

# CHAPTER ONE

## INTRODUCTION

### 1.1 Background of the Study

Nepal is situated on the southern lap of great Himalayan's boarding China in north and India in the south, east and west. It is a landlocked and developing country having total area 1,47,181 sq. km. It covers 0.3 and 0.03 percentage of land area of Asia and the world respectively. Eastern, Southern, Western border is surrounded by India and northern border is surrounded by China. It extends from east west with length of about 885 km and width of 193 km is situated in 26°22' to 30°27' north latitude and 88°12' east longitude.

Nepal is an agricultural country. Majority of people in Nepal depends upon agriculture for their livelihoods. Livestock production is an important agricultural subsector in Nepal, accounting for about 29% of agricultural GDP and about 11.5% of total national GDP. Whereas poultry industry share 1.83% of total GDP and 5.26 % of the agricultural GDP of Nepal in the fiscal year 2068/069. (MOF, 2069) Livestock production constitutes an important subsector of Nepalese Agriculture. It is an integral part of the Agriculture system in many parts of the country. Livestock contribute significantly to the welfare of the population at both household and national level by being the source of food such as meat and eggs, which are major source of essential nutrients providing income to farmer through sale of animals and their products using the production.

Economic growth rate of Nepal is estimated to increase by 4.6 percent in FY 2011/12, in comparison to 3.8 percent GDP growth achieved in FY 2010/11. Increased agricultural production and accompanied by growth in service sector outputs has been the major reason for such growth rate.

Poultry farming has been one of the favorite secondary occupations in the recent years. Poultry business can be suitable secondary occupation to reduce disguised unemployment to agricultural sector because they are interrelated to each other. Poultry farming has been receiving increasing attention due to the increasing demand of poultry products. Change in consumption pattern, high per-capita income of people, presence of large number of hotels, restaurants and rapid growth in population are some of the important factors for the steady rise in the demand of poultry products in present time.

Poultry eggs and meat are the important sources of nutrients. So, the consumption of these products has been increasing in our country. Poultry serves a very important role in converting grains and waste products into eggs and meat for the nutritional food for mankind. Poultry meat is commercially healthier than other meat because it contains essential amino acids, less fat, vitamins and minerals. So, it has high biological value.

Since Nepal is an agricultural country and poultry farming is an important sub-sector of agriculture, which significantly contributes to the Nepalese economy, so it is required to investigate the economic aspects of poultry farming like as investment, employment, production cost and benefit, problems and government policy for poultry development. As such this study is confined to explore the income and employment status in poultry farming in the study area.

## **1.2 Modern Development in Poultry Farming**

Poultry development in Nepal during the last decade has been very significant. It has been recognized that poultry industry in Nepal is one of the most rapidly growing segments of the agricultural sector. It is a potential tool to fight against poverty and malnutrition (Dhakal, 2005).

The 1950-1951 revolution can be considered the catalytic event for commercial poultry development in Nepal during 1951-1960, the governments also tried to design long term visions and strategies for national development during the first five year plan, "Village Development Worker Training Center" at Shreepur and Birgunj were opened. Poultry production and management was one of the training components for the village development workers (Poultry Munch, 1994)

At first improved poultry was introduced in Nepal by Nepal Government in 1957/58 with the donation from Heifer International of America. Heifer International donated additional 1700 New Hampshire pure line parent stock to Nepal Government in 1960/61 and government established central hatchery at Parwanipur with the help of USAID in 1960. Their main objective is to reproduce the good breed chicks. The project involved in poultry research and presented parent stock i.e. Black Minorca Rhode Island, Red and White Leghorn breed to the Nepal government. That was beginning of the industrial poultry farming in Nepal. With encouragement from the government sector and technical help, some pioneer farms were established and commercial feeds were produced for improved poultry farming in private as well as in government sector. Since then the government sector established five hatcheries in Khumaltar, Tarahara and Nepalgunj within the country to supply pure line bird to the rural sector to increase productivity and generate self employment (Shrestha, 1997).

After being independent from Rana regime, people became aware of their health, education, employment and other development activities. They changed their value and attitude. Then people began poultry farming with modernization from 2007 B.S onward. Poultry farming was opened in Singh Durbar in 2014 B.S. Some of the researches and contributions to uplift the poultry farming have been made in different time periods.

Singh Durbar Research Centre was being carried on under the 'Department of Agriculture'. The experiment was carried on a small farm with few chickens. Six experts were working in this farm. They were trained in foreign country. They suggested feed for the chickens which can be easily produced in country and prevention of disease under the observation. Objective of this institution is to trail the feeds, which is to be supplied to the poultry fowls. Its main function is to conduct a research on feeds, which will help to a greater extent in the growth of poultry fowls suggested poultry farmers about the feeder, drinking water, brooding machines, incubators and other equipments (Shrestha, 1964).

Main synthetic layer poultry lines, the commercial sectors supplying to the farmers are Hy-line Brown (American) Lhoman, Brown (Germany), ESA Brown (Indonesia) and other broiler lines are mainly originated from India (Vencob-100, Anak-300, Marshall, Hybro and Super Henna) and Thailand (Vencob-500, Hubbard) (Adhikari, 2004). Poultry industry is helping in national policy for poverty alleviation by providing employment opportunity and decreases the malnutrition by providing comparatively cheaper animal protein. It also provides organic manure and gradually replaces the import of chemical fertilizer.

The poultry farming system in Chitwan has been started from 2029/30 B.S. However professionally this district has been entered into the poultry farm up in 2040 B.S. and from 2045 B.S., its extension and development was there. The contribution of this district in total production of the country is approximately 95% production in layer, 34% in broiler and 60% production in eggs. Similarly this district has produced 28% feed and 21% in meat in total production of the country. The supply and consumption of the medicine and raw materials are in the same ration (Pokhrel, 2069/70). Present status of parent stock and production in Chitwan district is expected as the table given bellow:

**Table No. 1.1**  
**Present Status of Poultry in Chitwan District 2067/68**

S.N.	Particles	Expected No. of Birds	Expected Production Capacity (Yearly)
1.	Layer Poultry Farming	51,23,360	66,87,83,493 eggs
2.	Broiler Poultry Farming	2,02,39,212	3,77,31,321 kg
3.	Layer Hatchery Farm	75,350	53,93,012 chicks
4.	Broiler Hatchery Farm	2,81,465	2,13,04,434 chicks

Source: Pokhrel, Report Paper, Forum of Nepal Poultry Farmers- Chitwan

### **1.3 Study Area**

Bharatpur Municipality is the first biggest economic center of Chitwan district. It is situated in central - southern part of Nepal and covers the area of 162.2 square km. It is divided into 14 wards.

A large number of poultry industries have developed in the Bharatpur municipality. It is believed that it covers more than 60% of the total poultry demand of the country more ever, this municipality has a substantial volume of poultry products for export trade.

The actual information regarding poultry farming in Bharatpur is not enough and due to lack of primary information, no any development activities can be expected. No study of this kind has been carried out so far in Bharatpur. Therefore, it is necessary to find and figure regarding economical aspect such as income and employment of the poultry business. This study may help to find the actual scenario of the poultry farming in Bharatpur which will be meaningful to the farmers, entrepreneur, researchers and planners.

The poultry farming are scattered all over the district. Bharatpur is emerging area of poultry farming. There are 14 wards in the municipality

area. Some wards have more poultry farms and some wards don't have. In all the wards where poultry farms are established are surveyed in this study.

#### **1.4 Poultry Development in Chitwan District**

Chitwan district is the leading district in the poultry industry in Nepal. It lies in the southern part of the central development region of Nepal and Narayani Zone. It is in between 27°21' 45" to 27°52' 30" north latitude and 83°54' 45" to 84°48' 15" east latitude. It covers the area of 2238.39 sq km (Adhikari, Gupta & Panta, 2008) which is 1.52 percent of total area of the country. Makwanpur and Parsa districts lie in the east, Dhading and Tanahu in the north, Nawalparasi and Tanahu in the west and Bihar, a State of India in the south of this district. It has 36 village development committees, 2 municipalities, 13 regional units and 5 consistories. Bharatpur is the district headquarter and major economic center of the district. It lies in the bank of Narayani River and in the middle part of the district.

Chitwan district lies in between 141m to 1947m altitude from sea level. Madi valley and Rapti valley are the major fertile areas of this district. The maximum length from east to west is 88 km and south to north is about 50 km. Village area of this district occupies 54.82 percent and city area 4.58 percent of the total area (Sapkota, 2002). Average temperature in summer season is 27° to 32° Celsius and the annual rainfall is recorded from 125 to 200 cm in hilly area and 75 to 150 cm in valley area. In winter season average temperature is about 10° to 15° Celsius and rainfall is very less in quantity, it is not measurable (Adhikari, 2004).

Chitwan National Park, which is famous for natural beauty and wild life especially, 'rhinoceros' and 'bengal tiger' and various birds, is situated in Chitwan. Narayani, Rapti, Rieu River and Tamar, Bishajari, Kashara lakes are the natural beauties of Chitwan.

