CHAPTER - I

INTRODUCTION

1.1 Background of the Study

Nepal is predominantly a rural and agrarian country. Of the total population, almost 85% still live in rural areas and nearly 66% rely on agriculture for their livelihood. Nepalese agriculture is based on integrated system combining crop production and animal husbandry. Besides this, agriculture derives substantial export earning. Moreover, agriculture provides more than 60% of raw materials for all agro-industrial establishments in the country.

The social relationship of animal species and human beings dates back to time immorial. Farm animals were domesticated before the starting of recorded history. Paleolithic man hunted the wild animals for his food and clothing. While his follower, Neolithic man, started to domesticate them. Infact man in the new Stone Age, first started animal husbandry and agriculture. The earliest animal, which was domesticated by human, was about 14000 years ago. Then the sheep was domesticated as the food animal by man but it was done much later, about 11000 years ago. Therefore it appears that man spent most of his life (99.8%) after his origin without any domestic animal. Human beings tamed and domesticated a number of different species of animals especially those, which were easy to domesticate, and were economical with qualities such as docility, growth rate and multivaried uses. Livestock rearing has been an integral and essential part of the agricultural system in Nepal. Majority of the farmers have accepted it as a major source of income generation and also has been taken as a means to reduce poverty and to increase the participation of women to improve their socio-economic status. The share of agricultural production to national Gross Domestic Product (GDP) is about 40% of which livestock sector contributes more than 30% to the agricultural GDP and about 17% to the national GDP and 4% to national export.

Livestock ensure sustainability of hill agriculture by contributing to soil fertility maintenance and agricultural draught power. Livestock is equally

valued for family nutrition and soil prestige. Milk and meat are the major sources of protein in Nepalese diet. Not only that, these livestock products are the reliable sources of cash income for farm household. A poor family having a pair of oxen has advantage to get lands for share-cropping in the rural communities. Butter-milk (after separation of butter from milk) is usually distributed among the neighbours, which are usually a free commodity and excellent source for family nutrition of the poor. Moreover, livestock provides wool, hide, bone and skin, which are used as raw materials for livestock based industries. Draught power is one of the important source of power used in agriculture as well as they are important means of transportation in the hills and mountain area. Manure is another crucial contribution of livestock sector, which helps to maintain soil fertility there by increasing agricultural productivity

Similarly, we can generate biogas from dung of livestock animals. It is estimates that 81,000 MT of dry dung is used as dung cake, the alternative to fuel wood, which is equivalent to 20,400 MT of oil. The estimated biogas potential of Nepal is sufficient to operate about 1.3 million biogas plants (Pandey, 1996). It can make a saving in foreign exchange for import of chemical fertilizer, improved seeds, farming equipment and oil etc.

Per capita consumption of primary energy in Nepal is estimated to be 13 Giga Joules: out of these, traditional sources (fuel wood, agricultural/residues and dung cakes) make up 87.43% almost 35% of export earnings is needed for the import of petroleum products and coal. It is found that the use of agricultural and animal waste for cooking purposes rather than being used as organic fertilizer obviously results in decreasing soil fertility and reduced crop yield. Moreover, kerosene and electricity are mainly used for lighting, LPG for cooking in urban areas only but in rural area traditional energy source will remain, the main supplier of energy in the foreseeable future. Not only that, majority of people in rural areas is deprived from electricity facility; and cannot afford even if it is available. In this context, biogas produced fro, cattle and

buffalo dung may be one of the most appropriate alternative sources of energy both for cooking and lighting.

For all these reasons, the development of livestock production is a central part of the drive for food security and economic growth through out much of the developing world.

1.2 Statement of the Problem

A large number of farmers in Nepal have taken up livestock business as one of the most important regular income generating activities. And to some extent, this occupation has helped to improve the disguised unemployment problem of Nepalese agriculture.

But in livestock rearing, rural people are suffering from various problems. High and increasing population pressure, urbanization, lack of grazing land, forest degradation etc. are some major constraints in the development of livestock sector.

Breeding and medical facilities to livestock are difficult to be accessed. Most of the rural people has to go far to get veterinary facilities and insurance of cattle are available only to the animals purchased under bank loan arrangement. Risks of loss of animals due to fatal disease are also significant problems. Subsidy policy on livestock rearing, amount of loan for rural poor is not sufficient. Complex social structure and attitudes towards livestock and consumption of animal products, insufficient breeding facilities and so on are other problems in livestock sector. The study will explore the contribution of livestock rearing and problems with related to this occupation.

1.3 Objectives of the Study

The general objective of this study is to find out the contribution of livestock rearing in rural economy.

The specific objectives are as follows:

a) To analyze the impact of livestock rearing in rural household economy in Mrigauliya VDC.

b) To examine the status of livestock rearing in the study area.

c) To find out the problem of rural people in livestock rearing.

1.4 Rational of the Study

Most of the developing countries like Nepal are dependent on agriculture, but agricultural products have not been able to uplift the status of growing population. Food production is increasing at arithmetic progression but human population is increasing at geometric progression. But most of fertile land is decreasing due to extension of settlement. In this context, livestock raising is a major source of income generation among the poor people. Livestock is often sold to meet sudden and immediate cash need such as to treat illness, to pay school fees and other social obligations.

Livestock farming is inseparably linked with agriculture in Nepal. It is developing as a second occupation of rural people. In spite of the great significance of livestock, only a few studies have been done to access the contribution of livestock raising in rural economy. Thus, lack of information has made it difficult for policy makers to set priorities for further growth, expansion and development of livestock sector.

Mrigauliya VDC of Morang district is one of the important area for livestock rearing. Many farmers have their own cultivate area and also have cattle grazing area. From, where they collect their cattle feeding like green grass, straw, fodder leaves. In this VDC most of the farmers are farming more than one milking animals and goats. And the secondary source of income of the farmers in this area is milk sailing gain. All those factors indicate the high potentiality of livestock farming.

This study tries to analyze the situation of livestock farming in the study area. It attempts to find out the socio-economic condition of the livestock farmers and impact of livestock farming on the general life of the rural people.

Likewise, it presents the problems of this occupation and recommends for its sound development planners, researchers, policy makers and other interested persons can be benefited.

1.5 Limitation of the Study

This study is based on certain objectives related to livestock rearing. This study is confined to the Mrigauliya VDC of Morang district.

The concluding analysis of this study may not be generalized in the context of national aggregate level because of some limitations:

1. It is limited with the sample households of the Mrigauliya VDC that cannot be taken as a representative of the country.
2. The resources and the manpower are limited for the study so only 20% households of the study area are chosen.
3. This is an academic work, as a researcher is a student who has no experience thus there will be many shortcomings.

The study deals with the livestock farming. It lacks the information about technical aspect i.e. animal breeding. Likewise, the study lacks information in detail on the carrying capacity of the area, but it tries to focus on the agro-based economy of rural farmers. It seeks to study those animals that are commonly owned by the large bulk of the peasantry living in the Terai of Nepal, viz, cattle, buffalo, goat and pig. Although the study tries to relate livestock development and pasture but only livestock development has been analyzed in detail.

CHAPTER - II

LITERATURE REVIEW

In Nepal number of research studies on livestock farming has been under taken in the past year. Some of them are as follows:

Shrestha, (1979) has reported that integration of crop and livestock enterprises are necessary for optimum utilization of farm resources such as land, labour and capital. Livestock enterprises also will contribute to play a major role in hill's economy because of the smaller size of the landholdings in the hills than in the Terai.

Pradhan, (1989) has pointed out that livestock development is essential to the economic development of rural areas of Nepal. According to him, it is important for increasing agricultural production as well as for enhancing the economic status of the rural farmers.

Proffenberger, (1980) states that, the average Nepalese live in the hilly region and are mostly agricultural practitioners. Living in steep hill topography, Nepalese people practice agriculture for their livelihood assisted by animal husbandry. To hem, the rural people of Nepal are still practicing animal husbandry and farming together. They belong within the character of hill economy.

Similarly, Tulachan and et al., (1999) in their research report published by FAO and ICIMOD state that livestock are integral component of rural hill economy. Despite the crucial contribution, the livestock raising is mainly constrained by fodder deficit. They recommend for rearing of productive and appropriate livestock animals, human resource development (training) increasing plantation of fodder species in private land.

Rajbhandari and Shah, (1981) also state that productivity of livestock in the hills of Nepal is much lower than their production potential. The most important reason for this low productivity is the acute shortage of feed in the

hills. Similarly, the main reason for acute shortage of feed is the population pressure as well as increased livestock pressure per unit of land.

The paper presented by 'New Era', (1981) reveals the importance of livestock in hill agriculture system both for draught power and manure. According to the paper, agriculture by product is also one of the most important sources of feed for the livestock. So, livestock keeping and agricultural production are interrelated and complementary to each other.

Gurung, (1984) has tried to show that rapid population growth has resulted to the decline of natural resources that has led to reduction of animal's productivity and manure thereby declining agriculture production and productivity. So, he has focused on better and judicious natural resource management in order to increase agricultural productivity as well as livestock productivity.

