

**The Socio Economic Condition of Dairy Farmers:  
A Case Study of Lamahi Chilling Center, Dang  
District**

**A Thesis Submitted to:  
Central Department of Rural Development,  
Tribhuvan University,  
in partial fulfillment of the Requirements for the Degree of the  
Master of Arts (M.A.)  
in  
Rural Development**

**By  
SAMIR KUMAR PAUDEL  
Central Department of Rural Development  
Tribhuvan University, Kathmandu  
T.U. Regd. No: 6-2-54-931-2006  
Exam Roll No: 282544 (2070)  
2014, July**

## Recommendation Letter

It is great pleasure that I recommend the approval of the project work report entitled **The Socio-economic Condition of Dairy Farmers: A Case Study of Chilling Center, Dang District** completed by Mr. Samir Kumar Paduel under my supervision for the partial fulfillment of the requirements for Master of Arts in Rural Development. Therefore, this Thesis is recommended for its evaluation.

.....

Supervisor

Asso. Prof. Dr. Prem Sharma

Central Department of Rural  
Development

Tribhuvan University

Kirtipur, Kathmandu

Date: 16-12-2014

01-09-2071

## **APPROVAL SHEET**

This is to certify that report submitted by Mr. Samir Kumar Paudel entitled **The Socio-economic Condition of Dairy Farms: A Case Study of Lamahi Chilling Center, Dang District** has been approved by this department in the prescribed format of the Faculty of the Humanities and Social Sciences. This Thesis is forwarded for the evaluation.

### **Evaluation Committee**

### **Signature**

Prof. Dr. Chandra Lal Shrestha

Head of Department

.....

Prof. Dr. Mangala Shrestha

External

.....

Asso. Prof. Dr. Prem Sharma

Supervisor

.....

Date: 18-12-2014

03-09-2071

## **DECLARATION**

I hereby declare that the thesis entitled **The Socio-economic Condition of Dairy Farms: A Case Study of Lamahi Chilling Center, Dang District** submitted to the Central Department of Rural Development, Tribhuvan University, is entirely my original work prepared under the guidance and supervision of my supervisor. I have made due acknowledgments to all ideas and information borrowed from different sources in the course of preparing this thesis. The result of this thesis have not been presented or submitted anywhere else for the award of any degree or for any other purposes. I assure that no part of the content of this thesis has been published in any form before.

Samir Kumar Paudel

T.U. Regd. No: 6-2-54-931-2006

Date: 2014-12-10

2071-08-24

## **ACKNOWLEDGEMENTS**

First of all, I would like to render my whole-hearted gratitude to all of those who have kindly given their valuable time and energy for the study.

I am extremely indebted to my supervisor Asso. Prof. Dr. Prem Sharma (head of the department) for his inexhaustible support, valuable suggestions, encouragement and supervision in all stages of the study from the initial stage to the final compilation of the work. I feel deep thankfulness to all my respected teachers for their encouragement, guidance and co-operation that remain invaluable in the accomplishment of this work.

I am equally grateful to the staff of the Lamahi Chilling Center basically, Mr. Sarad Sharma (head of the LCC) and the respondents, who helped me much by providing actual information required for the study.

I would like to express my great gratitude to my parents as well as brothers for their kind cooperation, encouragement, financial support and love.

I am deeply indebted to my colleagues Anil, Pretam, Rasmita, Sumita, Ramesh, Dipak, Nirmal, Sarada and Janak for their regular help and suggestions.

I am also thankful to R.D. Mixing Center, Sunsari for their help in computerizing the manuscript.

Finally, I would like to thank all who have directly and indirectly assisted me to make this attempt a success.

July, 2014

Kirtipur, Kathmandu.

Samir Kumar Paudel

## **ABSTRACT**

The present study attempts to explain the socio-economic condition of dairy farmers in some VDC of dang district. The surrounding area of 17 milk cooperatives which are collected milk from the dairy farmers and bring to Lamahi Chilling Center is chosen for the study purpose. In the study, 120 sample households are taken from 17 different cooperatives of the study area. To analysis this study, the primary source of data information is taken into account, which is collected by researcher himself with the help of structured questionnaire. The output of the study has shown that there is a need of better facilities for the farmers to promote milk product and trade in the study area. Out of the total dairy farming household of the study area, only 11.42 percent are selected for the detailed study. Sample size is taken form every dairy cooperative by using the method of Simple Random Sampling.

Dairy farming is developing as a second occupation of rural Nepalese people. It has been playing a vital role to uplift rural socio-economic condition. The study has found the changing situation due to gradual development of education, some positive impact has exposed toward education in the study area. Looking the result of the study, it can be concluded that the living standard of the people of the area is uplift to some extent by milk selling. The income from the milk production and its selling occupies about one third income of the farmers. Such income has helped the rural farmers to fulfill their different needs. Most of the farmers use the dairy income in cattle feeding, but the income form the milk is also supporting the domestic expenses of the farmers. Some farmers use their income to pay school fees for their children study. Others have invested such as income in fixed assets such as land and house, health etc.

There are some problems in dairy farming such as lack of institutional credit services, low price of milk, high price of fodder, milk holiday, insufficient veterinary services and high price of improved breed of dairy animals. But these problems have not hindering dairy farming negatively though it needs some improvements. Dairy farming and agriculture are interrelated to each other. The production of crops, improved grass and other feeding materials are high in this area. There is further possibility of market expansion. Likewise, suitable climate and road access are other push factors which help to further expansion of dairy farming in this area. Thus, the overall scenario of socio-economic condition of dairy farmers is not so good, but, it is going very positively?

# CONTENTS

**RECOMMENDATION LETTER**

**APPROVAL SHEET**

**ACKNOWLEDGEMENTS**

**LIST OF TABLES**

**LIST OF FIGURES**

**ABBREVIATIONS**

**ABSTRACT**

## **CHAPTER-ONE: INTRODUCTION 1-6**

1.1	Background	1
1.2	Statement of the Problem	3
1.3	Objectives of the Study	5
1.4	Significance of the Study	5
1.5	Scope and Limitation of the Study	6

## **CHAPTER- TWO: REVIEW OF THE LITERATURE 7-14**

2.1	Literature on Role of Dairy Farming	7
2.2	Literature on Existing Situation of Dairy Farming	10
2.3	Literature on Problem and Prospect of Dairy Farming	12

## **CHAPTER- THREE: RESEARCH METHODOLOGY 15-19**

3.1	Research Design	15
3.2	Selection of the Study Area	15



3.3	Sampling Procedure and Sampling Size	17
3.4	Nature and Source of Data	18
3.5	Method of Data Collection	18
3.6	Time Frame	19
3.7	Data Analysis and Presentation	19

## **CHAPTER- FOUR: ANALYSIS AND INTERPRETATION OF DATA    20-42**

4.1	Milk Sellers	20
4.2	Family Structure by Age and Sex	22
4.3	Population Distribution by Ethnicity	25
4.4	Educational Status of Sample Population	25
4.5	Occupational Status of Sample Population	26
4.6	Landholding Size of Sample HHs	27
4.7	Type of Buffalo and cow Kept by Sample HHs	28
4.8	Total Milk Production	30
4.9	Milk Utilization	31
4.10	Milk Marketing	32
4.11	Milk Collection System	33
4.12	Income from Milk Selling	33
4.13	Utilization of Dairy Income	35
4.14	Problem and Constraints of Milk Marketing	36
4.15	Support of Institutional Facilities	38
4.16	Role of Milk Cooperatives	40
4.17	Veterinary Services	41
4.18	Annual Medical Expenses	41

**CHAPTER-FIVE: SUMMARY, CONCLUSION  
AND RECOMMENDATIONS 43-49**

5.1	Summary of the Study	43
5.2	Conclusion	45
5.3	Recommendations	47

**REFERENCE**

**Annexure**

Annex-1	Questionnaire for HH Survey
Annex-2	Checklist for Chilling Center
Annex-3	Checklist for Cooperatives
Annex-4	Photo Plates

## LIST OF TABLES

<b>Table No.</b>		<b>Page No.</b>
3.1	Chilling Centers of Dang District	15
4.1	Average Milk Collection and Total Sample Milk Seller	20
4.2	Family Structure by Age and Sex	22
4.3	Population Distribution by Ethnicity	24
4.4	Educational Status of Sample HHs	25
4.5	Occupational Status of the Sample Population	26
4.6	Landholding Patterns of the Households	28
4.7	Types of Buffalo and Cow Kept by Sample HHs	29
4.8	Total milk Production	30
4.9	The Average Trend of Milk Utilization	31
4.10	Milk Marketing	32
4.11	Income from Milk Selling	33
4.12	Utilization of Dairy Income	35
4.13	Problem and Constraints of Milk Marketing	37
4.14	Support of Institutional Facilities	39
4.15	Expected role of Milk Cooperative	40
4.16	Annual Medical Expenses	42

## LIST OF FIGURES

Figure No.	Subject	Page No.
1.	Family Structure by Age and Sex	23
2.	Population Distribution by Ethnicity	25
3.	Educational Status of Sample HHs	26
4.	Occupational Status of the Sample Population	27
5.	Land Holding size of Households	28
6.	Type of Buffalo and Cow Kept by Sample HHs	29
7.	Income from Milk Selling	34
8.	Utilization of Dairy Income	36
9.	Problem and Constraints of Milk Marketing	38
10.	Support of Institutional Facilities	39

## ABBREVIATIONS

ADB/N	Agriculture Development Bank / Nepal
AGDP	Agricultural Gross Domestic Product
CBS	Central Bureau of Statistics
CEDA	Center for Economic Development and Administration
DAN	Dairy Association of Nepal
DDC	Dairy Development Corporation
DFAMS	Department of Food and Agriculture marketing System
DOA	Department of Agriculture
FAO	Food and Agriculture Organization
GDP	Gross Domestic Product
HHs	Households
Kg.	Kilogram
Ltr.	Liter
NARC	National Agriculture Research Council
NDDB	National Dairy Development Board
NPC	National Planning Commission
NRs.	Nepalese Rupees
SAARC	South Asian Association for Regional Cooperation
Sq. Km.	Square kilometer
LCC	Lamahi Chilling Center
TU	Tribhuvan University
UNDP	United Nation Development Program
USAID	United States Agency for International Development
VDC	Village Development Committee
WFP	World Food Program

# CHAPTER ONE

## INTRODUCTION

### 1.1 Background of the Study

Milk is only the food having some of all nutrients necessary to maintain life and promote body growth. Milk contains the fat soluble vitamin D and the water soluble B Complex, C is also present for all age groups and almost complete single food for the young. Half a liter of milk per day will supply about a quarter of daily recommended intake of protein and all the calcium required by an active man to vitamins to help the health (Encyclopedia Britannica, Vol.5, p.451)

Livestock farming is an important economic activity since the commencement of human civilization. In the early stages of civilization when agriculture was not properly known, cattle formed the principle property of the people. In course of time, together with the gradual development of agriculture, livestock farming was also pursued and properly developed. Men first came to practice agriculture, which included the raising of domestic animals in the New Stone Age, i.e. the Neolithic Age. Thus, the history of dairy farming is related with the history of civilization.

