

CHAPTER - I

INTRODUCTION

1.1 Background

‘Livelihood strategies’ are the range and combination of activities and choices that households /individuals make in order to achieve their livelihood goals or the way of combining and using assets (DFID 2001) This is also a process of adjusting to particular social structure, livelihood strategies differ from person to person and vary from place to place and by caste/ethnic background in society. It is determined by socioeconomic, environmental and physical factors but people always try to reduce the risk factors and adopt the better livelihood opportunities. On the other hand livelihoods and individuals have continued and or modified their economic and social activities in order to meet their livelihood needs. Livelihood strategies also reflect creative ways of approaching environment and these strategies draw upon understanding and realization by the households of the eminent need (Subedi and Pandey 2002)

Now, every society is not away from each other. The world is narrowed by the globalization. Reforms and interaction can denote liberalization of transportation technology, combined with free-market ideology have made goods, services and capital mobile by making world more interdependent (Carney, 1998). So it has created a situation in which every community and country has access. This results some developing countries able to develop economic growth. A reduction of poverty. But other regions have not enjoyed sustained growth and in many cases, the poverty of poor has actually increased (Sharma, 2003).

Change is a universal and continuous phenomenon, which is found in all the societies at all time, People of different environmental conditions have adopted different ways of life to exploit the environment as best as they can because no environment provide men a free meal ticket, they must work to earn that ticket and to survive (Poudel, 1996).

Adaptation is a complex mechanism, which is interdependent among many components of social life. The changes, which occur in the resources in quality and quantity, used by the local adoptive systems and the relationship among people as well different groups and individuals trying to achieve

adaptation will allow supporter to capitalize on position, pattern of change, mitigate negative impacts and discover alternative livelihood strategies.

Nepal is one of the least developed countries in the world and this is reflected in Nepal's current rank as 129th world wise in Human development index. Poverty is a great challenge of the country. Nepal is a mountainous country with agriculture as its economic mainstay. The percentage of people dependent on agriculture has declined gradually from 81% in 1991 to 76% in 2002 (CBS, 2002) only about 20% of the total land area can be cultivated in a mountainous country like Nepal with the typical geographical condition and other natural reasons, the government of Nepal has to face many challenges in providing basic infrastructure facilities and services in most part of the country. Due to lack of agricultural infrastructure, agriculture has remained almost stagnant. Thus, the food grains alone have not been able to meet the ever-increasing food of the people. Hence, people have been practicing different economic activities to maintain their livelihood.

A traditional and integral part of rural farmers in Nepal is livestock farming. Although livestock is not usually kept for commercial purpose, buffalo and cattle are reared in almost every farm household for socio-economic and religious purpose. These animals are used as a means of drawing power, fuel and manure as a source of nutritional substance. They are not used primarily for commercial dairy purpose, Milk product are inadequate to meet the increasing demand arising from population growth and increase in per-capita income of the people in urban areas, the livestock farming has been regarded traditionally as integral part of rural farmers. It has not been effective and efficient in Nepal in promoting the living standard of poor farmers due to various obstacles occurred in those sectors and appeared as regional imbalanced for a balanced development of the country, HMG has laid proper policies and emphasized on cereal grain production in Terai belt and the development of livestock farming in mountain region. Nepalese farmers practise livestock farming from ancient periods. Some of our historical rural were from classes link Gopal and Mahispal also hints the culture of livestock in past. Milk and milk products play a key role in human nutrition. Milk is an important food item for human life (Awasthi, 2005).

Milk production is used as income generating and self employment generating means in Nepal. Besides it, it provides nutritive food and industrial raw materials. In agriculture sector, disguised unemployments are found and in rural area no any sector

provides employments to them. So, poor and helpless people keep many animals as pet or domesticated animals.

1.2 Statement of the Problem

Besides agriculture, there are a lot of sectors where local people engage and sustain their livelihood. Among them milk production is a key component but still this industry is facing hard times. This industry should be promoted not only as a substantial income generating, and household food security activity but also a means to improve the safety, quality and quantity of milk and as a pillar of development.

Many researchers and scholars have paid their attention towards sustaining and improving the dairy processing industry in Nepal, It must become competitive in terms of cost production and quality but they couldn't reflect the present situation of dairy farmer like socioeconomic condition and the problem related to farmer.

The milk producing and market systems differ from place to place and season to season depending upon the terrain of the country ranging from Terai, the hill and the mountains. This diversity provides some comparative advantages also to the individual region people of each and every pocket area. They have been taking different livelihood strategies like wise. Ilam municipality (Wards 3, 4, 5, 6) being agricultural rural and urban near Ilam market, the people have adopted their own livelihood strategy by utilizing their capital assets and local resources of the area. However, there are many vulnerable contexts of livelihood strategy including process and the structure too.

Since the last 10-15 years, the urbanization pattern of Ilam municipality is very high. The demand of milk is also high. So, all the production of milk in Ilam is being consumed by dairy and urban areas.

In this context, different questions arise from livelihoods of milk producing farmers and their enterprising perspectives and vulnerability context:

-) Who is engaged in and why have they adopted this occupation?
-) Is it sufficient to maintain their livelihood?
-) Have they been engaged in any other occupation?
-) What are the vulnerability contexts of their livelihood?
-) What are their socio-economic conditions?

1.3 Objectives of the Study

The overall goal of this research will be, to analyze the livelihood strategies and the vulnerability context of milk producers in Ilam municipality. For this the specific objectives of research will be:

-) To explore socio-economic characteristics of people engaged in milk production.
-) To analyze the impact of milk production on the livelihood of milk producer farmers.
-) To find out the vulnerability context of dairy farmers.

1.4 Significance of the Study

The entire study will focus on livelihood strategy of milk producer in Ilam Municipality. Nepal is one of the least developed and a mountainous country with agriculture as its economic mainstay. Around 30 percent people are living below the poverty line. Most of the poverty alleviation programmes are mainly concentrated on the rural areas. Most of the researches were conducted on rural poverty and the urban poverty has been paid less affections.

This research will however focus on rural urban poor in Nepal and will reveal the actual condition of poor people in Ilam municipality. This study will help to provide the appropriate solution to government and non-government agencies for making, conducting programme, etc. And also help to those who want to have further research about the farmer's livelihood vulnerability and present condition.

1.5 Limitation of the Study

There are many factors which are related to this study but they are not included here due to limited time, budget and other resources constraint. It is based upon data of sample settlement and hence the generalization may not be fully relevant for the whole country. The study does not take into account the by products of milk in detail. The study is basically based on the working of Tilkani, Sringsring and Golakharka Bhanjang settlement of Ilam municipality.

CHAPTER - II

LITERATURE REVIEW

Literature review is a very important aspect of academic research as an essential element of research design. As the revised of relevant literature is integral part of all research and facilitates to determine the theoretical base and cognizant of the problem from experience of previous research (Subedi, 2004), the following sector summarizes the findings of some selected studies done in the past.

2.1 Theoretical Review

Different theories and approaches have been developed on related topics. This study will be an empirical research which is based on positivistic approach. Some of the reviewed theories related to the agricultural productions are as follows:

Classical models of agricultural

2.1.1 The Von Thunen Models

According to the Von Thunen's Model each agricultural products has a closed market system having a specific zone around the central market in which it can be produced under the most favorable economic conditions. The optimum location of each production sector is obtained by comparing the net income from the land to each product (which can be achieved at a specific distance from the market, i. e. the gross income obtained per unit-area less the production and the transport costs). Competition for acquiring agricultural locations closest to the market is always won by the products that yield a higher income from land than all the other products in the location. The former includes vegetables from which very high cash returns per unit-area can be obtained since several vegetable crops may be produced in a field during an agricultural year. Moreover, vegetable growing involves high outlay and also because transport is comparatively expensive owing to the quantity and perish ability of the produce, vegetables are grown near the market. In the developing countries too, the initial stages of this development can now be observed in the vicinity of larger cities.

Thunen's primary achievement was to point out that transport costs determined the location of agricultural activities, and to project the consequence and differentiation of dairy, vegetable, and forest and crop production according to distance from the market. Not only the cost, but also delays caused by horse transport,

made it obligatory that perishable products like milk and fresh vegetables should be produced in the immediate neighborhood of the central city

2.1.2 Decision – Making Models or Behavioral Models

Decision-Making Models based on behavioral concepts were developed to deal with the problem of optimizing production in the light of incomplete information relating to risk or uncertainty in production, which suggests that actual decisions will be different from the decisions of an economist.

In this model, spatial variations in the various costs and demand patterns, a farmer is capable of taking rational decisions to achieve the goal of maximizing his profits. Each farmer could, therefore, find his optimum location, the one where the highest level of profit could be achieved. It also assume that the farmer could adapt himself to changes in environment and alters his activity and location, if necessary, in response to such changes.

The actual process of decision-making varies because the activities have different goals of production variable, levels of knowledge, and varying degrees of risk and uncertainty.

2.1.3 Diffusion Models (Hagerstrand 1952 and 1953)

Hagerstrand was the first geographer to develop a model to describe diffusion of an innovation over space of time. In his 1952 paper, he developed a four-stage model explaining the diffusion process, which he explained with the concept of innovation waves or diffusion stages namely: the primary, the diffusion, the condensing and the saturation.

According to the Hagerstrand (1952)

"The primary stage marks, the beginning of the diffusion process with a strong contrast between areas lying near the innovating centers and the far-off areas; the diffusion stage indicates the diffusion process proper, in which there is a spread of ideas as a result of a strong centrifugal effect with the secondary innovation centers in distant areas and a reduction in the regional contrast of primary stage; in the condensing stage, the relative increase is equal in all locations, and in the saturation stage, there is a general, but slow increase"

In 1953, his model was focused for the comprehension of neighborhood effect.

(For most people interaction with individuals is spatially restricted; the probability of contact declines as the distance between individuals' increases, or the spatial development of many diffusion processes seems to be characterized by the addition of new adopters around the original nuclei of carriers of an innovation, the relationship or contiguous growth has been called the neighborhood effect.)

Hagerstrand had assumed the following situation:

-) *Only the carrier possessed the information (innovation) at the beginning*
-) *The information is received orally at face - to - face (pairwise) meetings between the potential adopter and the carrier, i.e. through personal contact*
-) *The information is passed at certain specified times and intervals, particularly before the sowing period or at the time of sowing in different cropping season*
-) *At each of these times every carrier (Knower) passes on an innovation to another person (non- knower).*