Chitwan district has got potentiality to develop the agricultural sector through the poultry farming. The people who were involved in crop farming are diverted to poultry farming. Income from the poultry farming is higher than the crop farming. Land is being scarce to the small farmer. So, they are being attracted to the poultry farming.

The climate, transportation facility, loan support from the financial institution, easy market, many veterinary shops and consultant and need of nutritional food of the Chitwan district encourage establishing the commercial poultry farming. Bharatpur and Bharatpur Municipalities, Khairahani, Parsa, Muglin, Gitanagar and Madi are the major area of the poultry consumption. Poultry sector in Chitwan has two characteristics they are rural and commercial. History of commercial poultry production in Nepal is not very old but in non-commercial scale its history is very old. According to Nepal poultry association poultry production in Chitwan was started during 2029/2030 B.S. But on commercial scale it was started during 2040 B.S.

Establishment of Chitwan Feed Industry (2040 B.S), Everest Feed Industry (2042 B.S), Abinash Poultry Breeding Farm (2045 B.S) and Himalayan Feed Industry (2046 B.S) became the mile stone to terminate in to commercial poultry in Chitwan (Dhakal, 2005). Agriculture farmers changed their attitude towards poultry rather than food crops. In short period of time, Chitwan became a pioneer district in poultry farming in Nepal. The contribution of this district in total production of the country is approximately 90% production in layer, 35% in broiler and 60% production in eggs. Similarly this district has produced 28% feed and 21% in meat in total production of the country. The supply and consumption of the medicine and raw materials are in the same ration (Pokhrel, 2067/68).

According to the survey of CBS in 2067/68, in total domestic productions, the growth rate of agriculture sector production was 4.1%, similarly, this survey has estimated the growth rate 1.4% in the sector

production of industry and 3.6% in the sector of service production. Because of the extension of economic activities in the last month of the fiscal year, it is estimated to increase the growth rate in comparison to the previous calculation (Pokhrel, 2067/68).

After the establishment of Chitwan feed industry in 2040 BS, commercial poultry farming are emerging continuously. Poultry expo 1998 and 2005 uplift the poultry business in Chitwan. Out of total product 30 percentage feed, 45 percentage broiler chicks, 85 percentage layers chicks, 60 percentage eggs and 20 percentage meat are produced in Chitwan district. In between 2040 to 2050, 80 percentage of chicks are imported from Indian hatchery, especially, Key Stone Brown and Bab Cock, Hob Bird, Vencob-100, Arbonerock, Anak, Ross, Broiler and Hiline Brown, Key Stone Brown, Webcob Layers chicks has been imported from India and new Hampshire distributed from Parwanipur and Khumaltar Hatchery. In this time period, large number of farmers kept 200 to 1000 birds in their farm. In the 6th decade, the poultry development reached to the peak point and created the problem of over production. Poultry farmers changed the dippier system. Number of smaller farmers decreased and size of bird increased (Dhakal, 2005).

Meat and meat products are good sources of protein which is very essential for the growth and maintenance of the human body. Due to increased awareness on nutritional value of meat among the consumers, process of rapid urbanization has increased the income level of the people. Due to the gradual change in food habits, rapid population growth, inflow of tourists and easy access of marketing facility, the demand of poultry meat, meat production has been increasing every year at Chitwan district.

Hence, Chitwan has emerged as the egg basket of Nepal. This district holds 40 percentage of the total commercial bird of Nepal and produces nearly 50 percentage of the total chicks' production of Nepal. In Chitwan, 10



tons chicken meat and 4,00,000 eggs are produced per day. Although this district is self sufficient for the production and distribution of chicks, various types of diseases and the illegal import of poultry product from India are making problem in poultry development.

Temperature and climate of Chitwan district is not good for the poultry production, but millions of dollars has been invested in this sector and further investment is going on. According to Agriculture Development Bank, main branch, Bharatpur, out of the total loan flow from A.D.B., 30 percent loan flows to the agricultural sector. It shows the great attraction to the agricultural entrepreneurs.

Mainly in Chitwan, various types of broiler such as Vencob-100, Hubbard Flex, Highbrow, Super Henna and Layers such as Hi-line Brown, Lohman Brown, H and N Brown, Nick are being supplied to the farmers for commercial product.

## **1.5 Statement of the Problem**

Poultry farming has emerged as a major income generation enterprise in agriculture sector over the last four decades. Considering the trends of population growth change in the food habit of the people, increasing awareness on nutrition and growing demand, it can be assumed that this sector will grow continuously in future. The annual growth in commercial chicken eggs and meat production were estimated at 10.6 percent per year. Especially, unemployed youth, women and uneducated people involved in this sector to achieve the attractive profitable income. Beside this, there have been various challenges in this sector. Small to large- scale farmings have shifted in recent past years. Almost 70 percent of small poultry farms keeping 200 to 1000 birds per farm, in Chitwan district are closed down during 2002 to 2005 due to bird flu and other reasons.

In Bharatpur area, research in poultry farming has not been done yet. So farmers are facing various problems. Especially, the small farmers are uneducated and they are unknown about the modern development in the poultry system. Their sheds, equipments used for watering and feeding are not proper. They are careless about cleanliness and maintaining safety from diseases. Farmers are exploited by the middlemen. Middlemen determine the price of the farmers' product. There is lack of organized products and market system.

The cost of raw materials for the poultry production is comparatively higher than the price of product. Gamboro, Salmonella, Ranikhet and other common diseases and horror of 'Bird-flu' highly affect the poultry farming of Bharatpur Municipality. Man-made diseases such as strikes, illegal trade from India and cut-throat competition between the farmers are also the problems of this sector. Farmers are using traditional record system of their income and expenditure. Is there profit or not? What is the cost and revenue per bird? Can the business make profit to return the bank loan? Is there proper care by the veterinary consultant? How many people are employed in the business? Is the business running successfully? Likewise, many more unsolved questions about the poultry farming are prevalent in the study area. So, this study is relevant to find out the cost, revenue and employment situation of this business.

Poultry farmers of Bharatpur are laborious and interested to develop the poultry business, but they are unknown about the different managerial, technological and political issues. So, they are suffering from the above mentioned problems and feel the risk to increase the investment in this business. The general concept of this study is to analyze the income and employment status and problems faced by the farmers of Bharatpur Municipality.

## **1.6 Objectives of the Study**

The general objective of the study is to analyse the income and employment level in Bharatpur Municipality. The specific objectives of the study are:

- a) To examine the income status of the poultry farming,
- b) To analyses the employment opportunity of the poultry farming,
- c) To identify the problems faced by the poultry farmers, and
- d) To suggest appropriate measures to overcome of its problem.

## **1.7 Significance of the Study**

Poultry industry is considered as one of the most industrialized sector of agriculture. It is useful to generate employment and reduce the disguised unemployment of Agriculture sector. This industry serves a very important role in converting grains and waste products into eggs and meat for the nutritional benefit of mankind. The changing habit of the people in the food consumption and process of urbanization have increased the demand of poultry product in the market. Poultry meat and eggs are the chief source of protein and other necessary energy for human. Bharatpur Municipality is the second major area of the poultry consumption. There are few numbers of poultry farms and hatcheries. The study of poultry will be significant role to develop this business due to the following reasons:

- a. It provides part time employment, for unemployed people can also take care of the farm easily.
- b. Poultry provides from the sale of eggs.
- c. There is no complex technological constraint.
- d. Chicken can provide financial security to the farmer. When financial problem arise, chickens become the one of the main sources of income.
- e. Chicken meat is a white meat containing low cholesterol and high quality protein. It is better for human health and affordable to majority consumers.
- f. It requires less capital and less space.

Although poultry has the above advantages, poultry farming has not been developed in rural area. Several researcher and studies had been made in the past for the development of poultry farming in Nepal, from which comparatively a quantitative growth and qualitative improvement is possible. There is a very few study under the income and employment status of poultry faming which is most important part of this business. This study will focus on the cost income and employment status and problems faced by farmer in the poultry farming of Bharatpur Municipality and of Chitwan District. By conducting this study, income sources and employment potentiality can be brought into justification.

### **1.8 Limitations of the Study**

The study was conducted only in 5 percent poultry farms of the total 525 poultry farms (as universe) of Bharatpur Municipality area. It includes only those farms which were established before 2012 A.D. The current information from all broilers and layers farms, hatcheries and feed industries of Bharatpur is not sufficient. There are many other problems remained to study. The is a of proper record keeping system by farmers. Some included data are based on the remembrance of the farmers.

Present study includes only meat chicks and eggs. Manure is considered as bi-product of the poultry production activities. So the result of the study be reliable only for certain purpose and time period. Although, the study confined to analysis the cost, revenue and employment status of the poultry farming in Bharatpur Municipality. Some of important expenditure and income variable are included here and some are left by some practical difficulties.