Dairy farming is the major component of livestock farming. It has a long tradition in our country. Cow, buffalo, yak and are the main domesticated dairy animals. Cows and buffaloes are found in Tarai and hilly areas. In high hills yak and cow are the major dairy animals. Agriculturists see the promotion of milk production system as one of the most broadly favorable path of rural and overall economic development in many countries. For producer it provides a daily source of income with a relatively low risk. The care and management of milking animals

provide socially desirable work opportunities. And wastages from animals (dung) can use in bio-gas plant which will provide energy for daily consumption, it will make life easier. Animal's dung can also be used as fertilizer which is highly productive and harmless for agricultural land. Nowadays people sell milk where market is available. Many small dairy plants also have been established in rural areas. Dairy farming is developing as dairy enterprises in many parts of our country.

Agriculture is the largest sector contributing about 40 percent of GDP and active labor force engaging almost 65 percent of the total population in Nepal. Livestock sector contributes about one third of AGDP and 4 percent of national export. Dairy sector has high weight in livestock sector GDP and contributes about two third. Dairy farming is a major source of cash income of the major of Nepalese rural farmers. There were 6982660 cattle and 3624020 buffaloes in Nepal in 2001. Among them, milking cows were 852583 and milking buffaloes were 936811 (CBS 2002). Animals' products have occupied 27.7 percent weight on agricultural production index where 15.8 percent is only from milk. In the fiscal year 2001/02, 1158.8 thousand metric tons milk and milk products have been produced in Nepal and by 2002/03 it increased to 1195.9 thousand metric tons (CBS 2004.p.61-62).

The dairy development activities in Nepal started from Tusalvillage of Kavre district in 1952 (2009 BS) on the experimental basis with a small scale milk processing plant under the Department of Agriculture. The Central Dairy Plant was established in 1956 and in started to milk collection, processing and marketing activities. For the institutional development of dairy farming, Dairy Development Corporation (DDC) was established in 1969 (2026) under the public sector. DDC is totally owned by government. It is also financing

supported by the foreign grants and loans. World Food Program (WFP) has been supporting DDC since 1974. The New Zealand and Danish Government had contributed towards the establishment of milk processing plants. At present, USAID and Danish Government are the major donors.

The main objectives of DDC are:

- To provide a guaranteed market for milk to the rural farmers with fair price.
- To supply hygienic pasteurized milk and milk products to the urban consumers.
- To develop organized milk collection system to meet increasing demand of pasteurized milk and products.
- Develop an organized marketing system for milk products in urban area.

For fulfillment of these objectives, DDC has implemented various programs to develop numerous milk collection center, milk producer organization and Chilling Center in the various rural areas.

## **1.2 Statement of the Problem**

In Nepal, especially in the hills and the high hills where suitable climate, pastureland, fodder as well as unemployed wage labor force are available, dairy farming could be well developed as an industry. But farmers are not encouraged in this direction. In recent decades, with population explosion, we have been facing the problems of unemployment and insufficiency of land for agriculture. Farmers are generally engaged in crop farming beyond the carrying capacity of land. Marginal land has been occupied. Farmers are practicing traditional methods of agriculture, so the production and productivity has not been changed significantly.

In such situation, if we develop dairy farming, it will be an alternative to crop farming. It would be beneficial to both the individual



farmers and the nation as a whole. Dairy farming not only supplements the rural farmers' income but also help to increase agricultural productivity.

Demand of milk and milk products is increasing day by day due to rapid population growth and urbanization. But, because of inadequate milk supply and ill management of its marketing system, still dairy farmers are suffering from "Milk Holiday". Milk holiday become more sever, farmers of this study area are facing this problem due to various reasons: Banda, Strike and other technical problems of adequate alternative milk market. There is lack of reasonable prices of milk products in local market. So, the farmers increase their own consumption.

A large number of Nepalese farmers are below the line of poverty. They are engaged in subsistence farming. Nepalese agriculture is dependent on monsoon and it is wage labor intensive. Such poor agricultural condition has been one of the major factors, which has hindered the development of the country. Illiteracy, poverty, unemployment and malnutrition have been the basic characteristics of Nepalese farmers. In this situation, dairy farming being a home industry, can employ farmers and increase their income as well as develop countries, dairy farming plays a vital role in the life of human being as an extra income generating activities. DDC is supporting to the dairy farmers by various ways from last four decades.

In Dang district, there are two valleys: Dang and Deukhuri. The Lamahi Chilling Centre lies in Deukhuri Valley. It is the most biggest centre around the valley. Dairy farming was not the interested profession upto 2055 B.S. Due to the Gadhwa progression of co-operative organization, its area and scope extended. Gobardiha,

Gangaparaspur and Gadhwa are pocket areas for it. This chilling center has the great contribution in supplying milk-based products all over the valley. Though, milk farming is a rooted profession in my study area, there are some notable problems faced by the farmers. The long distance of the chilling center is the one burning problem for the concerned people. The farmers have to walk 2-3 hours to reach in the center. The unavailability of the proper counseling, medicine and other related services is the next problem. Similarly, still, farmers are depending on a traditional farming. They have not changed their traditional way. With other minor problems farmers are facing these problems permanently. Similarly, still, farmers are depending on a traditional farming. They have not changed their traditional way. With other minor problems farmers are facing these problems permanently.

### **1.3 Objectives of the Study**

The general objective of the study is to find out the socio economic condition of dairy farmers.

The specific objectives of the study are:

- To analyze the overall scenario of milk production and marketing system of the dairy products.
- To examine the role of DDC for institutional development of dairy farmers.
- To examine the role of dairy farming in rural poverty reduction.

### **1.4 Significance of the Study**

Dairy farming is developing as a second occupation of rural Nepalese people. It has been playing a vital role to uplift rural socio economic condition. Only few studies have been conducted in the field of dairy farming. Many studies have been made of biological aspects of livestock. But socio economic aspects have been overlooked. Thus the study aims to present information about the socio economic condition to

the dairy farmers and the contribution of DDC to develop dairy farming. The study tries to find out the impact of dairy farming of the general life of the farmers. Likewise, it will present the problems of dairy farming and recommends for its sound development. This study will provide guidelines to construct dairy development policies and plan for the policy makers.

### **1.5 Scope and Limitations of the Study**

Dairy farming has been developing as a major occupation in this area. No study has been done about the dairy farming activities and contribution of DDC to the dairy farmer for their socio economic enhancement of this study area. This study area was highly potential for dairy farming. So this study is supposed to be helpful for researcher, planner and development workers.

My study was based on those VDCs Gobardiha Gadhawa Gangaparaspur from where milk is supplied in Lamahi Chilling centre. There are the famous places for milk farming in Dang district. More specific limitations were as follows:

- A. Only those dairy farmers were selected for the study whose milk was receiving by Lamahi Chilling Center. Therefore, the findings of the study may or may not be generalized to other area of the country.
- B. This study is an academic study, so a large area cannot be incorporated in the study because of certain limitation viz. time, money, etc.

## **CHAPTER – TWO**

### **REVIEW OF LITERATURE**

Many researchers have done a number of studies in the field of dairy farming. Most of them are related to the existing situation of dairy farming, cost of production of milk, quality of milk, problems of dairy farming and so on. Among them some related literature are reviewed in this chapter.

Dairy Development Corporation(DDC), "Annual Report of Fiscal Year 2070/071 deals about the income and expenditure of DDC, its product, collection capacity, total milk collection, collection area etc. It has pointed out that DDC alone collected 57,129 metric tons of milk through the network of 1,014 dairy producer's associations (Dairy Cooperatives). DDC has provided income generating opportunity for more than 1, 50,000 family farmers.

#### **2.1 Literature on Role of Dairy Farming**

The study carried out by Department of Agriculture, HMG of Nepal (1991) shows that milk production is an important source of cash income for those households who can sell their milk. Sale of milk accounted for 20 percent to 40 percent of the total household income of the dairy surveyed farmers. Net cash returns were found to be the highest in households with both cattle and buffalo, with improved animals and with good market access. Net cash return per wage labor day is lower or comparable to the net cash returns obtained in production of various crops. However, milk production and sales is one of the few possibilities, which many farmers have to obtain the cash required to pay for certain necessities. Compared to crops, milk production provides more constant cash inflow, which is appreciated

because the family's expenditure is relatively constant, e.g. monthly school fees and so on.

Shrestha (1995) observes that farmers keep the dairy animal with the integration of vegetable and crop production for the agriculture in the country. Therefore, boosting of milk production helps to improve the rural economy. As the improved dairy farming provides more manure for the field, it will also help to improve the agriculture up to a certain extent. Therefore, dairying is a very effective medium to uplift the rural economy, a medium to increase the nutritional level of the urban population and ultimately to help the national economy.

Poudyal (1997) finds livestock contributed 27 percent and 21 percent to the total household income inside and outside DDC areas respectively and major share of the contribution was from milk. Farmers' reason for integration of dairy and high value crops show the supplementary relationship between them. He finds that the net return per cow per year is significantly higher in inside DDC area but return to wage labor from high value crops was found much higher compared to milk in both inside and outside DDC areas. He further finds that concentrates feed, fodder and wage labor contributed positively and significantly to the milk yield. Significantly, lower milk was found for the areas where farmers grew broom as cash than where used broom grass for fodder. Farmers inside DDC area got significantly higher milk yield from concentrate feeding.

Gautam (1999) describes that more than 9000 small dairy holder in Biratnagar milk region are directly benefited from dairy enterprise, through this sector they are earning more than 9 million Rupees in cash per month. Therefore, the economic status of the small dairy holder is good; their daily cash need is met through this sector. This sector is

found as one of the major source of backward linkage with rural area to urban area supplying money. This sector can be used as a good model for the Rural Urban Partnership in development and benefit sharing. He observes that among the small dairy farmers, the biogas had increased the importance of livestock at the farm level. The use of biogas is mainly for cooking food for the family and lighting the house. Use of biogas has saved about 20-25 percent of wage labor and time.

Pradhan (2000) has pointed out that DDC alone collected 54 million liters of milk from 40 districts through the network of 772 dairy producers associations. This has provided self-employment opportunity for more than 90,000 farmers and to enhance their capabilities.