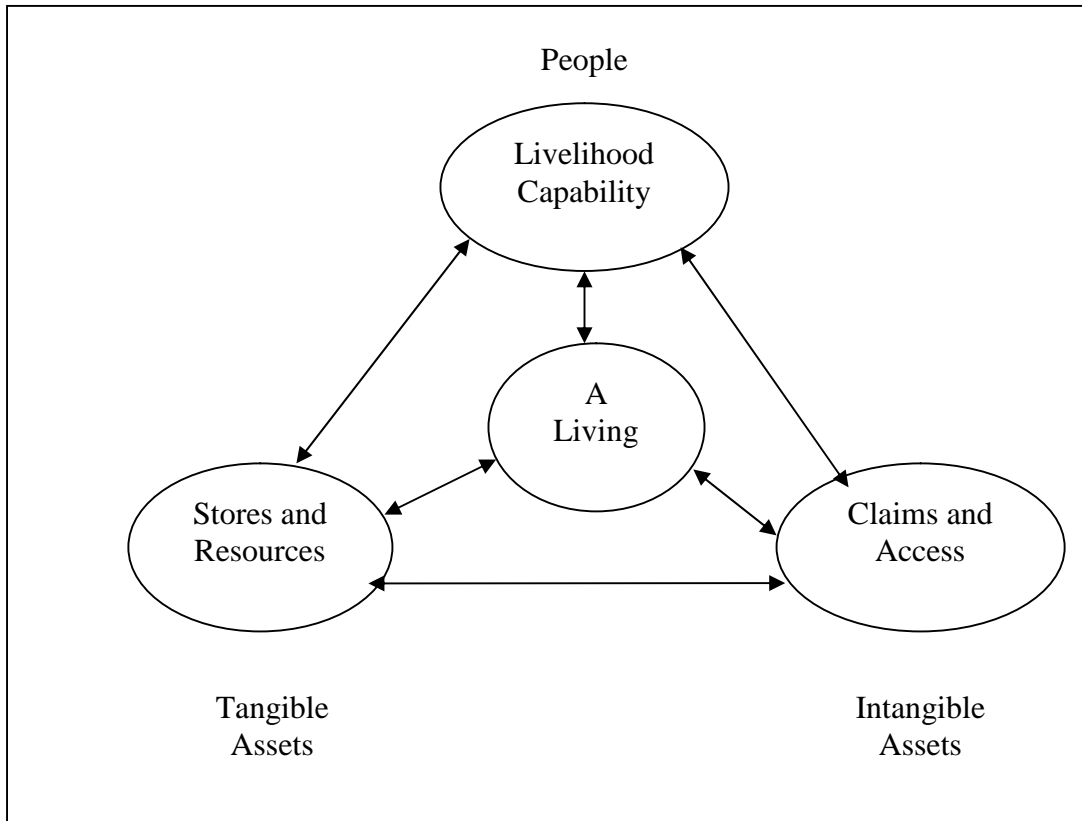
2.1.1 Sustainable Livelihood Approach

The concept of sustainable livelihood is an attempt to go beyond the conventional definition and approach to poverty eradication. The previous definitions were found to be narrow because they focused only on certain aspect of manifestation of poverty such as low income or did not consider other vital aspects of poverty such as vulnerability, social inclusion, etc. It is now recognized that more attention must be paid to the various factor and process which are either constraints or enhance poor people's ability to make a living economically, ecologically and socially sustainable matter. The sustainable livelihood concept gives more coherent and integrated approach to poverty eradication. In this approach has to be understood basically as a tool to understand poverty in responding to poor peoples view and their own understanding of poverty. (Krantz, 2001)

Although Brundtland commission on environment and development was the first international forum that had given the legitimacy on the concept of sustainable livelihood, Robert Chamber and Conway were first giving the composite definition of SL. The SL further gained legitimization in 1992 by United Nations conference on environment and development. The conference expanded the concept especially in the context of Agenda 21 and advocating for the achievement of sustainable, livelihood as a broad goal for poverty eradication (Krantz, 2001)

It is above mentioned that Robert Chamber and Gordon Conway were the first in providing the definition of livelihood. In 1992, they proposed the following composite definition of sustainable of livelihood.

Figure 2.1: Components and flows in livelihood



Source: Chambers and Conway 1992.

The core of a livelihood can be expressed as a living, with people, tangible assets and intangible assets contributing to it. The tangible assets commanded by a household are stores such as food stocks, stores of value such as gold, jeweler and Woven textiles and cash savings in banks and credit schemes and resources such as land, water, trees, livestock, farm equipment, tools and domestic utensils. The intangible assets are claims which can be made for material, moral or other practical support, and access, meaning the opportunity in practice to use a resource, store or service or to obtain information, material, technology employment, food or income. (Krantz, 2001)

There is no unified approach in applying SL concept, depending upon the agencies it can be used as analytical framework (tool) for programme planning or as programme itself. However there are three basic features common to most approaches.

The first is that the focus is the livelihood. The second is the approach that rejects the rigid standard procedure of conventional approach taking an entry point of a specific sector such as agriculture water, or health and finally the SL approach places great emphasis on involving people both in the identification and implementation of activities where is appropriate. In many aspects, SL approach is similar with old IRDP (Krantz, 2001 and DFID, 2002) to sum up, the core concept of SL approach are objective, principle and analytical framework, enhancing the sustainability of peoples livelihoods with a particular focus on the livelihoods of poor men, women and households is the objective of SL while principle focuses on people centered approach, holistic concept, dynamic nature, strength building, micro and macro building. However, the core of the SL approach is the analytical framework. This focused attention on the assets that poor men and women use and the strategies that they employ to make a living rather than focusing on their needs, in the vein of previous development approaches such as basic needs.

Livelihood approach seeks to promote choice opportunity and diversity. The term livelihood strategy denotes the range and combination of activities and choices that people make/undertake in order to achieve their livelihood goals (including productive activities, investment strategies, reproductive choice etc. (DFID, 2002).

2.2 Studies Related to Livelihood Strategy

Bishop (1990) has studied on “Livelihood strategy and seasonal rhythms of Karnali zone in Nepal.” This research paper has summarized that the zone Karnali has divided into three groups: a) Subsistence model which includes economical, cultural and agricultural production. b) Subsistence system which constraints by cultural attitude and training, ecological balance, agricultural and livestock technology, population and their health. c) The third is fact which is about niche of Karnali zone. He has found the six livelihood options which are used by remote people, agriculture, animal husbandry, home industry, exploitation of world business, trade and seasonal out migration for work.

Bhattarai (2001), In his dissertation Rickshaw pulling as a ways of earning livelihood, has focused on the way and means of rickshaw pullers earning livelihood. This study has found that majority of the population is largely engaged in agricultural activity. They have faced many problems to meet subsistence needs for the household. So, they are moved into the urban places from their home in search of employment

opportunities. Illiteracy, ignorance and downgrades are the main causes to enter this occupation. They have not better strategy of the rickshaw pullers and they spend their life just as 'earn' and 'spend' system.

Subedi and Pandey (2002), in their study on "Livelihood strategies of Rai communities of Arun Valley: Continuity and change," have analyzed the livelihood strategy of Rai in two places of Arun valley namely 'sitalpati in lower elevation and 'Makalu' in higher elevation. The study concludes that Rai has adopted several strategies to earn their livelihoods. The strategies differed from one place to another. Households have gradually reduced land under 'Khoriyas' using more public resources for self consumption and transforming 'Bari' into 'Khet'. The Rai people are following strategies like additional inputs in agriculture, adaptation of multiple cropping and crop diversification. Besides these strategies, wage laboring, pottering, borrowing, crediting and livestock selling activities were the sequence of livelihood strategies adopted under pressure.

Dhamala (2008) studied on livelihoods of street fruit vendors in Kathmandu. Researcher studied on the objective of analyzing livelihoods of street fruit vendors, case to adopt occupation and vulnerability context of street fruit vendors. The researcher has concluded that vending business in the city has a part of socio-economic fabric. Nepalese have learnt from Indian vendors. They maintain their life better than their previous occupation, not difference between Mobile and static vendors in their livelihood status but slight difference in handling business activities. Author further concludes that most mobile vendors don't pay tax but static ones have to pay.

2.3 Studies Related to milk Production and Marketing

Pyashi, (1978) researched on the milk production and supply in Kathmandu. The author realized that products such as milk which comes in the fore front in the dairy necessities of life, have tremendous demand in city area. The Kathmandu milk supply scheme has arranged many collecting centers and it collects at present about 10,000 liters per day. Researcher further says in Kathmandu valley the population and the number of tourists has been increasing at a fast rate. So the demand for milk is increasing rapidly. The sources of milk supply in the area are the DDC and few other private milk suppliers. But DDC has played a vital role to provide pasteurized milk to the consumers.

The milk put on the market is generally adulterated. Enquiries show that adulteration by producers is much less when compared with that practiced by collectors, distributors, etc. Producers are however primarily responsible for the initial contamination of milk as they play little or no attention to clean production or proper handling of the milk. The most common adulterants used are water and skimmed milk. The water added to foil detection by lactometers or by the 'khoa' test. Similarly they have discussed about the co-operative marketing of milk. Almost all the milk societies and milk unions have been organized with the primary object of improving the quality of milk supplied to towns and cities. (Mamoria and Joshi, 1968).

The National Co-operative Development Board (NCDB) was constituted from the national co-operative Development Board Act, 1992. The Board's role is to promote and develop co-operatives. Developing countries have been facing other major problems like economic impact of WTO agreement on the dairy sector. (Budhathoki, 2007).

The role of fodder out in household income generation, comparing the economics of fodder oat and wheat grain. The study found that the oat is very useful winter fodder and could help farmers to alleviate winter fodder scarcity feeding green oat in winter increase the milk production (1.03-1.13 liters/animal/day) (Budhathoki and upadhya, 2007)

Leindegaard (1993) in his research shows that when a household has a lactating cow, they meet their own demand for milk products and afterward they sell milk if they have any surplus. Then even though milk sales provide a reasonable possibility for cash income, the household requirements for the milk products is given high priority.

The primary benefit to be derived from increase in livestock productivity is sustainable producers, many of whom are resource poor, many of these being women and some of them are landless (PPLPI, 2004).

Buffalo has been an integral part of livestock agriculture in Asia for over 5000 years producing draft power milk, meat and hides. Even today these animals provide to be economically significant to small and landless rural poor (Nanda 2003).

Milk producers and personnel involved in the collection and transport and retail of milk should be trained as necessary and have appropriate skill in the areas listed below:

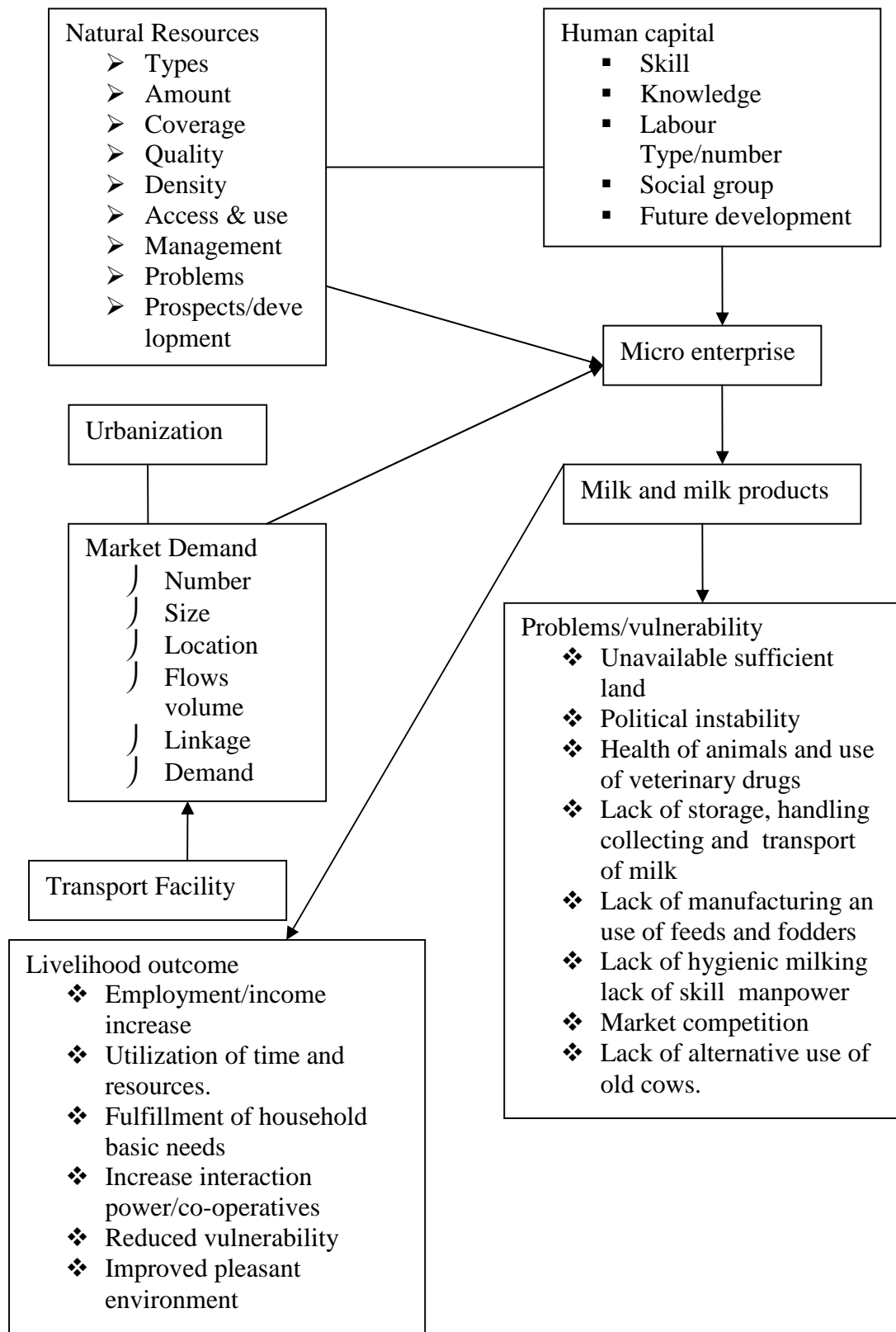
-) Health of animals and use of veterinary drugs.
 -) Manufacturing and use of feeds
 -) Hygienic milking
 -) Storage, handling, collecting and transport of milk
 -) Microbiological, chemical and physical hazards and their control measures.
- (WHO, 2007)

2.4 Synthesis of literature and conceptual framework

Many studies on livelihood have been done in Nepal on the human ecological perspective. Most of the studies have followed the sustainable livelihood framework.