## **CHAPTER TWO**

### **REVIEW OF THE LITERATURE**

#### **2.1 Historical Development of Poultry Farming in the World**

Poultry farming is the raising of domesticated birds such as chickens, turkeys, ducks and geese for the purpose of farming meat or eggs for food. Poultry are farmed in great numbers with chickens being the most numerous. Chickens are raised annually as a source of food, for both their meat and their eggs. Chickens raised for eggs are usually called layers while chickens raised for meat are after called boilers.

There is controversial question whether the egg came first in the world or chickens. According to the spiritual as well as natural science, there came chickens first in the world. In certain holy book, we get that the seventh wife of the certain Rishi gave birth to the winged birds. Charles Darwin had said that, "the chicken changes in native as the animal had their nature of adopting themselves with their environment". Although poultry eggs were artificially incubated in ancient China and Egypt, this method of hatching poultry was not on commercial scale until the 1870. The modern poultry industry emerged in the late nineteenth century in Europe, America as breeders focused in improving meat, and egg production housing, feeding and breeding have led to the rapid development of the industry since the 1930. Production and consumption of poultry products increased significantly during World War II when beef and pork were in limited supply. Since 1945 improved methods of strong and distributing poultry meat and egg have helped stimulate consumption of these foods specialization in raising broilers has been important under a single ownership.

Actually, we cannot say the place where the poultry bird had originated. But it is believed that the smaller active and close feathers birds are discommends of:

- i) Indian jungle fowl *Gallus Bankira*, which still exist in wild state in India and adjoining countries.
- ii) *Gallus solmerath*, the gray jungle fowl of India.

In the past spud of cock, fighting was primarily in its domestication and subsequent distribution and its value as a source of food was a secondary importance.

In the early period, the Aryan and Iranians exported chicken in Persian and Europe. Latter on the traders took it to Tibet, China, Japan, America etc. By the way, the chickens were distributed all over the world.

In, 1873 there took place the first organied effort in the USA to place the poultry breeding industry upon a stable basis. (Morley, 1972). Nobody knows the earliest date of poultry keeping. However it seems evident that fowl was domesticated and extensively spread at a remote period. Though poultry was known in a remote period, the real beginning of the modern poultry industry took place only in 1947 when Rene Antoine de Reamur, a Frenchman published his book on "The Art of Hatching and Bringing up Domestic fowls"

Reaumer had studied the Egyptian method of hatching and he attempted to modernize these practices. he corrently started the principles on which present artificial incubation methods are based. He was the member of the Royal Academy of Sciences at Paris and appears to have been the first person to apply scientific research methods to poultry practices. Reaumur pointed out that the quality of eggs, particularly the flavor can be affect by what the hen ate. He also demonstrated that the flavor of the use of certain aromatic plants, agreeable alternations in flavor and quality of flesh would result. He found

out that infertile eggs would keep a long time without spoiling. He suggested that each community should have a chicken-oven (Hatchery). He believed that through this method the multiplication of chicken to produce eggs and meat would be greatly increased and the food supply of the people improved. Reaumur, by divulging the results of his experiments, considered the father of the modern poultry industry. He gave people ideas and inspiration and he was quoted for many years. (<<http://web.poultry.encyclopedia.Americana,1965>>). The beginning of the commercial hatchery industry in modern times came in 1892, when Joseph D. Wilson made the first long-distance shipment of baby chicks by express, sending them to Chicago, III. Frozen egg was put on the market for the first time in 1899. In 1908 poultry teaching and investigational work had developed to a point where the American Association of college workers, now known as the poultry Science Association was organized. In 1916, the International Baby Chicken Association (since renamed the American Poultry and Hatchery Federation) was organized and in 1918 baby chick shipments, were admitted to the United States mails.

Slowly and steadily, the development took place in the field of poultry industry of the world. Today poultry industry has become one of the well-known industries of the world. It occupies a very important place in present world.

## **2.2 Review of Related Studies in Nepal**

A few Relevant works in poultry farming have been done in Nepal. In different time periods and situations different types of studies were carried out in poultry system of Nepal. Nepalese poultry farming was run traditionally before 1950 AD. After the democracy in Nepal, commercial farming was started in limited number and Area. Since then, commercial poultry have emerged as a major livestock sub-sector having high potential to create employment and Income generating and opportunities for farmers and unemployed rural youth.

**www.meatradenewsdaily.co.uk** a newsroom of this side focused that commercial poultry farming hadn't begun in Nepal when Guna Chandra Bista started Abhinash poultry Breeding Farm-a hatchery- in Chitwan district in 1990. Before opening the hatchery, Bista and his friends were already operating Everest Feeds Industry. Bista had invested Rs 4 million in his farm even though putting money in poultry farming was considered a risky business due to uncertainty about the market. Today Abhinash Group- with Abhinash Feeds, Abhinash Hatchery, Abhinash Poultry and Narayani poultry under its umbrella-- is one of the largest poultry producers in the country. The group produces 65,000 broiler and 25,000 layers chicks every week. The nation produces a total of 1.2 million broiler and 60,000 layer chicks every week.

**www.meatradenewsdaily.co.uk** another newsroom of this side insisted that chicken should not be as costly as it is now in the market, according to an article in Republica. Over the last year, the price of chicken has increased by 56 percent and this despite poultry's production cost only rising by around 30 percent. On the face of it, such a disproportionate increase does not warranted, and cannot be determined, merely by weighing production costs against sale prices. Last year, cut-up chicken cost 160 rupees (NPR) per kilo. This year, it costs NPR 250 per kilo. Last year, the cost of feed- the largest cost- contributor- was 30 percent lower, at NPR 29 per kilo. And although over 50 percent of the maize required for feed is imported from India and most of the other feeds (soybean cake, sesame cake and sunflower cake) are also imported, duty and taxes on these feeds have not risen very much. But live chicken last year cost NPR 110 per kg, while this year, it costs NPR 175 per kilo, which means the increase is independent of labour costs.



**Dhakal (2005)**, in his poultry journal, the data to analyse the production situation of feed mills, hatcheries, broilers and layers farms. Average and percentage are the tools used in the study. Especially, the study is related to the history of the poultry farming of Chitwan district but it shows the growth of poultry which is the base for the income and employment. Chitwan is producing 225 tons of poultry feed per day which is nearly 30 percent of the total feed production in Nepal. In some of the VDCs farmers prefer to prepare feed themselves rather than purchasing readymade feed from the market.

**CBS (2006)** in its monography insisted that chickens, ducks and pigeons compose the most important poultry in Nepal. In 1981/82, the total number of holdings that raised chicken numbered 716,900 with a population of 7.4 million or an average heads of 10.3 chicken per holding. In 1991/92, the number of holdings raising chicken population did not increase as much. The average number of heads of chicken per holding reduced to 8.8. In 2001/02, the number of holding engaged in raising chicken increased slightly by 13.9% and the increase in the number of chicken was almost of chicken per holding was 11.1, which was even higher than in 1981/82.

**Adhikari, Gupta and Pant (2008)** in their article focused about prevalence and identification of disease in layer chicken. Coccidiosis disease is most likely when young stocks are concentrated under conditions which permit the accumulation and sporulation of large number of oocysts. In the present study, the general prevalence rate of coccidiosis was found to be 25%. This was somewhat similar to the 38% farm level prevalence reported by Razmi *et al.* (2000) in Iran. Monthwise higher prevalence was found in the March and the lower (10%) in both April and September. This high prevalence rate of coccidiosis might be due to effect of favourable environment for the sporulation of oocysts. Seasonwise prevalence rate of coccidiosis was the highest (33%) during summer and spring, and the lowest

(14%) during autumn season. The prevalence of coccidiosis is higher in summer and spring season may be due to the hot and humid climate. Age-wise prevalence of coccidiosis was found the highest in 31-45 days age group (48%) and the least (6%) in 0-15 days age group. The high prevalence of coccidiosis might be associated with crowding factor and the presence of high number of oocysts in the litter at 31-45 days. Hence, this age group might be very susceptible to coccidial infections. Hofstad (1992) reported that 3-6 weeks age group of chicken were very susceptible to coccidial infection.

**www.dls.gov.np** a newsroom of this side focused that the number of fowls in this fiscal year 2012/13 increased by 6.17 percent to 47956078 as against last fiscal year's total of 44610305. Out of the total fowls, 28.3 percent shared by laying hens which is increased by 2.34 percent compared to the last year. However, due to broilers population increased in farming support to increasing of total poultry numbers. The time series data shows annual average growth of total meat production by 2.6 percent and eggs by 45.6 percent. The number eggs production is expected to grow by 4.69 percent. So, the total number of eggs produced in the country is estimated at 838 million of which 825 million eggs (98%) is from fowl and the rest 13 million eggs (2%) is from ducks. The more eggs are produced from hill than Tarai and the least produced from mountain. In Chitwan district net meat production from broiler chicken is 1372 metric ton and egg production from layer chicken is 65309000 eggs.

