IMPACT OF DAIRY FARMING ON SOCIO-ECONOMIC CONDITION

[A Case Study of Bharatpur Municipality, Chitwan, Nepal]

A Thesis Submitted

To

Central Department of Geography

Faculty of Humanities and Social Sciences

in Partial Fulfillment of the Requirement for the Degree of

Master of Art

Submitted

by

Shyam Bahadur Silwal

Roll No.: 3118

T.U. Rgd. No.: 44744-91

Central Department of Geographcy

Tribhuvan University

Kirtipur, Kathmandu

2009

APPROVAL SHEET

This Project Report entitled **"IMPACT OF DAIRY FARMING ON SOCIO-ECONOMIC CONDITION"** submitted by Mr. Shyam Bahadur Silwal has been accepted as a partial fulfillment for the Master of Arts (M.A.) in Geography.

Evaluation Committee

…….

Prof. Dr. Pushkar Kumar Pradhan

(Head of Department)

……

Chhabi Lal Chidi

(Supervisor)

……

(External Examiner)

Date: 2066/04/13

ACKNOWLEDGEMENT

This study has been prepare under intensive and genuine guidance and supervision of **Chhabi Lal Chidi**, Associate Professor, Central Department of Geography. I would like to express my sincere gratitude for the success of this attempt to fulfill the requirement of Master's in Geography.

Similarly, I would like to express my sincere gratitude to Prof. Dr. Pushkar Kumar Pradhan, Head, Central Department of Geography, Tribhuvan University, Kirtipur providing me inspiration and valuable suggestion for this work. I would like to express sincere thanks to respected faculty members and other staffs of this department for their various suggestions and helping with kindly cooperation.

My sincere gratitude is highly extended to my life partner Mrs. Goma Devi Silwal for continuous encouragement, inspiration and moral support. I would like extended similar filing to my father, mother, sister, brother, uncles, aunts for continuous support.

Shyam Bahadur Silwal

ABSTRACT

This thesis has been prepared for the fulfillment of partial requirement of M.A in Geography. The present study attempts to explain the impact of socio-economic condition by dairy development in Bharatpur, Chitwan district. The surrounding area of 9 milk co-operatives which collect milk from the dairy farmers and bring to Bharatpur chilling center is chosen for the study. Out of the total dairy-farming household, of the study area, only 10.37 percent are selected for the detailed study. Sample size is taken from every dairy co-operative by using the method of simple Random sampling.

Dairy farming is developed as a secondary occupation of rural Nepalese people. It has been playing a vital role to uplift socio-economic condition. This study, concluded that the living standard of the people of the area is uplifted to some extent by milk selling. The milk production and its selling occupies about one third of the total 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, veterinary services, and supporting other 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 is dairy sector 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 been hindering dairy farming negatively through it needs some improvements. Dairy farming and agriculture are inter-related to each other. The production of crops,

improved grass and other feeding materials are high in the 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 co-operative in this area. Thus, the overall scenario of socio-economic condition of dairy sector is not so good, but it is going very positively.

TABLE OF CONTENTS

CHAPTER IV

THE STUDY AREA

CHAPTER V

DAIRY PRODUCTION

CHAPTER VI

IMPACT OF DIARY FARMING ON SOCIO-ECONOMIC CONDITIONS

CHAPTER VII

PROBLEMS IN DIARY FARMING

CHAPTER VIII

SUMMARY, CONCLUSION AND RECOMMENDATION

LIST OF TABLES

LIST OF FIGURES

CHAPTER-I

INTRODUCTION

1.1 General Background

Poverty is a widespread phenomenon in developing countries. It is complex issue and has many dimensions such as income-based poverty, weakness in different aspect of human development, and social exclusion. Poverty levels are extremely high and income disparities are very evident across income groups. During 1990's Nepal witnessed a period of improved economic growth but political unrest over recent year lead to the contraction in the economy.

Nepal is one of the least developed countries in the world and this is reflected in Nepal's current rank as 129th Worldwide in Human Development Index. Poverty is a great challenge of the country. Nepal is a mountains 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 mountains country like Nepal with the typical geographical condition and other natural reasons, the government of Nepal has to face many challenges in providing basis 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 need for the ever-increasing food need for the people. Hence, people have been practicing different economic activities to maintain their livelihood.

Livestock farming being a major component of Nepalese farming system is becoming one of the important occupations in the rural area of Nepal. It contributes 31% of agricultural gross domestic product. Among this 53% derived from hill, 38% from the Terai and 9% from the mountains (App, 1995). Livestock farming especially dairy farming contributions 70% in total AGDP. The major components of livestock GDP are milk products of Nepal.

In 2001, there were approx 7 million cattle, 3.6 million buffalo, 0.9 million sheep, 6.5 million goats, 0.9 million pigs and 19.8 million poultry in Nepal (CBS 2001). Nepal has one of the highest livestock populations per capital and per unit of cultivable land of any country of Asia. Improved livestock accounts for only 8% of cattle, 21% of buffalo, 6% of sheep, 14% of goats, 14% of pigs and 50% of poultry. Livestock rearing represents on important part of the livelihood strategy of rural Nepalese household. It is presently undergoing phase from subsistence to commercial dairy farming in the various places of Nepal. Dairy farming has been helping the farmer to earn cash income and at the same time they can get manure as by product and draft power for agricultural production. One of the other important aspects of dairy farming is to generate energy in household level for cooking and heating in terms of biogas, which is produced by decomposition of animal dung into airtight digester.

Nepal is a geographically beautiful and small country with an area of 147, 181 square kilometer and it is ecologically divided into three regions: mountain Hill and Terai. The mountainous region is covered with high snow capped mountains.

Poverty remains deep and widespread in developing countries, and even rampant in some cases. Nepal being no exception is getting huge

amount of foreign aid to meet the goal of poverty alleviation since the start of its planned development effort in 1956 in the name of infrastructure development. However, the achievements are far below the expected. Thus, the country remains one of the poorest countries in the world and the poorest outside Africa in term of per capita national income. Income based poverty is widespread in the country and exists in a wide variation depending on the rural urban divide, geography, gender and caste/ethnic groups. The poverty is more rampant, deeper and severe in rural areas and much worse in the mid western and far western hills/mountains.

On the other hand, numerous people are involved in the production, processing and trading of dairy products and this provides employment opportunities for the local people. This is the potentiality of dairy farming but to make this industry as a major pillar which supports not only local people but also as a means to economic development, then the role of dairy is necessary because it cover wide range of development services including but not limited to financial services.

1.2 Statement of the Problem

The dairy definitely helped the poor people. But this study does not reflect the present situation of dairy farmer like socio-economic condition and the problem related to farmer. Unfortunately dairy are not working satisfactorily. Most of them are under heavy bank loans and are always looking for the nominal grants from the societies or from the government. Besides agricultural there are lot of sectors where local people engaged and sustain their livelihood. Among them livestock 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 as a means to improve the

safety, quality, and quantity of milk and as a pillar of development. As dairy farm sizes have grown due to scale of economy, the frequently of milk collection has dropped. According to the agricultural perspective of the dairy sector will accelerate from 2.9% to 5.5% by the plan period.

In the past the private sector has increased its presence in a dairy industry which state owned DDC. Farmers are still facing milk holidays and milk and milk products are not decreasing. To sustain and improve the dairy processing industry in Nepal it must become competitive in terms of cost production and quality. Trained manpower should be available to the private sector; raw milk pricing should be based on the quality and fixed by a free market system with little intervention from the government. Extension Services should be backed up with more research and animals and product quality. Government policy should encourage the private sector to diversity the products in collaboration with or in joint venture while the external partners from the developed countries to explore market using their brains name and diversity their products. Are people given training and skill development program before including in this industry how milk is processed? How many milk chillers does this district contain? Do these co-operatives prove themselves as true helper to the people? Are there any other constraints to milk producer besides marketing? Are people engaged in other activities besides milk producing? How many cattle's each household containing? What is your average monthly income from this field? Among two cow and buffalo which is more preferred? Besides milking these cattle are there any other benefits from them? What are the problems and prospects faced by this industry? Is there any government or industrial control on price of in which products? How is control on price implemented? Is quality standard of various products defined and enforced? How? Is there any

licensing requirement for farmer and traders? If so for what motive? How much it cost? These are the questions that are to be answered during my study.

Running 10-15 years, the urbanization pattern of Chitwan were very high. So there were demand of milk was also high. So that all the production of milk in Chitwan is being consumed by dairy and urban areas. Nowadays there were no milk holiday in Chitwan.

In past days farmers used to visit Narayanghat town to sell that milk daily. They had to visit shop to shop or home to home for sell. It was really time consuming and difficulties. After the establishment of many dairy centre near by villages farmers have to visit only 0-1.5 km. for selling there milk. So the distance aspect of felling milk has been reduced more. Than farmer produces more milk by saving time and money for travel to sell milk. It has invested both in number of farmer and among of milk production in Chitwan.