This study tries to fulfill the gap of milk producing enterprise with livelihood perspectives. On the basis of past studies on livelihood, studies on dairy farming and marketing and field experience, the conceptual framework has been created, which is given in figure 2.2:

Figure 2.2: Conceptual frame work on milk producing enterprise and livelihood



With combination of the natural resources, human capital urbanization, market demand and transport facility encourage to establish micro enterprises. Milk and milk products is a kind of micro enterprises. There are some problems related with milk and milk products. Though there are problems, there are many positive aspects also, which are livelihood outcomes.

CHAPTER-III

METHODOLOGY

Methodology is a process of completing the study. Method and techniques of data collection and Methods of analysis have been included in methodology. It describes the essential and experienced view of all academic works of the study .It clarifies the concept and gives the methods of the study. This study uses both qualitative and quantitative Methods.

3.1 Nature and Sources of Data

This study uses data primarily collected from the field survey. However, information obtained from secondary sources has also been useful during discussions of several issues. Secondary data or information has been derived from different books, journals, reports, website and GIS software, District Development Committee (DDC), central bureau of statistic (CBS) etc.

3.2 Methods and Technique of Data Collection

Both quantitative and qualitative data have been collected in this study. To collect primary information, both sample and census methods have been used.

3.2.1 Sampling and the sample size:

For the purpose of primary data Collection, field survey was conducted from 10th March 2010 to 30th March 2010, According to the record of municipality office, there are all together 1264 households in the study area and among them only 785 households have livestock milk production. Out of that, 90 households have been taken as a sample size that seemed sufficient to carry out the detailed study in the study area.

Data were collected from both large as well as small producers. Purposive sampling method is applied with a simple random sampling without replacement technique.It has been applied while choosing the sample unit from each and every milk producing household of the study area. The farmer households have numbered according to order from ward number.

Table 3.1: Sample size and sample Technique

Ward No	Settlement	Total No	Milk producing H H	Sample H H
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		HH	No	%	No	%
3	Sara, Saibota, Golbasti	338	112	33.1	13	14.4
4	Bistagaue, Golakharka bhanjang, Khalda	248	183	73.8	21	23.3
5	Kurani, Gawa danda, Pragti nagar	350	221	63.1	25	27.8
6	Tara gaue, Tilkani, Rani gaue	428	269	62.9	31	34.4
	Total	1264	785		90	100

Source: Field Survey, 2010

3.2.2 Household Survey

A questionnaire was prepared consisting 44 questions with close and open structure. The researcher himself administrated the questionnaires with the selected milk producers. It took altogether 20 days to conduct the questionnaire survey.

A set of structured questionnaire were prepared intending to capture the method of milk production, influencing factor, trend of milk production , cost benefit , major problem and impact of milk production on the livelihood strategy of the households. Household heads were selected to interview using the structured questionnaires. In the absence of household heads, other senior family members were also interviewed. Beside that the general information of the household such as composition of the family on the basis of sex, age, education and occupation were also included in the questionnaire. The model of the structured questionnaires used in the field survey has been attached in the appendix 1.

3.2.3 Observation

Observation approach is used to observe the real scenario of the local life which helped the research to understand the socio economic conditions prevailing in the study areas. Researcher visited twelve milk producing settlements. Direct observation has been applied in order to get additional information of the activities of milk producers for the study.

3.2.4 Key informant interviews

Educated persons and administrators were the sources of special information in this survey. To derive some specific information it is necessary to visit some key persons. Generally teachers, social worker, politician and senior citizens are key persons. In this survey, three key persons were interviewed in each world for specific

information about the study area as well as milk producing activities. A check list including some structured and unstructured questions were used for key informant interview.

3.2.5 Informal Interview

During field study informal interaction with a number of people was made. They were asked about milk producing occupation informally. This technique was also helpful to provide essential information about the behavior of milk producers.

3.2.6 Focus Group Discussion (FGD)

Focus group discussion is most essential for qualitative information. Altogether three focus group discussions were carried out in this study first, Tilkani settlement, second is Gama danda and third one in Globasti area. Different issues associated with milk production enterprises were put forward to the group for discussion upon the discussion was recorded.

Deep interaction between members of the group the key characteristics of focus group discussion is one of the excellent methods of subjective explorations in research process as it is generally dynamic and energetic because people themselves opine and respond to those opinions. Focus group discussions have been employed as another equally important research method in my research.

Focus group discussions have been conducted in three settlements; Gawa danda, Tilkani and Golbasti area. Comprising the number of participants ranged from 6-12. They were made to discuss on major aspects of their livelihood within the criteria defined in check list. It was really difficult to conduct theoretically authentic discussions because systematic selection of milk producers was very difficult. The checklist was used to acquire information during the FGD meetings. Key discussion points were noted down by the researchers. Researchers acted as 'facilitators' in the discussion meeting.

3.2.7 Field Note

Not all the information during the fieldwork could be secured systematically and in such cases field note proved helpful. The field notes were of immense help to remind later, when the subject matter was complex and the place of flow of

information was rapid. During the field survey both subjective interpretation of the situations and the raw interpretation of the facts were recorded.

3.3 Data processing

All collected information was screened generalized and managed to fulfill the objectives of the study. During data processing time required data were selected from the collected mass data, selected data were generalized in meaningful way according to objectives of the study and statistical calculation were done to draw the summary report of statistical data. Theoretical information were also screened and managed in meaningful way.

3.4 Data of Analysis

An application of GIS is a major tool for map preparation of the study area. Statistical and non statistical tools have been used for analyzing the data. The analyzed data have been presented in appropriate tables, cartographic presentations and figures. During this process only simple and appropriate statistical methods have been employed. This study has been completed with help of a systematic framework which has been shown in figure No.3.1.

3.5 Field experience

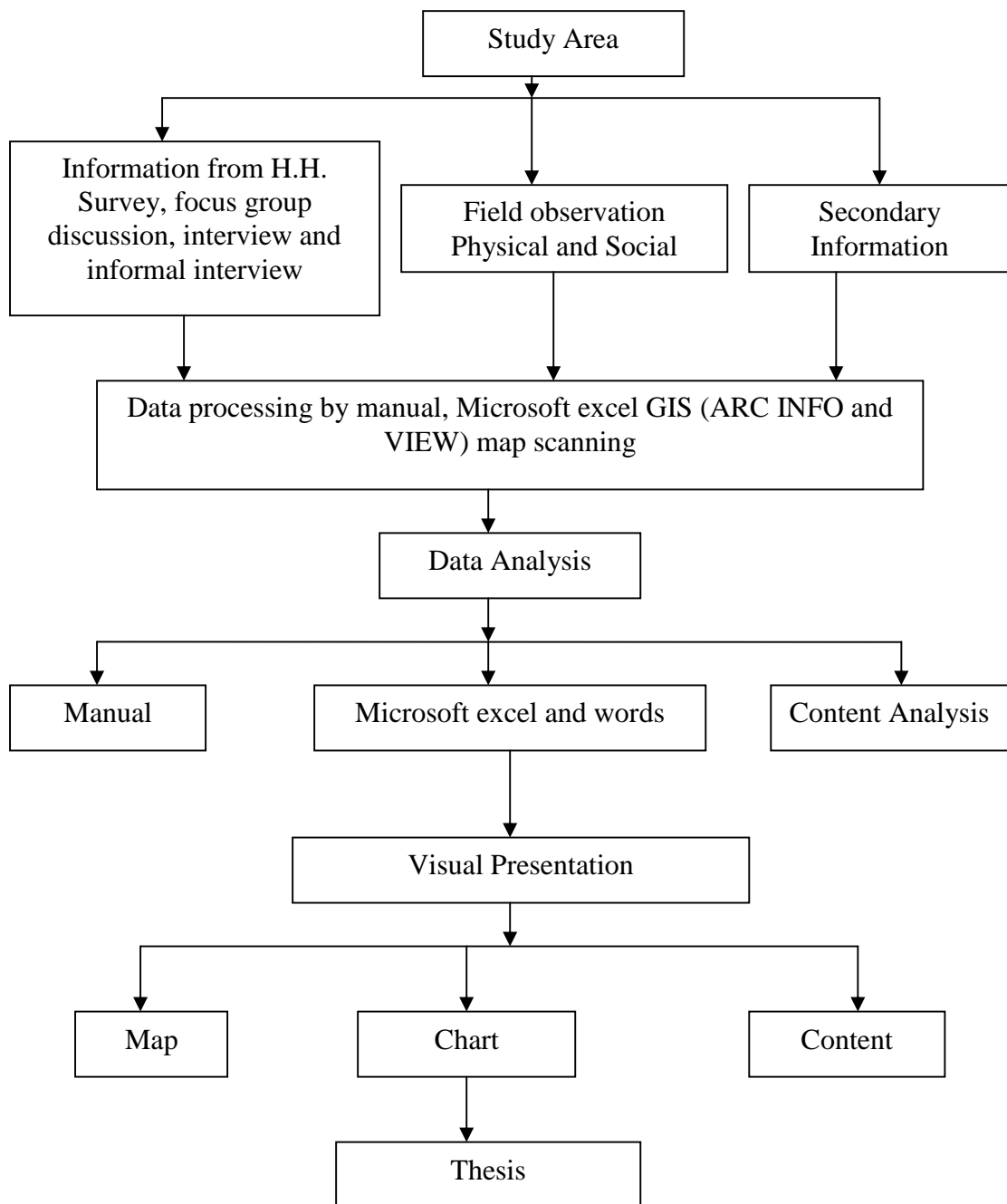
Fieldwork is an interaction between the respondents and the researcher for various nature and activities. The attitude of the researchers determines difficulties and problems. It is impossible to obtain total information unless the researcher has established good relationship with all the respondents. As the research work itself is problematic, it progresses in different phases. In case of the present study, various types of field experiences were observed during the field work.

First of all, it was difficult to convince them about the subject. However most of people were very co-operative and they have participated in the household interview informal interview and discussion and they have given valuable information on the subject. Without the involvement of the local person it becomes very difficult to meet the selected households head and other senior people for inter view.

Every respondent milk producer wanted to know about the subject, its purpose and the respondent farmers were asking what they are going to obtain in return if they

respond to the questions. It was very difficult to convince them. They were busy in the daytime working in the field. They were available for such interview in the evening only.