**Sharma (2010)** in his article insisted that there has been gradual increase in poultry egg production, and in the year 2006/2007, it reached 614,848,000 in Nepal (MOAC, 2008). The poultry population including layers and broilers are gradually increasing. There had been 6,643,350 layers in Nepal in the year 2004/2005. A lot of women are involved in poultry processing. Development of infrastructure for slaughter house has been very

slow. Local government should participate with private sector. The land for slaughterhouse, water supply, sewage and organic materials decomposition place should be well organized. Now a days people enjoy different types of poultry meats such as Mandarin chicken, chilly chicken and Thai chicken. They have developed habit of eating frozen meat. When people have exposure to outside work, they learn to eat different varieties with their changing lifestyles. Poultry production is an important component of integrated agriculture practice in Nepal. Backyard poultry becomes ideal source of cash money to rural people. Where as commercial farmers are interdependent with feed price, market network of eggs and meat. The backyard poultry farming is not up to expectation in term of bio-security and cleanliness measure. After first outbreak of HPAI, in 2009, the government of Nepal has given priority for bio-security policy formulation. As the poultry industry is in continuous threat of HPAI, the poultry health management is of great concern in present situation.

**Economic survey (2012/13)** focused that, the number of fowls is expected to swell up by 6.17 percent from last year's 44610305 to 47956078 this year. Among the fowls, the number of egg layers is estimated to be 8233091 an increase of 4.12 percent as compared to last year 5.6. Total meat production is estimated to increase by 2.6 percent to reach 295000 MT in the current FY, Of the total meat produced, share of fowl is estimated at 43112 MT and remaining from other animals like buffalo, goat, pig, duck etc. Previously, fowl production was taken only from the district livestock service office; however from this year onwards, an improvised counting method was applied by the Department of Livestock services bringing the broiler chicken that is produced around 4 times a year into country. This was the main reason for the increase in fowl meat production in particular and in general, for the rise in overall meat production. In the current FY, egg production is estimated to climb up by 4.69 percent from 787.0 million units

last year to 838.9 million units this year. Of it ,the share of fowl egg is estimated to be 825.8 million units and that of duck eggs 13.4 million units.

NPC (2010) in its three year plan (2010/11-2012/13) focused that the objective of the current three year plan is production of per person meat would have been increased from 9 Kg. to 11 Kg.; and egg 23 Kg. to 31 Kg. and produce 255 thousand M ton meat and 7150 lakh eggs in the last year of interim plan. Through in FY 2068/69 the production of meat was 288.50 M ton and 7870 lakh eggs were produced. It has focused that poultry farming is a profitable business and it may help the country to improve its economic development. It suggested that the poultry farming and feed production activities are inter-related and should be developed side by side. The strategy of this current three year plan is to enhance competitive capacity by making easy availability of improved breed livestock and reducing the cost of livestock production. And make quality control, monitoring and regulation of food agriculture and livestock commodities effective. According to the animal service program, by distributing improved breed livestock, development of shed, animal insurance, animal health, feeding of the animals with package, the income of targeted community can be increased. And other programs are also there like: the health certificate of animals to transport from any place another, use of animal transportation scaling, development of market infrastructures. In addition to that, the program will run to maximize the production of meat and eggs by applying the professional poultry farm program.

Among the three belts, the Hill belt reported the highest percentage of holdings raising chicken at 60.6% compared with 56.3 % and 31.5% in the mountain and Tarai belts, respectively. Correspondingly, out of 1,594,400 holdings raising chicken, 960,800 holdings were located in Hill belt area, which is approximately 60% also. Of the five regions, Mid-western region reported the highest proportion of holdings with chicken at 64.3% followed by Eastern region with 54.35, however, Eastern region, (page 157).

**Bhusal (2011)** in her article insisted that entrepreneurs in Nepal have found better wages and living standards in an unlikely place-the chicken coop. Poultry farming has become a popular enterprise here, where local farmers say they can afford more education for their children and are even starting to save money. The government has been active in promoting the industry and providing support to farmers industry here, offering trainings and subsidized materials. Poultry farmers say the business has enabled them to support their families, build homes, send their children to school and start saving. Challenges do exist, such as poultry diseases and a lack of training in rural areas. But industry officials say that overall, the business benefits consumers, the economy and the farmers.

There are 5,000 commercial poultry farms in Nepal, according to 2011 data from practical Action, an international nongovernmental organization. Agriculture contributes 66 percent of the population's employment opportunities and 36 percent of the country's total gross domestic product, GDP, according to the Ministry of Agriculture and cooperatives. It contributes 17.6 billion rupees, nearly \$240 million USD, to the GDP, says Deepak Mani Pokhrel, senior horticulture development officer for the ministry. More than half of Nepalese live below the international poverty line of \$1.25 per day, according to UNICEF. The labor underutilization rate, considered a more accurate measure than unemployment is nearly 40 percent for males and more than 20 percent for females, according to the 2010 Nepal Labor Force Survey Report.

**Winrock (2008)** in its dissertation focused about the commercialization of poultry in Nepal has been established since 1993. According to Nepal Hatchery Industry Association, there has been an investment of more than 16 billion Nepal rupees (228.57 million US \$) in this industry in the last 15 years. More than 65,000 people are directly. In 2003

GDP contribution of poultry industry in the national economic was 3%. Similarly 60,000 families involved, 190,000 people got employment opportunities, per capita meat availability was 2.62 Kg/person, per capita table egg availability was 21.90 egg. But It has increased in 2007, and GDP contribution of poultry industry in the national economic reached more than 3%. Similarly more than 60,000 families involved, more than 190,00 people got employment opportunities, per capita meat availability was 2.80 Kg/person, per capita table egg availability was 25 egg. The predicted commercial poultry production in Nepal for 2007/08, the number of particulars quantity of broiler chicks is 42,922,706, layers chicks is 4,473,271, Total poultry Meat 67,798,000 Kg, total Commercial Eggs is 714,647,934 total commercial Feed is 463,672 M. Ton. Nepal is dependent on foreign countries for parent stock for both broilers and layers. Major suppliers of parents in Nepal are Australia, the Netherlands, Germany, the united Kingdom, the philippines, Malaysia, srilanka and Belgium. Because Nepal's government has imposed a ban on imports of poultry and poultry products from Highly pathogenic Avian Influnza infected countries, imports from India are currently banned. parent stock are imported by 71 hatcheries and distributed in less than 15 districts of the country. The major breeds imported are cobb 100,cobb 500, cobb Avian 48, Ross 308, Hubbard Flex, Matshall R, Kasila, pureline Genetics, Lohmann Indian River in broilers and Hyline brown, Lohmann brown, H & N Nick Brown, B.V 380, Bovans, Isa Brown, and Dominant CZ in layers.

**R.H.SM. and E.SM. (2010)** in their thesis focused that the poultry industry in Nepal has emerged as the most dynamic and fastest expanding segment in animal husbandary sector. There has been a phenomenol growth in the Nepalese poultry industry in the last 3 decades. Poultry farming has emerged as major income generating enterprises in agriculture sector during the last four decedes. Considering the trends of population growth, urbanization, road access, transportation linkages, change in food habit of the

people, increasing awareness on nutrition and growing demands it can be assumed that this sector will grow continuously in foreseeable future. Poultry perhaps have higher requirements for each nutrient than do other domesticated animals. Eating regulation in poultry differ from those of other animals. Poultry eat to provide for energy needs. Poultry have higher body temperature than other animals and accordingly require a higher energy ration. Feed alone cost 65-75% of total broiler production and ultimately results in high price of poultry meat. Nowadays this industry has expanded well enough to replace imports of feeds, chicks, eggs, and meat products thus has played vital role in boosting the national income of the country.

Rising poultry is beneficial to low level income generating farmers. Poultry provide business in leisure. It provides balanced diet/nutrition to farmers and poor through poultry meat, eggs. Many poultry related business like meat, eggs, ration etc can be conducted which is very good way of generating income. This business need low finance to start and a broiler prepared within 1.5 to 2 months to maximum benefits can be achieved within certain period. Nepal government Agricultural perspective plan (APP) main aim is to eradicate poverty; as well as poverty Alleviation Fund (PAF). Thus poultry rearing is a good way of reducing poverty. This study will be helpful in generation of the new technology/method that will be easily adopted by farmer and helps in increasing production and productivity of farmer at lower cost of production.

**Shrestha, (1964)** in his thesis studied that most of the farmers used to keep 10 to 20 parent birds for eggs and meat production for household consumption. The regular consumption of eggs and poultry meat was very low even in rich society. Income from the poultry farming was negligible and it had not been established as a primary occupation. He was the first person to state the problem of poultry farming located in Kathmandu valley. In this study, he has concentrated on the importance of poultry farming in Nepal. It

has been found that poultry farming is a profitable business and it may help the country to improve its economic development. In this study, it is concluded that poultry farming and feed production activities are inter-related and should be developed side by side. This study shows the bright future of poultry farming in Nepal.

**Sharma (1976)** in his thesis focused that middle sized group farmers are beneficial than the large and small sized group among the 5 samples. It is better to continue the existing farms to promote the poultry farming in Nepal. Poultry farming is emerging business so it is viable in Nepal. The mortality of the chicks is declining due to the ammines of safety methods and use of medicine.