Singh (2000) in his seminar states that among the livestock components, dairying contributes almost three-fourth of the total livestock contribution in the agricultural gross domestic product (AGDP). However, the importance of the dairy sector has always been undermined and thus no plan has yet given a serious thought in formulating strategies that will help sustain the growth of dairy sector in the country. He further says that it is interesting to note that the period 1991/1992 to 1995/1996, the annual import value of the dairy products is Rs. 214 million that is as high as 6 times the average annual export value of Rs. 37 Million. This clearly shows a net negative trade balance of Rs.177 million per year. It indicates that Nepalese dairy industries have ample room for production and marketing of products for import substitution that/ or export, the Nepalese dairy farmers will have to face more "Milk Holiday" which will drastically curb farm production and thereby limiting the access of the rural poor to family income.

## 2.2 Literature on Existing Situation of Dairy Farming

The study conducted by Department of Agriculture, HMG of Nepal (1991) revealed that Nepalese farmers typically keep 5 to 8 cattle/buffaloes. Bigger holding have more animals but not proportionately and thus, their livestock cropland ratio is lower. About 87 percent of the total milk production is used for home consumption. Average annual milk consumption is about 45 liters per capita, which by Asian Standard, is a high level. Farmers in remote rural areas mainly use informal marketing channels. They sell their raw milk to the local shops in the village or process it into various products such as ghee, *KHUWA* (a kind of sweets made from milk, by cooking and shaking) which can be preserved and later consumed by the household or sold to private vendors. Simple traditional technologies are used in the processing and fuel wood is the main source of energy. A considerable amount of ghee is produced in the informal sector and perhaps as much as 8500 tons of ghee is export to India.

Lindegaard (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. Thus, even though milk sales provide a reasonable possibility for cash income, the household requirement for milk products is given highest priority. He states that most of the weeds fed during the rainy season have a positive impact on milk quantity but none of a negative impact on milk quality (fat %). Livestock, throughout the year, are fed in such a way that they are just kept on maintenance level.

Dhakal (1997) has found the quality of raw milk collected from farmers is very poor in terms of bacterial quality, which has to be improved in a greater way. The direct field visit shows that the livestock

keeping system was very poor. Farmers did not wash the udder properly and again the milking pail was not sanitized properly. Another factor might be that, the farmers bring the milk far from the Chilling Centers a day before. The Chilling Center did not always test acidity; hence, there is always the possibility to come the poor milk to the processing plant.

Joshi and K.C. (2001) state that the problem of milk quality worsens when there are deliberate attempts in quality deterioration made with the intention of monetary gains. At different units, the raw milk is exposed to adulterations of various kinds added to change the chemical composition of the milk for getting higher payments. At each point in the chain, quality control and monitoring activities are not performed effectively. The problem of quality in milk collection will be solved largely if chilling of milk can be performed as close to the milk production point as possible. They further state that cost of producing 1 kg of milk in Nepal is 13.5 to 15.5 depending on type of farm and location. In an international prospect, the cost of milk production in Nepal is considerably higher (50% or more) compared to countries like New Zealand and Australia. The relatively high cost of producing milk of a general low quality is a major constrain in achieving the goals of the Nepalese dairy industry.

Stem and other (2001) describe that dairy production in Nepal can be characterized as almost exclusively small scale, pre-industries and low input. Such subsistence-level production is the result of poor nutrition, management and health care. However, this kind of minimal production serves the farm family well; low inputs - low cost - low production - low risk. There is very large milk deficit in Nepal. Milk marketing prices and infrastructure are discouraging production.



### **2.3 Literature on Problem and Prospect of Dairy Farming**

Agriculture Development Bank carried out a research study in 1973. The basic objectives of this study were to find out the nature of dairy enterprise, to study the economics of dairy farming, to study the marketing outlets and to suggest appropriate measures for an effective operation of credit for dairy farming. The study found that buffaloes are better dairy animals than cows. The borrowers can repay the loans obtained for dairy farming from the bank within two-lactation period without any inconvenience. The bank loan has, therefore, generated good impact on the income and repayment capacity of the dairy farmers. But the repayment of loan is not very effective and generally the borrowers become delinquent by one reason or the other. Therefore, the study suggests concentrating dairy loan only in the areas where effective veterinary services and milk collection centers existed. Similarly, scientific dairy program, breeding, feeding, timely replacement and cutting of herds have been suggested.

A study conducted by Dairy Association of Nepal (DAN, 1994) reveals that the relatively high price of concentrate, its uncertain quality and lack of awareness together with untimely supplies of seeds and plantation materials have restricted improvement for the provision of low cost nutritious feed and fodders for the high milking animals. The study further shows that milk handling, storage and hygienic aspects of milk are in the domain of female member of the household. Hence, gender consideration in the empowerment process will require specific and sustained attention. The study concludes that shortage of feed and fodder, unavailability and insufficient veterinary services, unavailability of credit facility, higher interest rate in livestock credit, and lack of milk marketing facility are the major problems of dairying.

The study carried out by Department of Agriculture and National Dairy Development Board (2001) shows that almost all the milk product in Nepal comes from large number of small farmers raising one to few milking cows or buffaloes. But still, cost of production of milk in major milk - shed areas are high. This is one of the reasons that the farmers are always complaining about the price that the DDC is providing to them. Main reason of high cost of production of milk at the movement is mainly due to excess dependency of farmers on the grain based expensive concentrate feed for maintaining dairy animals. Animal health services are also becoming more expensive as almost all the veterinary drugs and vaccines are to be imported.

Shrestha (1995) writes that government does not seem to have encouraged the private sector to come into dairy industry. It has been very urgent to bring more milk processing plants and other dairy factories to match up with the ever-increasing milk production in the country. It is recommended that both the private and co-operative sectors should be encouraged to participate for the development of dairy industry. The dairy industry is to be diverted for the production of other dairy products too. It is high time that private investors are to be attracted for the establishments of new dairy plants in the country. As the markets for the dairy products are local and national; import substitution and exportable to the neighboring countries. Foreign collaboration in this field would be much helpful for the accelerated growth of the dairy industry in the country.

Dhakal (1999) draws his conclusion that the general economic condition of the people can be raised by making them engaged in dairy farming in modern line. Farmers give equal importance to crops production and dairy farming but the study shows that dairy farming is

more attractive to bring positive changes in their general economy. Although commercialization of dairy farming doesn't go back more than two decades, but the study shows that dairy farming is more profitable than the agricultural activities.

Kshetri (2000) says that cattle play a vital role in poverty reduction. However, they are severely malnourished due to acute shortage of food and fodder. Literature available shows that 50 percent to 67 percent ruminants are acting as sole extra burden to the available feed resources. He also mentions that livestock are backbone of Nepalese agricultural economy. At present, there is no way for average farmers to raise household food production without keeping livestock.

These studies reviewed provide information on various topic i.e. milk production and its quality, feeding materials, relationship of dairy farming with agriculture, role of dairy farming, and problem and future prospects of dairy farming. No specific study been done on contribution of DDC in enhancing the socio economic condition of dairy farmers. Nobody has studied the impact of dairy farming to rural farmers in comparison to their previous (before dairy farming/ income) and present condition. Similarly, any study on dairy farming in the surrounding areas of lamahi Chilling Center has not been done yet. Thus, this study is carried out to find out the realities of above unstudied topics of the study areas.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Research Design**

A descriptive as well as analytical research design was adopted in order to analyze and interpret the quantitative and qualitative data collected from the concerned field. Such research designs help to fulfill the above mentioned target.

#### **3.2 Selection of Study Area**

Dang district is one of the inner terai districts lies Mid Western part of Nepal. There are 5 Chilling centres of DDC in the district. Dang Milk Supply Scheme, which was established in 2032 BS, regulates all these Chilling Centers. These Chilling Centers dispatch the collected milk from local dairy cooperative to the dang Milk Supply Scheme.

**Table No. 3.1**  
**Chilling Centers of Dang District**

<b>Name of Chilling Center</b>	<b>No. of Dairy Cooperatives</b>	<b>Average milk Collection Per Day (in liter)</b>
Ghorahi Chilling Center	16	3000
Lamhai Chilling Center	17	5000
Narayanpur Chiling Center	15	3000
Bhalubang Chiling Center	10	2000
Tulsipur Chiling Center	10	3000

**Source: DDC Report 2070/071**

### 3.3 Sampling Procedure and Sample Size

It was not possible to interview all the dairy farmers in the study area. Therefore, sampling method has been adopted for the study. The total number of milk seller households in the study area was about 1050 out of which only 120 households was selected for the detailed study. Sample size was taken from every dairy cooperative on the basis of equity by using the method of Simple Random Sampling.

#### Average Milk Collection and Total Sampled Milk Seller

S.N.	Name of milk Cooperative	Staff.	Average Milk Collection/ Daily	Milk Sellers	Sampled	Percent
1	Suravi Dairy Maurighat Sahakari Sanstha Ltd.	3	240	93	10	10.75
2	Shrijanshil Dairy Bijauri D. U. S. S. Ltd.	4	332	123	13	10.56
3	Kalika Dairy Gadhawa D. U. S. S. Ltd.	3	194	60	7	11.66
4	Pragatishil Dairy Gangaparaspur D. U. S. S. Ltd.	1	111	37	4	10.81
5	Nandini Unnat Pashu Palan Form D. U. S. S. Ltd.	2	261	87	9	10.37
6	Asarfi Bachat Samuha, Satbariya D. U. S. S. Ltd.	1	63	25	3	12.00
7	Krishak	2	299	115	13	11.30

	Dugdha Utpadak Samuha D. U. S. S. Ltd.					
8	Purnima Pashu Palan D. U. S. S. Ltd.	1	124	40	5	12.5
9	Kantipur Krishak D. U. S. S. Ltd.	1	126	35	4	11.42
10	Jaya Gurudev Narayan, Bela D. U. S. S. Ltd.	3	204	106	12	11.32
11	Raj Bahadur Yadav D. U. S. S. Ltd.	2	127	40	5	12.5
12	Lamahi D. U. S. S. Ltd.	2	950	60	7	11.66
13	Om Agriculture D. U. S. S. Ltd.	3	196	49	6	12.24
14	Ghanshyam Subedi Banghushree D. U. S. S. Ltd.	3	144	55	7	12.72
15	Tikaram Chaudhari Arnuwa D. U. S. S. Ltd.	7	121	41	5	12.19
16	Birbal Chaudhari D. U. S. S. Ltd.	4	124	48	6	12.5
17	Shree Krishna D. U. S. S. Ltd.	2	97	36	4	11.11
	Total	44	3713	1050	120	11.42

**Source: Field Survey, 2014**

### **3.4 Nature and Source of Data**

The present study was mainly depended upon the primary data. Different types of quantitative and qualitative data and information was collected in the study. Primary data were collected by interviewing dairy farmers. However, secondary data was obtained from Lamahi chilling center, Dairy Cooperatives, different journals, books, reports, newspapers and Dang Milk Supply Scheme.

### **3.5 Method of Data Collection**

The following three methods were used to collect primary data.