Figure 3.1: Methodological framework of study



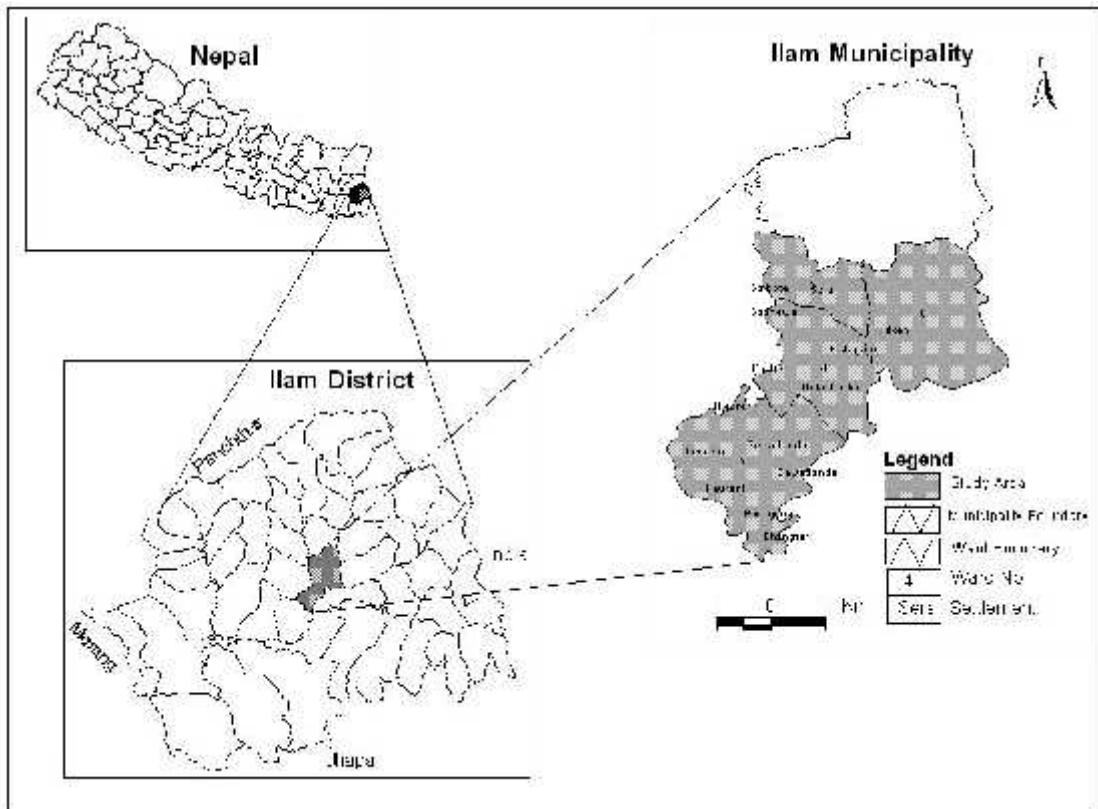
CHAPTER- IV

INTRODUCTION OF THE STUDY AREA

4.1 Geographical location

Ilam municipality is located in the eastern part of Nepal. It is the headquarter of Ilam district. The altitude ranges from 401m to 1407m from the mean sea level. Geographically, this municipality is located at 26° 56' 46" N latitude to 87° 56' 46" E. Longitude. The boundary of municipality's Maikhola in the east Puwakhola in the west. Barbote VDC in the north and Maikhola is the east and Puwakhola in south. The total area of this municipality is 27.0 sq.km. About 2.7 sq Km of the total area has been occupied by urban built up area.

Map 4.1: Location Map of study area



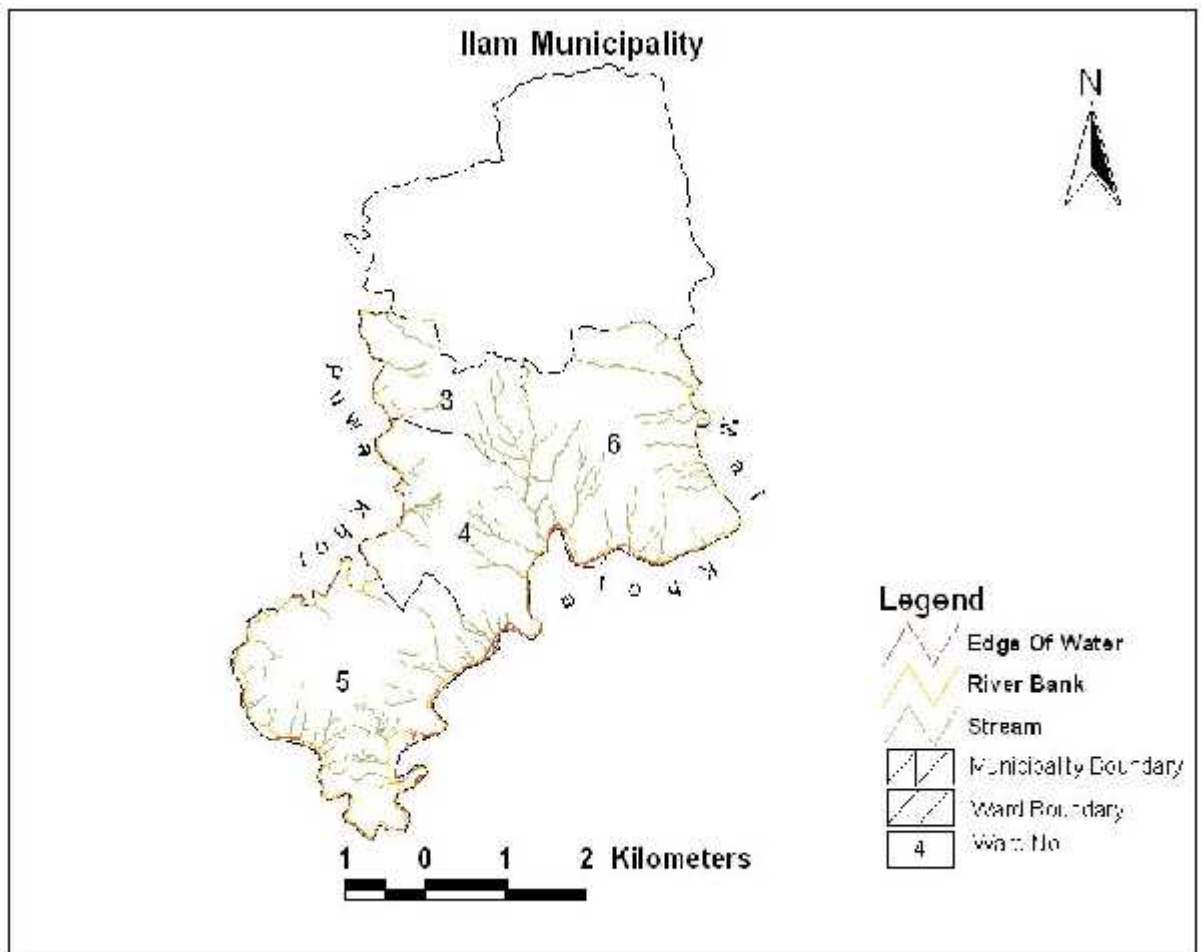
The Ilam municipality, headquarters of Ilam district is called as the “queen of Hill” due to its beauty, cool and peaceful environment. It is a tourist place of the country. Historical tea garden and various temples Setidevi, Narayansthan, Maisthan, Gumbadanda and like other religious places and Maipokhari have added extra energy in tourism of Ilam. Its natural beauty too has made it as major center in the east of Nepal for tourism industry.

Ilam municipality is also rich in social and physical infrastructure, which has contributed a lot in the rise of its gross domestic product (GDP). Agriculture and dairy farming are the major economic source of this municipality. Therefore, agricultural product has become the strongest pillar for the economic development of Ilam municipality. Steeply sloping land and loss of grass and forest cover have also increased the susceptibility for landslides and other disasters.

4.2 Drainage Pattern

The main rivers are Maikhola in the east and Puwakhola in the west of the municipality. The drainage system of the municipality is shown in the map 4.2

Map 4.2: Drainage system of Study Area

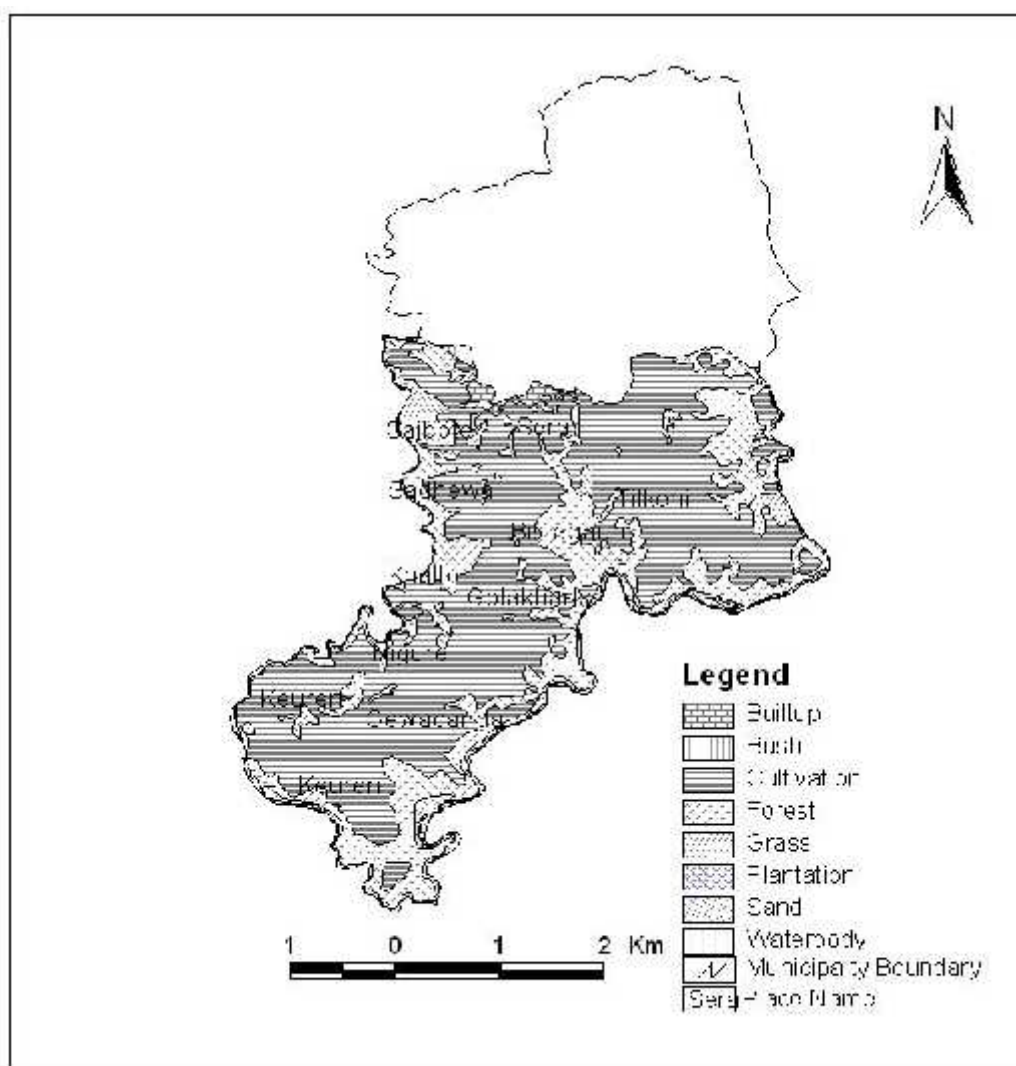


Source: Topographical survey map, 2007.

4.3 Land use/ Land cover

The land use pattern of the study area is diverse. The main types of land use/ land cover are cultivated land, forest, grassland and sandy area (map 4.3)

Map 4.3: Land use and land cover (1996)



Source: Topographical survey map, 2007.

In the study area, conversion of forest land to cultivated land has been accelerated due to population growth. About 60 % of the total land is cultivable. Cultivated land is extensively distributed in the western part of the study area.

4.4 Climatic conditions

Ilam municipality lies in sub-tropical climatic area. However climate varies with altitude and aspects. The average temperature of the study area is 21°C and the average rainfall is 2500mm.

4.5 Soil Types

Soil is an important aspect of terrain analysis. The special arrangements of the soil are not evenly distributed in this area. Colluvial soil is predominant types of soils

in the area. Soil of the study area are classified according to their origins, i.e. alluvial, colluvial and residual soil etc. soil depth of the area is categorized as shallow (1-3), medium (3-6 m) and thick (26 m).

4.6 Geological setting

Geology of the study area is dominated by the Precambrian to Cambrian kyonite and sillimanite bearing genesis, biotype schist, metaquartzite, amphibolites, cal silicate genesis, orthogenesis and angiogenesis. The Mahabharata crystalline of the eastern Nepal are apparently continuous with the darieeling genesis of the sikkim Himalayan (Chamlagain and Dangol, 2002).