**Joshi (1977)** in his thesis found that the regular supply of feed is necessary to meet the increasing demand of poultry product. This study recommended the restriction of importing eggs from India to encourage the Nepalese poultry farmers. This study concluded that the growth of poultry as well as feed industries would be able to provide the job opportunities to the people. As a result of which the problems of unemployment could be reduced. In this report, he explained about that tradition and culture of various religious groups in relation with the poultry consumption. Some of the castes like Brahmins, Chettries and some other religious groups such as Buddhists, vaishnavi, Krishna pranami etc only used to consume vegetarian food and prohibited any types of meat. So these societies, income through the poultry production was nil. However, the poultry farming was popular within lower castes and some special ethnic group of people in Nepal. They offered poultry product such as eggs, chicks and cock to pray god and goddess. Eggs and chicks were offered to the witch doctor to cure diseases. People in the past also knew about the importance of poultry meat. So they provide diet to pregnant women and after delivery. They believed that poultry meat gives us energy to work and makes us healthy. Shrestha (1997), in his thesis insisted that poultry framing in Nepal has been mainly centre on the urban area of the



country. In rural area, poultry farming is not found in commercial scale due to the lack of technological knowledge. There should be availability of the skill development programme to improve the poultry management. The market structure of the poultry fowl should be systematized and well managed. There should be the government priority to solve the market problems.

**Shrestha (2000)** in her thesis showed that the number of feed and poultry farming are increasing every year. The price of feed is not stable. Poultry feed needs different types of raw materials but some material are not available in Nepal and must be imported from India. Chitwan of the industries export their poultry feed to other countries.

**Sapkota (2002)** in her thesis instead that Brahmin and Chhetry are adopting this enterprise more compared to other caste where more than 90% broiler farmers have been Hindus. The mid aged farmers group (30-40 years) are adopting more compared to other aged group where maximum number of farmers are illiterate to simple literate and have no any training was taken in poultry husbandry. Maximum number of poultry owner used labor by their own family member for all activities. The outer labors were generally child labor and got very less amount as a labor wages. Mainly enterprise head and his wife were found more responsible for all activities and they worked more than 4-6 hours per day. Poultry farmers of chitwan are expanding more than 93% in variable cost. The mean mortality percentage of chicken was around 7% which may be due to different epidemic disease and poor management the industry on an average enjoyed a net return of Rs. 27.93 per birds of broiler and feed conversion ratio is 2.34%. However, about one third of the producers reported losses in their business. The variations in the management practice of individual farm and their management performance could be the major reason for this. Other factors, which kept the net return of the overall industry at low level, were the technical expertise, to internalize the dynamic

of market functioning in their production and marketing strategy, and use of treatment recommendations without assessing their economic rationale.

**Adhikari (2004)** in his thesis studied about coccidiosis disease. It is most likely when young stocks are concentrated under conditions, which permit the accumulation and sporulation of large number of oocysts. Coccidiosis may occur at any age, season and month. The highest prevalence of coccidiosis was found in the month of June and March in broiler and layer chicken respectively. Season wise prevalence of coccidiosis was the highest during summer season and the lowest during autumn in both broilers and 31-45 days age of layers, and the lowest in 0-15 days age of both broiler and layer chicken. The mud/mud+brick type floor acts as more precipitating factor for coccidiosis than concrete type floors of broiler and layer poultry farms. Layer chicken rearing in cage system had less chances of infection than rearing in deep litter system. Four different species of *Eimeria* were identified by using mean length and width of oocysts in combination with site and nature of intestinal lesions. The identified species were viz. *E. tenella*, *E. necatrix*, *E. maxima* and *E. acervulina* in broiler chicken and in addition to above four, another one species *E. brunetti* was observed in layers chicken.

**Bhattraï (2008)** in his thesis studied about the risk faced by the poultry farmers. It has involved many risks, some of the important risk factors are: plague of Bird-flu, lack of qualitative chicks and feed, increasing price of chicks and feed, plague of Gambaro disease, plague of Ranikher disease, strike, higher mortality rate of chicken, open border, free competition with Indian production etc. He also state some risk minimization factors which are: life insurance policy should be implemented so as to reduce the risk in its business, high qualitative chicks and feed should be provided, the training facility should be provided, uncontrolled price of chicks and feed should be controlled, the imported chicken should be controlled from India, free way should be provided in very condition to bring and send be provided.

**Pokhrel (2068)** in his report focused that the poultry farming system in chitwan has been started from 2029/30 B.S. However professionally this district has been entered into the poultry farm up in 2040 B.S. and from 2045 B.S..., its extension and development was there. The contribution of this district in total production of the country is approximately 90% production in layer, 35% in broiler and 60% production in eggs. Similarly this district has produced 28% feed and 21% in meat in total production of the country. The supply and consumption of the medicine and raw materials are in the ration.

### **2.3 Commercial Importance of Poultry Farm**

Livestock production is an important agricultural subsector in Nepal the growth rate of livestock sector is between 3.5 and 5 percent per annum which is more rapid than crop. Livestock have played a significant role in the income generation of the rural poor thereby contributing significantly in the poverty reduction. Livestock also have deep social and religious value.

The target envisaged by the Government of Nepal in its Three-Year Interim plan is to reduce the country's poverty level from current 31% to 24%. Livestock is one of the most important sectors in achieving this target. The livestock sector contributes around 15% of GDP and poultry industry shares around 3-4% of the total GDP (MOAC, 2009/10)

Poultry are one of the important sub sectors within livestock. Commercial poultry are mostly concentrated in the urban and semi urban areas that are equipped the electricity and road facilities. To be more precise, commercial poultry pockets are mostly concentrated in the Chitwan, Kathmandu Vally, Kaski and Morang and their peripheries.

Poultry farming are vital to the livelihood of the rural people in developing countries in at least the following ways:

- ) Poultry are important source of cash income for rural people.
- ) Poultry are one the few assets available to the poor, especially women.
- ) Poultry manure is vital to the preservation of soil fertility and the sustainable intensification of the farming system.
- ) Poultry products are also used for self-consumption.
- ) Poultry products are also used for self-consumption.
- ) Poultry produce a vital and often only source of income for the poorest and marginal group of the rural poor.
- ) Poultry farming provides the employment opportunity all around the year.
- ) Poultry meat, egg as well as litters can be used

Nepal is an agricultural country. Most of the farmers produce food crops in their farm and there is greater chance of under-employment and disguised unemployment in this sector. Therefore, poultry farming is becoming a suitable side occupation to those who have suffering from disguised and under employment. Among with the development in poultry farming various other sectors of economy also developed like feed industries, Hatcheries, trade, agriculture in which further employment can be generated. Therefore, poultry farming has greater importance to enhance the national economy gy creating the wide range of employment. According to Nepal Hatchery Industry Association, there has been an investment of more than 24 billion Nepali rupees in this industry. More than 65,000 people are directly employed and thousands more have benefited indirectly from this industry (USAID, 2008).

Poultry industry converts the food grains and other products in to egg and meat, which provides the protein, vitamins, minerals and iron for the human body and it helps to people become to healthy and strong. The litters obtains from poultry industry have more phosphorus and nitrogen which is very essential for the plant. So, along with the development in poultry farming development in agriculture sectors also developed. Besides this poultry,

industry also contributes to the development of export trade, wholesale market, and retail market and creates the multiplier effect within the country. Poultry farming is also one of the major sources of foreign currency. Poultry farming business can help to earn the foreign currency by promoting the import substitution and export promotion of poultry product.

The current pace of industrialization and urbanization in the country will contribute to the rise in demand for meat and egg. supply of mutton and Buff meat will not able to meet the growing demand for meat in the country. This gap between demand and supply of meat can be fulfilling by promoting the poultry farming. Chicken meat is also relatively cheaper than mutton and Buff meat and chicken egg is the only source of egg in Nepal. Consumption of chicken meat and egg in restaurant and hotel is comparatively high than other meat and eggs.

From the poultry business government also can be generated the income in the form of tax and non-tax revenue. Government can obtained the export duty, import duty, value tax, registration charges etc. from the poultry business.

## **2.4 Opportunities for the Poultry Industry in Nepal**

There are tremendous opportunities for poultry production industry in Nepal. The climate in most of country is suitable for poultry farming. As poultry meat is good source of protein and is cheaper than other meat, it can combat the protein deficiency problem amongst Nepalese, especially young children. Additionally, there is less risk of coronary heart disease through poultry meat consumption compared with other meat. Because the poultry industry in Nepal is relatively commercialized, it is the most promising option to fulfill the demand gap of meat supply in the near future. Due to religious beliefs, beef production is not possible in Nepal and there is limited scope for pork. Worldwide trends show that the consumption of products of animal

origin increases with increase in the per capita income. As poverty decreases, the demand for products of animal origin is likely to increase. The poultry industry has the potential meet this expanding demand.

## **2.5 Research Gap**

Although there are various study in poultry farming, study on income status cost of production and employment opportunities has not been carried out in the study is necessary. Due to the change in time period the habit of the consumer their income source and price of product have change. So that new research is necessary to know the present situation of employment and income from the product as well as the price level.

