society is influenced by the diffusion of innovation. Diffusion is one process of communication through the different channel
which spreads the certain message of particular ideas or goods. Diffused messages are perceived as the new ideas for the particular individual, group, society or organization. Similarly, in the process of agricultural changes, society develops their cognitive knowledge from the daily practices and tries to adopt the new knowledge also. Diffusion model talks about the main four key elements of diffusion of innovation; innovation, communication channels, time and social system. Society is dynamic and changing its norms, values and practices in certain time interval. The traditional/conventional practitioners developed their knowledge of agricultural practices as the new innovation and gradually in certain time interval, their innovation diffused to spread their knowledge of new technology and practices of agriculture which gradually adopted the modern technology. Technological changes of agriculture have positive and negative effects in social system. Social system stands as the receiver of new innovation. The above conceptual framework shows the process of changes that traditional agriculture changed into modern agriculture and knowledge of modern agriculture is again diffused into two parts: inorganic highly commercial farming and organic farming. Diffusion is one process of transforming knowledge from one generation to another generation or one social system to another social system. In this connection, in the name of modernization, farmer becomes the user of fertilizers and pesticides to double the production which finally affect the quality of soil, health of individual and environment. Because of the awareness on misuse of pesticides and its effect on human life, some people have started the pure organic farming by using the scientific knowledge on the basis of standard of organic production. It is observed from the field study and previous literature that some farmers have directly started organic farming by avoiding modern farming and some have started through the 'Integrated Pest Management (IPM)' system.
According to the *Vegetable Management Guide for the New England Region*, IPM "is the coordinated use of pest and environmental information to design and implement pest control methods that are economically, environmentally and socially sound. IPM promotes prevention over remediation and advocates integration of multiple control strategies to achieve long-term pest management solutions" (Duesing, 2014). A complete IPM management plan includes a hierarchy of controls: Cultural controls, Mechanical and physical controls, Genetic controls and Biological controls.

In the above conceptual framework, the study linked with the effect of organic agriculture in social and economic status, opportunity and challenges and developing the sustainability model of organic agriculture as the final conclusion of study because the study is going to explore the effect of organic farming in socio-economic life of farmers in relation to the Nepalese context. The change and development of agricultural society is derived by the social development theory also. By nature, people want to test the new ideas and innovation to make the life comfortable. With the changes of other parts of society, a farmer and expert of agriculture has built the new technology for the better promotion of agricultural product. As the theoretical explanation of 'Diffusion of Innovation Theory', in the phase of 'decision', farmer decides on the basis of perceived knowledge of innovation. If they felt the relative advantages from the acceptance of new innovation then finally confirm the use of new innovation. In this study, data was collected from those farmers who already accepted the new innovation of organic farming so it can be assumed that the organic farming has positive effect in the socio-economic life of farmers so that they are continuously involving in organic production. The
assumption/hypothesis will be tested after analysis of data and will confirm the real socio-economic effect. The study also explores the challenges and opportunities of organic farming in the real ground context of Nepalese organic farmers. Theoretically, it was observed that when farmers felt more challenges or relatively more disadvantage by accepting the new innovation; they will reject the innovation, will be returned to the traditional farming. The primary data collected from the organic farmers will confirm the numbers of farmers who want to continue and discontinue the organic farming in future also. Finally, the study will develop the sustainable model of organic farming in Nepalese context. Principally, the overall changes and development of organic farming is guided by the four principles of organic agriculture: principle of health, principle of ecology, principle of fairness and principle of care. The decision of accepting the organic farming should be affected from these four principles of organic agriculture. But in the Nepalese context, the study will ensure that which principle is more effective to determine the decision of involving in organic farming from the primary data. The study will develop the more comprehensive model of ‘sustainable organic agriculture’ covering the role and responsibilities of individual to government authority. Lukas Kilcher (2007) has also highlighted the contribution of organic agriculture to sustainable development. From the study of Kilcher, major five points were drawn which contribute the sustainable development:

1. Organic agriculture is sustainable and diverse;
2. Organic farmers conserve resources;
3. Organic farmers produce more, better-quality products and achieve higher incomes;
4. Organic products provide market access and create added value;

5. Organic agriculture increases self-confidence and mobilizes new partnerships. (Kilcher, 2007, pp. 31-32)

The findings of Kilcher also supported to justify the need of sustainability of organic agriculture for the positive contribution in socio-economic development and changes of farmers.