1.3 Objectives of the Study

The objectives of this study are to analyze the production processing and marketing system of the study area. This study also tries to identify the socio-economic impact of problem of prospect of dairy farming. The specific objectives of this study are:

- To analyze dairy production, processing, marketing system in the study area.
- To identify the socio-economic impact of dairy farming in the study area.
- To identify the problems and prospect of diary farming in the study area.

1.4 Limitations of the Study

Because of time and financial constraint this study is only limited in the ward number 6,7,8,9,13 and 14 of Bharatpur Municipality. This study is based on sample information collected from the sample chilling centers and selected interviewers. Summary were drawn based on these information together with other information sources. So, it may not be actual for any particular situation of the study area and as well as for other parts this study doesn't take into account the by products of milk in detail.

1.5 Scope of the Study

This study is concerned with the importance of dairy farmers of Chitwan. Chitwan is an assessable place of Nepal lacks in infrastructural development. It has been playing a vital role to uplift socio-economic condition. Although this study has not covered the entire part of area rather it may try to reflect the present stage of dairy farmers and volume of production. It also highlights the related problems and socio-economic condition of farmers of the study area. This study is purely a micro level study because no such study has been done in the past to cover the entire aspects. By the way the study tries to fulfill the gaps of knowledge about various aspects like production, marketing and socio-economic condition of farmer of Chitwan. The study aims to present information about the socio-economic condition to the dairy co-operative and the contribution of DDC to develop dairy farming. The study tries to find out the impact of dairy development of the general life of the farmers. Likewise, it will present the problem of dairy co-operative and recommends. For its sound developments this study will provide guidelines to construct dairy development policies and plan for the policy makers.

CHAPTER - II

LITERATURE REVIEW

There is scarcity of the literature about the dairy. Some Nepali and foreign writes have published articles and books about the flow of Dairy in Chitwan district and its impact on socio-economic condition of peoples. Some related literature for this study has reviewed here.

The livestock sector is very complex with many crosscutting issues interrelationship with other sectors; it is a very important part of the agriculture sector and key role to play in the country's development and poverty reduction (ADB, 2001)

Budhathoki (2007) reported that according to agriculture perspective plan in the sector will rise from 2.9% to 5.5% by the end of the plan period. Dairy accounted for about two-last decades was about two-third off the livestock sectors. The average growth of milk production over the last decade was about 2.6% per year (Parham et al. 2003). In 1995-96 Nepal introduced agriculture-led economic growth and rural poverty alleviation by implementing the 20year APP which envisages researching and annual growth rate of 5.5%.

The demand for livestock in developing countries is predicated to double over the next 20 years due to human population growth, increasing urbanization and raising incomes more than 81% of the population of Nepal relies on the agriculture sector for employment has been sluggish and most importantly has failed to keep the place with population growth. Nevertheless, contrary to the relative decline of agriculture the live stock production index has continuously been increasing over the last decades (FAO, 2003).

Policies and strategies to promote milk production in developing countries often don't address the key issues of small-scale milk collection and processing and these acts as a limiting success. For the growth and development of small-scale sector can be achieved through local level organization of small-scale productions into working groups and associations or co-operatives. The main driving force to attract small holders into this supply cycle is to provide increased returns to stimulate production and encourage uptake of improved technologies (FAO, 2001)

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

Dairy Development co-operation (DDC) "Annual Report of Fiscal year 2060/61 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 57129 metric tons of milk through the network of 1,014 dairy producer's associations, (Dairy co-operatives). DDC has provided income generating opportunity for more than 1,50,000 family farmers.

Dupire (1962) explains that the case of West Africa woman receive cattle from their families either gifts or through in heritance. The cattle belong to the woman in that they control milk, keep animals of case of divorce and bequeath them to their children (FAO, 1997).

Leindegaurd (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.

Development planners ignorance of the economic roles of women in pastoral societies indeed ignorance of pastoral socio-economic contributed to the relatively poor performance of "livestock projects" (Hurwitz and Jowkar, 1992).

Livestock provide over half of the value of global agriculture, output and one third in developing countries is viewed as a "Food Revaluation" (PPLPI, 2004).

Animal husbandry and dairy development plays a prominent role in the rural economy in supplementary the income of Rural household, particularly the landless and small and marginal farers. It also provides subsidiary occupation in semi-urban areas and more so for people living in hilly tribe and drought prone areas where tribe and drought prone areas where crop output may not sustain the family. Animal husbandry output constitutes about 24% at the country's agricultural output. Livestock includes domestic animal such as cattle, buffalo, sheep goats, horses, pigs etc. India's animal wealth is both large and varied (Suva, 2005)

Upadhya et. al., (2000) reported that the milk holiday was coined in 1991 when the DDC could not buy all the milk offered and refers to days in the week when public or private dairy organization don't buy milk their regular supplies (Dairy farmers). Milk holidays are becoming an annual phenomenon in Nepal. The available evidence indicates that this is mainly a result of the incapability of the formal dairy organization to sell milk and milk products Milk holiday are largely a phenomenon of the flush season (September to March) during which the supply of milk is four times greater then in the lean season.

The Tenth Year Dairy Development Plan (Type DP) 1990-2000 progress that the DDC set its own price for milk based on commercial considerations, this has not yet materialized. Although the DDC has been

responsible for formulating and executing pricing policy in practice it has to obtain government approval before implementing any price change.

According to Department of Livestock services under the ministry of Agriculture and co-operative of HMG/N aims of developing the livestock sector by diversification and commercialization as an income generating and prosperous farming. The objectives of DLS in dairy sector include increasing production of milk, assisting in quality improvement of milk, helping in market identification and management, encouraging livestock based industries and developing human resource in the sector. In Nepal, women are actively involved in livestock production. Fodder collection, grazing and milking are generally performed by both women and man, whereas activities like feed preparation, feeding, cleaning sheds and preparing milk products are women's domain (Acharya and Bennet, 1981; Katual, 1990).

The milk put on the market in generally adulterated. Enquiries show that adulteration by producers is much less when compared with that practiced by collections, distributors, etc. producers are however primarily responsible for the initial contamination of milk as they play little or no attention to clean production of proper handling of the milk. The most common adulterants used are water and skimmed milk. The water added may be dirty and contaminated cane sugar and flour are also 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 contributed 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 increased the milk production (1.03-1.13 liters/animal/day) (Budhathoki and Updhya, 2007)

In Nepal, a nation wide network of Department if livestock services is working on improved buffalo production External funding from the Asia Development Bank and the European Union has greatly strengthened its research and implementing activities (Rasali, 2000). In the conflict situation that is un going in Nepali, most of the external financial organization's and systems functioning in rural areas have been either destroyed or phased out. But the rural and community based saving and credit co-operatives and the dairy co-operatives are the only grass root institutions that are still functioning without much problem in the conflict areas. Co-operatives over wide range of development services including but not limited to financial services. Following chapters will elaborate the contribution of co-operatives in providing access to micro finance services, dairy services consumer services and agricultural inputs and marketing services (CECL, 2004)

Rural co-operative service provides research management, and educational assistance to co-operatives to strengthen economic position of farmers and other rural residents. The main motto is to work with co-operative leaders to improve organization, leadership, fixing prices identifying market, to guidance to further development (Ling, 1996).

Based on the successful experience in some pocket areas of the HKH (Hindu Kush Himalayan) smallholder dairy farming is an integral component of the mixed mountain farming systems. It should be possible to replicate such models and experiences in other degraded upland areas of the hills/mountains. While doing so, maximum participation of poor and marginal farmers should be ensured. Promotion of market oriented smallholder dairy farming integrated with agro-forestry systems in upland hill/mountain area can improve the livelihood of small and marginal livestock development farmers along with the conservation of environment. However, there are several constraints/issues such as credit, animal health and insurance, market development and value additions. These constraints as policy issues should be addressed critically in order to explore the development potentials of order to explore the development potentials of small dairy enterprise. Initial facilitation for delivery of appropriate technological options such as agro-forestry-grassland systems, and linking to market opportunities in a small way could improve the living conditions of poor and marginal livestock dependent farmers. (Tulachan, 2002)

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

The above-mentioned literature is focused mainly on the development of dairy livestock, production economic status of dairy farmers and also about the problems of dairy co-operatives societies. It is the first attempt to study about the dairy farming through flow of dairy and this study is carried out to find out the current situation or the condition of above unstudied topic of the study area.

CHAPTER - III

METHODOLOGY

To achieve the objectives of this study, different research methodologies have been used. The nature of this study is exploratory. Both formal and informal procedures were used to get required information.