#### **A. Questionnaire Survey**

Questionnaire survey was conducted to milk seller household members of the study area. Structure questionnaire was used to get detail information about the socio economic condition of the dairy farmers and contribution of DDC to them. It was used to collect data on population, institutional development, education, number of dairy animals, milk production, income of dairy farmers, utilization of the income, consumption pattern, role of DDC and cooperatives and expected role of DDC.

#### **B. Informal Interviews.**

Information was collected from informal interviews with the number of dairy cooperatives, staff of Chilling Center and local leaders. Information related to sustainable development of dairy farming and market centers in the study area was collected by this method.

## **C. Observation**

Observation approach was used to observe the housing and cowshed types, care of livestock and collection of milk. This approach helped to understand the real socio economic condition of dairy farmers.

### **3.6 Time Frame**

The proposed study was taken around 90 days to be finally accomplished. Every minute was taken carefully.

### **3.7 Data Analysis and Presentation.**

The systematic analyses have been done by using qualitative as well as quantitative tools and techniques. The quantitative data obtained from structured questionnaire are first processed through validation, editing and coding. Second, this processed data have been presented in tabular form. Finally, the data are interpreted with additional information. Simple statistical tools such as percentage and ratios have been used to present the findings. Besides this, cartographic techniques such as graphs, diagrams and maps are used to supplement the presentation of the findings of the study.

The fieldwork provides an effective interaction between the respondents and the researchers in their various nature and activities. The problems and experience depend upon the attitude, habit and politeness of the researchers. It is impossible to obtain detail information unless the researcher established good relationship with respondents.



## CHAPTER FOUR

### ANALYSIS AND INTERPRETATION OF DATA

#### 4.1 Milk Sellers

The number of professional milk producers is different in different cooperatives. It is because of the problem of transportation, cattle feed, loan, pastureland, grains, veterinary facilities, etc. Following table shows cooperatives-wise figures of sampled milk sellers:

**Table No. 4.1**  
**Average Milk Collection and**  
**Total Sampled Milk Seller**

S. N.	Name of milk cooperative	Staff.	Average Milk Collection/Daily	Milk Sellers	Sampled	Percent
1	Suravi Dairy Maurighat Sahakari Sanstha Ltd.	3	240	93	10	10.75
2	Shrijanshil Dairy Bijauri D. U. S. S. Ltd.	4	332	123	13	10.56
3	Kalika Dairy Gadhawa D. U. S. S. Ltd.	3	194	60	7	11.66
4	Pragatishil Dairy Gangaparaspur D. U. S. S. Ltd.	1	111	37	4	10.81
5	Nandini Unnat Pashu Palan Form D. U. S. S. Ltd.	2	261	87	9	10.37
6	Asarfi Bachat Samuha, Satbariya D. U. S. S. Ltd.	1	63	25	3	12.00

7	Krishak Dugdha Utpadak Samuha D. U. S. S. Ltd.	2	299	115	13	11.30
8	Purnima Pashu Palan D. U. S. S. Ltd.	1	124	40	5	12.5
9	Kantipur Krishak D. U. S. S. Ltd.	1	126	35	4	11.42
10	Jaya Gurudev Narayan, Bela D. U. S. S. Ltd.	3	204	106	12	11.32
11	Raj Bahadur Yadav D. U. S. S. Ltd.	2	127	40	5	12.5
12	Lamahi D. U. S. S. Ltd.	2	950	60	7	11.66
13	Om Agriculture D. U. S. S. Ltd.	3	196	49	6	12.24
14	Ghanshyam Subedi Banghushree D. U. S. S. Ltd.	3	144	55	7	12.72
15	Tikaram Chaudhari Arnuwa D. U. S. S. Ltd.	7	121	41	5	12.19
16	Birbal Chaudhari D. U. S. S. Ltd.	4	124	48	6	12.5
17	Shree Krishna D. U. S. S. Ltd.	2	97	36	4	11.11
	Total	44	3713	1050	120	11.42

**Source: Field Survey, 2014**

Table 4:1 shows the cooperative-wise No. of sampled milk sellers. There are 1050 dairy farmers who sale milk to the different cooperatives. The total sampled dairy farmers were 120(11.42%). The

average milk collection at the chilling center was 3713 liters. The distance of these cooperatives from the chilling center was so long. Therefore, the professional milk producers of these cooperatives were not found. On the other hand, the number of Brahmin and kshetri were high in these cooperatives. Besides this Kami, Damai and Sarki lived in these area and they were not the professional milk producers. Among the total sampled (120) milk producers, 41% milk producers are the Brahmin and Kshetri. Tharu were generally looked for high income yielding jobs other than the milk production which they did not find high income generating activity.

#### **4.2 Family Structure by Age and Sex**

Family, structure, its composition and member participating in the various occupations can highly influence the socio-economic status of any family. Similarly, where there is higher economically active population, the pace of development ratio of that place will also be higher. Family structure by age, sex and also the economically active population of the sampled households are shown in the table.

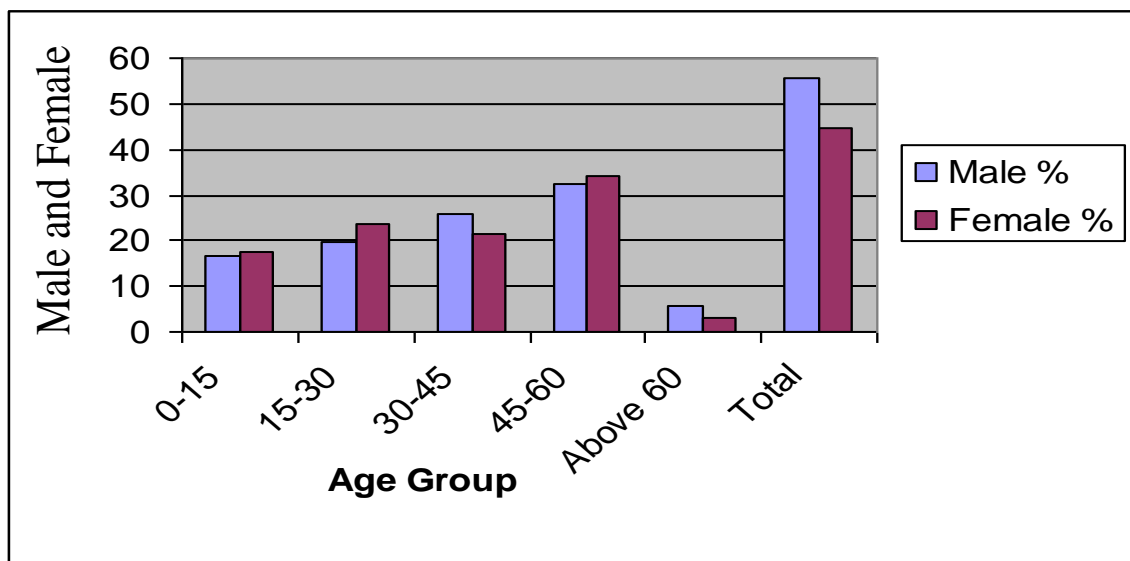
**Table No. 4.2**  
**Family Structure by Age and Sex**

<b>Age Group</b>	<b>Male %</b>	<b>Female %</b>	<b>Total %</b>
0-15	16.54	17.65	17.03
15-30	19.69	23.53	21.39
30-45	25.98	21.57	24.02
45-60	32.28	34.31	33.19
Above 60	5.51	2.94	4.37
<b>Total</b>	<b>55.46</b>	<b>44.54</b>	<b>100.00</b>

**Source: Field Survey, 2014**

Above table clearly states that the total male populations in milk production activities are 55.46 percent and female 44.54 percent which indicates that male population involving in these activities is greater by 10.92 percent than female population. Similarly, economically active population (15-60 years) is 78.60 percent and dependent population is 21.40 percent among the respondents. Thus, the highest percentage of economically active population is found in the study area which is shown in bar-diagram.

**Figure: 1**  
**Family Structure by Age and Sex**



### 4.3 Population Distribution by Ethnicity

Caste and ethnicity plays an important role in peoples' occupation in our traditional society. We can find peoples' occupation in highly influenced by castes and ethnic groups which they belongs. Population distribution by ethnicity is given in the following table.

**Table No. 4.3**  
**Population Distribution by Ethnicity**

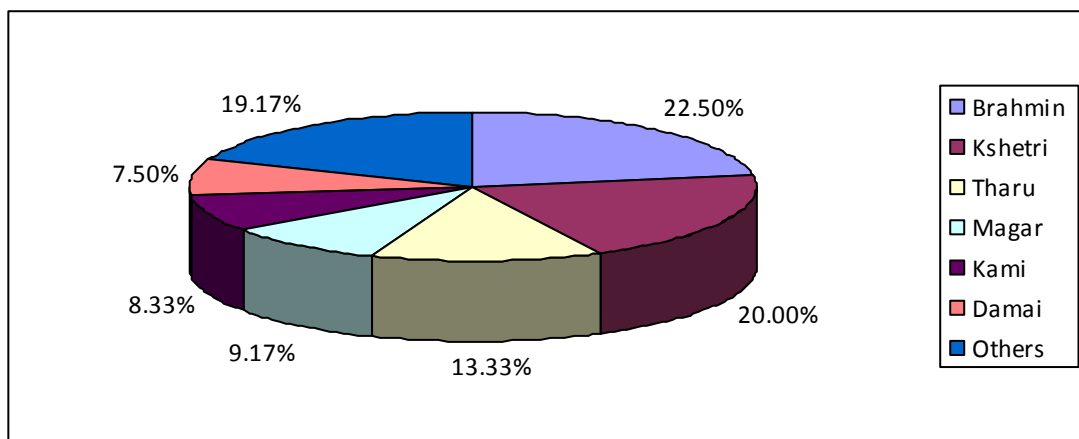
<b>Caste/Ethnicity</b>	<b>No. of Households</b>	<b>Percent</b>
Brahmin	27	22.5
Kshetri	24	20
Tharu	16	13.33
Magar	11	9.17
Kami	10	8.33
Damai	9	7.5
Others	23	19.17
<b>Total</b>	<b>120</b>	<b>100</b>

**Source: Field Survey, 2014**

As our country comprises various caste and ethnic groups, the study area also comprises different caste and ethnic group.

The above table shows that in the study area Brahmins population seems to be higher than other caste and ethnic groups. Most of the populations involved in milk production activities are Brahmins and Kshetri, which shows that generally so called higher caste or ethnic groups of society are involving in this profession. This can be shown in pie-chart as shown below.