Pradhan, (1985) has tried to ascertain how goat farming contributes to rural household economy and how far it can be linked with modern technology and what type of management can attain maximum profit. According to his findings, landless or less landed farmers raise their economy more upon goat farming than the farmers with large land holdings. However, due to poor management resulting from ignorance of modern and scientific raising techniques, goat farming hasn't proved beneficial as it could have been improved if farming technology had been applied and due investment made on this account.

Oli and Morel, (1985) edited book Livestock on the hill of Nepal, includes various paper on livestock farming presented by different scholars in seminar held by Pakhribas Agriculture Centre, Dhankuta. It covers different aspects of livestock farming (e.g. faring system, animal breeding, feed and fodder, livestock product, market, animal diseases and health) in the hills of Nepal. Livestock plays a significant role in hilly agricultural system as well as socio-economic life of the hilly farmers.

Y. Yadav, has examined the relationship between livestock and crops, livestock and forest, crop and forest in the mountain region. In this study he finds that livestock, crop and forest are closely linked with one another.

Singh and Shrestha, (1990) in their book, Review of Livestock Development in Nepal have made a valuable study. They studied livestock on the basis of ecological belts, variation of livestock population distribution and holding. They have examined the linkage of livestock with other sectors e. g. forest, pasture land, agricultural land etc. they have also described animal health and livestock market.

Gurung, (1983) throw lights on the importance and problems of animal feed in Nepal with the case study of Langtang valley. He states that hill and Alpine regions are suitable for livestock development because they are rich in pasture, though animals do not get sufficient feed even in summer season due to low supply of feeding. So he recommended that the animals feed could be increased by plantation of green grasses and its preservation stall-feeding, proper and effective management of grazing system etc.

Mathema and Van Dar Veen, (1980) have made a valuable study. The paper presents livestock situation in Pumdibhumdi of Kaski district and Khadbari in Shankhuwashava district of western and Eastern Development Region of Nepal respectively. It examines the interdependence of livestock and crops farming of the different farm categories. The study reveals the relationship between farm size, family size and holding size of livestock per household. The study found out that there in positive relationship among these variables. Returns from owning livestock and constraints for owning additional livestock are also described in the paper.

New Era, (1980) shows the use of forest and its protection by the community. It has estimated that 73 percent the livestock feed is provided by forest and grass lands.

Amatya, (1990) shows the role of lopping in supply of fodder trees. According to him, the productivity of fodder trees depends on its lopping pattern but over

lopping can retard its growth of forage. It is possible to have green fodder available throughout the dry season if the appropriate species are planted and harvested in the correct sequence.

Ranjit, (1991) presents the agriculture situation in Tupche Village of Nuwakot district. The study examines the relationship of pasture, animal and agricultural production. He has also analyzed the role of livestock in household income and the role of village lopping cycle in pasture management of Tupche village.

Rana and Mathema, (1981) have reported the role of manure in agriculture production and productivity. They state that the increasing amount of animal manure applied to crops gives greater returns than increasing the number of labour expanded in cultivating crops. Manure could be increased by stall-feeding practices. Similarly, the quality of the manure could be improved by improving the manure storage method with mixing fodder leaves.

Field and Pandya, (1969) explain the pasture, fodder and livestock development in connection with Trishulie watershed Nepal, which shows the problems of overgrazing by vast number of livestock and its effect upon the accelerating soil erosion. According to this report, the activities of agriculture, livestock keeping, forest, management, pasture utilization and ecological balance are interrelated and must be considered together. But the authors fail to give concrete solutions to the problems.

A report pointly published by UNSP/FAO/SATA discusses the existing pasture and fodder resources which are just sufficient to feed the cattle during the rainy season but animals live under sub-maintenance level of nutrition during the dry season because of heavy pasture and pasture, so that livestock directly of indirectly depends on crop residues (like paddy, straw, millet straw, maize stover etc). Therefore, the livestock development is also a function of agricultural development.

Departmental Food and Agricultural Marketing Services, (1985) has reported the role of livestock in the Nepalese economy with concerning three geographical zones and also covers so many others to boost up the livestock

production and its productivity in future. This report states that community pasture land is now over grazed and livestock are half fed most of the time especially in winter. To overcome this problem, the report recommended that the over grazing pasture should be controlled and organized by adopting rotational system. Similarly, we should try to make hay as much as possible and preserve it properly for winter.

Dahal, (1993) has examined the relationship between livestock and farm size. He has shown that there is positive relation among farm size, family size and holding size of livestock. The study also analyses the role of livestock in the household economy. Further it describes the existing situation of fodder and feeding practices in Jarayotar village of Bhojpur district.

The developing world is projected to be the most important supplier to this growing market. Production of meat and milk is expected to increase by about 3% per year in the developing world, compared to about 0.5 percent in the industrial countries. Industrial poultry production could be the fastest growing sector with an expected increase in output of about 80% until 2020. The other livestock commodities will grow at about 50% over that period. Stricter environmental regulations; consumer concerns about health and animal welfare; increases in the price of grain, water, energy, and transport; land scarcities; and major breakthroughs in the use of tropical fodder might shift the balance back to red meat production. Whatever happens, the livestock sector will under go some dramatic structural changes. (WB: 2001)

Livestock play an important but variable role in both rural and urban societies. Animals can use products that are left over by humans, such as kitchen wastes, hotel leftovers, grass from roadside and empty plots, residues from agro-industry and crop residues, while giving multiple products in return, such as meat, eggs, milk and fibres, or by providing a source of income. They can provide emotional attachment and play a role in social stability, but at the same time they can affect public health both positively and negatively. However, traditional systems of animal keeping are not static. They adapt to changing

circumstances such as increased population pressure, use of fertilizers, changing consumption pattern and new regulations. Livestock keepers, governments, national and international agencies each have a different role in this change, including keeping track of developing technologies and management practices that might be useful for development. The farmers expertise lies in the fact that they know their own condition best while the expertise of the national and international agencies lies in their access to information from different areas else where in the world. The exchange of experiences among livestock keepers, consumers of animal produce and institutions at both national and international levels is necessary for the generations and applications of appropriate technologies and management techniques that serve to keep farmers in business. (FAO: 2001)

Joshi, (1976) tries to show the specific role of livestock in the development of agriculture in Nepal. He introduced the concept of 'Animal man relationship'. He has reported that Nepalese farmer especially small farmers in the rural context cannot increase their agricultural productivity without improving the animal husbandry practices. So he strongly emphasis that the rural sector of the country should be provided sufficiently the basic infrastructure for increasing animal husbandry practices.

Koirala, (1985) has presented various aspects of the role of livestock in our economy. He has tried to prove that livestock have played multiple roles in Nepalese socio-economic set-up. He has concluded that Nepalese economy should consider the overall picture of the combination of both agriculture and livestock farming. So, he has emphasized the development of livestock condition in order to improve agricultural productivity with establishing livestock training centre veterinary, health post, and sufficient loan with lower rate of interest for animal husbandry.

Summary of the Literature Review

From the various study it becomes clear that livestock development is essential for the economic development of rural area. Integration of crop and livestock enterprises is necessary for optimum utilization of land, labour and capital as well as for enhancing the economic status of the rural farmers. Some reports reported that pastureland has overgrazed and livestock are half-fed especially in winter. To solve this problem it has recommended: hay making for winter rotation system should be practiced, should plant the fodder species in private land, make people aware about the importance of stall feeding system etc. in Nepal, low productivity of livestock animals due to acute shortage of feed it is mainly because of the population pressure as well as increasing livestock pressure per unit of land. So, there should be better management of natural resources. Emphasis should given to the development of livestock condition in order to improve agricultural productivity with establishing livestock training center, veterinary health post and sufficient loan with lower rate of interest for animal husbandry.

CHAPTER - III
RESEARCH METHODOLOGY

Research methodology is a way to systematically solve the research problem. In other words, research methodology describes the methods and process applied in the entire aspects of the study. This chapter mainly discuss on the study area, research design, nature and sources of data, data collection technique, data analysis etc.

3.1 Selection of the Study Area

The selected research site of the study is Mrigauliya VDC of Morang district. This study covers ward no 7 of Mrigauliya VDC. This VDC is located in the Terai belt and Mahendra highway passes across the middle part of this VDC. The VDC is limited with Dulari and Sundarpur VDC in the west, Karabari in the north, Belbari and Harichha in the east and Siswani and Dangara in the south. According to census report of 2001, the total population of this VDC is 12913. There are 190 households in ward no.7, and total population is 954, among them 477 are males and rest are females. In this VDC most of the farmers has kept livestock animals for farm, milk, meat and energy purpose. The main occupation of the people is agriculture. This area is selected to find out the impact of livestock rearing in rural household economy.

3.2 Research Design

A descriptive as well as analytical research design has 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.

3.3 Nature and Source of Data

In this study major priority is given to the primary data, which are obtained from the field survey, basically these primary data are dependent on the

interview of the sample household and through the structured questionnaire. On the other hand various data are not getting from the primary source, which is tried to find from the secondary data. Especially those secondary data were obtained from different types of government officials, library of T.U., related published and unpublished books, booklets, seminar reports journals and other related literatures.

3.4 Sampling Technique and Sample Size

It is not possible to interview the entire household with livestock in the study. Therefore sampling method has been applied. The total number of livestock keeping households in this ward is 151. Out of them only 31 (20%) households has been selected, with the method of simple random sampling. Thus the selected 31 households represent the sample of the present study.