3.1 Nature of Data and Information

This study area was selected to dairy farming of Chitwan district for the production and marketing of milk through two milk producers' co-operative societies. The present study was mainly depends upon the primary data. Different types of quantitative and qualitative data and information were collected. Primary data were collected from dairy farmers, chilling centre and observation. However secondary data were obtained from chilling center, dairy co-operative different journals, books report, newspaper, Central Bureau of Statistics (CBS), District Development Committee (DDC) etc.

3.2 Research Design

The present study focus on the milk production and milk cooperatives and its effect on the economic life of the producers of the study area. The research design used in the study is descriptive as well as analytical. The data collections here are both qualitative and quantitative.

3.3 Sample Size and Sample Technique

It is not possible to study all milk seller farmers in this research. So there are 18 cooperatives that bring their milk in Bharatpur chilling center through collecting from collection centers. Based on the recorded

of Bharatpur chilling center I cooperatives have been selected for the detail study. From these each I cooperatives 20 milk seller who is also member of same co-operatives have been randomly selected for the study.

Sample size has been taken proportionally from every cooperatives under study. There are 210, 400, 300, 350, 600, 350, 160, 190 and 180 milk seller in these co-operatives. Those selected cooperative are (Anandapur, Jaya Nepal, Shree Krishna, Navadurga, Aupakar, Sharadpur, Gaurijung Annanapurna, Prembasti of Chitwan who sell milk Baharatpur chilling centre. This study covers Bharatpur municipality and Mangalpur VDC and Fulbari VDC. Bharatpur areas itself where various cooperation exist for collecting milk of its fame members and bring to the Bharatpur chilling centre.

The primary data were collected by direct personal interview with the help of structured questionnaires Chitwan, Bharatpur (Yagyapuri) were the targeted site of this study. According to field visit at 2008 December 15th to December 21th at 7:00 A.M. to 9:00 A.M. in selected diary co-operatives the researcher asked randomly to the dairy farmers who brings milk at 15th December, there are total household 210 and 400 of Anandapur and Jayanepal, randomly chose the 15 household of Anandapur and 25 household of Jayanepal on 16th December selected 20 household in the total 300 household of Shreekrishna on 17th December selected 20 household from the total 350 household of Navadurga, on 18th December 25 household are selected in total 600 of Aupakar on 19th December 15 and 10 household are selected from total 350 of Sharatpur and 160 of Gaurigunja respectively on 20th December 15 household are selected from total 190 of Annapuna and on 21th December 15 household are selected from total 180 household of Prembasti.

Total 2740 households were found in the study are. All these dairy farmers constitute the population of the study. Therefore out of 2740 households 160 households were selected with the method of random sampling. Hence the selected household represents the sample of the study.

Table 3.1 : Sample Size and Sample Technique

Serial No	Cooperatives	Total Household	Selected household
1	Anandapur	210	15
2	Jaya Nepal	400	25
3	Shree Krishna	300	20
4	Navadurga	350	20
5	Aupakar	600	25
6	Sharadpur	350	15
7	Gaurigunja	160	10
8	Annapurna	190	15
9	Prembasti	180	15

Source: Field Visit 2008

3.4 Data Collection Procedure

Both qualitative and qualitative data were used in this study. These data were collected from both primary and secondary sources. For the collection of these data the following data collection procedure were used. Here both primary and secondary data collection procedure adopted for this study have been defined below.

3.4.1 Primary data

Primary data were collected using informal interview, observation and personal interview with farmers using structured questionnaire.

- Informal interview
- Observation
- Questionnaire approach

a) Informal Interview

Information was being collected from informal interview with the members of milk cooperatives staff of milk collection center, chilling centre. Information related to the role played by dairy co-operatives in development of by improving the social economic condition of rural farmers was collected by this method.

b) Observation

Observation approach is used to observe the real scenario of the local life which helped the research to understand the socio- economic gap prevailing in the study areas. Researcher visited nine milk co-operatives named Jaya Nepal Anandapur, Shree Krishana, Naba Durga, Upakar, Saradpur, Gauri Gunja, Annapurna and Prembasti. By this observation researcher tried to trace the real activities problem of co–operative of the study area.

c) Questionnaire Approach

Structured Questionnaire has been used to get detailed information about daily cooperatives and its role in daily development and as well as the rural poor families. This information was used to collect the primary data through interview of selected farmers. Education, number of dairy animals, milk production, income from dairy farming, utilization of the

income earned between farmers who are involved in dairy cooperatives and beyond the cooperatives as well as.

3.4.2 Secondary Data

Secondary information were collected from various published and unpublished sources such as chilling center and dairy co-operative reports, different journals, books report, newspaper, Central Bureau of Statistics (CBS), District Development Committee (DDC) etc. In addition to these previous research reports have also been used for secondary information.

3.5 Data Processing Technique

All collected information were 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 a meaningful way.

3.6 Presentation and Analysis

Collected required information has been presented in maps, tables and diagrams. Qualitative information have been presented and analyzed systematically. Presented tables and diagrams and maps have been analyzed with the help of different sources of information. Mutual summary have been drawn from presented information to fulfill required objectives of the study.

CHAPTER - IV

THE STUDY AREA

4.1 Locations

Chitwan valley lies in the central subtropical region or Nepal. Chitwan is a district studies near by the east -west highway and on the basic of Narayani river. It is also called as inner Terai (Madesh) and Rapti valley. It is surrounded by nawalparsi, tantalum on the west province on the west, Dhading and Gorkha on the north and Bihar province with beautiful natural resource Chitwan is district endowed national parks, making majestic lakes forest divers. It is a center for the tourisms to make it prosperous beautiful attractive no-governmental, private and community level.

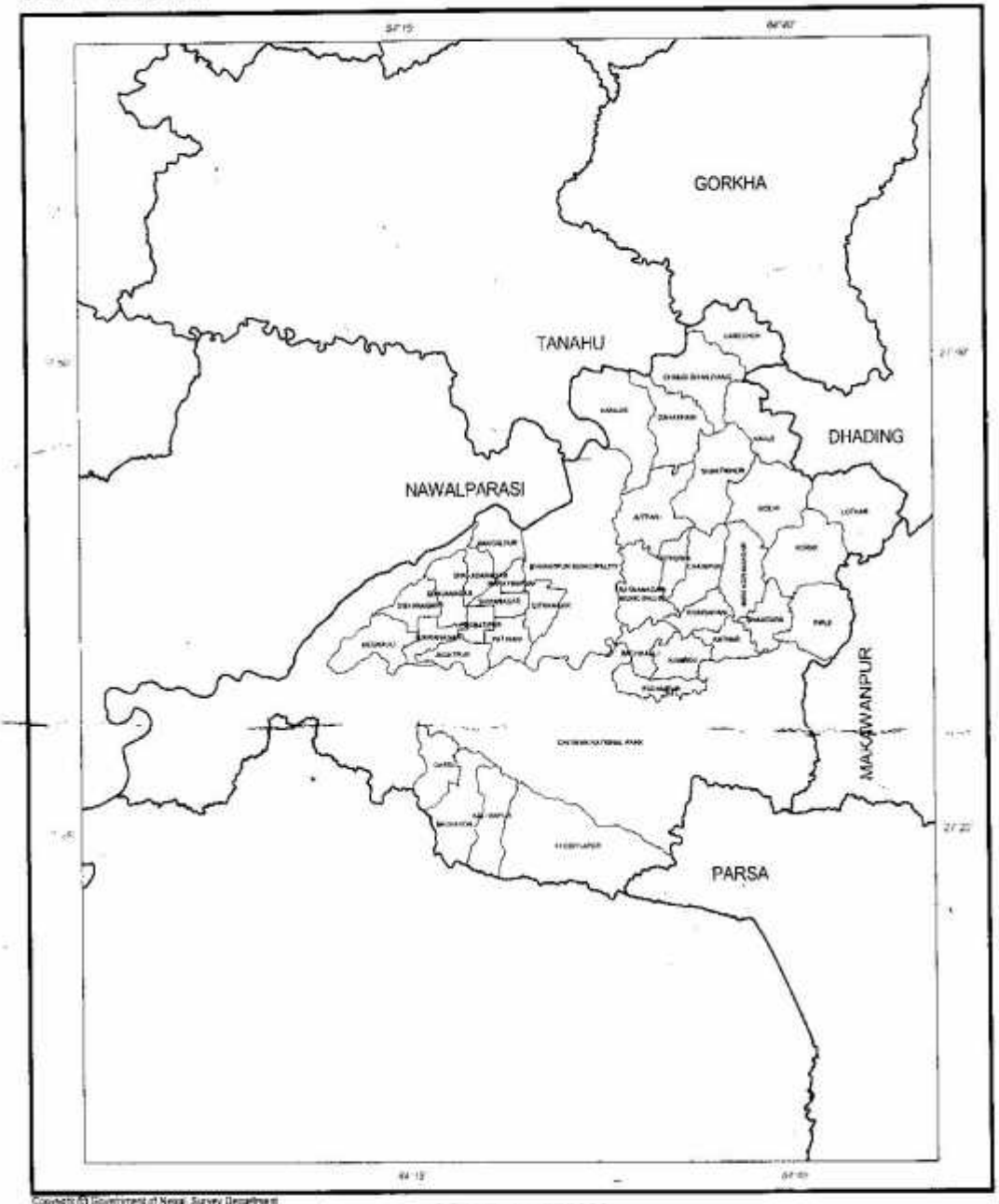
The Narayani river is located in central Nepal (84^0E and 27^0 30' N). The river basin approximately 35,000sq. Km of Himalayas before the convergence of the Trisuli and Kali Gandaki tributaries at the holy place, the Deu Ghat. A substantial portion of Narayani river and Rapati river basin is contained within Royal Chitwan national park which has been declared a world heritage natural in 1983. Chitwan valley also embodies beautiful natural landmass of high as Deu Ghat at the Narayani river basin approximately 4 km North East from Narayan Ghat. Bharatpur municipality is small and beautiful places in the eastern part of Chitwan district Narayani zones of Nepal. It is situated on the bank of Narayani river. It lies 146 km east from the capital city Kathmandu. Its geographical limits are latitude 28^0 to29^0 north and longitude 86^0 to 88^0 east. The elevation various from about 144m to 1947 m form mean sea level.