4.7 Population

The total population of the Ilam municipality is 16,246, living in 3311 households. In the study area the total population is 7039, living in 1264 households. Among them 3444 are female and 3595 are male. In the four selected wards this study Hindus constituter 84.6%, Buddhist 2.8% , Kirat and 0.6 % others people are living (MUAN, 2007)

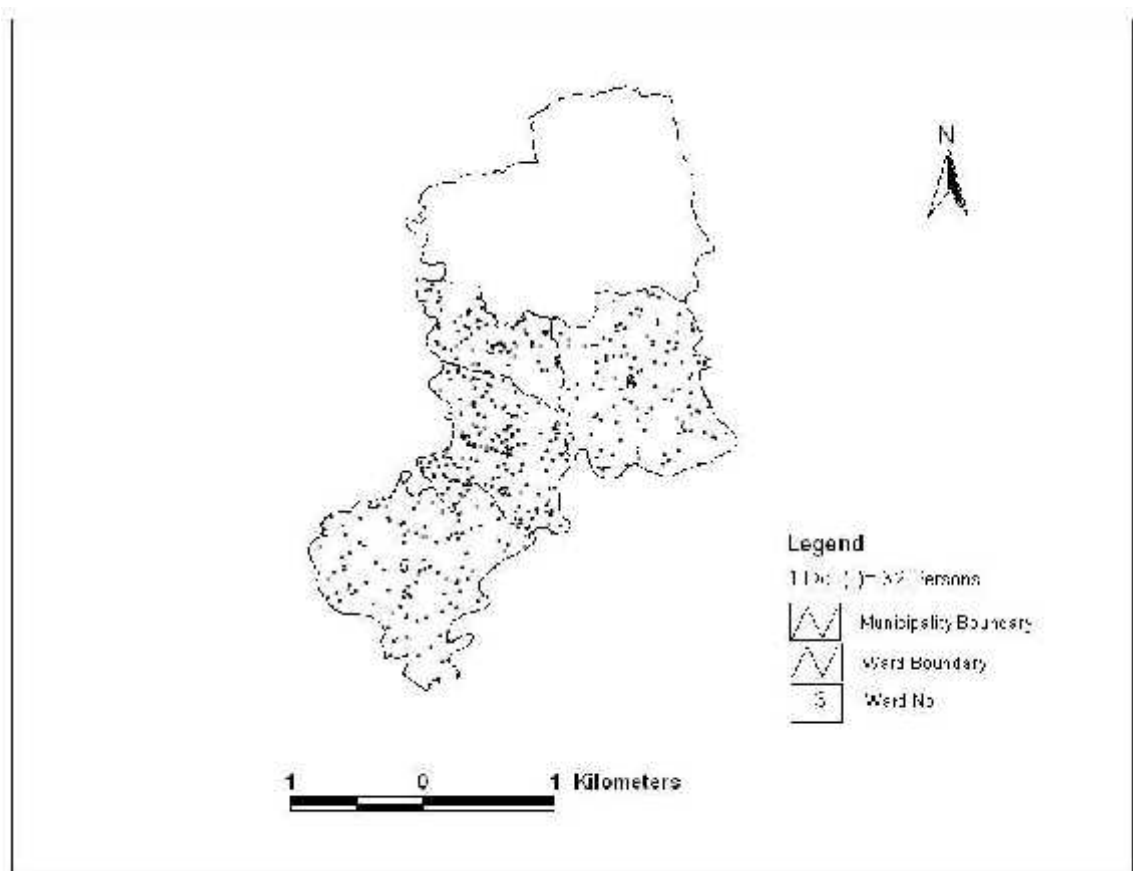
Table 4.7: Wardwise Population distribution

Ward No.	Population (2058)			No. of Household(2062)
	Male	Female	Total	
3	1062	971	2033	383
4	649	660	1309	307
5	780	769	1549	359
6	1104	1044	2148	459
Total	3595	3444	7039	1264

Source: Ilam Municipality, 2008

Table 4.7 shows the population distribution of the Ilam municipality (wards 3, 4, 5 and 6). According to the data the highest number of population are in the ward no 6 with 2148 followed by ward no 3 with 2033, similarly the lowest no of populations are in ward no 4 with 1309.

Map 4.4: Population distribution of the study area



Source: Topographical survey map, 2007.

CHAPTER-V

SOCIO- ECONOMIC CONDITION OF MILK PRODUCERS

The discussion on socio-economic condition in this section includes age, sex, and ethnicity, marital status, education income, loan availability of toilets, luxury goods, water facility and fuel consumption for cooking purpose, animal health, feeds and fodder.

5.1 Age composition

The age composition is one of the most basic characteristics of population. All aspects of an individual or community's life social attitudes, economic activities, political propensities and so are affected by age. Age influences the needs of thinking, attitudes and behavior of the people. The age structure very much influences the socio-economic life of community (Gosh 1985) the age and sex composition of this study area is as follow.

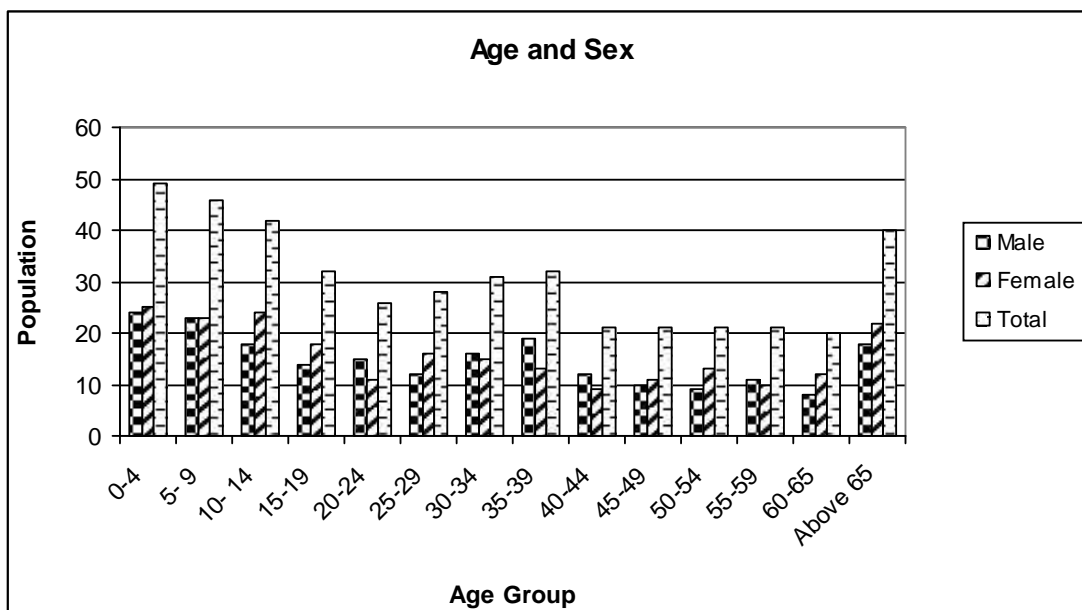
Table 5.1: Age and sex composition

Age group	Male		Female		Total	
	No	%	No	%	No	%
0-4	24	11.6	25	11.3	49	11.2
5-9	23	11.1	23	10.4	46	10.5
10-14	18	8.7	24	11.6	42	9.6
15-19	14	6.8	18	8.1	32	7.3
20-24	15	7.2	11	4.0	26	5.9
25-29	12	5.8	16	7.2	28	6.4
30-34	16	7.7	15	6.8	31	7.1
35-39	19	9.2	13	5.9	32	7.3
40-44	12	5.8	9	4.0	21	4.8
45-49	10	4.8	11	5.0	21	4.8
50-54	9	4.3	13	5.9	21	4.8
55-59	11	5.3	10	4.5	21	4.8
60-65	8	3.9	12	5.4	20	4.5
Above 65	18	8.7	22	10.0	40	9.1
Total	209	100	221	100	430	100

Source: Field Survey, 2010.

The table above shows the age group of 0-4 years comprises the largest group. In this group, male population is 11.6 percent and female population is 11.2 percent. The category of 60-65 years has the lowest proportion of total population among milk producer households.

Figure 5.1: Age and sex composition



5.2: Educational Status

Among the different qualities of population, education is most important. The old generation was poorly educated but with the passage of time they have realized the importance of education. They have been sending their children not only to school but also have the plan to send them abroad for their further studies. Educational reform resulted into socio economic reform in the society as a whole. Educational status can be measured by literacy rate. Population composition of milk producers by literacy has been analyzed below:

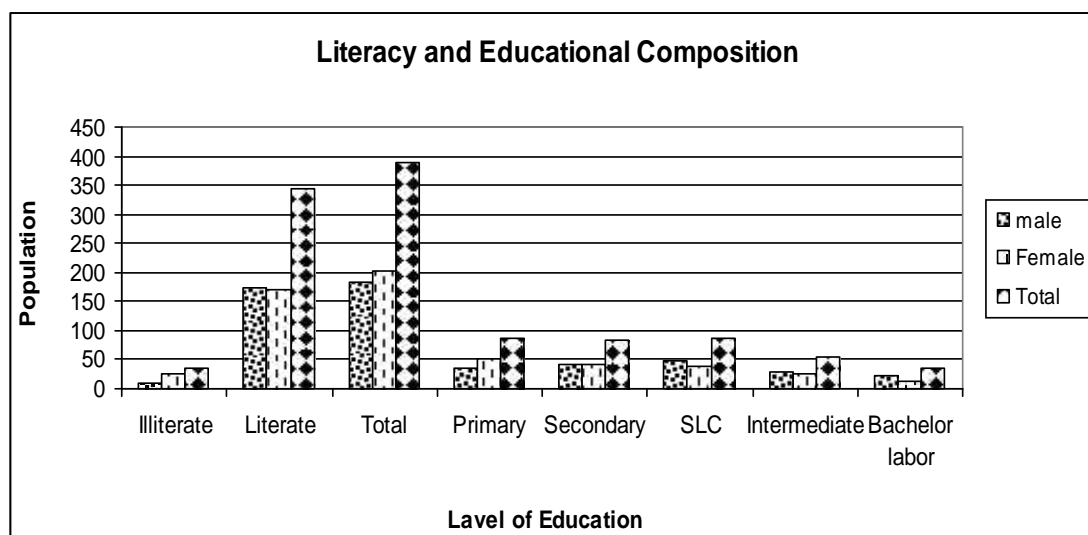
Table 5.2: Literary and educational status (Above 5 years)

Level of education	Male		Female		Total	
	No	%	No	%	No	%
Illiterate	10	5.4	27	12.8	37	9.5
Literate	173	94.5	171	87.2	344	90.5
Total	183	100	201	100	381	100
Primary	34	19.65	52	30	87	25
Secondary	41	23.69	41	23.9	82	23
SLC	47	27.2	40	23.4	87	25
Intermediate	30	17.3	26	15.2	56	16
Bachelor level	21	12.1	14	8.1	35	10
Total	173	100	171	100	344	100

Source: Field Survey, 2010.

Table 5.2 shows the educational status of the milk producers. Only 9.5 percent farmers are illiterate. Educational status of milk producers is rich. 90.5 percent are literate and 10 percent people have Bachelor degree.

Figure 5.2: Literary and educational status



5.3 Martial Status

Martial status refers to proportion of population that consists of single, married, widowed, or divorced people. Marriage is the legal union of persons of

opposite sex. The legality of the union may be established by civil, religious or other means as recognized by the laws of a particular country. The well being of a society is conditioned by the proportions of listed people, falling within the several marital groups. It is important to analyze the marital status because it also shows the social status of people in the society. Generally widows and divorced women are considered as marginal.