**Figure: 2**  
**Population Distribution by Ethnicity**



#### **4.4 Educational Status of Sample Population**

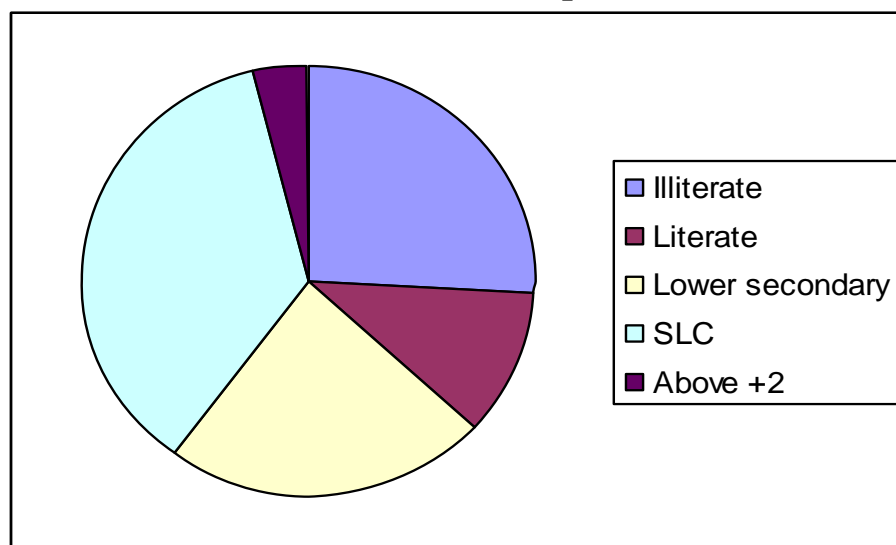
Educational status of parents plays a vital role in the occupation that s/he follows. Generally, higher educated persons are found holding their occupation more efficiently and conveniently than uneducated. Below table shows the educational status of the sample household.

**Table No. 4.4**  
**Educational Status of Sample Households**

<b>Educational level</b>	<b>Percent</b>
Illiterate	26
Literate	11
Lower secondary	23
SLC	36
Above +2	4
<b>Total</b>	<b>100</b>

Source: Field Survey, 2014

**Figure: 3**  
**Educational Status of Sample HHs**



#### **4.5 Occupational Status of the Sample Population**

Sometime our social hierarchy and deep-rooted social value set the occupation of people living in society. Similarly, in Nepalese society's practice, particular job are set for women and men.

Occupation of the respondents denotes the employment in various sectors for earning purpose. Different respondents are involved in different sector for earning purpose like agriculture, services (government, non-government), business and others.

**Table No. 4.5**  
**Occupational Status of the Sample Population**

<b>Occupation</b>	<b>Percentage</b>
Agriculture	54.54
Services	12.12
Business	6.67
Others	4.45

Economically inactive	22.22
-----------------------	-------

**Source: Field Survey, 2014**

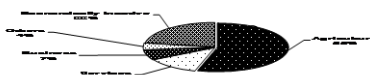
Above table shows that 54.54 percent of the respondents are engaged in agriculture sector which is the main source of the income. Similarly, 12.12 percent are involving in services, 6.67 percent are in business and only 4.45 percent are in other activities like wage earner and the remaining 22.22 percent are found to be economically inactive.

This shows fairly the higher number of people is involved in agriculture in comparison to other job.

**Figure: 4**  
**Occupational status of the Sample Population**

#### **4.6 Landholding Size of the Sample Households**

Majority of people living the study area depend highly upon agriculture and it is the main source of their income. Land possession hence, is an important factor of economic status. The overall landholding of respondents is low. The distribution of landholding among the respondents is not even. The landholding situation of the sample households is presented below in table:-





**Table No. 4.6**  
**Landholding pattern of the Households**

**Table No. 4.6**

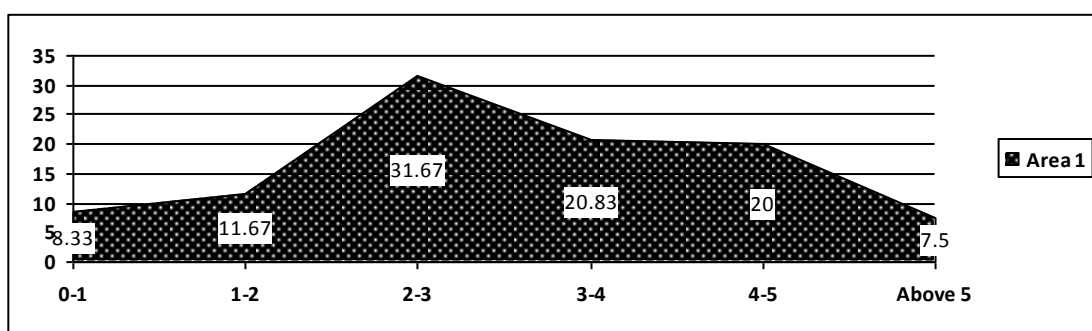
**Landholding Pattern of the Households**

<b>Land size (In Biga)</b>	<b>No of households</b>	<b>Percent</b>
0-1	10	8.33
1-2	14	11.67
2-3	38	31.67
3-4	25	20.83
4-5	24	20.00
Above 5	9	7.5.93
<b>Total</b>	<b>120</b>	<b>100.00</b>

**Source: Field Survey, 2014**

**Figure: 5**

**Landholding size of households**



#### **4.7 Type of Buffalo and Cow Kept by Sample HHs**

In the study area, there are both types of animal local and improved. Improved are better than local which gives more milk. Different types of cattle are domesticated by the respondents in the course of milk production.

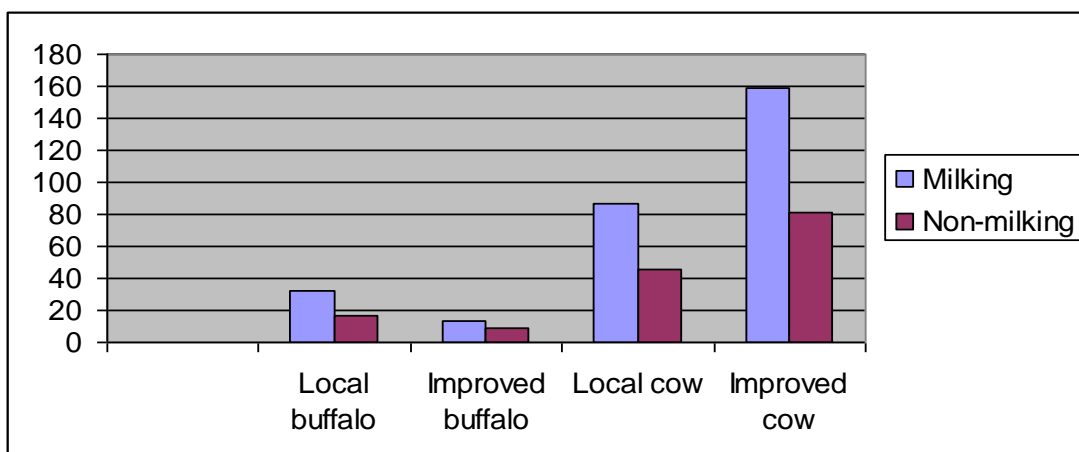
**Table No. 4.7**  
**Type of Buffalo and Cow Kept by Sample HHs**

S.N.	Type of animals	Milking	Non-milking	Total	
				No.	Percent
1	Local buffalo	32	17	49	11.04
2	Improved buffalo	13	09	22	4.95
3	Local cow	87	46	133	29.96
4	Improved cow	159	81	240	54.05
<b>Total</b>		<b>291</b>	<b>153</b>	<b>444</b>	<b>100.00</b>

**Source: Field Survey, 2014**

The table shows that the number of milking animals are larger than of non-milking. And the number of improved buffaloes and improved cows are larger than the number of local ones. It also indicates that the respondents have been attracted by improved cows because they are higher milk yielding animals than that of locals. This is the better sign in milk production in near future.

**Figure: 6**  
**Type of Buffalo and Cow Kept by Sample HHs**



#### 4.8 Total Milk Production

Milk production activity is one of the major economic activities of the farmer in the study area. Generally, farmer keeps cows and buffaloes for milk production. Comparatively the amount of milk production of improved cows is more than that of others. The following table shows the total milk production of the sample households.

**Table No. 4.8**  
**Total Milk Production**

Amount (in liter)	No. of HHs	Percent	Total production (in liter)	Percent
0-5	14	11.67	45	4.28
5-10	61	50.83	91	37.09
10-15	29	24.17	326	31.05
15-20	11	9.17	178	16.95
Above 20	5	4.16	110	10.48
<b>Total</b>	<b>120</b>	<b>100.00</b>	<b>1050</b>	<b>100.00</b>

**Source: Field Survey, 2014**

The table shows that there are 50.83 percent households who produce 5-10 liter milk per day and their total milk production is 391 liter which is 37.24 percent of the total production. Similarly in the production category of above 20 liter there are only 4.16 percent households, whose total production is 110 liter per day which is 10.48 percent of the total production. According to the above table it is clearly seems that highest number of households are producing 5-15 liter of milk. On the other hand, it should be noted that there are some farmer having higher number of cattle but with less milk production and this is due to milking status of the cattle they own.

#### **4.9 Milk Utilization**

Economic earning from the milk depends on the milk sold by farmers. However, some portion of the total milk production is consumed by the farmers. It is noted during the field visit that some families own milking animals only for domestic (consumption) purpose and not the commercial purpose. The average trend of milk sold and consumption is shown in table below:-

**Table No. 4.9**  
**The Average Trend of Milk Utilization**  
**And Total Milk Production**

Amount (In liter)	No. of HHs	Total production (In liter)	Utilization			
			Consumed (in liter)	%	Sold (In liter)	%
0-5	14	45	14	6.14	31	3.77
5-10	61	391	97	42.54	294	35.77
10-15	29	326	72	31.58	254	30.90

15-20	11	178	29	12.72	149	18.13
Above 20	5	110	16	7.02	94	11.43
<b>Total</b>	<b>120</b>	<b>1050</b>	<b>228</b>	<b>21.71</b>	<b>822</b>	<b>78.29</b>

**Source: Field Survey, 2014**

The above table shows that 21.71 percent milk was used for domestic consumption and 78.29 percent milk was sold in milk collection centers through their milk cooperative. Most of the farmers (61HHs) are producing 5 to 10 liter milk per day. In the production category of 15-20 liter/day there are 11 families whose total production is 178 liter/day out of which 29 liter is consumed and 149 liter is sold. It seems the milk consumption per households is 2.66 liter, but the overall average milk consumption of the households is 1.79 liter. It was observed that sometime when DDC can not buy the milk due to closed and technical problem, farmer have to consume all the milk they produced, which also affects their income on that "milk holiday".

#### **4.10 Milk Marketing**

For any products, there must be very attractive markets prospects. Production cost and process may impose severely if the producer does not see any profitable market opportunity.