1.9 Limitation and Delimitation of study

Limitation

- The study has not covered the inorganic highly commercial farming and conventional farming who are not doing the organic farming in this study,
- From the perspective of social inclusion, the study cannot incorporate the equal participation of gender, caste and ethnicity and class of respondents due to the institutional setting of Nepalese societies.
- The study had also selected those farmers who are not internationally certified but recognized by District Agriculture Office as organic farmers.
- The study developed the sustainable model of organic agriculture on the basis of analysis of quantitative and qualitative data which build the theoretical knowledge. The reliability of this model was tested through the ‘Validity Seminar’ but the proposed model was not implemented in the field. It is recommended for the concerned stakeholders.

Delimitation

- The study was delimited within four districts (Kathmandu, Lalitpur, Bhaktpur and Dhading districts)
The study had selected only the organic farmers, data were not compared with the non-organic farmers

1.10 Operational definition of key words

**Conventional agriculture:** Natural foods, on the other hand, have no legal definition or recognition, and are not based on a systematic approach. While natural products may generally be minimally processed, there are no requirements to provide proof, leaving open the possibility for fraud and misuse of the term.

**Integrated Pest Management (IPM):** IPM is the process to manage the use of pest in farming. It is the process to minimize the quantity of pest to go in pure organic farming. The operational definition of IPM is similar to the international understanding of this term.

**Organic agriculture:** Organic agriculture is based upon a systematic approach and standards that can be verified and are recognized internationally.

**Smallholders:** operationally, it is defined for the farmers who are doing the organic agriculture for the purpose to sell their product to maintain their basic needs.

**Sustainability:** theoretically, sustainability covers the major three aspects: social, economic and environmental sustainability. The study had also defined the sustainability in relation to the model of organic agriculture adopting the ecological, social and economic values. Sustainability is defined the continuity of practice of organic agriculture in long run.
1.11 Chapter Plan

The study has planned to finalize in the five chapters. It is based on the scientific and systematic format of research. The whole thesis is divided into five chapters as below:

**Chapter One: Introduction** – the chapter has covered the ontology (theory of reality) of study variable. The independent variable of this study is the organic farming and dependent variables are the socio-economic status of organic farmers. So, the chapter has explained the background information of organic farming and its effect on the social life of farmers. The chapter has covered the statement of problem, significance of study, research objective, and research hypothesis, philosophy of study, theoretical framework, conceptual framework, limitation and operational definition of key words.

**Chapter Two: Literature Review** - the chapter two briefly described the epistemology (theory of knowledge) related to the research problem. The main objective of this study is to collect the relevant information from the previous literatures and discussed on the basis of specific objective of this study. The chapter has divided into several sub-headings to gather the knowledge of subject.

**Chapter Three: Research Methodology** – the chapter explains about the process of data collection. The chapter covers the research approach, research design, sampling design, data collection strategies (data collection tools, data collection process), formation of instruments, reliability and validity of instruments and data analysis plan. This chapter guides the whole process of data collection and analysis.
Chapter Four: Findings and Discussions – this is one of the major chapters of whole thesis. The chapter presents the field data and analyzes the findings on the basis of specific objectives of this study. This chapter is divided into main four subheadings: 4.1 Demographic information of respondents, 4.2 Socio-economic changes of farmers after involvement in organic farming, 4.3 Opportunities and challenges of Organic farming, and 4.4 Strategic model for sustainable organic farming in Nepal.

Chapter Five: Summary and Conclusion – this is the last chapter of this study which summarizes the whole thesis and find out the conclusion of whole discussion. The chapter also gives the recommendation for the further study. As the final observation of the study, it will explain the gap of study and will explore for the future researchers to fulfill the gap of this study.