The study on the cost production, income situation and employment is relevant in the case of poultry development. There are some problems faced by the poultry farmers also try to explore through the study. The research carried on in the different subject which mention above is became the out dated, so this study will be the most important to know the current situation of poultry farming.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

This chapter gives the details of the procedure adopted for the research. The beginning of the chapter points out the rationale for selection of a particular area as a case. Methods of research design, nature and source of data as well as the universe and sampling procedures, technique of data collection and analysis are also described in this chapter.

#### **3.1 Research Design**

The present study is a case study of poultry farming in Bharatpur Municipality. Research design is the plan before the data collection for the sampling procedure. To fulfill the objectives, it has categorized poultry farms into three groups: small, medium and large, according to their number of birds and investment.

The descriptive and analytical types of research design are more applied for the study where the issues are related to the research objective. To observe the income, employment and price, the price of egg and meat are taken of the years 2012 A.D.

#### **3.2 Nature and Source of Data**

In the present study, both primary and secondary data have been collected to fulfill the objectives of the study. For this purpose, a brief and intensive field work was conducted in the month of June 2012 to October, 2012. To take primary data a pre-testing questionnaire was developed for the study. By taking interview from the farmers and entrepreneurs, final questionnaire was developed for detailed study. Interview and direct observation methods were followed for the collection of information. The poultry expert, poultry farmers, hatchery owners, butcher and distributor were

interviewed. Some secondary data were also incorporated from the office record of the suppliers, feed millers and hatchery. Other sources of secondary data were the publication of current three year interim plan, economic survey 2012, poultry journal, research reports etc.

### **3.3 Sample Size and Universe**

The universe of the present study comprises all the poultry farms of Bharatpur Municipality. The total number of 525 poultry farms was indentified from the selling list of hatchery and by field survey. The poultry enterprise established before 2011 AD were purposively selected for sampling. About 5 percent random sampling by lottery method was taken i.e, 26 farm from the universe i.e 525 farm. The detailed information was taken from the sampled farmers and their categorization was also taken as small medium and large farm holders. These are categorized on the basis of poultry number of birds raised just before last batch. Having below 1000 is considered small, 1001 to 2500 medium and above 2501 is considered to be large farm. There were 12 small, 8 medium and 6 large farms found in the sample which was representative of the universe.

The sources related to the poultry industries i.e feed industries, poultry association, suppliers, big farmers and meat shop. This field study shows the recorded data that, there are about 525 poultry farms in Bharatpur Municipality. Among them there are 328 small farms, 157 medium farms and 40 large farms. According to above mentioned classification, only 5 percent of total 525 poultry farms are selected for the sample study of this research. Among the 26 sample poultry farms 12 small, 8 medium and 6 large farms are included.



**Table 3.1**  
**Number of Broiler and Layer Bird in 2012**

Types of Farms	No. of sample farm	Numbers of Layers Bird	Number of Broilers Birds	Total	Percent
Small 328 (0-65)	12	0	7,180	7,180	9.4%
Medium 157(19-12)	8	292	9,980	12,900	16.9%
Large 40(15-3)	6	50,100	6,000	56,100	73.7%
Total 527	26	53,020	23160	76,180	100

Source: Field Survey, 2012.

### **3.4 Methods of Data Collection**

The present study, necessary primary data were collected from the study area. For this purpose, a brief and intensive field work was conducted in the month of June to October, 2012. In the field work, different methods and techniques were used to collect the information. A brief account of the collection of data is given below:

#### **3.4.1 Interview**

Most of the information of the poultry farms taken in the study was collected through face to face interview and door to door survey of the sample population. Both structured and unstructured questions were used to conduct the interviews. Data were collected using precisely developed and tested interview schedule.

The schedule had covered general introduction of the poultry farms. The information to be collected was related to name and address of the poultry farmers. The second sector of the schedule covered the income and

employment level of the farmers. The information related to salary, working staffs, number of birds, eggs production etc and the third section of the schedule covered the information of price and market of various years.

Further details of income from meat, eggs and manure and problems faced by the poultry farmers in present day were also collected in the interview period of 30 to 50 minutes.

### **3.4.2 Observation**

Besides collecting data with the help of scheduled questions, the observations and discussions on unscheduled questions became very much helpful to collect the information. The data collected through observations and unscheduled questions have been used to support the description of scheduled data in relevant places in the text. During the field work, non-participant observation was also used to gather some qualitative information. The information collected through observation was mainly on income level, employment, poultry house condition etc.

In addition to poultry farmers, other non-participant farmers, entrepreneurs and local agents/suppliers feed mill were requested for information regarding the different aspects of poultry farming. Some key informants of the district such as campus and school researchers, social workers and scholars were also incorporated for the information. Furthermore experience of author in relation to poultry farming was also included for description.

## **3.5 Data processing and Analysis**

The collected data were processed manually. They were edited, coded and tabulated manually. An attempt was made to keep all the data in a master table and almost all items were obtained to look into the distributions.

In the process of income analysis, the cost of production and revenue were analysed in one complete cycle of broiler production and layers production by computation of per bird and per crate of egg. Cost of production was based on variable cost i.e. feed, labor, chicks and medicine cost and fixed cost interest on loan , electricity charge ,depreciation cost ,cost on building etc. The return price was calculated by adding the total price of manure, price of meat per kg weight and price of egg per crate and net profit was calculated by subtracting total cost from total revenue per birds.

### **3.6 Tools of Data Analysis**

For the analysis at the collected data, percentage, average and ratios are calculated by using the table and presented on the bar diagram and pie chart.

## **CHAPTER FOUR**

### **PRESENTATION AND ANALYSIS OF DATA**

#### **4.1 Cost and Income Analysis**

Poultry farming is one of the important subsectors of agriculture to generate the income and employment of the people, there are various constraints and challenges of poultry industry to maximize the benefit and to minimize the lost. Income and expenditure on production are the major activities in the poultry production. Poultry farmers spend for the various goods and services which are used in the production process. These costs can be categorized as fixed cost and variable cost. fixed cost represents the expenditure made on the durable goods such as house rent, feeder, waterier, tray, interest on loan etc and variable cost for the daily consumption goods and services such as chicks, feed, wage, medicine, electricity etc. Farmers aim of the farming bird is to get profit by selling the meat, eggs and manure product. In this study, the production cost of the poultry farming is calculated on the basis of variable cost and fixed cost and income from the production is the study on the broiler and layers production.

##### **4.1.1 Cost of Production**

Cost of production is study on the cost of fixed factor and the cost of variable factors. Fixed factors can be used for the long period of time in the production process but the variable factors can be changed according to need and interest of the farmers.

##### **4.1.1.1 Fixed cost of Production**

This is the cost of a farm which does not vary with every change of output. In this study, land cost has been excluded because almost all the poultry enterprise is located in the residential area near by the building of Poultry farmers. The piece of land in which poultry farm established was the

fixed price before many years. This study only analyses the present expenditure for the farming and income generation. Major share in the fixed cost is house rent. There are various types of farm house some are well structured whose life expectancy is expected more than 25 years, some are medium types and some are very low quality made by using locally available resources whose expected life expectancy is less than 5 years. Some of the factors used in the broiler and layer production are different but most of the factors are same. Some other fixed factors which were under study are feeder, brooder, waterier, interest on loan, tray etc. Fixed cost for hundred birds is shown in the table below:

**Table 4.1**  
**Fixed cost of production (per 100 Broiler and Layers Birds)**

Expenditure Heading	Expenditure on 100 Layer Birds		Expenditure on 100 Broiler Birds	
	Amount (Rs)	Percentage	Amount (Rs)	Percentage
House Rent	3854.8	55.2	600.3	19.8
Feeder	280.3	4.1	230.9	7.6
Brooder	142.6	2.1	-	-
Waterier	354.2	5.1	293.7	9.7
Tray	390.0	5.5	-	-
Electricity	1203.0	17.2	1332.9	43.9
Maintenance	385.0	5.5	290.4	9.6
Interest on Loan	368.7	5.2	285.7	9.4
Total Cost	6978.6	100.00	3033.9	100.00
Average Cost	69.7		30.3	

Source: Field Survey, 2012.