3.5 Technique of Primary Data Collection

For the collection of primary data, household survey, interview, by field visit, observation were used. Despite the fact achieved from respondents reply, the researcher self observe the housing and animal-shed types, care of livestock animals. This approach helped to understand the real situation and activities of milk and meat producers from livestock rearing.

3.6 Tools of Primary Data Collection

The following tool has been used to collect primary data.

3.6.1 Structured Questionnaire

Structured questionnaire has been used to get detail information about livestock farming. It is used to collect data on population, education, number of livestock animals, mortality condition of livestock, income from livestock, problems in livestock keeping etc.

3.7 Data Analysis and Presentation

The systematic analysis has been done by using qualitative as well as quantitative tools and techniques. The quantitative data obtained from

structured questionnaire are processed firstly. Then processed data have been presented in tabular form. Finally, the data interpreted with additional information. Simple statistical tools such as percentage have been used to present the findings. Besides this, diagrams, figure and pie-chart are used to supplement the presentation of the findings of the study.

CHAPTER - IV

PRESENTATON AND ANALYSIS OF DATA

4.1 Socio-economic Status of the Livestock Rearing Farmers

Most of the livestock farmers are depend on agriculture. This study shows that the livestock rearing is in favour to enhance the economic status of the farmers because most of the farmers are satisfied by keeping the animals. From the earning of livestock they fulfill their daily expenses. Some of the farmers are taken it as the side occupation.

This chapter describes the socio-economic status of the livestock farmers and the livestock-holding situation, problems in livestock rearing of the (Mrigauliya VDC) study area.

4.2 Population Structure

Bhutai Tole has 190 households with a total population of 954, among them 477 are male and rest are female. But the researcher made a detailed study taking sample from 31 households. This community is also similar to the other Nepali society in respect of son preference, which is also one reason of population growth in the community. Detailed population structure of studied community is given in the below table.

Table 4.1

Population Distribution by Age and Sex of the Sample Households

S.N.	Age Group	Population			Percentage (%)		
		Male	Female	Total	Male	Female	Total
1	Below 6	9	5	14	8.9	4.5	6.6
2	6-15	15	22	37	14.8	19.8	17.5
3	16-44	51	58	109	50.5	52.3	51.4
4	45-59	13	14	27	12.9	12.6	12.7
5	60 and above	13	12	25	12.9	10.8	11.8
Total		**101**	**111**	**212**	**100**	**100**	**100**

Source: Field survey, 2006

Total population of the 31 households is 212 including 101 (47.6%) males and 111(52.4%) females. It shows that female population is higher than that of the male. There are 24.1% people are under 15 years. 64.1% are under economically active age group and rest is dependent population among the sample household population.

4.3 Ethnic Composition of Sample Households

Bhutai Tole of Mrigauliya VDC is inhabited by multi-ethnic groups. Brahman, Chhetries are the dominant ethnic groups followed by other caste groups in the study area. The ethnic composition of sample household has been shown by the following table.

Table 4.2

Ethnic Composition of Sample Households

Ethnic Composition	No. of Household	Percentage (%)
Brahmin	19	61.3
Chhetri	6	19.3
Sarki	2	6.5
Rai	2	6.5
Giri	1	3.2
Tharu	1	.3.2
Total	**31**	**100**

Source: Field survey, 2006

Above table shows that among 31 households, 19 households (61.3%) are Brahmin, 6 households (19.3%) Chhetri, 2 households (6.5) Sarki, 2 households (6.5) Rai and so on.

4.4 Religious Composition

Mrigauliya VDC has multicultural and multi ethnic society as people of different casts and creeds are living there. This VDC is dominated by Hindus (99%) there is a religious tolerance among them.

4.5 Educational Status of Sample Households

There is good educational facility in the village. Literacy plays vital role in overall aspect of human life. Following table clears the educational status of the population of sample households of study area.

Table 4.3 'A'

Literacy Rate of Sample Households

S.N.	Category	Male		Female		Total	
		No of Population	%	No of Population	%	Total Population	%
1	Literate	90	93.7	90	82.6	180	87.8
2	Illiterate	6	6.3	19	17.4	25	12.2
Total		**96**	**100**	**109**	**100**	**205**	**100**

Source: field survey, 2006

More than 87.8% population is literate in the study area. Overall 93.2% males and 82.6% females are literate. Female and male literacy percent is slightly different. In the total population 87.8% are literate. The proportion of female illiteracy is higher. Under 6 year's age group population is not included in the literacy rate.

Table 4.3'B'

Educational Status of the Sample Household

S.N.	Educational Status	Male	%	Female	%	Total	%
1	Primary	23	25.5	31	34.4	54	30
2	Lower secondary	14	15.5	11	12.2	25	13.9
3	Secondary	28	31.1	35	38.9	63	35
4	Higher education	25	27.8	13	14.5	38	21.1
Total		**90**	**100**	**90**	**100**	**180**	**100**

Source: Field survey, 2006

The above table shows that educational status of the population of the sample household of the Bhutai Tol of Mrigauliya VDC. From the above table it is that

in the levels of educational attainment, proportion of female is higher than males at primary and secondary level category. Whereas in other category, male percentage is higher than female. In higher level of education, female attainment is only 14.5 whereas male proportion is 27.8 it is due to the growing household responsibilities upon female and most of the girls marry before reaching higher lives education.

However it is observed that the literacy status of men and women in the study area are better than the national level. It may be because of more facilities of school, college, non-formal educational program in the study area and the awareness of people about education.

4.6 Occupational Structure of Sample Households

Though the residents of the study area perform various activities, which are concerning economic development such as farming, animal husbandry, business, and wage labour service etc. Their economic condition has based on agriculture. Occupational structure of sample households is indicated as below.

Table 4.4

Occupational Structure of Sample Households

Occupation	**Primary**	**%**	**Secondary**	**%**
Agriculture	24	77.4	7	36.8
Business	4	12.9	5	26.3
Service	3	9.7	4	21.1
Wage labour	0	0	3	15.8
Total	**31**	**100**	**19**	**100**

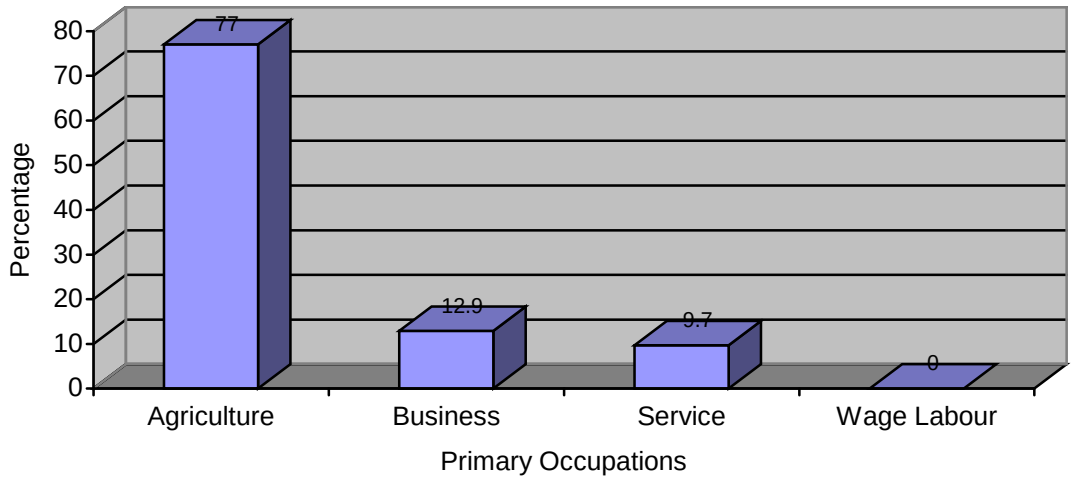
Source: Field survey, 2006

The above table 4.4 shows that the main occupation of the people of the study area is agriculture. So, 24 households (77.4%) are primarily engaged in joint agriculture and livestock raising, 12.9% households has taken business as primary occupation and rest 9.7% households have government job. The

farmers, who do not have sufficient land for their survive work as wage labour in agriculture or as tenants for survive.

Figure 4.1

Occupational Structure of Sample Households



4.7 Land Ownership Pattern of Sample Households

Land ownership pattern of this village is unevenly distributed. Large numbers of people are depending on small parcel of land. In an agricultural country like Nepal, land is considered as the symbol of economic well being. The following table indicates landholding size of sample household.

Table 4.5

Land Ownership Pattern of Sample Households

Land Holding	**Sample Household**	**%**
Landless	1	3.2
1-10 Kattha	8	25.8
11-19 Kattha	1	3.2
1-2 Bigha	11	35.5
2 Bigha above	10	32.3
Total	**31**	**100**

Source: Field survey, 2006

The above table shows that 3.2% household is landless, 25.8% families have 1-10 kattha, 3.2% family have 11-19 Kattha, 35.5% family have 1-2 Bigha, and 32.3% family have more than 2 Bigha of land who are supposed to be big farmers in the area.