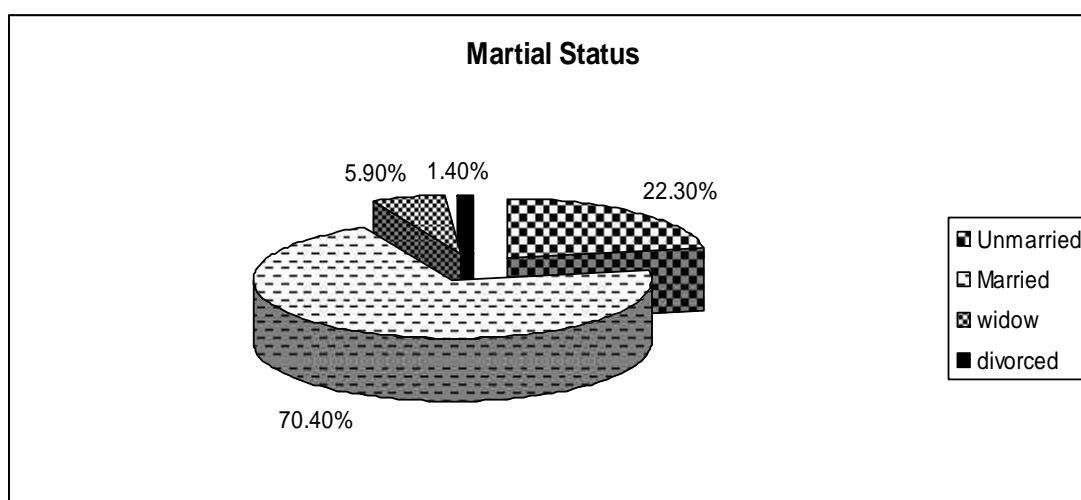
Table 5.3: Marital/status

Marital status	Number	Percent
Unmarried	67	22.3
Married	212	70.4
widow	18	5.9
divorced	4	1.4
Total	301	100

Source: field Survey, 2010.

Table 5.3 shows the marital status of milk producers by various categories such unmarried, married, widow, and divorced. Among them married number is greater than others.

Figure 5.3: Marital status



5.4 Ethnic Composition

Nepal is a multiethnic country. According to CBS 2001, 101 caste or ethnic groups are found in Nepal. Ethnicity is social component of population. It reflects socio cultural characteristics of population. Different caste groups *Brahimbn Chhetri, Limbu, Rai, Newar, Gurng, magar, Tamang, Kami, Darjy etc.* are found in milk producing occupation.

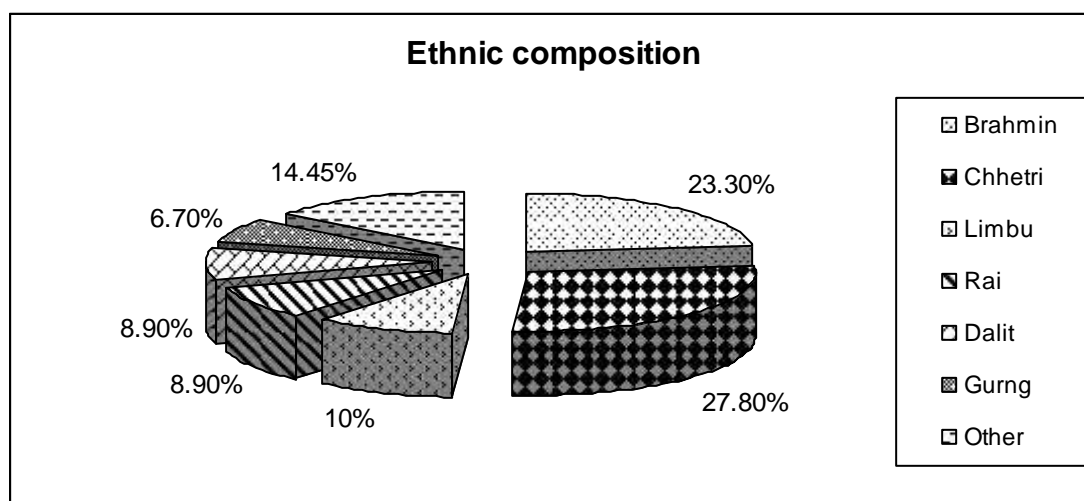
Table 5.4: Ethnic composition

Caste Group	Number of Milk Producer (H.H)	Percent
Brahmin	21	23.3
Chhetri	25	27.8
Limbu	9	10
Rai	8	8.9
Dalit	8	8.9
Gurung	6	6.7
Other	13	14.4
Total	90	100.00

Source: Field Survey, 2010.

Table 5.4 shows that Chhetri are found dominant ethnic group in this occupation in the study area. Out of total households 27.8 percent are Chhetri and 6.7 percent covered by Gurung.

Figure 5.4



5.5 Schooling of Children

Most of the farmers send their children to the school, the number of students also have slightly increased in comparison to the past. In the local area, there are private schools but less number of students goes to such school because they could not afford. Those who have good income prefer to send their children to private boarding school rather than the government schools if the private school is not far from their houses. All enterprising people have realized the importance of education as well as increase in their income level. They feel that without education, they can't increase their income and expectancy.

5.6 Toilets Facilities

Toilets are necessary in every households because it helps to prevent the possibilities of infectious diseases. It is also a sign of consciousness. All of the milk producer farmers have built their own toilet.

5.7 Availability of Communication and Transportation Facilities

The farmers have spent milk and milk products income in purchasing goods such as radio, television, vehicles etc. With increasing income every one needs and has access the modern means of entertainment and communication. And the decision to keep radio and T.V. at home helps farmers to be more conscious about the various issues of the society, country and the world.

Table 5.5: Number of Household Having Radio, T.V., Bicycle and Motorcycle

Settlement	Radio	T.V	Motor-cycle	Bi-Cycle
Sara	10	6	3	1
Saibota	4	2	1	-
Goalbasti	14	10	3	1
Bistagaue	9	8	1	-
Golakharka	6	4	-	-
Khalda	8	8	1	-
Kurani	7	4	-	1
Gawa danda	6	4	2	-
Pragati nagar	11	8	-	-
Tara gaue	5	3	2	-
Tilkani	4	3	2	-
Rani gaun	6	5	-	-

Source: Field Survey, 2010.

CHAPTER-VI

IMPACT OF MILK PRODUCTION ON THE LIVELIHOODS

Milk production has been developing as a popular means of regular income than cereal and cash crops. This sector is less affected by climatic variation unlike other agricultural enterprises. The demands of cereal and cash crops and prices of such products do not remain stable when the prices of such crops fall, it cannot cover the cost of production. So there are various reasons for preferring this dairy sector which is regularly earning income. About 60 percent of the respondents earn regular income from this activity. About 25% of respondents believe that keeping dairy animals in home means simply to maintain tradition because this has been doing by their forefathers. About 30% of respondents regard that dairy animals are kept for manure. This might be because respondents might have lots of land for cultivation. And 30% believes that dairy animals are kept for selling and consuming and 15 % of the respondents regard that dairy animals helps in operation of biogas plant which decreases in the cost of time consumed in firewood collection. The impact of milk production dairy farming in the study area has been defined below.

Case 1

I am Bhakta Bahadur Adhikari migrated from Taplejung. I had 150 ropanis of land in Taplejung and product 40 maund alaichi per year. Although income from the Jungle was very big it could cover all my expenditure. So my economic condition was very good. Unfortunately, 15 years ago, my wife Naramaya had dangerous health problem. I got busy in running for her treatment so sold my previous properties and migrated here to have better health facilities. Now, I am fully satisfied with my previous critical decision.

6.1 Milk Production

In the past the total milk production was less before the involvement of the rural farmers in dairy co-operative because then the milk was produced for domestic consumption purpose. And selling near after the involvement local farming in co-operative. The milk production has been drastically increased because they have found the marketing facilities and maximum prices. Previously people kept more local cows, but now they keep improved cows and the total amount of milk production of local dairy animal was lesses in comparison to improved cows.

Table 6.1: Dairy Milk Productions of cows and buffaloes

S.N.	Milk production (in lits.)	Household (Number)
1	1-5	50
2	5- 10	30
3	10-15	8
4	Above 15	2
Total		90

Source: Field Survey, 2010.

6.2 Purchases of Milk

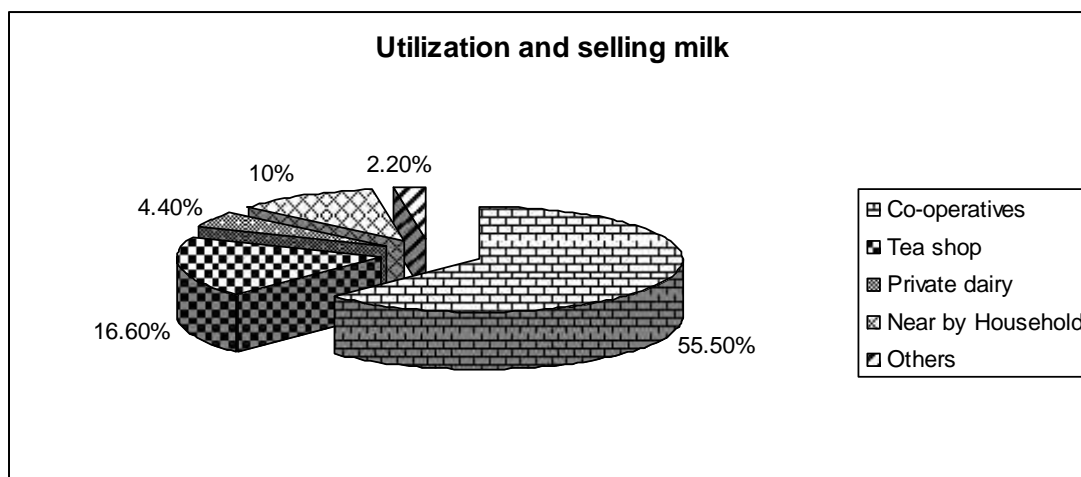
In the past, it was difficult to find the marketing facilities. There were a few local dairies in some places. With the establishment of dairy co-operations, most people involved in this activity have focused their attention to sell milk because it is easier and less time consuming, must the dairy farmers (55%) sell their milk to co-operative. Some of them also sell raw milk in local market like hotel, lodge, restaurant, tea shop etc (table 6.2).

Table 6.2: Purchases of Milk Produced

Milk Purchases	House Hold	
	No	%
Co-operatives	50	55.5
Tea shop	15	16.6
Private dairy	4	4.4
Near by Household	9	10.0
Others	2	2.2
Total	90	100

Source: Field Survey, 2010.

Figure 6.1: Purchases of Milk



6.3 Period of Selling Milk

All the farmers don't sell milk throughout the year. They sell more milk in summer season than in the dry winter season. Farmers who have more than two milking cows and buffaloes sell more milk their milk selling periods more than one month/year. Among farmers who have only one or two milking cows and buffaloes, are not able to sell milk for more than one months. It is found that 28.9 % households sell milk to the whole year, 30 percent of households sell milk 10 to 12 months, 21.1 percent of households sell milk for 8 to 10 months and 26 percent of households sell milk for zero to seven months.

Table 6.3: Duration of milk selling

Month	Household	
	No	%
0 to 7	18	19.1
8-10	19	21
10-12	27	31
12 and more	26	28.90
Total	90	100

Source: Field Survey, 2010.

6.4 Incomes from selling milk

Most of the people are involved in dairy co- operatives. Before the involvement of people in dairy co-operatives most of the farmers used to keep local dairy cows and buffaloes because cows were kept for milk consumption and left over was sold in near by shops or household dairy farm. But after the involvement in dairy co-operative, people started to keep improved dairy cattle as these cattle provide more milk in comparison to local cows and buffaloes. Now, people have started keeping dairy animals in a commercial sale. Here, people in study area prefer to sell only raw milk rather than other milk products. They consider that selling raw milk is less profitable. Households produce ghee only for self consumption purpose. The income from the milk selling do not remain the same throughout the year because of number of dairy animals and households consumption.

Table 6.4: Income from selling milk (Rupees/Year)

Income (000 NRs)	Mid Value (m)	Household (F)	Income (Rs.)
0-10	5,000	4	20,000
10-20	15,000	12	180,000
20-30	25,000	30	750,000
30-40	35,000	22	770,000
40-50	45,000	18	810,000

50-60	55,000	2	110,000
60-70	65,000	2	130,000
Total		90	2770,000

Source: Field Survey, 2010.