The metropolis of Bhatrapur is situated exactly adjoins the east-west highway which was previously known as mahatma highway. Among the various types of road connection measuring 8786 km, 195.7 km is black to popped 1106.5 km is graveled, (Kacchi), 88.7 km is highway itself. There are two domestic airport called Bharatpur airport and Meghuli airport, which are besides the east west highway, and nearly 32 km form the east west highway respectively.

CHITAWAN DISTRICT

ZONE : NARAYANI

District Code : 35



SCALE 1 : 575000

11500 0 11500 23000 Meters

LEGEND

———	District Boundary
- - - - -	VDC Boundary
MORANG	District Name
	VDC Name

DISTRICT : CHITAWAN

Area :2218 Sq.Km.(Approx.)

HORIZONTAL DATUM

Spheroid Everest 1830
Projection MUTM
Origin Longitude 84° E., Latitude 0° N.
False coordinates of origin 500 000 m. Easting, 0 m. Northing
Scale Factor at Central Meridian 0.9999

Map compiled from National Topographic Database at scales 1:25 000 and 1:50 000, 2002. Internal administrative boundaries are not demarcated on the ground. Map produced by the Survey Department, National Geographic Information Infrastructure Programme, (NGIIP), Kathmandu.

LOCATION MAP

4.2 Topography

Chitwan is on of the inner Terai there are hill and Tarai in the Chitwan district but in the study area, there are almost plain area. So all the milk farmers used bicycle to bring their milk.

4.3 Climate

The season is dominated by two distinct wind systems; namely the south easterly monsoon in the summer characterized by heavy rain and warm temperature and we sterile disturbance in the winter with occasional showers. The average temperature in the rainy season is 27^0 c. generally the summer month are warm and pleasant and winter month are cold. Hence rain occurs during the month of July, august and September particularly in the winter month in the mountain areas, the unable to disperse atmospheric pollutant to the outer atmosphere laterally and vertically. According to meteorological station of Chitwan, there was 7 to 30 D.C. temperature in winter season and 16 to 40 D.C. in summer season.

4.4 Land Use

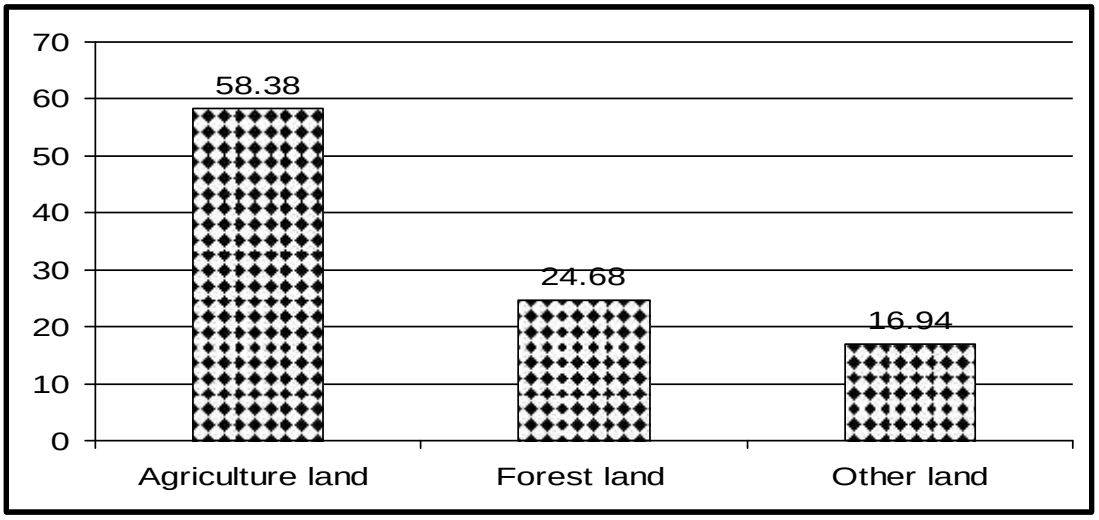
Land uses of Chitwan district mainly consists of agriculture, forest and land mainly agricultures land are of two types Khet and Bari. Agriculture and land in Chitwan district comprises approxitimately 46894 ha (58.38%) of total land agriculture land being converted into urban land (housing and residential area) over last (10 to 15) years.

Table: 4.1 : Pattern of Chitwan Land Use

S.N.	Types of Land	Occupied are (in Ha.)	Percentage
1	Agriculture land	46894	58.38
2	Forest land	19882	24.68
3	Other land	13602	16.94
Total		80318	100

Source: DDC, Office, Chitwan 2008

Figure: 4.1: Pattern of Chitwan Land Use



The plain land uses main paddy, millets etc and the valley areas are of the land use crop, grown includes paddy, wheat and other vegetables. In the plan (forest) of the district about 19822 ha. (24.68%) of the total land of the district is covered by the national land. The major forest areas Chitwan National Park, Community Forestry. Due to violation of the locals, the forest are have lost their natural ecology, however, manmade greenery is maintained after handing of the forest area to the community forest group with positive implication soil erosion and vegetation ecology.

4.5 Population

Scattered pattern of population distribution is found in this area. The total population of sample household taken by those people who are the members of dairy co- operative which is 90 % Brahman and Chhetri are the major ethnic group in this areas. The other ethnic group are Magar, Newar, Tharu, Gurung, Tamang, Dalit, Damai. The average housed holds size is of 4 persons. All the ethnic groups speak Nepali language in the public place. Most of the people of this area are Hindu.

Table: 4.2: Distribution by Age and Sex Population

Age group	Male		Female		Grand Total	
	Total	%	Total	%	Total	%
Below 6	26	9.5	40	11.0	66	10.3
6 - 10	46	16.7	62	17.1	108	16.9
11 -20	67	24.4	87	24.0	154	24.1
21-60	95	34.5	106	29.2	201	31.5
Over 60	41	14.9	68	18.7	109	17.1
Total	275	100	363	100	638	100

Source: Field Survey, 2008

In this table we know that the age group of 21 to 60 years is highest population. In this group male population are 34.5% and female population is 29.2%in this area. The lowest age group below six year in this group male children are 9.5% and female children are 11%in this area.

4.6 Education

This is an area with average literacy rate. The old generation is very less literate but with the passage of time they have realized the important of education and they have been sending their child not only school but have planed to send them for further studies in future. The male literacy (56%) is nearly 1% higher than the female literacy rate. Among literate male Shree Krishna is at higher position and Aupkar is at lower position. The education status of female is lower than male group.

Table 4.3 : Literacy Percentage

Cooperatives	Male	Female	Total
Annandapur	53	45	49
Jaya Nepal	57	58	57
Shree Krishna	67	62	66
Nava durga	53	53	63
Aupakar	51	52	52
Sharatpur	57	51	54
Gauregunj	55	56	55
Annapurna	53	47	50
Prembasti	55	54	54
Total	56	55	56

Source: Field Survey, 2008.

4.7 Livestock Composition and Size

Farmers have been keeping livestock for many year cows, buffalo, goat, and hens are major source of income from livestock in this area. Almost all the farmers have kept cows. According to cow in regarded as goddess so, cows have dominated the total livestock but before they used to have one or two cows. And they used to consume milk and sell other farming as substantial purpose. But after the establishment of dairy co-operatives farmers have started keeping more cows and buffalo because now they have realized that dairy farming is an important source of earning because it is less prone to climatic change there are drastic changes in the keeping the cattle's before most of farmers used to have local cows and buffaloes and less improved cows and buffaloes.