4.8 Source of Energy for Cooking

People of the study area seem environmentally conscious. They are aware about the environmental degradation. They are conserving forests by forming community forest user group. They do not go to the forest for grass cutting and fuel wood collection except for the public open days. Those household who have land, have planted trees and some fodder. Most of the people of study area have made the biogas plat. Kerosene and electricity users are found in negligible quantity. The major energy source for cooking in study area is biogas, fuel wood and LPG. Majority of the people use biogas as a cooking energy source.

Table 4.6

Sources of Energy for Cooking in Sample Households

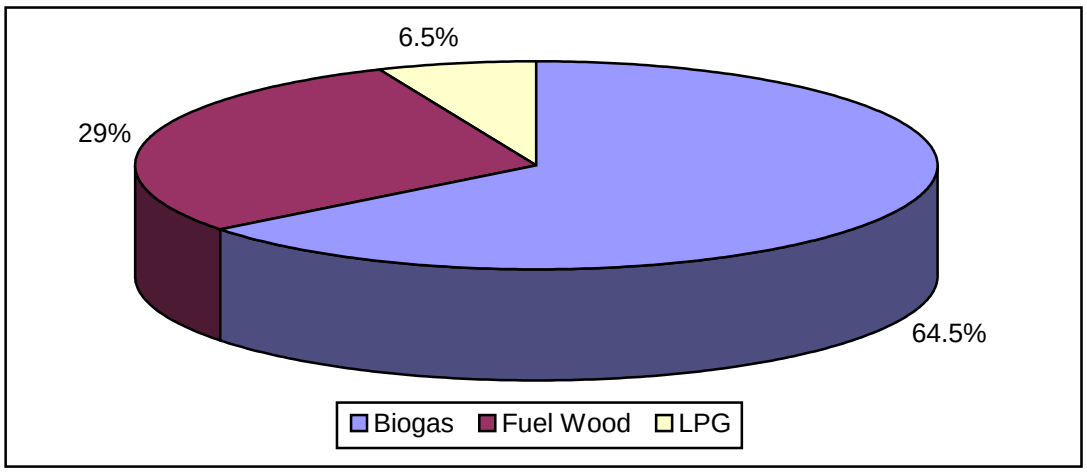
S.N.	Source	No. of Household	Percentage
1	Biogas	20	64.5
2	Fuel wood	9	29.0
3	LPG	2	6.5
Total		**31**	**100**

Source: Field survey, 2006

Above table shows that maximum 20 households (64.5%) use bio-gas, 29% use fuel wood and 6.5% use LPG gas. It shows that biogas has become an alternative source of energy for cooking. Farmers of the study area are attracted towards this technology.

Figure 4.2

Sources of Energy for Cooking in Sample Households



4.9 Purpose of Livestock Holding of Sample Households

Most of the families of the study area are rearing domestic animals like, cattle, buffalo, goat, pig and birds like chicken, duck and pigeon for different purposes as per their capacity. Some sell animals and birds for the purpose of meat and some sell milk. Some are rearing animals for consumption of milk and fertilizer for farming. Detail information is given in the following table.

Table 4.7

Purpose of Livestock Holding

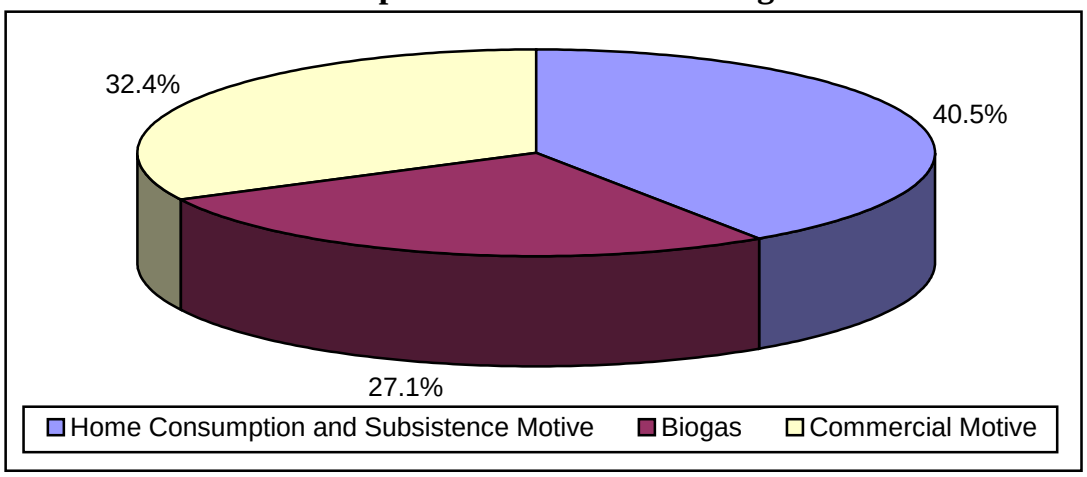
S.N.	Purpose of Livestock Holding	Percentage
1	Home consumption and subsistence motive	40.5
2	Bio-gas	27.1
3	Commercial motive	32.4
Total		**100**

Source: Field survey, 2006

The table shows that 40.5% households raise livestock for home consumption and manure production for cultivation of crops other 27.1% farmers for Biogas purpose and 32.4% raise animals for commercial motive.

Figure 4.3

Purposes of Livestock Holding



Similarly livestock population of sample household is presented below.

4.10 Livestock Population of the Sample Households During the Year 2004-2006

Due to Growing benefits from the livestock sector, farmers are attracted towards livestock rearing. It has multiple benefits of livestock rearing. For the agricultural farmers, it is necessary to keep livestock animals for fertilizer and draught power. To maintain the high pressure upon agriculture, livestock rearing plays important role. So, livestock population is increasing.

Table 4.8 'A'

Livestock Population of Sample Household at the Time of Field Survey

Types	No. of Livestock	Percentage	Average Livestock Population Per Sample Household
Cow	68	25.7	2.2
Buffalo	17	6.4	0.5
Oxen	40	15.1	1.3
He buffalo	3	1.1	0.1
Goat	133	50.2	4.3
Pig	4	1.5	0.1
Total	**265**	**100**	**8.5**

Source: Field survey, 2006

Table 4.8 'B'

Livestock Population of Sample Household in Previous Year (2004/5)

Types	No. of Livestock	Percentage	Average Livestock Population Per Sample Household
Cow	48	21.2	1.5
Buffalo	12	5.3	0.4
Oxen	48	21.2	1.5
He buffalo	8	3.6	0.3
Goat	95	42.1	3.1
Pig	15	6.6	0.5
Total	**226**	**100**	**7.3**

Source: Field survey, 2006

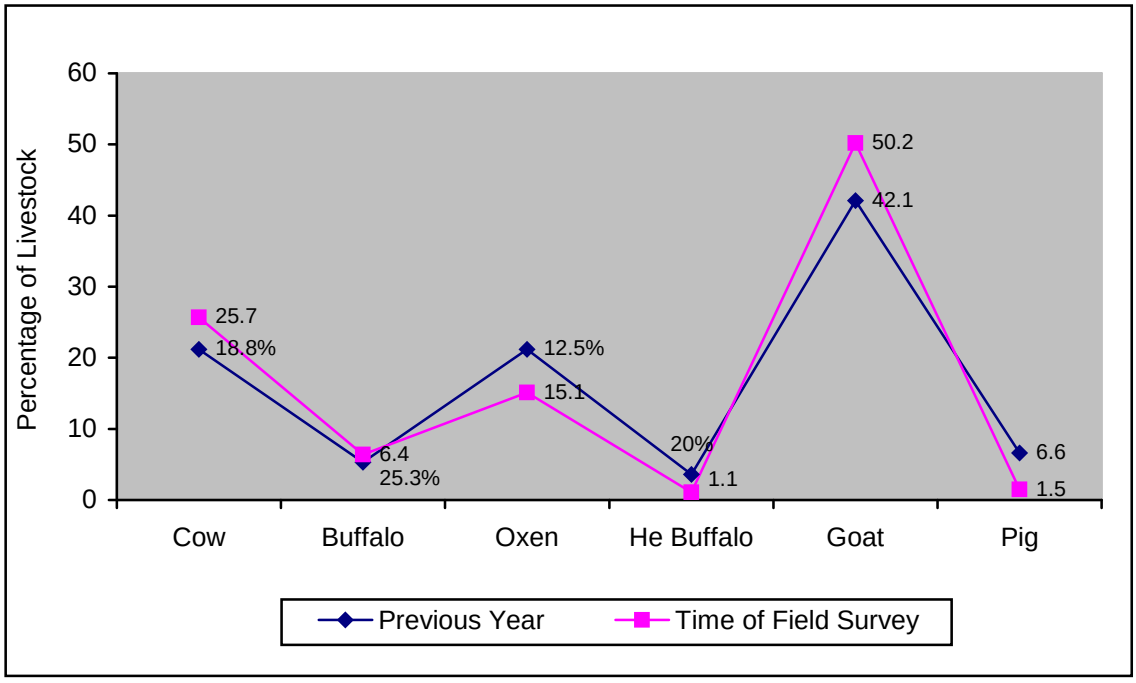
The above table 4.8 'A' shows that there are 265 animals in this year (2006). The distribution of these total livestock animals of the sample households shows that among the livestock, household keeps cow 25.7%, buffalo 6.4%, goat 50.2%, oxen 15.1%, he buffalo 1.1% and pig 1.5%. The average number of livestock per household is 8.5.