**Table No. 4.10  
Milk Marketing**

<b>Milk sold to</b>	<b>No of HHs</b>	<b>Percent</b>
DDC	120	100.00
Private market	-	0.00

Local market	-	0.00
Others	-	0.00

**Source: Field Survey, 2014**

The table shows the target market of the farmers for milk production. Sample study of 120 household shows that all of the farmers (100%) sell the milk to DDC. During the field study, it was found that farmers are selling milk only to the milk co-operative with low price and lack of desirable facilities.

#### **4.11 Milk Collection System**

The milk collection system plays a vital role in the development of milk production activities. If the milk collection center is not far and price of milk is good enough, farmers will be inspired to sell milk. Milk is collected and marketed by milk cooperatives. There are seventeen milk collection cooperatives in the study area. These collection centers collect milk and send it to the chilling center. Many of these collection centers are far from the chilling center. They are using various kinds of transportation (i.e. horses, van and man themselves) to carry the collected milk to the chilling center.

#### **4.12 Income from Milk Selling**

In the sample study, it shows that significance portion of the income is covered by milk sales. Table (below) shows the average income of different households.

**Table No. 4.11**  
**Income from milk selling**

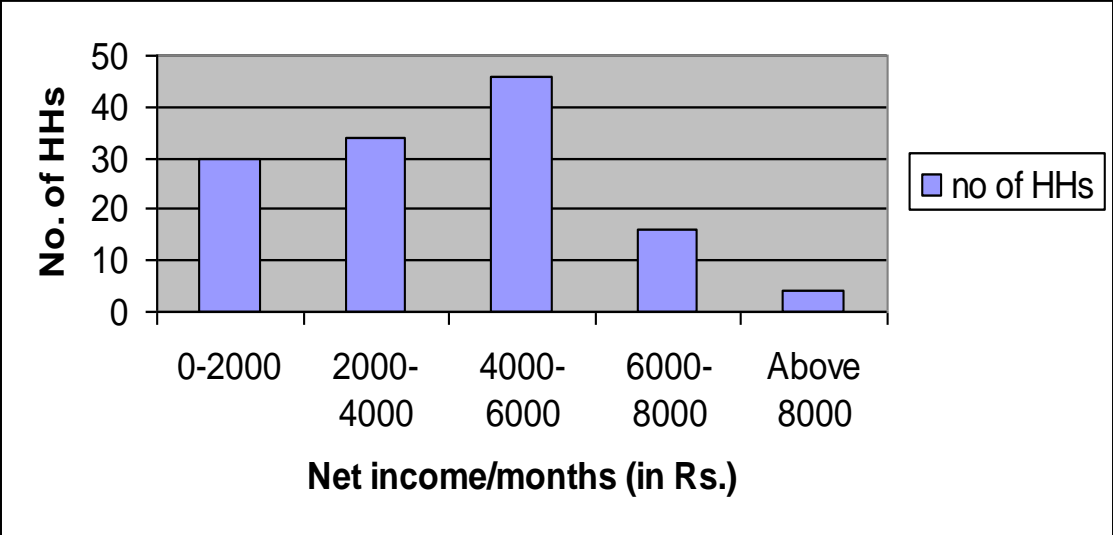
<b>Net income/month (in Rs.)</b>	<b>No. of HHs</b>	<b>Percent</b>
0-2000	25	20.83
2000-4000	32	26.67
4000-6000	44	36.67
6000-8000	15	12.5
Above 8000	4	3.33
<b>Total</b>	<b>120</b>	<b>100.00</b>

**Source: Field Survey, 2014.**

The table states that 36.37 percent earn Rs.4000 to 6000 individually. It is clearly seems that the number of household is decreasing in the income level of more than Rs. 6000 per month.

Although this income shows a satisfactory level, not a single farmer is satisfied with his/her current income status. They often complain that the price the price of fodder is relatively higher than milk price. The little margin on the milk is almost utilized on the household expenses and there remains no chance of further enhancing the economic status of the people, as it seems. Most of them repeated that they need to keep larger number of animals to earn significantly higher although; nobody fixed that 'large number' in a clear explicit term. Moreover price set by DDC vary with the quantity of lacto and fat contained by milk. Buffalo milk contains more lacto and fat and has high price in comparison to the price of cow milk which contains less fat and lacto.

**Figure: 7**  
**Income from Milk Selling**





### 4.13 Utilization of Dairy Income

Dairy income is spent in various items. Many farmers spend dairy income for their basic needs. Some people have pre-plans to use dairy income. Following table shows the utilization of dairy income by farmers.

**Table No. 4.12**  
**Utilization of Dairy Income**

<b>S. N.</b>	<b>Items</b>	<b>No of HHs</b>	<b>Percent</b>
1	Cattle feeding	45	37.5
2	Home expenses	31	25.83
3	Education	16	13.34
4	Health	7	5.83
5	Fixed assets	6	5.00
6	Above all	15	12.05
	<b>Total</b>	<b>120</b>	<b>100.00</b>

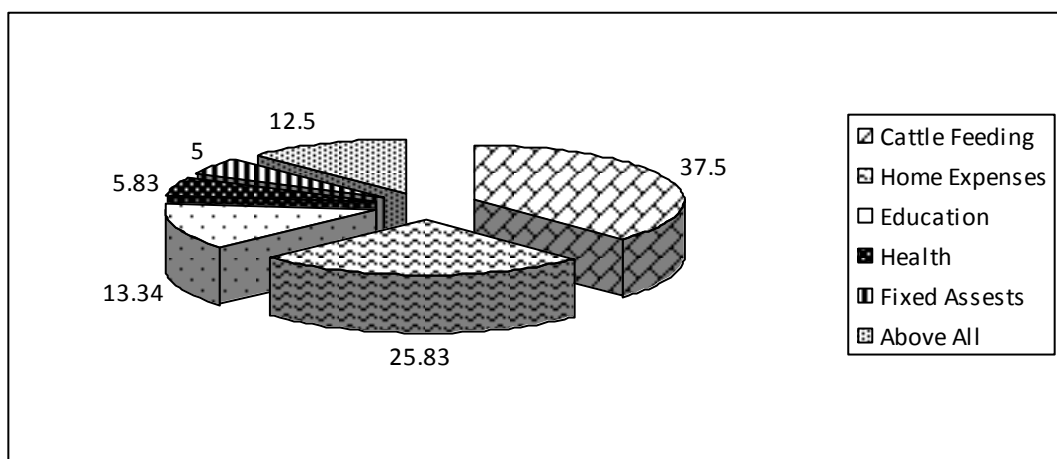
**Source: Field Study, 2014.**

The above table shows those 37.5 percent households spend dairy income in fodder for cattle feeding. Similarly, 25.83 percent household use dairy income in home expenses such as food, clothes and fuel, 13.34 percent households spend their income in education. Farmers receive regular cash income on half-monthly (15 days) basis. So, it is convenient to pay school fees for the lower income group farmers. About 5 percent households use their income in health. It is important that about 5 percent households spend in fixed assets such as land and house. It is clearly seems that milk production activities is helping the

farmers to enhancing their socio-economic status. Rest of the households (12.5%) said that, they do not spend dairy income separately. They spend their income in above all items.

It shows that dairy income has helped the farmers to fulfill their basic social and economic needs. The lower income group farmers spend their dairy income in basic goods because it is their only one source of income. Many middle-income group farmers spend their income in education, health, fixed assts and durable things. But, about 38 percent of households spend the income of dairy product on cattle feeding. So, the income is not very satisfactory for the dairy farmers.

**Figure: 8**  
**Utilization of Dairy income**



#### **4.14 Problem and Constraints of Milk Marketing**

Dairy farmers are facing many milk marketing problems and constraints in the study area. The collection center buys the milk in the morning only. There is no market to sell the milk in the evening. The price of milk is determined by the DDC and it is very low. There is vast different between the buying price and selling price of milk by DDC. So

that the low price of milk is another problem. To some places, collection centers are far from their houses. It takes long time to take the milk to the collection center. And acidity of milk is also a problem of dairy farmers. If milk acidifies in the collection centers, farmers should bear its loss.

There are other problems such as lack of artificial insemination, lack of scientific testing equipments in the collection center and lack of vehicles and comfortable road to transport milk. The technical knowledge of the staff of collection center is very low.

In the study area, there is no alternative market to sell the milk. If farmer want to sell the milk in market center, they would reach *Ghorahi* Bazaar. It is far from the study area. Another severe milk marketing problem is 'milk holiday'. Banda, Strike and technical problem create such situation. In this situation, farmers get heavy lose as there is not any alternative milk market. Farmers are obligate to consume their surplus milk production undesirable, though they want to sell it. The following table shows the problem and constraints of milk marketing of the sample households.

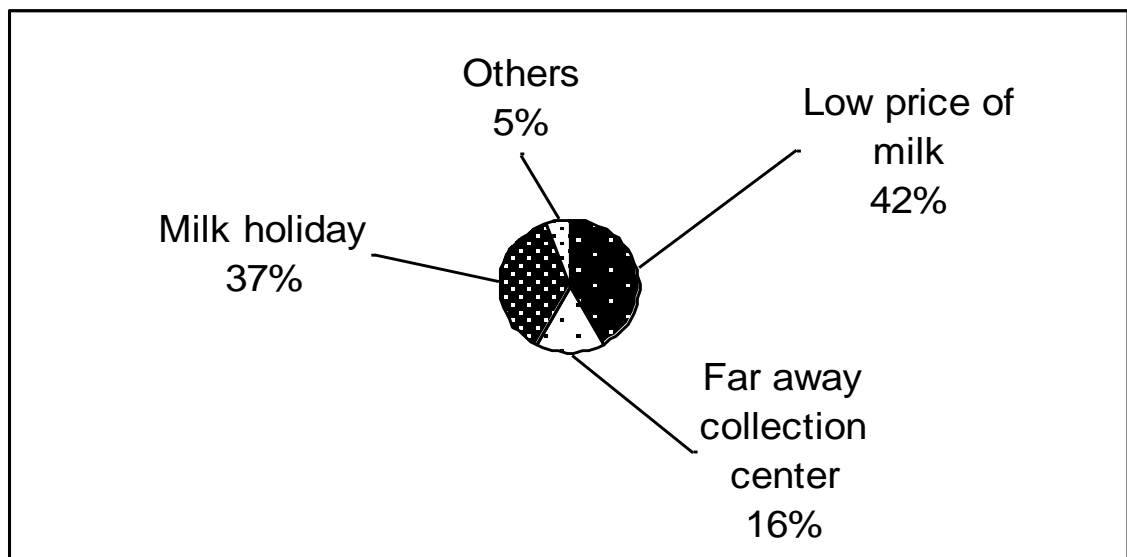
**Table No. 4.13**  
**Problem and constraints of Milk Marketing**

<b>S.N.</b>	<b>Problem and constraints of Milk Marketing</b>	<b>No.of HHs</b>	<b>Percent</b>
1	Low price of milk	51	42.5
2	Far away collection center	18	15
3	Milk holiday	45	37.5
4	Others	6	5
	<b>Total</b>	<b>120</b>	<b>100.00</b>

**Source: Field Survey, 2014**

The above table shows that more than 42 percent household said that low price of milk is the first problem of the milk marketing. On the other hand, 15 percent household opined that far away a collection center from the houses is the main problem for them. Likewise, about 37.5 percent households said that milk holiday is the main problem of milk marketing. And more than 5% households said other problems of milk marketing such as lack of market to sell the milk in the evening, lack of milk product industry, lack of better management, lack of good transportation, lack of technical knowledge, acidification of milk etc.