Table shows that the highest 30 milk seller households earning ranges between NRs 20,000 to 30,000, and 2 milk seller households earning various between NRs 60,000 to 70,000 per year. This is the highest amount of income earned by the households from selling milk.

6.5 Income from Non Dairy Animals

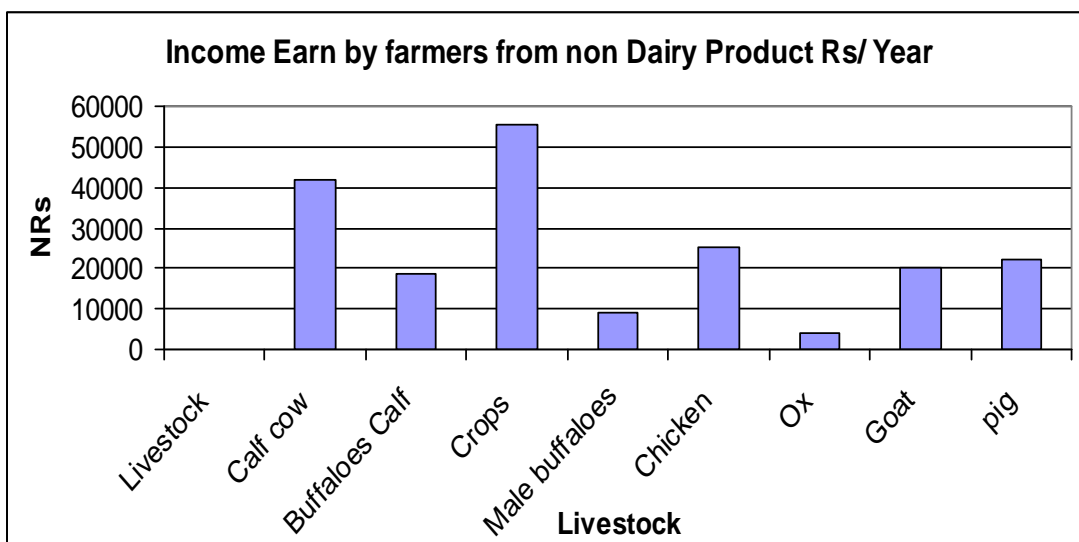
Most of the farmers have been keeping improved breeds of livestock (mainly cows) after who involvement in dairy co-operatives. For buying those breeds loan is provided by co-operatives in minimum interest rate. The improved breeds of animals are expensive than local breeds. They can afford to purchase then because the income from non- dairy animals has also increased.

Table 6.5: Income Earn by farmers from non Dairy Product Rs/ Year

S.N.	Livestock	Nrs.	%
1	Calf cow	42,000	17.74
2	Buffaloes Calf	18,500	7.8
3	Crops	55,400	23.40
4	Male buffaloes	8,900	3.76
5	Chicken	25,300	10.68
6	Ox	4,200	18.67
7	Goat	20,400	8.62
8	pig	22,000	9.29
	Total	196,700	100.00

Source: Field Survey, 2010.

Figure 6.2



6.6 Sources of Loan

Most households take loans for purchasing improved breeds of livestock. Loan is the major source of urban/ rural poverty because the low level of income results in taking loan but the high interest rate makes urban/ rural people unable to pay back. This results in indebtedness. In the past many farmers used to take loan from, village money leaders where interest rate is high which farmers cannot pay back in their whole life. None with increasing trend in involving in co-operatives, many farmers are given loan in low interest rate. This has resulted into farmer's investment in new field with more income. So now farmers have understand the importance of co-operative. So, they take loan from co-operatives and get benefited. But few dairy farming people take loan from other sources such as relatives own and selling own property.

6.7 Expenditure Pattern of Dairy Farmers

Economic orientation for expenditures among dairy farmers is varied. Some spend much of their income only to make a survival. Others earn more and spend less for food and living standard but also for other needs such as education of their children. The following case show how dairy milk producers have been spending their earning in varied sectors.

Case-1

Prem Bista is permanent resident of Golakharka. He is a retired job holder of Ilam campus. He has five members in his family one wife, one son, one daughter-in-law and a niece. His niece studies at a boarding school and other family members

work on farm and livestock. The production from farm covers his family livelihood through out of the year and after being a member of a co-operative, he has made a great deal of income by keeping advanced king of cow and he saves the money gained from dairy farming in various co-operatives being a member for secured future.

Case-2

Gyan Bahadur Basnet is an ex-Indian army. He has one wife, 2 son, 2 daughters-in-law and 4 grand children of which 2 of them are disabled. They have 25 acres of land and they have 2 jersey-typed cows. He manages family earns from the pension he receives and farm products. He saves the income gained from livestock in private banks or co-operatives to secure the future. The base of saving has been strongly established after being a member to the co-operative.

6.8 Changing Fuel Consumption for cooking Purpose

Biogas and fire wood are the major sources of fuel in the study area. Before most of the people used firewood as fuel because it was easy to get and didn't have to pay more money. But after the involvement in dairy co-operatives, with increase in income, people have shifted their interest in biogas plants. 65% of the positive sign of development because biogas is healthy sources of fuel and it also helps in protecting the forest. The increasing number of biogas plants is the result of increasing dairy farmers and sufficient amount of dung, farmers who keep less dairy animals have no biogas plant. Thus biogas directly is related to dairy farming. This shows that dairy farming has a lot of advantages, the most important being income level and using animal dung as manure and using as fuel for cooking purpose.

6.9 Livelihood Outcomes:-

Livelihood outcome are achievement or output of livelihood strategy such as more income, increased well being reduced vulnerability improved food security and more sustainability.

Here the term livelihood outcome represents the achievement of the milk producers on the other hand, in individual level the respondents who have additional skill (Teacher, helper, officer, driver etc.) have also the high income with compare to single (enterprise dairy production). But there is no drastic significant change in such

respondents. The limited income due to lack of investing capitals, own land, skill knowledge of their work has been made their life more Vulnerable. Those milk producers who also works in other profession earns more. Their standard of living is much higher than others.

Moreover among these respondents (milk producer) livelihood diversification is the important for positive livelihood out come in the study area. After joining milk producer co-operations, most of the dairy producer have achieved some note able livelihood outcomes. Livelihood outcome achieved by them are not only in the form of economic value (monthly saving) but also for social value which also has equal meaning as economic Value. Those out comes of economic value may be easily invested to increase other livelihood assets. Main sector of investment by most of the respondents are diverse and complex which are summarized below.

Table 6.6: Livelihood outcomes

Sector of investment	Forms of livelihood outcomes
Basic needs	Fooding, Clothing, repairing house, education
Health and education	Investment for treatment (inthetime of illness) enroll their children into school.
Custom and religion	Invest in some special occasions (marriage birth, worship, invest in feast and festival)
Luxurious goods	Invest to buy ornament and new cloth investment buy T.V., computer etc
For well being	Construction of new house, surplus saving for future life.

Source: Field Survey, 2010.

Thus we can say that milk producers are improving their living standard through this enterprise. It will further help to understand the condition of the milk producers with relating to the livelihood outcomes and sustainability while in most cases livelihood outcomes can be thought of as the decrease of poverty.

CHAPTER-VII

VULNERABILITY CONTEXT

The term vulnerability has become more familiar in national and international context especially in developing country at present. The vulnerability context represents the external environment in which people live. Trend shocks and seasonality are external factors over which people have no or limit control. Trend comprises for instance resource stock, population density, technology, politics, economics. Shocks comprise among other things destruction of access, economic shock and conflict. The seasonality may include price, production and unemployment opportunity. (DFID, 2002)

People's livelihood and the wider availability of assets are fundamentally affected by vulnerability context, over which they have limited or no control. Though all milk producer farmer are able to earn some income. The vulnerability that dairy farmers faced can be described under following subheadings.

7.1.1 Technical knowledge and Vulnerability

Most of the milk producer farmers have not sufficient technical knowledge on milk products and their safety from bacteria, that's why they can not manage properly most of the dairy products and also lack new equipment and technology. This has limited the dairy production and it's limited to selling fresh milk to particular area. As a result diversification of dairy production has not taken place.

7.1.2 Effective Investment and Vulnerability

For importing necessary equipments and technologies the dairy producers should move ahead through a proper business plan. The tendency is to ask government to hand over such equipment from DDC.

7.1.3 Market Competition as a Source of Vulnerability

A marked number of private dairies have emerged over the past 10 years with the liberalization of the economy. On the one hand they are competing with the dairies as they too sell the raw milk on the other because of private dairies the co-operatives have to produce good quality of milk, that require more investment.

7.1.4 Lack of alternative use of old cows

As per the superstition in Hindu mythology cows are worshipped as Godless, it can not be sold for meat and/or other purposes. Hence, when the cows stops providing the milk it cannot be sold at whatever the price it may have fetched. Because of this the investment of the dairy farmer cow doesn't get return after the old age, which is to certain extent, discourages investment in this field. Industries depend on pasteurizing milk for immediate consumption.

7.1.5 Calving Pattern in buffaloes as a vulnerability

There are seasonal calving patterns in buffaloes and it is the availability of fodder most of the buffaloes get calves during August to October when most of the milk holiday takes place. The breeding of the buffaloes should be change later calving time and the milk holidays could be solved to some extent. Research is needed for changing the calving pattern so that flush season can be minimized.

7.1.6 High cost of milk production as a vulnerability

Dairy farming in Nepal is still dominat by non-commercial farmers, so the production cost of milk is generally higher than in neighboring Indian. Due to free entry of milk and milk production into Nepal, the dairy sector should have to produce milk at a competitive price even within Nepal, commercial farmers are raising more than three buffaloes a few cattle's are necessary to production milk at a lower cost than rearing a single animal. It is possible to reduce production cost by improving management through better feeding, breeding and health care.

7.1.7 Lack of Diversification as a Source of vulnerability

Product diversification has been very limited in Nepal less than 5 percent of milk collected are converted to other dairy products and most of them are for consumption purpose. And even farmers prefer to sell raw milk rather than selling milk production because they feel that time is also saved and well, it is easy too.

7.1.8 Veterinary services as a vulnerability

The proper veterinary services and facilities are not available in the study area. There is lack of trained veterinary doctor and technicians. Thus, most of the problems of dairy farming are lack of veterinary facilities. And they too have to come to main city to buy medicine and medical facilities. And if they (veterinary technicians) prefer

to call them to villages they ask heavy amount to be paid. In most villages, simple advice and medicine are also hardly available. So the farmers fear to keep improved cattle's. If they die because of lack of treatment the farmers have to bear heavy loss, and sometimes farmers buy veterinary drug in shops and feed their animal without veterinary doctors, sometimes these give negative impact to their animals.

7.1.9 Lack of insurance facilities

Most of the farmers complain about the lack of insurance of animals. Farmers buy improved breeds taking loan from different sources but if the animals die or become sick, then there are no facilities of repayment.

7.1.10 low price of milk

Farmers always demand for increasing the price of milk. According to them water is more expensive than milk. The price of it very less in comparison to their expenditure for their animals.

7.1.11 Feeds and fodder as a vulnerability

Crop by products of rice plant and maize plant are the main feed stuffs for the dairy animals in the study area. Besides these tree fodder ground grass are also used as fodder for animals. Before, the farmers were not so conscious about feeding for cattle but now they have realized that they feed more improved green grass to cattle. This has resulted to increase in production of milk and milk fat percentage. On which basis the payment is done by dairy development co-operatives either government or private. Because of growing uncontrolled population, land fragmentation rate is very high. So feeds and fodder problem are being growing.

7.2 Sustainability

Besides these vulnerability contexts, this dairy milk production sector has lots of sustainability in future. Farmers have been keeping dairy animals since long and they will continue to don't in future too. There are lot of potentialities for urban rural farmers. This sector can be strong means for the development.

7.2.1 Dairy Co-operatives

Among the credit co-operatives milk producer's co-operatives also have grown rapid within the last decades as a result of rapid dairy production.

Central dairy co-operatives association limited Nepal (CDCAN) formally called as the central milk producer's co-operatives union (CMPCU). The national level federation of milk producer's co-operatives has been established following the enactment of the co-operation act, 1992 as a central body of all milk and dairy production co-operatives established throughout the country.