Similarly, table 4.8 'B' shows that in previous year (2004/5), there were 226 animals. The distribution of this total number of livestock consists of cow 21.2 percent, buffalo 5.3 percent, oxen 21.2 percent, he buffalo 3.6 percent, goat 42.1 percent and pig 6.6 percent. The average number of livestock per household was 7.3 in previous year (2004/5).

Above tables reveal that priority is given to goat rearing than buffalo, cow, oxen and so on.

Cow is still occupy religious place and is important for milk, manure, biogas and commercial motive, oxen and he buffalo for draught power and manure. Buffalo are raised mainly for milk, manure, biogas and commercial purpose. Goats and pigs are raised for meat and cash income.

Figure 4.4: Livestock Population of Sample Household of Previous Year and at the Time of Field Survey



4.11 Distributions of Livestock Animals (cow, buffalo and goat) by Breed

In the past, Nepalese farmers kept local breed animals in large number, which could easily found in the market. But at present, the farmers are attracted towards the animals of improved breeds. In the study area, most of the cows are found of improved breeds.

Table 4.9

Distribution of Livestock Animals (buffalo, cow and goat) by Breed

Types	Buffalo		Cow		Goat	
	No.	Percentage	No.	Percentage	No.	Percentage
Local	15	88.2	23	33.8	108	81.2
Improved	2	11.8	45	66.2	25	18.8
Total	**17**	**100**	**68**	**100**	**133**	**100**

Source: Field survey, 2006

The table reveals that most of the buffaloes and goats of the sample household are local breeds. Among cow, large numbers are improved breed followed by local but pigs has found only of local breed.

4.12 Mortality Condition of Livestock Animals

Mortality rate in improved breeds has been found in great number than the local breeds in the study area. Local breed animals have been found to be high immunative power. The following table shows mortality condition of animals of sample households.

Table 4.10

Mortality Condition of Livestock Animals of Sample Households

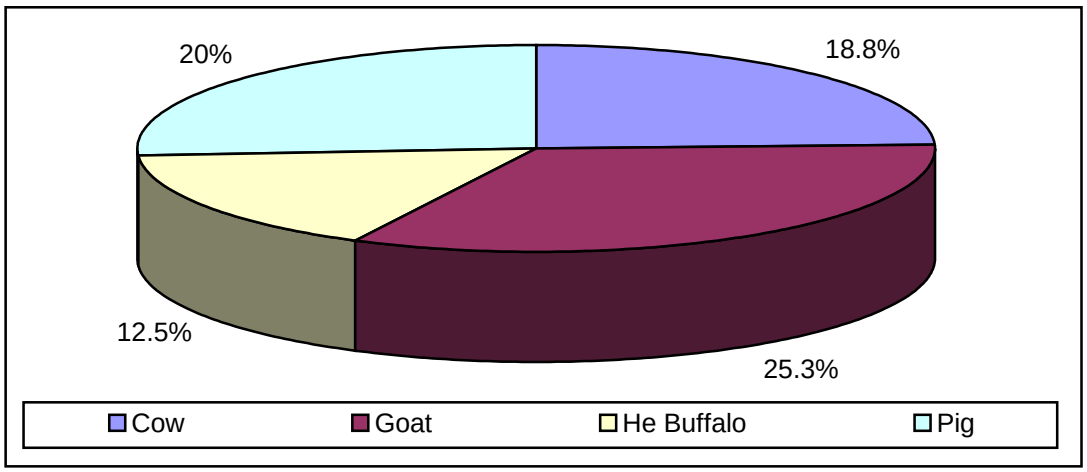
Types of Animals	Total Animals in Previous Year	No. of Death with in One Year	Percentage
Cow	48	9	18.8
Goat	95	24	25.3
He buffalo	8	1	12.5
Pig	15	3	20.0

Source: Field survey, 2006

The above table shows that among livestock animals got have high death percentage followed by pig, cow and he buffalo.

Figure 4.5

Mortality Condition of Livestock Animals of Sample Households



4.13 Expenses on Livestock Rearing

Expenses on livestock sector differ according to the number of livestock holding. Such as in the study area expenses on this sector is not similar. In buying of cow and buffalo, households have spent 10,000-1,30000 Rs according to the number breed of cattle. In the keeping arrangement household have spend 12000-100000 Rs, in medicine 1000-40,000 Rs have to spend annually. Among the sample household, 8 households fulfill the food requirement by their own farming source. Who have the improved breeds of cattle have to spend in food because they can't fulfill from their own sources and that types of animals are rapidly attacked by diseases. So the expenses on medicine to the improved types of cattle requires in high amount. So the expenses on medicine to the improved types of cattle requires in high amount. Household's expenses on different article of livestock farming is shown in the below table.

Table 4.11

Expenditure on the Different Articles Related to the Livestock Rearing/Year

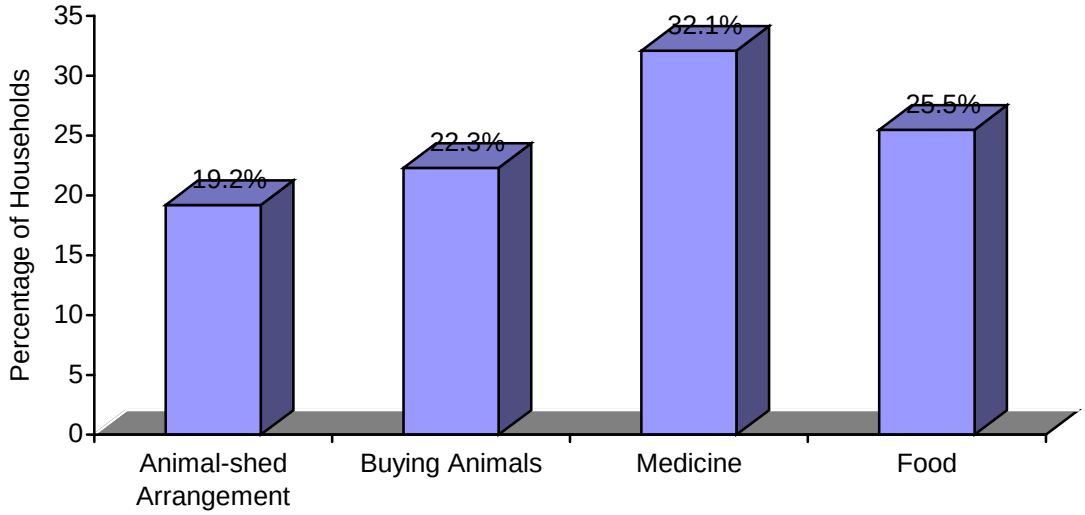
Topic	Percentage of Sample Household
Animal-shed arrangement	19.2
Buying animals	22.3
Medicine	32.1
Fooding	25.5
Total	**100**

Source: Field survey, 2006

According to the above table 19.2% households have made house systematically for keeping the animals. 22.3% households has bought cattle, among them most of the people have bought improved breed of cow 32.10% of them have to spend on medicine and 25.5% spend on food.

Figure 4.6

Expenditure on the Different Articles Related to the Livestock



4.14 Sources of Finance for Livestock Rearing

Economic status of all farmers is not similar of the study area. The household have good source of income, do not feel difficulty to expense on livestock animals. But all of the farmers cannot afford by their own source. So they have to take loan from bank, money lenders etc to adopt this occupation.

Table 4.12

Sources of Money to Buy the Cattle

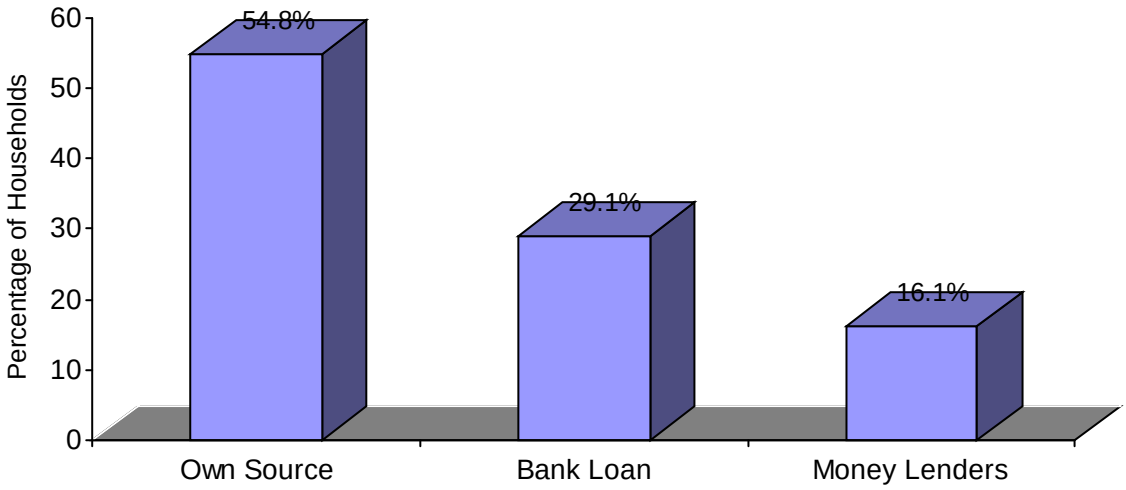
Source	**Households**	**Percentage**
Own source	17	54.8
Bank loan	9	29.1
Money lenders	5	16.1
Total	**31**	**100**

Source: Field survey, 2006

Among the 31 households, 54.8% households afford to buy the cattle from their own sources, 29.1% households depend on bank loan and 16.1% households depend on moneylenders.