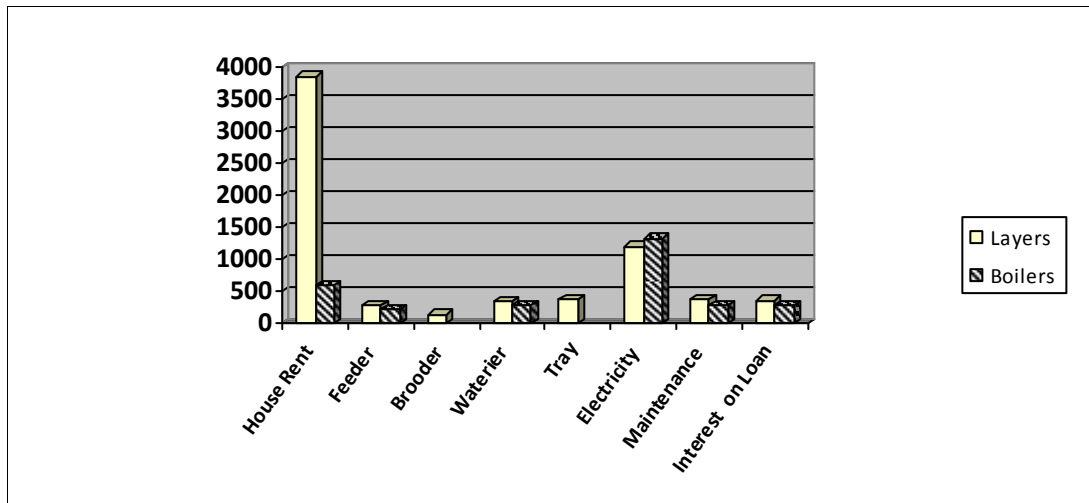
In the above table the calculation of the fixed cost of production is on the assumption of average time period of layer birds is 18 months and the average time period for broiler bird is only 45 days. The above information is

the average of the various farms report and their records. The table indicates the expenditure per hundred layer bird and per hundred broiler bird. There are some differences between the broiler and layer bird production. In the layer production largest share is covered by expenditure on house rent which is 55.2 percent out of total cost. Other costs are in decreasing order as cost of electricity is 17.2 percent, cost of tray is 5.5 percent, interest on lone is 5.2 percent and the minimum cost is for the brooder i.e. 2.1 percent.

Similarly, in broiler production, electricity cost is maximum i.e. 43.9 percent out of total cost and maintenance cost is minimum i.e only 9.6 percent. House rant, Interest on loan, waterier and feeder also have major share in total fixed cost. In Poultry farming, loan is required to develop farm infrastructure for the day to day expense such as feeds, medicine, wage etc. The analyzed data show the most of the farmers under study used bank loan and their average share in broiler production is 9.4 percent out of total cost which is 5.2 percent in layers production. Electricity is generally used for brooding, providing light, heat and cold. Some charges should be paid to the electricity authority as a fixed cost. The result of the study shows that the use of electricity is compulsory for all types of farms according to their number of birds. In the survey time period, the cost of electricity was Rs 80 per month for minimum (20 unit) unit of electricity and the cost per unit was Rs. 7.30.

Maintenance cost was calculated by using cost of durable goods and raw litter repairing cost of building, electricity etc. As compared to small and medium farm, large farm used more costly equipment and building. So the maintainable cost was found high on large farm. Above table can be presented by the help of percentage diagram as below:

**Figure 4.1**  
**Fixed Cost of Production**



#### **4.1.1.2 Variable cost of production**

Variable cost of production varies with the output not proportionately. Variable cost includes the cost of chicks, feed, medicine, litter, electricity, wage for the labour and others. The main source of chicks for all size groups of poultry farms are *Shikhar Hatchery, Abinash Hatchery, Panchakanya Hatchery* and other Hatcheries of *Chitwan* district. The main sources of feed is the feed industries of *Chitwan* district such *Himalayan Feed, Everest Feed, Ananada Feed, Abinahs Feed, Pancharatna Feed* and some of the large scale farms have been producing feed for themselves and small farmers are using the other's production.

In the study, the variable cost of broiler and layer production in the different size of poultry farm is analyzed on the table below, and is based on the time duration. The time duration of layer bird is 18 months and broiler bird is 45 days.

**Table 4.2**  
**Variable cost of production (Per 100 Layers and Broiler)**

Expenditure Heading	Variable Cost (100 layers)		Variable cost (100 broilers)	
	Amount (Rs)	Percentage	Amount(Rs)	Percentage
Chicks	10471.4	4.8	3937.5	17.2
Feed	195314.8	89.9	17725.1	77.3
Wage	4500.0	2.1	285.7	1.2
Medicine	5614.3	2.6	731.2	3.2
Litter	905.7	0.4	129.8	0.6
Misc.	363.0	0.2	125.7	0.5
Total	217169.2	100.0	22935.0	100.0
Average	2171.6		229.3	

Source: Field Survey, 2012

Above table represents the total variable cost of production per 100 layer birds and per 100 broiler. The cost of feed is major part of the total variable cost for the both types of birds-layers and broilers. In the study of the variable cost, the time period of the layers birds is 18 months and broiler birds is 45 days. Most of the larger farms have their own feed; small feed industry and produce required amount of feed in their own industry in low cost. But the quality of feed is not satisfactory because of improper balance of feed or faulty formulation of raw materials. The feed cost of small farm is more than the medium and large farm because they are compelled to purchase the feed from other feed mills. They depend on the production of others. They have to pay high price according to the price determined by the large industry. Out of the total variable cost, the cost of feed for the layer production occupies 89.9 percent but in broiler production feed cost occupies only 77.3 percent. Other expenditures for the layer production are very low i.e. expenditure for chicks is 4.8 percent, expenditure for litter 0.4 percent expenditure for medicine 2.6 percent and expenditure on wage 2.1 percent.



Similarly in broiler production, cost of chicks is 17.2 percent, cost of wage is 1.2 percent, cost of medicine is 3.2 percent, cost of litter is 0.6 percent and the miscellaneous cost is only 0.5 percent. For layers, cost of feed is calculated as the basic market price Rs. 29.9 per Kg with average feed consumption per day as 120.8 gram per bird. For broilers, cost of feed is Rs. 58.1 per kg with average feed consumption per day as 67.9 gram. The cost of chicks is calculated as the basic market price, when price of layer chicks is Rs. 104.7 and broiler chick is Rs.39.4 per bird.

Labour cost in the large farm is higher than the small and medium farm. In small and medium farms, they use family members for the different activities. They spend more time every day in poultry management as compared to medium and large farm. The labour monthly salary was about Rs. 5000 on in average per labour in the study time period. Monthly salary in large farm was found to be higher than medium and small farms. Most of the labourers of the large farm were couple and out of district.

#### **4.1.1.3 Total cost of production**

Total cost includes total variable cost and total fixed cost. In the case of layers production, total variable cost per 100 layer birds is Rs. 217169.2 and total fixed cost per 100 layers birds is Rs. 6978.6. So the total cost of per 100 layer production is the sum of total variable cost and the total fixed cost.

Symbolically,

$$TC = TVC + TFC$$

Where,

$$TVC = \text{Total Variable Cost} = \text{Rs. } 217169.2$$

$$TFC = \text{Total Fixed Cost} = \text{Rs. } 6978.6$$

$$TC = \text{Total Cost} = \text{Rs. } 224147.8$$

From the total cost (TC), average cost (AC) can be found. Average cost of layer production can be calculated as below:

$$AC = TC/Q = 224147.8/100 = \text{Rs. } 7078.5$$

Where,

TC = Total cost,

AC= Average costs,

Q= Quantity.

Similarly, in the case of broiler production, the total cost of broiler production is the sum of total variable cost and total fixed cost of production. In this study, total fixed cost per 100 broiler production is Rs. 3033.9 and total variable cost per 100 broiler production is Rs. 22935. So, the total cost of per hundred of broiler production is Rs. 25968.9 per unit cost (average cost) of broiler production can be calculated by using the total cost. So the average cost of broiler production is Rs. 259.7 (i.e. 25968.9/100). Production nature in broiler and layers are not identical. So, there is not comparison in the production cost.

#### **4.1.2 Income from the poultry Farming**

Poultry farming is one of the major sources of income in agriculture sector. The farmers involved in crop farming are getting loss day by day due to the low price of the product and high cost of production. So, the farmers are being attracted in to the poultry farming. It is a chief source of income. By investing small amount of capital, people can keep birds in their leisure room, hut and shed. This business helps to solve the day to day house hold problems and increase the saving of the people.

The attractive income and easy life in poultry farming encourage the people to keep the large number of birds. They will be ready to bear the risk in poultry farming when they can get attractive income through this business. In Bharatpur Municipality, most of the poultry farmers are small; they are keeping less than 1000 birds. Among them some farmers are still unknown about the modern techniques and methods of farming. Small farmers like to keep the broiler chicks in their farm because in short time period it gives returns. But the farmers large scale are attracted to keep the

layer birds because there is comparatively low risk of disease and low mortality rate is found in layers birds production. Those farmers can wait for the returns but small farmers are more ambitious for the return.

Attractive income is the aim of the poultry farming by the production of meat and eggs. In this study, income from the meat production via broiler farming and income from the eggs via layers production are separately analyzed. Other income from the poultry farming is in minority i.e. by selling manure and layer's meat.

In Bharatpur Municipality, the number of broiler farm is higher than layers but most of the broiler farm is small in size. Comparative cost in small farm is higher. So, income from this farm is small in amount. Layer farming are popular in this area, most of the large farm keeping layers birds.