Being a central dairy, co-operatives association limited Nepal (CDCAN) represents 1375 primary milk production co-operatives societies as local level in the country.

Dairy co-operatives have been able not only to market and the milk of their members but also some of them have been able to process the milk and also supply animals feed and other necessary dairy equipment and medicines to their members. These cooperatives have enhanced the human assets of their members.

7.2.2 Agriculture and dairy farming are complementary

The following are the major reasons for being agriculture and dairy farming are complementary to each other. Animal's manure is useful in agriculture. It helps to produce more crops and diversify the crops. If more animals are kept more dung is produced, which results in more production. If more crops are produced the farmers will have more crops residue and grain to feed animals. Due to more fertile land improved grasses and other feeding materials are likely being grown in this area. If the private sectors are encouraged in this field to keep the milk power plant or to diversify the product then it can be competitive with the international market and reduce the import of dairy products. The problem of milk holiday can be solved and the secured marketing facilities can be provided to the rural farmers. The availability of marketing facilities promote rapid growth of dairy development.

7.2.3 Dairy farming can improve pleasant environment

The climatic condition of the study area is pleasant. It is neither too cold nor hot. The suitable climate helps this area for quick development of dairy farmers. Both the local / improved grass or fodder can be grown.

The availability of proper condition of road also helps for further development of dairy farming. Roads not only helps to transport the milk for selling purpose but also for exchanging, selling and buying of improved breeds from one place to another.

Dairy farming is less affected by climatic variation than agricultural crops, so more farmers are attracted towards this sector which is the positive sign for healthy farming competition. Rural milk producers produce good quality maintained and hygienic milk. As a result, it will have positive effect on human health and products can be diversified and can compete with international market as well.

CHAPTER-VIII

SUMMARY, CONCLUSION AND RECOMMENDATION

8.1 Summary

Raising cows and buffaloes for milk is a common feature of agricultural households in Ilam Municipality. Selling milk was not very common and most of the milk production concentrated on household consumption and preparation of butter. The task used to be an individual enterprise until lately. However, in recent years the individual enterprise has turned into cooperatives. The present study of milk production in Ilam municipality shows that such farmers have been organized into cooperatives. About 80% of the co-operative farmers have started to keep improved varieties of cows and buffaloes since they get loan from co-operatives in minimum interest rate. The remaining 20 percent also intend to keep improved breed but the insurance for their livestock is lacking and in case of death of livestock the loss is heavy. In Ilam 95 percent milk producers sell raw milk because it is easy and less risky.

Dairy activity is not exclusive of one or other caste or ethnic groups. Brahmin/Chhetri, *janajati*, Dalit as well as others are also engaged in this activity. Most of the dairy farmers are Hindu. More than 90 percent are literate. Some of the family members has higher degrees as well. Largest proportion of population belonged to economically active group and the proportion of aged population is also considerable (more than 13%).

The average annual income from milk production is NRs. 30,770 per household. A lot of changes are observed in the households after they were engaged into milk production and sale. Almost all households have improved their assets. Public health situation, measured in terms of access to private toilet facilities, has improved. Biogas has largely replaced traditional fuel-wood. Education situation has improved and now all school age children are attending school. Some households are able to send their children to University education. Households have spent their income into buying items such as television, mobile phone, furniture, and fancy goods and some have also good savings in banks for secured future.

Not everything is good and there are vulnerabilities associated with milk production. Farmers lack insurances of their cattle. They do not get adequate price for the raw milk. Households lack skills and motivation for product diversification. There is unfair competition among diaries. The proper fodder and feed also create

vulnerability at times. The veterinary services are not adequate. Moreover, the return from raw milk as per the investment is rather low when household labor engaged in this business is accounted for.

8.2 Conclusions

Despite some vulnerability associated with milk production there is greater prospect of this activity in Ilam. The households that are engaged in cooperatives feel more secured than those remaining outside the cooperatives. In addition the cooperative has also brought households together and has developed the feeling of being together. The quality of life has greatly improved.

Ilam municipality is getting more urbanized and its population especially in and around built-up area is expanding. This means an increase of non-agricultural population and this population is the potential consumer of milk either directly as raw milk or through local dairies. This in turn functions as the potential market for milk producers of the study area. Indirectly, engagement of almost all sections of people irrespective of caste and ethnicity also reflects and reinforces the ongoing social change in the society.

There are vulnerabilities associated with milk production that farmers are faced with but these are surmountable so far. The strengthening of local cooperatives and provisions of loan and other facilities would greatly enhance the capability of milk producing farmers. This in turn indicates the continuity and sustainability of this activity as viable livelihood option in this area.

8.3 Recommendations

Dairy farmers play an important role to up lift the standard of the urban rural farmers. The dairy co-operatives aim for the betterment of small milk producer farmers by providing all the facilities according to their principles. But still they have lots of problems and there is need for some improvement in this sector for commercialization of dairy farming enterprise in a sustainable way. The following recommendation can be suggested:

8.3.1 General Recommendation

(a) For Farmers

1. Farmers should rear improved breed for high production of milk because the higher the breed, the higher the production of milk.

2. Farmers should have insurance of their cattle because in case of their loss he/she may receive its claim.
3. Farmers should manage proper shed for their cattle.
4. Before taking training an producing good quality of milk and about veterinary service, farmers should be more careful about their health and hygiene.
5. Farmers should provide good quality feed and fodder for cattle Because milk production from cattle depends upon the feed they get.

(b) For Co-operatives

1. Dairy co-operatives should encourage farmers to keep improved breed of dairy animals whose productivity is higher than that of local ones. Co-operatives should provide breed of animals on subsidy under its specific programmes.
2. Most important farmers should be made aware about the importance of insurance of animals through cooperative, other concerned institutions.
3. Training should be given to farmers for quality production of milk and its products and about animal health and diseases.
4. Farmers should made aware of giving good quality based feed and fodder to their cattle's as well as encourage them to produce improved grass. Fodder grass and other feed that are cheaper in price.

(c) For DDC (Dairy Development Co-operation)

1. The DDC should increase the price of milk so that rural farmers are encouraged and benefited.
2. The problems of milk holiday should be solved because it directly affects the rural milk producers.
3. The capacity/ number of chilling centers should be increase so that coverage will be more.
4. DDC should provide more secure marketing facilities so that during flush season milk producers will not be affected.

(d) For CDCAN (Central Dairy Co-operative Association Ltd. Nepal)

1. It should provide more facilities to support member co-operatives in establishing milk and dairy product industries.
2. It should always create and promote the feeling of co-operation among it s members though some specific programs.

3. The monitoring and evaluation is needed to find out where particular co-operative are successful in implementing the given action plans. The co-operatives that are successful should be given more facilities so that it would set an example to other co-operatives and encourage them too.

8.3.2 Specific Recommendation

1. Studies should be conducted to find out milk production status is the different parts of the country where program is implemented by government of Nepal.
2. Comparative studies should be carried out on the dairy practice between remote and urban areas and other concerned authority should be more focused on its underlying problem.
3. Farmers are not aware of improved technology about the milking animals rising. Proven technology should be transferred to the co-operatives members through extensive programs.
4. Farmers should be encouraged for product diversification. Which they feel easy and viable.
5. Research should be done on calving pattern in buffalo production system because majority of buffaloes calving take places from mid July to October.
6. Promotion of dairy sector is also possible through different types facilities such as credit transformations insurance, banking loan.
7. Old cows should be permitted to sent (export) to India.

8.3.3 Recommendation for further Research

Further intensive studies can also be done on the following topics:

- ❖ Potentiality of dairy development in Nepal. (yak farming in high mountains, goat and cow and buffalo farming in mid hills etc.)
- ❖ Achievement of dairy co-operatives and its impact on people.

Research on dairy development and its marketing.

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Appendix-2



Interview with respondent



Interview with respondent



Respondent in cowshed



Respondent feeding her cows

Appendix-1

Tribhuvan University

Central Department of Geography

Household Questionnaire for "Milk Producer's Livelihood in Ilam"

VDC/N

Date:

Ward No;

Tole:

A. General information of respondent

1. Name and cast/ethnicity
2. Place of Origin
3. Age: a) <15 b) 15-30 c) 40-45 d) 45-60 e) >60
4. Sex: Male/Female
5. Marital Status: Married/Unmarried
6. Education: Literate (.....) illiterate.
7. Previous occupations (If there is):

B. Family Background:

S.No.	Name	Relations with respondent	sex	Age	Education	Occupation	Income
1							
2							
3							
4							

1. How much the physical property (assets) does your family have?

Khet:

Bari:

Others:

2. Since when have been working in this enterprise?
3. Why do you do this enterprise?
4. What is the source of skill learned?
 - a) Parents
 - b) Friends
 - c) Formal
 - d) others (if specify)
5. Does your current skill enough?
 - a) Yes
 - b) No

6. How much milk do you have everyday?
Litters
7. How much milk do you sell every day?
 - a) 1-5 ltrs
 - b) 5-10 ltrs
 - c) 10-15 ltrs
 - d) > 15 ltrs perday
8. Do you do other work beside this?
 - a) Yes (What...
 - b) No
9. How long time do you work in a day?
 - a) Below 4 hours
 - b) 4-8 hours
 - c) 8-12 hours
 - d) 12 hours
10. Ownership of the enterprise
 - a) own
 - b) father
 - c) Grand father
 - d) son
 - e) Other (if specify)
11. Working enterprising house place
 - a) own
 - b) Rented

12. Are you member of any milk producers
Yes No.....

If you have, what is the Name?

D. Income and Expenditure Pattern:

1. How much money earn by dairy farming
Daily: Monthly
2. How much money do you earn?
Daily: Monthly
3. Please mention other source of income?
1. 2.
4. How much money do you spend in a month?
 - a. Food (Rs.)
 - b. Cloths (Rs.)
 - c. Entertainment (Rs.)
 - d. Education/School Free (Rs.)
 - e. Medical/Health (Rs.)
 - f. Fooder (Rs.)
 - g. Labour (Rs.)
5. Does your income enough to support your expense?
 - a) Yes
 - b) No
6. If not, from where you set for balance?
7. What is the source of investment?
 - a) Own
 - b) Bank Loan
 - c) Finance
 - d) Others
8. Please tell me your own land in sufficient to survival for yours cattle?
 - a) Yes
 - b) No
9. If No, from where do you bring essential things?
10. Where do you supply your product?
 - a) Customers visit to your plce (from)
 - b) Ilam Bazar
 - c) Fickka
 - d) others (if specify)
11. Why are you bringing and supplying there?
 - a) No any alternative
 - b) Easy for transport
 - c) Cheep/expensive them other

12. Have you got any support from government or any other agencies to promote your business?

- a) Government
- b) Other agencies (Name

13. Do you save your income?

- a) Yes
- b) No

If yes, how much money do you save and which is the best organization to save your income?

- a) Daily (Rs.)
- b) Monthly (Rs.)

14. Does any member of your family go to school/collage ?

- a) Yes
- b) No

15. If yes, what types of school/collage?

- a) Public
- b) Private

16. Are you satisfied with this occupation?

If yes, what is the reason?

If not, what is the reason?

16. What are the main source (fuel) for cooking

- a.
- b.
- c.
- d.

E. Vulnerability of Livelihood Strategies:

1. Do you have any health problem?

- a) Yes
- b) No

2. If yes, where do you go for treatment?

- a) Pubic health center
- b) Private health center

3. Does these problems attect your occupation and now?

4. Does your any family member has any health problem?

- a) Yes
- b) No

5. Have you face any problems while running this occupations?

- a) Yes
- b) No

6. What types of problems have been facing?

7. Are you aware of the problems have been facing?

- a) Yes
- b) No

8. What is your opinion to manage this occupation

9. Do you want to engage your further generation in this enterprise? Why?

a) Yes (because)

b) No (because)

10. Do you have any plan to extend this enterprise? If yes, mention.

S.No.	Play	Reasons
1		
2		
3		
4		

11. Finally, Are you interesting to say something about this enterprise?

THANK YOU