Figure 4.7

Sources of Money to Buy the Cattle



4.15 Annual Income from the Different Livestock Animals

Annual income from the livestock also differs according to the number of livestock animals. From the local breed of animals they cannot earn more as the improved breed of animals. Annual income received from the different animals has presented separately as below.

Table 4.13 'A'

Income Received by Sample Households from Cow/Year

Annual Income from Cow	No. of Household	Percent
15000-30000	13	43.3
31000-45000	6	20
46000-60000	4	13.3
61000-75000	2	6.7
Above 75000	5	16.7
Total	**30**	**100**

Source: Field survey, 2006

Above table reveals that among the 31 sample household 30 households have kept cow of both local and improved types. Among them 43% household's annual income from cow is about Rs15000-30000, 20% earns Rs 31000-45000,

13.3% earns between Rs 46000-60000, 6.7% household earns between Rs 61000-75000 and 16% earns above 750000.the earnings comes from the milk and the sale of young calf. From the 1 local cow one and earn about Rs 12000-15000 and from the improved cow they can earn Rs 28000-30000. Farmers, who earns above 75000, can earn about Rs 1, 50000-210000 the large amount of earning comes from the improved cow.

Table 4.13 'B'

Income Received from Buffalo/Year

Annual Income from Buffalo	No. of Household	Percentage
15000-30000	9	64.3
31000-45000	2	14.3
46000-60000	2	14.3
61000-75000	1	7.1
Total	**14**	**100**

Source: Field survey, 2006

Similarly, table 4.13 'B' shows that the annual income from the buffalo. From 1 buffalo, Rs 15000-30000 can earned annually. Among the sample household only 14 houses has kept buffalo. 64.3% house's annual income from buffalo is Rs 15000-30000, 14.3% earns between Rs 31000-45000 and similar percent earns Rs 46000-60000, only 7.1% household earns Rs 61000-75000. They sell both milk or milk product and young buffalo.

Table 4.13 'C'

Income Received from Goat/Year

Annual Income from Goat	No. of Household	Percent
15000-30000	14	46.7
31000-45000	11	36.7
46000-60000	4	13.3
61000-75000	1	3.3
Total	**30**	**100**

Source: Field survey, 2006

Goat farming is popular in the study area among the sample house, 30 houses has kept goat. From the goat tearing, farmers can get better earning in low investment and short period. Among the goat keeper, 46.7% household annual earning is Rs 15000-30000, 36.7% earns between Rs 31000-45000, 13.3% earns between Rs 46000-60000 and 3% household earns about Rs 61000-75000 annually, from the improved breed of goat they can earn much in short period. But the improved type of goat has kept in less number.

Table 4.13 'D'

Income Received from Pig/Year

Annual Income From Pig	No. of Household	Percent
10000-15000	1	25
16000-20000	1	25
21000-25000	2	50
Total	**4**	**100**

Source: Field survey, 2006

The above table shows that, only 4 household of the study area has kept pig. It is also profitable animal for the farmers. Of the total pig farmer, 25% household's annual earning from pig is almost Rs 10000-15000and other 25% also earns Rs 16000-20000 and remaining 50% earns between Rs 21000-25000 annually. It has found that the pig keepers are of the lower caste people in the study area.

4.16 Share of Livestock in Annual Income of the Respondents

Respondents are involve in different activities besides the livestock rearing. According to the number of livestock, farmers are earning money. Who have kept animals of high breed with large number, are earning more income than other. Share of livestock in total annual income has presented below.

Table 4.14

Share of Livestock in Annual Income of the Respondents

Household	Share of Livestock in Annual Income (%)
5.1	85
16.2	70
23.2	45
19.2	36
36.3	22

Source: Field survey, 2006

Above table shows that about 5% households' livestock contribute about 85% to their total annual income.16.2% households' gain about 70%, 23.2% earns 45% of their total annual income. Likewise 19.2% earn about 36% and 36.3% earn about 22% income of their annual income.

4.17 Household Member Engaged in Livestock Rearing

Households of the study area have taken livestock as the secondary occupation. Those households who are economically poor, all of the members are involved more or less to look after the animals. But the rich household, who has kept animals in large number are not directly involve in looking after animal but in their house domestic worker look after the livestock animals family members only direct to the domestic worker. Manpower's involvement in livestock rearing is shown below table.

Table 4.15

Household Member Engage in Livestock Rearing

Members	No. of Households
Male	5
Female	11
Both	15
Total	**31**

Source: Field survey, 2006

4.18 Working Hour in Livestock Rearing

Working hour to look after livestock animals, also determine the livestock production. Who does proper care of livestock animals, can get good profit, from the livestock production.

Table 4.16

Daily Working Hour of Sample Household in Livestock Rearing

Working Hour/Day	No. of Household	Percentage
1-3	1	3.2
4-6	19	61.3
7-9	9	29.0
Above 9 hour	2	6.5
Total	**31**	**100**

Source: Field survey, 2006

Above table shows that, 3.2% households work 1-3 hour, 61.3% household work 4-6 hour, 29.0% household engage 7-9 hour and 6.5 % household work more than 9 hour. Average working time is 6.7 hour in livestock rearing

4.19 Major Findings of the Study

4.19.1 Socio-economic Condition of the Study Area

Most of the households of the study area have accepted agriculture as main basis of their livelihood. Rice, maize, wheat, mustard are main grain crops. Though, agriculture is the most important sector of national economy, maximum people are searching alternatives due to various hindrance such as lack of irrigation, lack of scientific equipment, lack of food security around the year, fragmentation of land, lack of manpower etc.

Although agriculture is the backbone of village economy, it does not provide regular and full job for the farmers all the year around particularly for those peasants who have very little land and the production of the land is also not sufficient. So, the labour who is unemployed or underemployed, have to work as wage labour in own country or abroad. Some of them are engage in service

and business. They have got better earning and they are known as the rich people in the village.

4.19.2 Livestock Holding Situation

Maximum households of the study area have kept livestock animals. Main livestock commonly found in this VDC are cow, goat, buffalo, oxen, he buffalo and pig. It is found that majority of livestock farmers keep cow and buffalo mainly for milk, energy, manure for home purpose and sell surplus amount at local market to meet general home expenditure. Improved breed cattle are kept especially for business purpose. Only 3 households have kept he buffalo. 15.1% household has kept oxen mainly for agricultural purpose or draught power. Goats are popular and profitable among sample households for immediate cash generation. They are sold at the time of economic crises. Pigs are found in few numbers because of the social norms high caste people have not kept pigs. Only the lower caste people have kept pig. Fro, the pig, farmers can get more income in short period.

4.19.3 Contribution of Livestock Rearing

Livestock have played multiple roles in Nepalese socio-economic set-up. Nepalese farming is mixed farming. Every farmer keeps some animals for meat, milk, wool, manure and draught power for agricultural operation. Livestock has become a major source of cash for resource poor rural people. Livestock is often sold to meet immediate cash needs such as to treat illness or to pay school fees in study area.

In spite of great benefits, farmers of the study area are not satisfied by their livestock production because they have less number of improved or cross breed livestock due to the lack of capital, manpower, green fodder etc. so, we can say that if we can increase the Improved breeds in the village, it will certainly helps to uplift the economic status of the rural poor.

Animals are main source of milk, meat, drought power, manure and fuel/energy. For, the cow and buffalo, farmers have take advantage of milk,

manure and fuel. They have been earning better income by selling surplus milk and they can get reasonable price by selling young cow and buffalo. Nepalese farmers cultivate by their traditional method in which oxen and he buffaloes are used and it is useful as draught power. Goats and pigs are good income source of rural people because in the short and low investment it gives more income. But pig farmers are found in less number. It does not take much labour as other cattle. However, manure production of these animals has played great contribution in maintenance of soil fertility to great extent.

Oxen have been found as major source of energy for agricultural production and transportation of harvested products in the study area. The majority of sample household have used their oxen for work for 90-100 days per year. About 65% households have used oxen for cultivation and lending others for income generation whereas 35% of households hire oxen for agricultural production.

Thus, keeping more livestock animals farmers are solving their economic crisis and by producing compost manure, their agricultural production has also increased. The farmers of the study area have sufficient quantity of manure. But they are using chemical fertilizer to increase production. In the present situation of fuel-wood defict, farmers have set-up biogas plant, which can be generated by the animal dung. Especially, it is advantageous for women and children, which help to conserve the forest, to reduce environmental pollution and to save the people's health. Slurry is more fertile for the land than the manure made by natural process.

4.19.4 Sources of Livestock Feeding

The main sources of feeding for the livestock animals in the study area are green grasses in the rainy season and leaves of tree, crop residues like corn stalk, paddy, wheat and maize straw during winter local feeds concentrates like bran, maize flour and kitchen left over are used to make 'Kundo'. Improved feeds are feed especially to the improved breed of animals because locally available feeds are not sufficient for that type of animals. But it is difficult for

the farmers to buy that types of feeds due to the high price. Local cows, buffaloes, oxen, he buffaloes and goats are taken for grazing in negligible amount because their is lack of grazing land where as improved cows are completely stall-fed.