Table 4.4 : Livestock Keeping

Cattle	Local		Improved		Total	
	No	%	No	%	No	%
Dairy Cow	36	35.3	334	53.7	370	51.1
Dairy Buffalo	43	42.2	132	21.2	175	24.2
Cow calf	9	8.8	99	15.9	108	14.9
Buffalo Calf	14	13.7	57	9.2	71	9.8
Total	102	100.0	622	100.0	724	100.0

Source: Field Survey, 2008.

In this table, people are keeping the improved live stock are greater than local livestock. In improved livestock people are keeping dairy cow (53.7%) more than dairy buffalo (21.2%) and In local livestock, people are keeping dairy buffalo (42.2%) more than dairy cow 935.3%).

CHAPTER -V

DAIRY PRODUCTION

5.1 Chilling Center

Bharatpur chilling center, Bharatpur center chief: Mr. Ruplal Prasdad Yadav. This chilling center is situation at about 6 kilometer west of Bharatpur. It has chilling capacity of 600 liters during the fiscal year 2065/03/01 to 2065/03/15 it has collected 59,650,00 liters from 9 mpcs. These co-operatives are scattered in numbers of municipality and VDC'S. During the study the weather was summer mpcs used to bring milk in chilling center in mini truck, tractor, and man arriving cart. There was time variation in bringing milk in chilling center. It used to start from 6:30 o' clock in the morning and 4: 30 o'clock in the afternoon. This is because of difficult terrain and boundaries such river and forest.

Table 5.1 : Cooperatives in the Study Area

S.N.	Co-operatives	Location
1	Anandpur	Mangalpur
2	Jaya Nepal	Fulbari
3	Shree Krishna	Krishnapur
4	Nava durga	Kalyanpur
5	Aupakar	Laxmipur
6	Shartpur	Sharatpur
7	Gaurigunja	Gaurigunja
8	Annapurna	Kesarbag
9	Prembasti	Prembasti

Source: - Field Survey, 2008

5.2 Milk Production

The total milk production was less in liters before the involvement of the rural farmers in dairy co- operation because milk was produced for consumption purpose and selling nearby but after the involvement in co-operation the milk production has been drastically increased because they have found the marketing facilities. Before people kept more local cows. But cow and buffalo because the total amount of milk production of local dairy animal is less in comprised to improved cows. As to prove this point we can take annapurna co- operatives among other eight co - operatives as local improved cows and buffaloes the involvement in dairy co-operatives the total milk production is (3680 liters), all the ethnic groups have improved them selves in dairy farming.

Table 5.2 : Milk productions of Cows and Buffaloes

S.N.	Co-operatives	Milk Production (in Lits.)
1	Anandapur	210
2	Jaya Nepal	300
3	Shree Krishna	350
4	Nawa- durga	350
5	Aupakar	500
6	Sharatpur	350
7	Gaurigunj	260
8	Annapurna	1900
9	Prembasti	180
	Total	4400

Source: Field Visit, 2008

5.3 Utilization of Milk

It was difficult to find the marketing facilities. These were a few local dairies is some place. So milk was processed into ghee and other

products. But with an establishment of dairy co-operations people only focus their attention to sell rows milk because it is easier and less time consuming purpose and selling produced milk for consumption propose and selling purpose. As this point can be explained through Aupakar co-operatives before people used to consume 400 liters of milk but after people the domestic consumption has been increased to 500 liters this is because most of the farmers have improved cattle, and after the establishment of co-operatives farmers have no tension of selling milk so the production gets the market. There is most milk production in Aupakar(500lt.). In the Aupakar co-operatives 80 liters milk are consumption in local area and 420 liters are sold. There is less milk production in Gaurigunja. There is almost 160 liters daily. All of them 20 liters are consumption in local area and 140 liters are sold.

Table 5.3 : Milk Productions of Cows and Buffaloes

Co-operatives	**Domestic consumption**		**Sales**		**Total**
	Liter	Percentage	Liter	Percentage	
Anandapur	40	19.0	170	81.0	210
Jaya Nepal	30	10.0	270	90.0	300
Shree Krishna	40	11.4	310	88.6	350
Nawa- durga	30	8.6	320	91.4	350
Aupakar	80	16.0	420	84.0	500
Sharadpur	30	8.6	320	91.4	350
Gaurigunj	20	12.5	140	87.5	160
Annapurna	20	10.5	170	89.5	190
Prembasti	30	16.7	150	83.3	180
Total	320	11.6	2270	88.4	2590

Source: - Field Visit, 2008

5.4 Period of Selling Milk

All farmers don't sell milk throughout the year. They sell more milk in summer season than in the dry season. Farmers who have more than two milking cows and buffaloes sell milk more than 9 months. But frame how have only one or two milking cows and buffaloes are not able to sell milk more than 9 months. It is found that 20% household of Jaya Nepal co- operatives sell milk whole year, 70% household of Nawa Durga sell milk between 8-9 months 70% household of Sharatrpur sell milk till 10 to 11 months. This might be because of it lies near chilling center as well here most of the house has improved dairy cows and buffaloes and people here are mostly improved in commercial dairy farming. All the farmer house, there were different milk production in the different time period. An august and September there was 34.7% milk production and on December there was only 15.3% milk production.

Table 5.5: Duration of Milk Selling

Months	Household	
	No	%
Up to 7	21	21.4
8 to 9	34	34.7
10 to 11	28	28.6
12 & More	15	15.3
Total	98	100

Source: - Field Visit, 2008

5.5 Selling Milk in Other Sector

Bedside's co- operatives, the manager of cooperatives sell milk in various sectors. This is because people believe if milk is sold by only in dairy co- operatives then during milk holidays they suffer from the problem of marking. If they continue to sell in other place then during milk holiday also their milk will not be wastage, besides co-operatives

58.33% of the people of Anandapur sell their milk in nearly private dairies. 21.43%, 18.18%. 36.37% of Jaya Nepal, Shree Krishna, and Nava Durga also sell their milk in year by house and those household may be of their relatives of owner of the land which they are chilling 20% and 25% of household of Aupakar and Gaurigunja sell their milking other sectors. Here other sectors mean hostile of various college and small hotels.

Table 5.6: Selling Milk in Other Sector

Types of Selling Place	Household	
	No	%
Tea shop	25	19.7
Private Diary	54	42.5
Near by Household	33	26.0
Others	15	11.8
Total	127	100

Source: - Field Visit, 2008

5.6 Income from Selling Milk

Before the involvement of people in dairy co- operatives most of the farmers used to keep local dairy cows and buffaloes because cow were kept for milk and consumption and left over was sold in near by shops or household dairy farming was for substantial purpose. But after the involvement in dairy co-operative people started to keep improved people started to keep improved dairy cattle's as these cattle provide more milk in comparison to local cows and buffaloes. Now people have started taking dairy farming as commercialization. Here people in types in studies area prefer to sell only raw milk rather than other milk is a product. They regarded that selling raw milk is less household produce ghee only for self-consumption purpose. The income from the milk selling has increased hugely in comparison before which can be proved though taking the example of co-operatives. Before the Anandapur

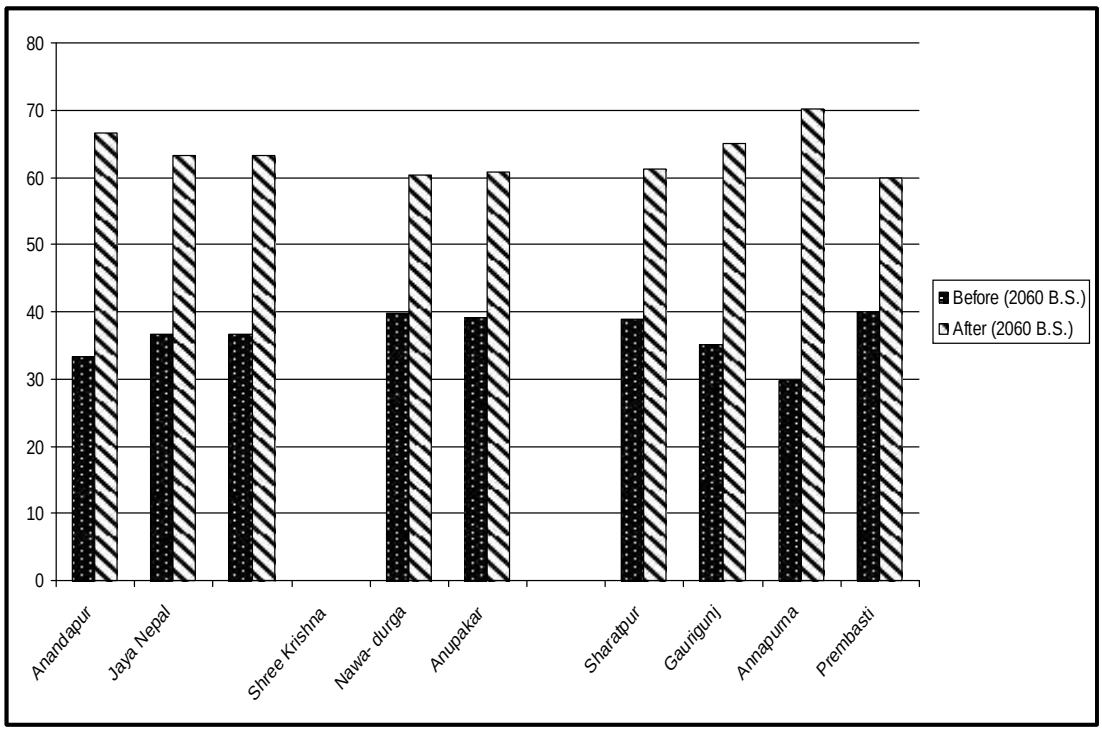
income of co-operatives Anandurpur from selling milk is Rs.50, 000 (33.33%) and after the involvement in co-operative it has increased to Rs.30, 000 (66.67%) the highest income earner is Annapurna 1980000 (70.21%).