**Figure: 9**  
**Problem and Constraints of Milk Marketing**



In general, it is found that low price of milk is the first problem, milk holiday is second one and distance to milk collection center is the third problem of milk marketing that the dairy farmers are facing..

#### **4.15 Support of Institutional Facilities**

Different organizations provide different form of institutional facilities to the milk producers of this study area. These facilities are

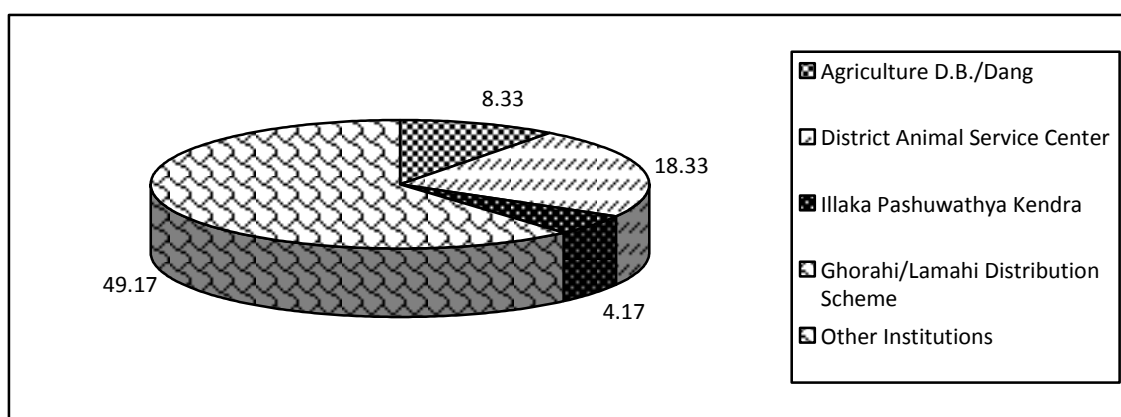
encouraged to the rural farmers. The table below shows the institutional support of different institutions.

**Table No. 4.14**  
**Support of Institutional Facilities**

S.N.	Name of Institutions	Mode of Facilities Received	No. of HHs	Percent
1	Agriculture Development Bank Dang	Easy loan facility	10	8.33
2	District Animal Service Center	Improved breed	22	18.33
3	Illaka Pashuswathya Kendra	Veterinary service	5	4.17
4	Ghorahi/Lamahi Milk Distribution Scheme	Technical knowledge about milking cattle	59	49.17
5	Other institutions	Others	24	20.00
	<b>Total</b>		<b>120</b>	<b>100.00</b>

**Source: Field Survey, 2014.**

**Figure: 10**  
**Support of Institutional Facilities**



However, the above mentioned facilities are provided by different institutions to some extent, these facilities are not sufficient and easily accessible to the entire milk producer. They are frustrated from the plans and policies of these institutions.

#### **4.16 Role of Milk Cooperative**

A cooperative is generally viewed as socio-economic organization that can fulfill both social and economic objectives of its members, and that has its members' interests truly at heart (Sing, 1986).

Similarly, milk production cooperatives in the study area are running by its farmer members. These cooperatives are providing various services to its members. The main role of these organization found in the study area are collection of milk, providing loan, providing facilities to its member.

**Table No. 4.15**  
**Expected Role of Milk Cooperative**

<b>S. N.</b>	<b>Expected Role</b>	<b>No. of HHs</b>	<b>Percent</b>
1	Easy loan facilities	19	15.83
2	Technical knowledge about milking cattle	30	25.00
3	Payment in time	44	36.67
4	Improved fodders seed	17	14.17
5	Others	10	8.33
	<b>Total</b>	<b>120</b>	<b>100.00</b>

**Source: Field Survey, 2014.**

Above table shows that about 16 percent of the total sample households are expecting easy loan facilities. Likewise nearly 25 percent expect their cooperative as technical knowledge provider. So that they can improve their cattle's milking status. Similarly, almost 37 percent household replied that the milk cooperative should payment them in time. Among the sample households about 15 percent want improved foddors seeds; feed for cattle through their milk cooperatives and another 8.33 percent household replied the cooperative should help them in various methods like inspection of their cattle on time vaccination in the time of fatal diseases.

#### **4.17 Veterinary Services**

There is a veterinary clinic in the study area. To take veterinary facility, they should go Lamahi VDC. The clinic is closed from the chilling centre but far from some milk co-operatives that means maximum number of farmers could not facilitate by the clinic. So it is necessary to establish some veterinary clinic in the study area.

#### **4.18 Annual Medical Expenses**

Medical expenses for the animals is also an important factor which determines the annual saving of the farmers and sometimes farmers have to bear high cost to treat their animals due to intensity and case of the disease. Table below shows the average annual expenses of the sample households.

**Table No. 4.16**  
**Annual Medical Expenses**

<b>No. of Animals</b>	<b>No. of HHs</b>	<b>Total No. of Animal</b>	<b>Percent</b>	<b>Total Medical Expenditure (in Rs.)</b>
1-2	51	62	14.97	11500
2-4	34	115	27.78	9300
4-6	19	97	23.43	10000
6 and above	16	140	33.82	13100
<b>Total</b>	<b>120</b>	<b>414</b>	<b>100</b>	<b>43900</b>

**Source: Field Study, 2014**

The above table shows that for total animal of 62 (14.97 percent of the total number of animals), generally, it takes Rs 11800 as medical expense which decreases to Rs. 9300 for 120 (27.78%) animals. This decrease is due to the severity, intensity and the type of the disease they suffered. Likewise, for 97 (23.43%) animals of the next group in sample, medical cost is Rs.10000 and still another sample of 140 (33.82%) animals take medical expense of Rs. 13100. According to the respondent the inconsistency in the number of animals and respective medical cost is due to the variety of diseases.



## **CHAPTER - FIVE**

### **SUMMARY, CONCLUSION AND RECOMMENDATIONS**

#### **5.1 Summary of the Study.**

The present study attempts to explain the study of socio-economic condition of dairy farmers in some VDC of Dang district. The surrounding area of 17 milk cooperatives which are collected milk from the dairy farmers and bring to the Lamahi Chilling Center is chosen for the study purpose. In the study, 120 sample households are taken from 17 different cooperatives of the study area. To analysis this study, the primary source of data information is taken into account, which is collected by researcher himself with the help of structured questionnaire. The output of the study has shown that there is a need of better facilities for the farmers to promote milk product and trade in the study area.

The main findings, summaries of this study are as follows:

- In the field survey, total sample population of female is 302, which is greater than male i.e. 289.
- According to the field survey, 17.03 percent remains in the age 0 to 15 years. 78.6 percent population remains in the age group 15 to 60 and only 4.37 percent is in the age group of 60 above.
- The average household size of the study area is 4.54 whereas the national average household size is 5.44.

- The field survey clearly shows that only 26 percent sample population are illiterate and 74 percent population are literate which suggests a positive attitude towards education in the study area.
- In the study area, 54.54 percent of the total population is engaged in agriculture followed by services (12.12%), business (6.67%) and others (4.45%).
- Ethnically, Brahmins and Kshetri are major residents of the study area covering 42.5 percent of the total population.
- The disparity of landholding pattern in the study area is found to be high.
- In the study area, the total number of livestock kept by sample farmers for milk production is 444. Among them 84.01 percent are cows, both local and improved, and remaining 15.99 percent are buffaloes. The number of improved livestock are greater in number which produces more milk than local livestock.
- Total milk production of the sample households is 1050 liter per day out of which 228 liter is consumed for domestic purposes and remaining 822 liter is sold for income generation.
- Almost all milk product of the study area is purchased by Dairy Development Corporation of Lamhi branch office.
- Among the total households, 20.83 percent households earn up to two thousand, 26.67 percent households earn up to four thousand, 36.67 percent households earn up to six thousand, 12.5 percent households earn up to eight thousand and another 3.33 percent

households earn above Rs 8000 per month. It indicates that it is the main source of income of the sample population in the study area. But the farmers are not satisfied by the income of the milk because of the low price of milk.

- The earning from milk production is spent in diversified areas such as cattle feeding, home expenses, education, health caring, fixed assets etc. 'Cattle Feeding' is the main expenditure items sharing 37.5 percent households spend their income in it.
- Among the total households, 42.5 percent households said that low price of milk is the first problem and constraints of the milk marketing, 37.5 percent households said that milk holiday is their first problem and constraints, likewise 15 percent said that far away collection center is their first problem and constraints of the milk marketing and other remaining 5 percent households said other problem and constraints of milk marketing.
- 'Medical Expenses' for the animals is also an important factor. In which the medical expenses of livestock amount is Rs.43, 900 per annum.

## **5.2 Conclusion**

Looking the result of this study, it can be concluded that the living standard of the people of the study area is uplift to some extent by milk selling. The income from the milk production and its selling occupies about one third income of the farmers. Such income has helped the rural farmers to fulfill their different needs. Most of the farmers use the dairy income in cattle feeding. But the income from the milk is also supporting the domestic expenses of the farmers. Some farmers use their

income to pay school fees for their children study. Others have invested such income in fixed assets such as land and house, health, cattle feeding etc. It is a secondary occupation of the farmers living here.

From the very establishment of milk collection center, the numbers of milk selling farmers have been increasing every year. The duration of selling of milk largely depends on the number of milking cows. The collection centers buy milk only in the morning. Thus, the milk of evening is used for domestic consumption and process for ghee, homemade cheese and other products.

There are some problems in dairy farming such as lack of institutional credit services, low price of milk, high price of fodder, insufficient veterinary services and high price of improved breed of dairy animals. But these problems have not hindered dairy farming negatively though it needs some improvements. Dairy farming and agriculture are interrelated to each other. The production of crops, improved grass and other feeding materials are high in this area. There is further possibility of market expansion. Likewise, suitable climate and road access are other push factors which help to further expansion of dairy farming in this area. Thus, the overall scenario of socio-economic condition of dairy farmers is not so good, but it is going very positively nowadays.