4.19.5 Health Condition of Livestock Animals of Sample Households

Protection of animals from contagious and infectious disease is very important for reducing economic loss from diseases and increasing the productivity of animals i.e. milk, meat and manure. Animal health is important because livestock are very expensive to the farmers. If animal health is neglected, quality of animal population declines a lot and also may be detrimental to the economy for the farmers.

Most of the livestock animals may be suffering with so many diseases especially in the hills so that there is low productivity of the livestock. The most prevalent diseases of livestock are haemorogic septicemia, liver fluke, roundworms, tape worms, foot and mouth disease etc.

The health condition of livestock population of the study area does not seem to be so satisfactory. Main livestock animals are suffered from liver fluke, foot and mouth disease, round worms and diarrhea. Some farmers could not identify the disease. They refer them as anonymous disease. There is not a government livestock service centre, but some veterinary doctor has established private veterinary soap; which has been providing health service to the livestock of the study area but they do not come in mean time. Moreover, expensive medicine has caused serious threat to the smallholder and poor farmers of the study area.

Almost all of the farmers in the study area are aware about the animal health and disease and when animal get sick they call to the vetenary doctors at their house and sometime they take their sick animals to the vetenary clinic some times, farmers use locally available herbs and medicinal plants for normal disease. None of them go to the traditional healers to treat their sick animals.

The most common diseases reported in the study area are liver fluke, foot and mouth disease, pneumonia and numerous worms. Most of the animals were found to be sick in summer. It was found that livestock extension services has not provided to the village because of the limited trained veterinary workers and supply of veterinary medicines.

Mortality of goats is also high as compared to other livestock animals. Most of the farmers of study area found no cause of death of their animals. Certainly, it has caused serious threat to small farmers. It was found that buffalo, oxen and cows were resistant to disease as compared to goat and pig.

4.19.6 Problem of Livestock Rearing in Study Area

Livestock farming is one of the major enterprises in Bhutai Tol. It has been supporting significantly to socio-economic life of farmers. During the interview farmers were asked about their problems in livestock farming. Because of their ignorance most of them said that they did not have problems. The state of livestock farming in Nepal is very poor, which requires great effort to improve it.

Though, livestock is quite popular with the farmers of the study area, this profession is handicapped by various problems, according to the respondents are as follows.

1. Problems of Animal Health and Health Care

During the field survey it is found that most of the farmers complained of the problems of animal health. A variety of diseases are cited by farmers. There is no government animal health care center in the village. They have to go to Gothgaun and Salakpur for this purpose. These areas are about 2 K.M. far from the study area. It is difficult to take diseased animals to distance place for treatment. Sometimes, farmers do not get necessary medicine at the time of need and some are very expensive which farmers cannot afford even if it is available.

2. Problems of Animal Nutrition

The matter of animal nutrition is another very important aspect of livestock farming state of animal nutrition determines animal health and their productivity. The feeding system is poor and there is shortage of green fodder especially in dry winter season. Most of the farmers of the study area have small parcel of land. So they cannot produce sufficient feed for the livestock. They have to buy feeding in high price. It is great problem in livestock rearing. The problem of fodder is growing serious because of the:

- Limited fodder resources available in the village.
- Increasing no. of livestock resulting in high pressure in limited resources
- Uncontrolled grazing system in forest land
- Lack of knowledge of resource Management
- Lack of sufficient pasture land

3. Problem of Animal Production

The animal production is low in the village. It is the result of neglect on basic component of livestock production such as:

- Poor husbandry, traditional way of livestock management
- Poor feeding system
- Poor health condition
- Lack of knowledge of marketing i.e. cost and benefit

4. Lack of Manpower

It is obvious that livestock rearing is a labour intensive job. Due to the changing context, children go to school and most of the young people have left the village n search of employment. Elder persons stay at home. They are physically weak as compared to youth and can not maintain animals in better way. So, result is the low productivity

5. Lack of Quality Animals

Most of the farmers of the study area keep local breeds, which are genetically inferior. It is found that farmers have raised 88.2% and 81.2% percent local

buffalo and local got pigs are not found of improved breeds. So result is the poor productivity. Cross breeding facility are limited in study area.

6. Lack of Capital Investment

Most of the farmers of this VDC are suffering from lack of capital, which has rendered in adopting new technology. So due to lack of capital, they are bound to raise their animals in traditional manner.

7. Problem of Credit Availability

Credit unavailability is also a problem to the rural farmers of study area. Even if they get credit local moneylender imposes higher interest rate and they cannot pay in time. Rate of interest in private sector varies from 25-35% per annum in study area. So, they are bound to rear local animals, which have low productivity.

8. Lack of Experienced Vetenary Doctor

Due to the lack of expert vetenary doctor, animals are dying and farmers have to face losses from their investment. And the doctors also do not come at the time of need.

9. Low Price of Production

Farmers have to spend money in different article in livestock rearing. But as the expenditure in the rearing, they are not getting appropriate price of their livestock production.

10. Market is Far from the Study Area

Farmers go to the Belbari and Duhavi to buy and sell the livestock animals. Belbari is about 10 K.M. far from the study area. Farmers have to go by foot to sell the animals like cow, buffalo, oxen etc. if they cannot sell in one time they have to go time and again

11. Cultural Values

Nowadays pig farming has been a profitable occupation but due to religious issue, Brahman and Chhetri as well as Muslim do not keep pig. As a result, livestock raising is impeded by cultural values.

12. Lack of Appropriate Livestock Insurance Facility

There is not appropriate policy about the livestock insurance. Insurance office is also far from there. They have to pay premium and they have to renew it time and again. If they are not able to pay it in time, they have to pay from the beginning. It has become another problem especially for the poor farmer.

Government sector has not provided training related to the livestock rearing and there is not provision of supervision of the status of livestock rearing in the study area. Lack of governmental subsidy is another problem. Lack of reliable statistics of livestock and its products has been obstacle for livestock development in rural area.

4.19.7 Prospect of Livestock Rearing in Study Area

As the increasing population of the country, the demand for milk and meat is also increasing. Though milk and meat production is increasing, the production has not fatch the demand. There has established many dairy cooperatives in the study area, which export milk to other parts of the country.

Thus, there are various potentialities of this occupation in study area. For the sailing of milk and meat there is not marketing problem. Firstly, Purbanchal University is under construction and there are various educational institution in the study area other basic physical infrastructure are also available there so the trend of migration to this place is increasing. It is good aspect to develop the livestock sector. At present day, biogas has become main source of energy for the rural farmers because the price of fuel wood is high and cannot found easily because of the deforestration. To fulfill the requirement of energy the farmers have to keep livestock animals. Market area in ward no. 9, 6 Sundarpur and Indrapur VDC is open door to sale the livestock products. Institute of

agriculture is also contributing to some extent. Due to increase in educational and awareness level, people are in favour of diversification of agriculture. As a consequence, livestock farmers are engaged in different livestock enterprises for economic empowerment. Thus, there are better prospect for livestock raising according to respondents and development activities of the study area.

CHAPTER – V

SUMMARY CONCLUSION AND RECOMMENDATIONS

5.1 Summary

Though the study is conducted to the only one small village of Mrigauliya VDC, the problems encountered reflect the whole village of the Nepal, where agriculture, livestock farming and natural resources like forests and grazing lands are closely interrelated. Nepal has been practicing mixed farming system, where agriculture livestock keeping and pasture are integrated together.

The present study tries to analyze the impact of livestock rearing in rural people, problems in livestock rearing and status of livestock rearing in the study area.

- Of the total respondents 77.4% households are primarily engaged in joint livestock rearing and agriculture.
- Livestock rearing is in favour to enhance the economic status of the farmers because most of the farmers fulfill their daily expenses from the earning from livestock rearing.
- Each household has kept same animals like cattle, buffalo, oxen, goat and poultry.
- People keep livestock mainly for household consumption, agricultural production, energy, and income generation and draught power.
- Oxen are kept only for draught power. Goat and pigs are mainly kept for meat purpose.
- The lower castes people keep pigs.
- Pigs and goats are taken as high profitable animals in short period
- Most of the households are self sufficient in milk production. They consume milk at home as their need and sell surplus milk at local Dairy Cooperatives for capital accumulation.

- Milk is sold twice a day in morning and evening.
- The households of the village also generate income by selling of young calves of cow and buffalo.
- The majority of the farmers are not satisfied by their local breeds, which have low productivity as compared to improved breeds.
- 64.5% households have made biogas plant and has become major source of fuel, which is another positive impact of livestock rearing.
- Among the respondents 40.5% keep animals for home consumption and subsistence motive, 27.1% for biogas and 32.4% for commercial motive.
- Priority is given to goat rearing than cow, buffalo and oxen and so on.
- Average livestock population of the sample household is 8.5 at the time of field survey.
- Most of the cows are found of improved breeds but other animals are mostly found of local breeds.
- Mortality rate in improved breeds have been found in great number than the local breeds.
- Goat has high mortality percentage followed by pig, cow and he buffalo.
- Of the sample household about 32% spend on medicine 25% spend on feeding, 22% on buying additional animals, and rest of them has spent on keeping arrangement.
- Among the total sample households, in 15 households both male and female are equally engage in taking care of livestock animals. But in other household female involvement in livestock rearing is high than male.
- Farmers average working hour is 6.7 hour in livestock rearing.
- One of the most serious problems of livestock rearing in the hills is the shortage of livestock feed especially in winter. Due to this, productivity of livestock has become low.
- In the winter people feed paddy, wheat, maize straw to their animals.
- Quality feeds are feed especially to the improved breed of animals because locally available feeds are not sufficient for that type of animal.