Table 5.7: Income from Selling Milk Rupees/ Year

Cooperative	Before (2060 B.S.)		After (2060 B.S.)		Total
	Rs.	%	Rs.	%	
Anandapur	150000	33.33	30000	66.67	450000
Jaya Nepal	275000	36.67	475000	63.33	750000
Shree Krishna	325000	36.67	475000	63.33	750000
Nawa- durga	330000	39.70	500000	60.24	830000
Anupakar	450000	39.13	700000	60.85	1150000
Sharatpur	130000	38.82	520000	61.18	850000
Gaurigunj	140000	35	260000	65	400000
Annapurna	840000	29.79	198000	70.21	2820000
Prembasti	160000	40	240000	60	400000

Source: Field Survey, 2008.

Figure 5.1: Income from Selling Milk Rupees/ Year



Co- operatives lie in village area of Chitwan district and here most of the dairy farmers are more attached toward dairy farming. This farmer does contain improved breeds. They regard that dairy farming is less prone to climatic change dairy farming helps to earn a lot of money but half of the money earned from these sectors is spend to the cattle either for providing feed or fodder of for giving them treatment.

5.7 Income from Non Dairy Animals

Most of the farmers have been keeping improved breads of livestock after involvement in dairy cooperatives because to buy those breeds loan is provided by co-operatives in minimum interest rate. The improved breeds of animals are expensive than local breeds so, the income from non-dairy animals has also increased. The increase in income from non-dairy farming can be proved.

Table 5.8 : Income Earn by Farmers from Non-Dairy Product Rs/ Year

S.N.	**Livestock**	**Nrs**	**%**
1	Calf cow	42000	21.1
2	Buffaloes calf	17700	8.9
3	Crops	60500	30.4
4	Male buffaloes	9100	4.6
5	Chicken	26800	13.5
6	Ox	10100	5.1
7	Goat	21010	10.6
8	Pig	11600	5.8
	Total	198810	100

Source: Field Survey, 2008.

Before the established of dairy co-operatives, from calf cow, buffalos calf, male buffalos, chicken, ox, goat and pig. In Annupurna had 2600 income in year and low income rate from non dairy have 18,000 in Preembasti. All co-operatives had more income from crops and calf cow and chicken before established of dairy co-operatives.

CHAPTER VI

IMPACT OF DIARY FARMING ON SOCIO-ECONOMIC CONDITIONS

Dairy farming has been developing as an easier mean to obtain regular cash income than food and cash crops. This sector is also less affected by climatic variation. Food and cash crops demand on nature and prices of such products do not remain stable when the price of food and cash fall, it cannot cover the cost of production so there are various reasons for preferring this dairy sector is regular earning income (60%). About 20% of respondent for and Annapurna, Jaya Nepal, Nava Durga, Aupakar, Sharatpur and Aanapurna believe that keeping dairy animals in home simply means maintain tradition because this has been doing by their forefather's. About 40% of respondents from Nava Gurga regards that dairy animals are kept for manure. This might because respondent might have lot of land for cultivation. And 20% believe that dairy animals are keep for selling and consuming milk 20% of the respondents from Anandapur, Sharatpur, Annapurna, regard that dairy animals helps in operation of biogas plant which decreases in cost of time consumed in firewood collection. The impact of diary farming in the study area has been defined below.

6.1 Economic Condition

6.1.1 Use of Dairy Income

Farmers use the earned income from selling milk is spend in various household purposes mostly the earned income is spend for the cattle itself and self over is spend in domestic purpose, education purpose etc. most

the members of co-operatives spend their dairy income on domestic purpose either that is fulfill basic need facilities or the education purpose and in other sector like to add up in improved cattle. Likewise, Sharatpur co-operatives spend their income most their income for domestic purpose (90%) Annandur, Jaya Nepal, Shree Krishna, Nava, Durga etc. Are spending their income in education of children 30%, 10%, 20%, and 20% respectively. In totality 20%, 10%, 10%, 10%, 20%, 10% is spend for the other purpose by Anandapur, Jaya Nepal, Shree Krishna, Aupalar, Annapurna and Prembasti respectively Nava Durga and Gaurigunj spend their income to buy properly 20% and 30%.

6.1.2 Sources of Loan

Loan is the major source of rural poverty because the low level of income results in taking loan but the high interest rate makes rural people unable to pay back. This results in indebt ness. Before many farmers used to take loan from, their village money leaders where interest rate is high due to which farmers cannot pay back in their whole life. But the involvement in co-operation many farmers are given loan in low interest rate. This has resulted into farmer's investment in new field and earning income. Before all co-operatives have been taken loan from village moneylenders but now farmers have understand the importance of co-operative. So, they taken loan from co-operatives and benefited. The highest numbers of people who take loan from co-operatives are of Jaya Nepal (40%) Nava Durga 50% Gauigunj 20% and Prembasti 60%. The people of all co-operatives prefers to take loan from bank because according to them bank is near and we trust them too. And few people of various co-operatives take loan from other sources such as relative own self and selling own property.

6.2 Social Condition

6.2.1 Schooling of Children

Most of the farmers send their children to school number of students have slightly increased than in the past. There were private school but less number of students was to school because they couldn't afford. If affordable only sons were send. But after involvement in co-operatives the number of children is sending to school slither in government or private. But with increase in income form prefer to send their children to private boarding school then government school if the private school is not far form the house. All cooperative people have realized the importance of education and as well as their increase in income level. They feel that without education they have not increased their income and expectancy.

6.2.2 Making Toilets

Toilet is necessary in every house because it helps to describe the possibilities of infection disease. It is also a sign of consciousness. All the severed farmers have built toilet now. Before (100%) there was not toilet in many houses but after the involvement in dairy co-operatives most of the farmer have local toilet and hygienic toilet. After the people of all co-operative has the hygienic toilet 50%, 70%, 50%, 60%, 70%, 40%, 40%, 80%, 60%, 70% respectively aware of importance of toilet but before they have no aware so they have use local toilet. Before most of people used open places of toilet. In addition to this the rural farmers gets regular income and spend it to build such toilets. Thus the number of local toilets has been increasing.

6.2.3 Buying Luxury Goods

The farmers have spent dairy income in luxurious goods such as radio, television vehicles. Before all co-operatives they have no any luxury goods, they have only radio. But, after all co-operatives increase in their income level they have all types of luxury goods and very few have a vehicle. The rate of luxurious goods has been increasing rate with increase in their income level. In other co-operatives also the number of luxury goods is in increasing rate with increases in income level. This shows that everyone needs entertainment besides work shows. And the decision to keep radio and T.V.at home help rural farmers to more conscious about the various issues of the society.

Table 6.1 : Luxury Goods

Co-operatives	Radio	Television	Motorcycle	Cycle	Others	Total
Anandapur	15	8	3	16	0	20
Jaya Nepal	14	12	5	13	2	20
Shree-Krishna	12	8	2	14	0	20
Nava-Durga	17	14	3	12	1	20
Aupakar	10	12	6	14	2	20
Sharatpur	16	13	1	13	1	20
Gaurigunj	12	9	2	15	0	20
Annapurna	18	16	8	15	2	20
Prembasti	12	11	2	13	1	20

Source: Field Visit, 2008.