Dairy farming has various kinds of indirect cost and benefit. Indirect cost means the time devoted by milk producers in the course of milk production and indirect benefit means the fertilizer, bio-gas, dung cake, etc produced by the animals. Here, in this study, it is assumed that the indirect/opportunity cost is equal to indirect benefit because of the

unavailability of the accurate data and measuring unit of fertilizer, bio-gas, fuel etc. This requires a further intensive study.

After the establishment of Lamahi Chilling Center (TCC) in the study area; employments, incomes of the farmers, production of milk have increased. This is certainly a positive impact of DDC on the economic status of the dairy farmers. Thus, the DDC is moving forward to reach its goal. As a result, activities have affected the economic status of the dairy farmers of the study area positively. After the establishment of TCC; the monthly incomes of a farmer have increased compared to the incomes before the establishment of TCC in the study area.

### **5.3 Recommendations**

Milk production has played crucial role to uplift the socio-economic condition of the rural farmers. However, some improvements are still needed in this area. Sustainability and commercialization of dairy farming is necessary to reinforce its role in the local economy, for this purpose, the following recommendations can be implemented.

- ✓ Dairy Development Corporation (DDC) should timely improve the price of milk. The cost of production of milk is increasing day by day because of the cost of improved breeding, high purchase rate of milking animals and the price of cattle feeding.
- ✓ Milk holiday by the DDC should be avoided, since milk is the perishable goods. This is a key reason of the milk producers' dissatisfaction in producing milk. Because every farmer wants to get guarantee of the sale of their product.

- ✓ To reduce the problem of cattle feed, the DDC should establish its own industries for supplying the cattle feed. The supply of cattle feed should be cheap and adequate.
- ✓ Credit services for dairy farmers should be made available at minimum interest rate through Agriculture Development Bank, other Finance Companies or Cooperatives.
- ✓ Veterinary services can be provided in the village through District Animal Service Office where regular and timely vaccination given against animal diseases. Milk producer cooperatives, local government of local community should encourage veterinary doctors or paramedical staff to operate clinics of drug shops in the villages.
- ✓ Farmers should be encouraged to rear improved breed of dairy animals whose productivity is higher than that of the local ones. District Animal Service Office should provide improved breed of animals on subsidy price under its regular or specific program.
- ✓ To make the livestock scientific, farmers should be trained about modern technology of animal husbandry.
- ✓ Farmers should be encouraged to produce improved grass; fodder trees and other feed particulars of cheap cost. In addition to that training on basic hygiene of milk, animal health and better management of animals should be provided to the farmers by the District Animal Service Office.
- ✓ Banks or Finance Companies should encourage the farmers by providing them loans and insuring their animals.

- ✓ The collection center, the chilling center and other milk marketing system should be made easily accessible to the people in the study area.
- ✓ To raise the economic status of dairy farmers, to encourage them for producing more milk and to reduce the import of milk powder from abroad, the price of milk should be increased. If the farmers get attractive price of their milk, more farmers can enter in this field and the supply of milk can be increased to meet the increasing demand for milk and quantity of imported milk can be reduced. In order to discourage the import of milk powder, high tariff duty can be levied on it.

So to develop the dairy farming, the problems mentioned above should be solved. Since, Nepal is an agrarian country; most of the people of Nepal depend on agriculture and make their livelihood. The government should distribute the national income by keeping to such problems in view. Farmers should be given different training facilities to develop such type of sector; the area should be announced as "White Zone" by the government.

## REFERENCE

- Acharya, Saledra Prasad, (2005). *Local Milk Production and Marketing System: A case study of Sonpur VDC of Dang District: An unpublished Project Report submitted to Central Department of Rural Development, T.U., Kirtipur, Kathmandu.*
- Arthur, L Anderson, (1995). *Introductory Animal Husbandry*, New York: The Macmillan Company.
- Dairy Development Corporation, (2062). *Annual Report of Fiscal Year 2060/61*, DDC Central Office, Lainchour, Kathmandu.
- DAN, (1994). *Empowering MPAs/MBCs Pilot Project for Sustainable Dairy Development*, Unpublished report of Bhartpur, Butwal and Sipaghat Chilling Center.
- DOA and NDDDB, (2001). *Annual Report,2001*, Lalitpur: DOA & NDDDB.
- DOA, (1991). *Ten Year Dairy Development Plan (1990-2000), Vol-1*, Kathmandu: DOA.
- Dhakal, Krishna Hari, (1999). *Development of Dairy Farming: a Case Study of Gitanagar VDC*, an unpublished dissertation, central department of Geography, TU Kathmandu.
- Gautam, Kamal Raj, (1999). *A Study on Small Holder Dairy Sector in Ilam Milk Shed*, unpublished report, National Dairy Development Board, Kathmandu: NDDDB.



- HMG of Nepal, *Ministry of Finance*, (2002). *Economic Survey*. Kathmandu.
- HMG of Nepal, Central Bureau of Statistics, (2002). *Statistical Pocket Book of Nepal*, Kathmandu.
- HMG of Nepal, *Ministry of Population and Environment*, *Nepal Population Report 2003*, Kathmandu.
- HMG of Nepal, Central Bureau of Statistics, (2004). *Agriculture Census*, Kathmandu.
- Joshi, Durga Dutta and K.C., Tarak Bahadur, (2001). *An Overview on Small Holder Dairy Production and Marketing in Nepal. Make Milk not Methane Gas in Nepal*, Kathmandu.
- Kshetri, Bhoj Bahadur, (2000). *Socio-economic and Welfare in Relation to Environment: A case study of the farming system of Hindu country Nepal*, Environmentally sustainable livestock production for poverty alleviation, proceeding of the Third National Animal Science Convention.
- Pradhan, S.L., (2000). *Livestock Development in Nepal*, Figure Challenges, Development Concept and Approaches, Environmentally sustainable livestock production for poverty alleviation, proceedings of the Third National Animal Science Convention, Kathmandu: NARC.
- Sharma, Prem, (2002). *A Handbook of Social Science Research Methodology*, Kathmandu: Kshitiz Prakashan
- Sing, Katar, (1999). *Rural Development Principles, Policies and Manegement*: New Delhi.

Stem, Chip, Joshi, Durga Datta and Orlic, Mark, (2001). *Reducing Methane Emissions from Ruminant Livestock: Nepal Pre-feasibility Study Report, Make Milk, not Methane Gas in Nepal.*

Upadhaya, Ram Milan; Joshi, Durga Dutta and Thapa Tek Bahadur,(2001). *History of Dairy Development in Nepal*, Lalitpur: National Dairy Development Board, Danida Support Project.

[www.amul.com](http://www.amul.com)

[www.dairydev.com.np](http://www.dairydev.com.np)

## Annex-1

### Questionnaire for household survey

**Name of Respondent:**

**Related cooperative:**

**Caste:**

**VDC:**

**Ward no:**

**Age:**

1. Detail of household members

	Below 15 years	15-59 years	60 and above
Male			
Female			
Total			

2. Occupational status of household member.

Occupation	No. of persons
Agriculture	
Services	
Business	
Others	
Total	

3. Educational Status

Educational Level	No. of person
Illiterate	
Literate	
S L C	
Intermediate	
Graduate	

4. Land holding size of respondent (In Bigha)

A Less than 1

B 2-3

C 3-4

D More than 4

5. Please give following information on your livestock.

Animal categories	Number	No. of milking animals
Local buffalo		
Improved buffalo		
Local cow		
Improved cow		
Sheep/ goat		
Others		

6. How much time you spend for your cattle per day? Specify please.  
a) 3 hours    b) 5 hours    c) 7 hours    d) Others
7. How many milk you produce per day?  
.....
8. How much milk do you consume out of your production?  
.....
9. Where do you sale your milk?  
a) local market                      b) DDC'S milk collection centre  
c) private dairy                      d) others
10. How much milk do you sale?  
.....
11. How much price do you get per liter?  
.....
12. Do you get reliable price for your product?  
a) yes                                      b) no
13. Do you feel any trouble for marketing of milk?  
a) yes                                      b) no
14. If yes, what type of problems?  
a) related to milk quality              b) low price of milk  
c) milk holiday: i) Political    ii) DDC  
d) others
15. What is the major problem of dairy farming?  
a) improved grass    b) lack of straw    c) loan facilities  
d) veterinary facilities    e) market of milk    f) pasture land

16. How much do you earn per month?  
 .....
17. Where do you spend your income from milk?  
 a) cattle feeding                      b) home expenses      c) education  
 d) health                                  e) fixed assets          f) cattle  
 purchasing
18. How much do you save? (Approx)  
 .....
19. Did you feel any support for your economic activities?  
 a) yes                                      b) no
20. Do you get any financial support from your milk cooperatives?  
 a) yes                                      b) no
21. If yes, for what purpose?  
 a) purchasing cattle                      b) individual loan  
 c) for agriculture                        d) others
22. Do you get any technical support from DDC?  
 a) yes                                      b) no
23. If yes, mention.  
 .....
24. Do you feel that there is any role of DDC to enhance your socio-economic status?  
 a) yes                                      b) no
25. Do you get any support from DDC for your institutional development at local level?  
 a) yes                                      b) no
26. Please suggest the role and function of DDC to uplift socio-economic condition of dairy farmers.

**Annex-2**  
**Checklist for Chilling Center**

S.N.	Questions	Answers
1	Date of establishment of Chilling Center (C.C.)	
2	Daily collection capacity of the C.C.	
3	Type and name of equipments used in the C.C.	
4	Number of staff in the C.C.	
5	Types of test of milk that C.C. does	
6	Hinterland of the C.C.	
7	Name of milk collection cooperatives	
8	Location of milk collection cooperatives	
9	Distance of collection center from the C.C.	
10	Average daily milk collection from each cooperatives	
11	Average price of per liter milk	
12	Selling price of milk	
13	Rate of commission to milk cooperative	
14	Paying duration of collection cooperative	
15	Problems that the C.C. faces during collection	

**Annex-3**  
**Checklist for Collection Center Cooperatives**

S.N.	Questions	Answers
1	Name of milk producer cooperative/non cooperative	
2	Date of establishment of milk collection center	
3	Date of registered	
4	Number of members of milk producer cooperative	
5	Average number of milk seller farmers	
6	Average daily collection of milk	
7	Number of staff in collection center	
8	Equipments use in collection center	
9	Types of tests of milk in collection center	
10	Means of transportation of milk to the C.C.	
11	Transportation cost (per liter)	
12	Average price of per liter milk	
13	Paying duration to farmers	
14	Problems that collection center facing during collection and marketing	

## Photos



**A female dairy farmer returning after measuring milk**



**Researcher is asking question to the respondent**





**A farmer is pouring milk to measuring pot**



**Loading the milk to the tanker from Lamhai Chilling Center**



**Unloading cans of milk from the jeep at the Chilling Center**



**A staff of Chilling Center taking sample from the milk**