- Animals are taken for grazing in negligable amount. Improved cows and buffaloes are mostly stall-fed.
- Majority of the farmers have grown some species of tree fodder to their own land to reduce the fodder defict.
- In average, livestock holders have to spend 2-3 hour for fodder collection.
- Stall fed animals are fed more quantity of 'Kundo' especially prepared from maize flour and rice bran, choker during lactation period.
- Farmers who do not have sufficient land are facing acute fodder deficit during winter season. As a consequence, their investment for livestock production is more but production is very low which has discouraged the livestock producers.
- It is found from the survey that every household sends their children to school. Most of the young age people go outside the village for employment. So they lack manpower for livestock rearing. It is also one reason for low productivity.
- Animals use to suffer from various diseases. But there is lack of trained veterinary doctors and they also do not come for treatment at the time of need. As a result, sick animals die due to lack of treatment.
- Farmers have to spend money in different articles in livestock rearing. But compared to the expenditure they are not getting appropriate price of their livestock production.
- Governmental sector has not provided subsidy and training related to the livestock rearing. And there is no provision of supervision of the status of livestock rearing.
- Due to the development of physical infrastructure and social organization, flow of migration is increase in the study area and many dairy cooperatives are operating there so there is better future prospect of livestock raising in this study area.

- Most of the respondent's requisition is that government has to provide medicine and feeding materials in cheap price to the farmers at the village, and should fix the reasonable price of livestock product.

Thus, as to conclude livestock raising is a respected and profitable occupation for small farmer, landless poor and backward communities. Certainly, it leads to economic development of study area there by contributing to GDP growth of the country.

5.2 Conclusion

Livestock has played multiple roles in Nepalese socio-economic set-up. In the concluding remarks following points are presented as below:

- Keeping more livestock animals farmers are solving their economic crisis and by producing compost manure, their agricultural production has also increased
- Livestock commonly found are cow, goat, buffalo, oxen, he buffalo and pig.
- Majority of the farmers has kept cow and buffalo mainly for milk, energy and manure for home purpose and sell surplus amount
- Health condition of the animals does not seem to be so satisfactory, animals are suffered from liver fluke, foot and mouth disease, round worms, diarrhea etc. and health technician are not providing health treatment at the time of need.
- There is lack of grazing land and farmers are not able to produce sufficient feed due to the small parcel of land.
- Cross breeding facility is limited in study area and governmental animal health service is also not available.
- As the expenditure in livestock rearing price of production is not appropriate.

5.3 Recommendations

Livestock development is essential for the development of rural economy. It is important for increasing production, productivity of agriculture and for raising the income of the village. So, appropriate measures of improvement should be taken for sustainable livestock development. The following are some of the important aspects that should be considered in order to overcome the existing problem in the livestock production.

1. Animal health care center should be established in each village and frequent visit/observation by health technicians is required and provision of providing medicine and vaccine at reasonable cost should be made available.
2. Alleviate fodder deficit by:
   - Making local people realize the importance of stall feeding system.
   - Proper/systematic management of forest.
   - Encouraging farmers to grow more fodder trees in their farm lands, waste land around, homestead and terraced land by providing seeds of good fodder tree species.
3. Encourage farmers towards increasing the productivity of animals instead of increasing the number of animals.
4. Livestock is closely interrelated with crop production and forest. So, there should be proper co-ordination and co-operation among ministries, NGOs and INGOs regarding policy and programme formulations with related to agriculture and livestock development as well as effective Implementation.
5. The institution and organization related to livestock development should conduct extensive educational and technical programs to make the farmers aware of basic principles of animal health care, prevention of diseases feed and fodder management practices.

6. Unproductive animals should be culled and they should be replaced with better productive and appropriate animals that are compatible with local environment.
7. Livestock service centre in the rural area should also provide medicine at minimal price as compared to private veterinary clinic and feed also should provide in cheap price.
8. Government as well as NGO and other concerned agencies should not only provide service to production but also focus on marketing aspects. For this marketing channel and transportation facilities should be developed, regulated and extended to rural inaccessible area also. At the mean time, exploitation of primary producers by middleman should be prevented and discouraged at any cost.
9. Livestock keepers should be facilitated by livestock insurance policy, quick and easy credit supply.
10. Women's contribution to livestock raising should be considered. At least 50% of income from livestock should be provided to women for their economic empowerment. Their knowledge and ideas should be entered into mainstream perception.
11. Farmers profit is the function of both cost and benefit. One way to increase the gap between them is to make them available cheaper loan but higher price for their products. Thus, it is recommended that the price of animal product should increase whereas interest charge of the institutional loan should be discouraged.
12. Entrepreneurship in supply of quality concentrated animal feed materials should be promoted.
13. The rural farmers should be educated to pay greater attention to their livestock keeping rather than take it as a traditional occupation, which they have followed from generation to generation.

5.3.1 Recommendations for Further Research

- A systematic research for livestock rearing should be launched.
- Each components of animal husbandry should be thoroughly studied by livestock personnel to locate the problems of livestock rearing and find out the solution to overcome problems and for betterment.

Livestock rearing has become an integral part of the agriculture as well as rural economy. Finally, it can be said that through formulation and implementation of suitable policy, co-ordination and co-operation of different line agencies, educating farmers through suitable training, motivating private sector in all aspects of livestock activities in a market oriented livestock sector can do much towards rural poverty reduction. Moreover, livestock can be the vehicle through which poor people can escape from the poverty trap.

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ANNEX-I

A Project Report on

The Contribution of Livestock Rearing on Rural Economy

Household Questionnaire

1. Questionnaire No …….

Name of the Respondents …… Age ……

Sex …… VDC ……Ward No ……

Caste …….. Educational Status: Literate ( ) Illiterate ( )

2. Demographic Profile

S.N.	Name of the Family Member	Age	Sex	Educational Status
1				
2				
3				
4				
5				
6				
7				
8				
Total				

3. What is your main occupation?

a. Agriculture ( ) b. Business ( )

c. Service ( ) d. Wage labour ( ) e. Others ( )

4. What is your secondary occupation?

……..

5. Do you have your own land?

a. Yes ( ) b. No ( )

If yes, mentioned about

S.N.	Type of Land	Area of land (in Bigha, Kattha, Dhur)
1	Khet	
2	Bari	

6. Livestock Holding Situation

S.N.	Type of Livestock Animals	Local Breed	Improved Breed	Total No.
1				
2				
3				
4				

5				
6				

7. Purpose of livestock holding

a. Household Purpose ( ) b. Energy ( )

c. Commercial Purpose ( ) d. Agricultural Purpose ( )

e. Others ( )

8. What type of animal had you kept last year?

What type of animal have you kept this year?

Last year				
This year				

9. In which article do you spend on livestock rearing?

a. Cattle shade management ( ) b. Cattle buying ( )

c. Medicine ( ) d. Feed ( ) e.Others ( )

10. From which source do you start livestock rearing?

a. Own source ( ) b. Money lenders ( )

c. Bank ( ) d. Others ( )

11. How much did you spend on cattle buying?

……...

12. What do you do your animal products?

a. Use in home ( ) b. Sell ( ) c. Both ( )

13. How much do you earn from livestock rearing?

S.N.	Types of Animals	Annual Income in Rs.
1		
2		
3		
4		
5		
6		

14. What is the percentage of income from livestock sector out of total income?

……

15. Did any animal die due to disease?

a. Yes ( ) b. No ( )

If yes, due to what disease

……

16. Which Manpower of the family engages in livestock rearing?

a. Female ( ) b. Male ( )

c. Both ( )

17. How many hours do you spend to look after animals?

…….

18. How do you solve the feed requirement for the livestock?

a. Own farm source ( ) b. Selling ( ) c. Both ( )

19. Have you installed biogas plant?

a. Yes ( ) b. No ( )

If no, what is the source of energy for cooking?

a. Fuel wood ( ) c. LPG ( ) d. Kerosene ( )

20. Which method do you apply to treat your diseased animals?

a. Traditional method ( ) b.Vetenary doctor ( )

21. Is any problem in selling livestock animals?

a. Yes ( ) b. No ( )

22. What are the main problems in livestock rearing?

……

23. Is any governmental support for the livestock rearing is sufficient?

a. Yes ( ) b. No ( )

If not, what type of services do you want from the government?

…….

24. What have to do to solve the existing problems in livestock rearing?

……

25. Do you want to give continuity to livestock rearing?

a. Yes ( ) b. No ( )

26. In your view, what is the contribution of livestock rearing in the economic development of the farmer?

……..