6.2.4 Drinking Water Facility

Water is necessary of human being. Before most of the farmers of all co-operatives used water from well. They highly use the well source for consumption of water 100% of Nava Durga and Jaya Nepal co-operative but the Shree Krishna and Sharatpur co-operative had publish

piped water for consuming water only (20% and 10%) respectively. After involvement in dairy co-operative people have started to use water from the public piped water. In this source of water farmers of two/ three household unit and own the public piped water. This shows togetherness and we and feeling among the farmers. Only few people of various co-operatives used piped (public). The people of various co-operatives did not used local source of water because of they have not any local source of water dairy income has made the poor sources of the rural area able to play regularly piped is in the house it self. It means it help to lessen their time for fetching water and the time can used to do other household works.

6.2.5 Fuel Consumption for Cooking Purpose

Biogas and firewood is the major sources of field in the village. Kerosene and other 3 areas also used as the source of fuel. Before most of the people used firewood as fuel because it is easy to get and doesn't have to pay money. But after the involvement in cooperatives means increase in income people has shift their interest of fuel in biogas plants, kerosene or other here other means bhusechula, gas etc. 70% Anandapur, 80% Jaya Nepal 50% Sharatpur 70% Gaurigunj and Prembasti 80% Annapurna use biogas plant show the positive sign of development because biogas is healthy sources of fuel and it also help to protection the forest. The increase number of biogas plant is the result of farmers and sufficient amount of dung, farmers who keep less dairy animals have no biogas plant. Thus biogas directly related to dairy farming. This help to determine that dairy farming have lot of advantages between all the most important being income level and using animal dung as manure and using as fuel for cooking purpose. 20 %, 10 % and 10% Shree Krishna,

Aupukar, and Annapurn use kerosene as a fuel respectively. This might be because of not able to pay.

6.2.6 Involvement in Dairy Farming

The major activities of dairy farming are cutting grass, feeding, cattle, cleaning and caring and at last marketing. Generally cutting grass feeding cattle and cleaning are the work of female and marketing between male and female. Women were bounded in household work and male at the outside the household. But during the study the researcher found that in the study area there was no such division of work. The people have realized that their aim is to earn money so they perform any of the activities whenever anyone is free. This shows gender equality. Now male also goes for cutting grass and feed the cattle if the women are busy in other work the perception of male and female and their work division has been changed into "WE" and "OUR".

6.2.7 Animal Health

In the study area due help of dairy co-operatives are aware of animal health. Before in village there was no one to give suggestions and advice people where less aware of the vaccination or any animals diseases. Many farmers of Shree Krishna, Aupaakar, Nava Durga, Annapurna, Prembasti has reported food and mouth diseases as the main serious disease secondary liver fluke. The farmers reported that before they used to treat the animals sick. But now after involving into co-operatives farmers have started to become more careful because if improved breeds get sick and die then they have to bear heavy provide some amount of money for treatment animals and other to be spend from own side.

Vaccination against the foot and the mouth disease is done differently in different co-operatives but it is not found being done routinely as requires, it is also be done three times a year in improved animals whereas in case of local bread twice a year. However it is found being done regularly by only Jaya Nepal cooperatives and following by Aupalar, Prembasti. But like Nava Durga, Annapurna conducts only when animals seriously needed. This kind of the treatment against the liver fluke and worms are not found regularly in the study area. Generally, it is done three times a year.

Table 6.2 : Frequency of Treatment Against the Animal Disease

Co-operatives	Foot and Mouth vaccine	Liver fluke
Anandapur	When needed	If needed
Jaya Nepal	Three times a year	1-2 times
Shree-krishna	When needed	If needed
Vava-durga	Once a year	1-2 times
Aupakar	1-2 times	If needed
Sharatpur	When needed	If needed
Gaurigunj	When needed	If needed
Annapurna	Once a year	If needed
Prembasti	1-2 times	When needed

Source: Field Visit, 2008

6.2.8 Feeds and Fodder

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

it they could feed more improved green grass to cattle then this result into increase in production of milk and milk fat percentage on which basis the payment is done by dairy development industries either government or private.

CHAPTER VII

PROBLEMS IN DIARY FARMING

7.1 Diary Cooperatives

Among the credit co-operatives, milk producer's co-operatives also have grown rapid within the last decades as a results dairy production has been increasing while the overall production in agriculture sector has declined.

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 the all milk and dairy production co-operatives established throughout the country.

Being a central dairy co- operations association limited Nepal (CDCAN) represents 1,375 primary milk production co-operatives societies at local level and 36 districts level around 51 districts in the country.

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

This is also a sector that has been very less affected by the insurgency problem of the country. Besides its advantages co-operatives have same constraints.

7.2 Lack of Technical Knowledge

Most of the dairy co-operatives lack new equipments and technology. This has limited the dairy production within setting fresh milk to particular area. As a result, diversification of dairy production has not taken place. Any value addition through processing of diversifying the production goes to DDC or private dairy schemes.

7.3 Lack of Effective Investment

For importing necessary equipment and technology the dairy movements has problem of this area. There is little initiatives to raise investment within the movement through a proper baseness plan. The tendency is to ask government to hand over such equipment from DDC.

7.4 Market Competion

A momentous numbers of private dairies have emerged over the part 10 year 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 cooperatives have to production good quality of milk.

7.5 Lack of Alternative use of Old Cows

As per the superstition in Hindu mythology the cow are worship as god so it if cannot be sold for meat and or other purpose. Hence, when the cows stops providing the milk if cannot be sold at whatever the ending value it may have fetched. Because of this the investment that a dairy farmer does in cow doesn't gets return after the old age, which to certain extent, discourage investment in this field industries depend on pasteurizing milk for immediate consumption.

Dairy co-operatives have lot of potentialities if the proper attention is given from government and private sectors. These co-operatives not

only provide loans, but also provide marketing facilities to the rural milk producer and make them secure. And the advice makes farmers more aware of the problems and prospects of this sector.

5.4.2 Problems of dairy farming of uncollected milk is very small about two percentage of the total offer,

7.6 Milk Holiday

The processing sector (DDC and private) has a limited capacity to absorb all the milk offered by dairy farmers especially during the flush season. The terminology " milk holding " is used for the days which milk is not bought form the producer's. This is one of the most important problems faced by the milk producer's milk holidays have grown to 2 to 3 days in a week and it seems that it may continue even in the lean season. At present the amount of uncollected milk is very small about two percentage of the total offer but it may increase in further and further if the efforts for the increase in processing capacity and the consumption are not pushed forward. At present the trend for milk offer is (14%) higher then the consumers demand trend (8%). So most demanded of milk in the market, there are not milk holiday in any co-operatives.

7.7 Calving Pattern in Buffaloes

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

7.8 High Cost of Milk Production

Dairy farming in Nepal is still dominate 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 rising more than three buffaloes of five cattle are production milk at a lower cost than the farmers rearing a single animal. It is possible to reduce production cost by improving management through better feeding, breeding and health care.

7.9 Lack of Diversification

Product diversification has been very limited in Nepal less than 5 percent of milk collected is 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.

7.10 Veterinary Services

The proper veterinary services and facilities are not available in the villages. There is lack of trained veterinary doctor and technicians. Thus most of the problem of dairy farming is lack veterinary facilities. And they too have to come to main city to by medicine and if they facilities and they too have to come to main city to by medicine and if they prefer to call them in villages then heavy amount have to be paid. In village's simple advice and medicine facilities so the farmers fear to keep improved cattle because if they die because of lack of treatment then the farmers have to bear heavy loss, and sometimes farmers by veterinary drug in shops and feed their animal sometimes these impacts negatively to their animals.

7.11 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 it the animals die or become sick then there is no facilities of repayable.

7.12 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 is very less comparison to their expenditure for their animals. Besides these problems this dairy sector has lot of prospects in future. Farmers have been keeping dairy animals since long and they will continue to do in future also. There are losses of potentialities rural farmers. This sector can be strong means for development.

The major reason being agriculture and dairy farming are complementary to each other. Animal's manure is useful in agriculture. It helps to produce more crops and the diversity the crop as animals manure soil more fertile. If more animals are kept more dung is produced which results in more production. If more crops are produced the farmers will have more crop residue and grain to feed animals. Due to more fertile land improved grass 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 competitive with international market and reduce the import of dairy product. Then 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 meant rapid growth of dairy development.

The climatic condition of the area is pleasant. It is neither too cold not. The suitable climate helps of this area helps for quick development of dairy farmers. Both the breed either local or improved grass and fodder can be grown.

The availability of proper condition of road also helps for further development of dairy farming. Radio helps not only to transport the milk for selling purpose but also or exchanging, selling and buying of improved breeds from one place to other can be done through the vehicles.

Dairy farming is less affected by climatic variation than agriculture field so many farmers are attracted toward this sector is position sign for healthy competition. Rural milk producers produce good quality competition milk producers produce good quality and hygienist milk as a result it will have positive effect on human health and as well product can be diversified and can compete with international market.

CHAPTER VIII

SUMMARY, CONCLUSION AND RECOMMENDATION

8.1 Summary

From this study of diary production in Bharatpur Municipality 90% of co-operatives farmers have started to keep more improved animal because they gad loan from co-operatives in minimum interest rate. Those farmers who are left i.e. 10% prefer to keep improved breed but fear rules them because they don't have insurance policy and if animals die then for they have to bear heavy loss. 70% farmers complain about milk holiday milk holidays lies flush season where the majority of milk is wasted. So they want to get rid of this problem.95% of the farmers prefer to sell raw milk because it is easy way and also make milk products but for self-consumption.

All farmers regard that income can be earned from this sector but half of some time the earned income is not sufficient for feeding animals and for their treatment. So they want to increase in price of milk. They regard that water is more expensive then milk 99.84% of people feel secured when they are involved in dairy co-operatives.

Ninety percent of the farmers know about the ghee making and card making in traditional crude methods. There are improved technologies for making different milk products efficiently and economically. After involvement in co-operative 99.99% of farmer feel that they have developed the feeding of togetherness, responsibilities participation.

Ninety two percent of the farmers regard that their superstition in Hindu mythology is that the cows are worships as good as it cannot be sold for meat and or other purpose. Hence, when the cows stops

providing the milk it cannot be sold at whatever the ending value it may have fetched. Because of this the investment that a dairy farmers does in cows does not get return after the old age, which to certain extent, discovers age investment in this field.

Dairy farmers get regular income on the 15 days basic. So after involvement in cooperatives most of he farmers have started to send there. Childers in school either in boarding or government. This shows that they have understood the importance of education.

More than ninety two percent increase in income through selling milk from dairy cooperatives people have utilized income into buying luxurious goods like T.V. and making toilet and change in pattern of using field i.e. biogas plant and change in consumption pattern of food. During the study the research found that the farmers tried to ride the income source either by decreasing the number of cattle or land holding or not mentioning the luxurious items prevalent in their house. After the increase in income level too, some farmers doesn't prefer to make toilet but the most of the rural people are satisfied after getting involved in the dairy cooperatives. This not only has increase the socio economic status of people but those dairy cooperatives have helps a lot in increasing the awareness level of his member which is the positive attitude achieve the target of rural development.

There are some problems in dairy co-operatives and dairy farmers in the study area that is Chitawan 90% of the farmers find milk holiday as the major problem. The next problem that the farmers face is low price of milk 50% of the regard that the price of milk should be increases. Next problem is related with the lack of product diversification less than 5% of milk collected is converted into other dairy products and most of them are for consumption purpose.

Besides having lot of problem this dairy farming is a strong means sustainable development and it is a best means for development because it helps to cherish the local people.

8.2 Conclusion

This study gives a clear picture of the situation dairy production in Bharatpur Municipality. The roles played by co-operatives are into two things. Firstly, fostering we feeling among rural farmers. Secondly, providing marketing facilities to rural milk produces dairy co-operative have made the farmer to unite themselves in groups and farmers to feeling of togetherness. This sector has significant impact on the quality of life. Number of people has changed their economic and social life. Though the study the researcher has found that dairy farming has lot of potentiality instead of having lot of problems in this sector, like of institutional facilities insufficient veterinary facilities low price of milk holiday etc. These problems hinder in development of this sector but these problems have solution.

8.3 Recommendation

Dairy farmers play an important role to up lift the standard of the rural farmers. But, role of dairy cooperatives is very prominent for development. The dairy cooperatives aim for betterment small milk producer's farmers providing all the facilities according to their principles. But still, they have lot of problems and there is need for some improvement in this sector. For commercialization of dairy farming in a sustainable way the following recommendation can be suggested

8.3.1 General Recommendation

(a) For Co-operatives

1. Cooperatives should encourage farmers to keep improved breed of dairy animals whose productivity is higher than that of local ones cooperatives should provide breed of animals on subsidy under its specific programmed.
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 given 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 rice.

(b) 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 to insurance of their cattle because in case of their loss he may receive its claim.
3. Farmers should manage proper shed for their cattle's.
4. Before taking training for 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 of feed and fodder for cattle's. Because milk production from cattle depends upon the feed they get.

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

1. The DDC should increase price of milk so that rural farmers get 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 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 cooperatives in establishing milk and dairy product industries.
2. It should always create and promote the feeling of cooperation among its members through some specific programs.
3. The monitoring and evolution is needed to find out where particular cooperative and successful in implementing on they're given action plans. The co-operatives that are successful should be more facilities so that it would set an example to other co-operatives and encourage them too.

8.3.2 Specific Recommendation

1. This types study should be conducted to find out dairy status among the different part of the country where program is implemented by government of Nepal.
2. A comparatives study should be carried out on the dairy practice between remote and urban areas and other concerned authority should be more focused on this underlying problem.
3. Farmers are not aware of improved technology about the dairy animals rising. Proven technology should be transferred to the cooperatives members through extensive programs.

4. Farmers should be encouraged for product diversification. They feel easy.
5. Research should be done on calving pattern in buffalo production system because majority of buffaloes calving takes places from mid July to October. So high production of milk production from buffaloes to be same in period where milk holiday take place. If we could change calving seasons breeding management it will if help to solve this problem in some extent if not completely.
6. Promotion of dairy sector is also possible through different types facilities such as credit transformation insurance, banking loan.
7. Dairy sector cannot be expanded unless the government taxes interest in its promotion.
8. Dairy sector cannot be expanded unless the government taxes interest in its promotion.
9. Public government bodies non-government bodies, private sector involvement are must for dairy development to achieve the means of development.

8.3.3 Recommendation For Further Research

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

- ❖ Potentiality of dairy development in Nepal.
- ❖ Achievement of dairy co-operatives and its impact on people.
- ❖ Dairy development: A sustain sector
- ❖ Research on dairy development and its marketing.

BIBLIOGRAPHY

Budhathoki, M., (2007). ***"Dairy Co-operative and Rural Development, A Case Study of Banepa: Kavre District".*** Padma Kanya Campus, Kathmandu.

CBS, (2006). Agricultural Statistic of Nepal. Kathmandu, Nepal; Central Bureau of Statistic, Agricultural Statistics Division.

DDC, (2007). ***Annual Report of Fiscal Year 2062/63,*** DDC Center Office, Lainchour, Kathmandu.

Dhakal K.H, (1999). ***"Development of Dairy Farming, A Case Study of Gitanagar VDC,*** Central Development, Tribhuvan University.

DOA, (1991). ***Ten Year Dairy Development Plan (1990-2000), Vol-1,*** Kathmandu: DOA

Joshi D.D., and Bhadhur T. (2001). ***"An Overview of Small Holder Dairy Production and Marketing in Nepal".*** Make Milk, Not Methane Gas in Nepal.

NARC, (2001). Annual Report, ***"Animal Breeding and Artificial Insemination Division"***, Nepal Agriculture Council, Khumaltar, 2058/2059.

NEP; (2006). ***"Third Livestock Development Report",*** ADB, Kathmandu.

Prahad M., (2001). A Paper Presented in the ***"Program on Development of Rural Financing Institution and Co-operation"*** Kathmandu: Bhatbhateni, Nepal.

Rasali S.B., (1990). ***"Present Status of Indigenous Buffalo Genetic Resources in the Western Hills of Nepal".*** Lumle.

Sharma, B., (2000). ***Sustainable Development of Small Holder Dairy Farming in Mixed Crops Hill Farming Areas of Nepal.*** CREST and Nepal Agriculture Research Council, Kathmandu, Nepal. (An Unpublished Research Report).

Shrestha H.R. and Bhattarai C.R., (1992). ***Dairy Development Co-operation's Experience in Nepal.*** NDDB.

Shrestha, C.B. (1981). Cultural geography of Nepal Kathmandu : Ratnapuatak Bhandar.

Singh D., (2004/05). ***Statistical Information on Nepalese Agricultural,*** Kathmandu.

Upadhaya, R.M., Joshi D.D., and Thapa T.B., (2001). ***History of Dairy Development in Nepal,*** Lalitpur: National Dairy Development Board, Danida Support Project.

Upadhayay, R., (1997). ***Problems and Prospects of Tourism in Chitwan District, Research Report,*** Submitted to DEDA, Tribhuvan University, Kirtipur, Kathmandu.

Upadhayay, Rudra Prasad, (2007). ***Prospect of Eco-Religious Tourism in Chiwan Valley: Problems and Challenges,*** Nepalese Journal of Development and Rural Studies Vol. 4. No.2, Central Development of Rural Development.

APPENDIX - II

Chilly Center of Yayan Nepal Milk Co-operatives

Checking of water portion of milk by Lato meter drop in the full milk of Lactojar there is also contifuse machine to checking the fat of milk

Checking fat, lacto and Milk quantity by computer

Putting the milk in milk cane on analizer

Farmers are waiting to pour milk in to cane

Farmers are pouring in to cane