#### **4.1.2.1 Income from Broiler production.**

Broiler birds are the source of meat .If the demand of meat increases, the price increases. This ultimately increases the income of the farmers. Likewisem, if the demand decreases due to any reason, price decreases and ultimately income decreases. So, the demand is determinant of price. The fluctation of price of per kg meat in the study time period is Rs.100 to Rs. 180. So the average price of per kg meat is assumed to be Rs. 140 in the income calculation. Income from the manure is comparatively very small in share. It is less than 6 percentages in total . The price of manure per tailor is not fixed. Different farms sell the manure in different prices. In this study, average price of broiler's manure is assumed to be Rs.3450 per tailor and average price of layer's manure is Rs. 4085.7.

In this study, the total number of broiler bird under calculation is 23160 in all farms. Most of the farms are medium and small in category. The mortality rate of broiler bird is found in between 0.5 percent to 2.5 percent

and average mortality is calculated as 1.5 percent. Because of easily available medicine and other scientific development mortality rate is decreasing. There are different sources of income from broiler production. The major sources are meat and manure production. Meat production is the main goal of broiler production. If the growth of poultry bird is not found satisfactory, than the farmers will automatically suffer higher loss. So, the research data show that live weight per bird is 1.8 kg to 2.7 kg in 45 to 50 days. In this time period, the average weight per bird is 2.2 kg.

The selling price of live bird is Rs. 100 to Rs. 180 per kg, In average calculation, selling price per kg live bird is Rs. 140.5 Comparatively, the production cost of small farm is higher than medium and large farm due to maximum involvement of family member and daily waged labour in their farm. In this study time period, the horror of bird flu had entered in our country. So, there was variation in selling price of per kg live bird. Small size farms have more possibility to have a high price than large and medium because they sell their product to local people and local meat shop. But medium and large size farms generally sell their poultry product to large businessman, wholesales, suppliers and dealers in nominal price rate.

The poultry farmers reported that the rate of price increases in winter season as compared to summer. It may be due to more meat consuming habit of Nepalese people in cold season. The farmers are able to get better price of their product in the winter season as compared to other seasons.

**Table 4.3**  
**Income from Broiler Production**

Farm Code No.	No of Birds	Mortality(%)	Average weight in 45 Days(kg)	Average price	Total no Selling Bird	Income per Lot(Rs)
1SB	450	0.7	2	140	446	124880
2SB	450	0.5	2	135	445	120150
3SB	700	0.8	2.2	150	693	228690
4SB	630	1	1.8	145	623	162603
5SB	500	1	2.4	140	495	166320
6SB	600	1.5	2.7	140	591	223398
7SB	500	0.9	2.4	136	495	161568
8SB	350	1.2	2.3	140	345	111090
9SB	800	0.8	1.9	129	793	194364.3
10SB	600	2.0	1.7	145	585	144202.5
11SB	430	0.5	2.5	135	425	143437.5
12SB	550	0.6	2.2	145	544	173536
1MB	1500	1	2.4	140	1483	498288
2MB	1200	1.2	2.1	135	1183	335380.5
3MB	2000	0.6	2	145	1985	575650
4MB	1700	1.4	2.4	150	1674	602640
5MB	2300	0.7	2.2	130	2280	666900
6MB	1900	0.6	2.5	150	1886	707250
1LB	6000	0.5	2.2	140	5970	1838760
Total	23160	17.5	42.1	2670	22939	10197531.8
Average	1218.9	1.5	2.2	140.5	1207.3	536712.2

Source: Field Survey, 2012

Poultry manure is also the source of income to the farmers. Generally, it is used by the farmers themselves or sold to other farmers. The situation of poultry manure data showed that the average production of manure per square feet floor space with lighter material was 4.2 kg. The income from the manure production per bird is Rs. 8.4 in 45 days. In this study, it was found that small

size farmers used light materials in their shed. The quality of manure was better in large and medium scale farm as compared to the small farm. So, the price of manure in large and medium scale farms was more than in the small farms and was determined due to the quality of manure. Most of the farmers who had cultivable land used manure themselves and improve the fertility status of soil.

The average price of manure is different regarding broilers and layers bird because of the quality of manure. The average price of broiler manure per tailor is Rs. 3450 during the research time period.

Total income per bird was calculated by adding total selling price of bird and its manure. The study result showed that the average income per live bird was Rs. 309.1. Average income from manure production per bird was recorded Rs. 7.8. So that the total income per bird was  $\text{Rs. } 309.1 + \text{Rs. } 7.8 = \text{Rs. } 316.9$ .

As to calculate yearly income from bird in average time period of 45 days, 6 to 8 lots of broiler bird was calculated to be possible in one year and the average lots of production was recorded to be 7.1. Then, to calculate the year income per bird can be calculated by multiplying the average income Rs. 316.9 per bird to the calculated average lots. The average income per bird is  $7.1 \text{ lots} \times \text{Rs. } 316.9 = \text{Rs. } 2249.9$ .

#### **4.1.2.2 Income from Layers Production.**

In the poultry farm of layer birds, there are only three sources of earning revenue. The main revenue earned in this industry is from egg production. The sale of tired birds is another source of income. The third type of revenue earning source is the sale of manure. The income situation of layers farm can be explained in the following points:

In this study, it has been attempted to analyze the income situation of all size of farm, according to their production. Egg production is the main source of income of farmers. In this study, the large size of farm has earned highest income in comparison to other farms. It may be due to the quality of feed and health care. Income from small farm is comparatively less than medium and large farm because small farmers cannot invest for the necessary modern equipment and medicine for the chickens. The qualities of food they are using for chicken are also lower. As a result they get eggs of low quality and low level of income.

**Table No. 4.4**  
**Income from Eggs and Meat Production**

Farm code No.	Average egg production	Average price per egg	Income from eggs	Average weight of tired birds	Average price per kg	Income from meat production
1ML	318	7.8	2480.4	1.6	97.5	156.0
2ML	324	7.7	2494.8	1.8	100	180.0
1LL	327	7.8	2550.6	1.6	97.5	156.0
2LL	315	7.7	2425.5	1.7	100.5	170.8
3LL	322	7.7	2479.4	1.8	104	187.2
4LL	317	7.7	2440.9	1.9	100.5	190.9
5LL	323	7.8	2519.4	1.6	100	160.0
Average	320	7.7	2484.4	1.7	100	171.5

Source: Field Survey 2012

The income earned from the sale of tired birds is the second source of revenue. Due to the instability in the prices of chicken in the market and monopolistic nature of the wholesale market level, the revenue earned through the tired birds is variable. The price of meat varies in the different seasons. So, there is fluctuation of the income through the sale of tired birds. In the study time period, the rumor of bird flu was very high.

Another source of income is the sale of manure. The small scale farmers have lowest revenue from the sale of manure. It is due to the small number of flocks and they have used the litter in small quantity. Comparatively, large and medium scale farmers have earned more revenue from the sale of manure because they use litter in actual quantity. From the above calculation we can sum up the total income of layers birds from eggs, meat and manure production. This is shown in the table below:

**Table 4.5**  
**Total Income from Layers Birds**

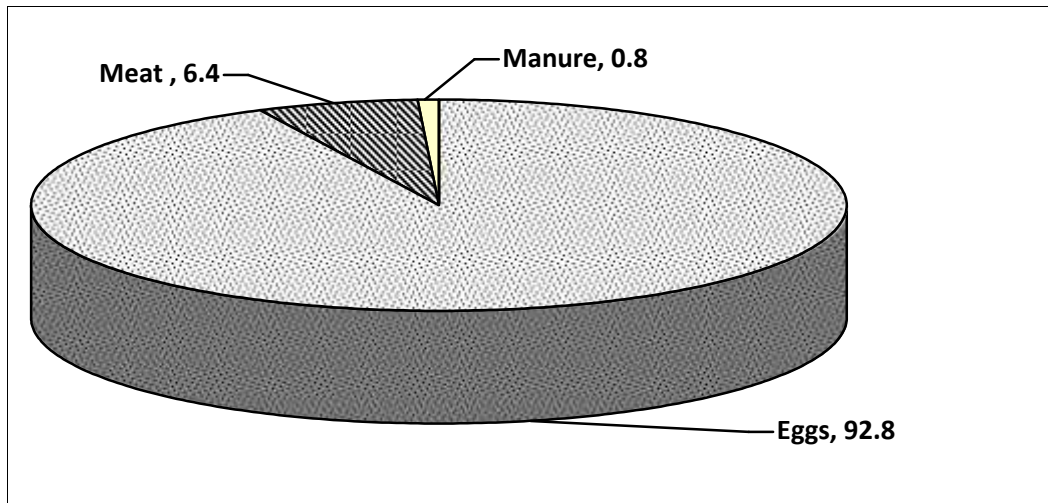
Items	Total income	Percentage
Eggs	2484.4	92.8
Meat	171.5	6.4
Manure	19.0	0.8
Total	2674.9	100

*Source: Field Survey, 2012*

From the above table, it can be noted that the revenue earned by eggs production is 92.8 percent. Then the revenue earned by the sale of tired birds is 6.4 percent and the revenue earned by the sale of manure is 0.8 of the total income from layers poultry farms .It can be shown with the help of pie diagram as below:



**Figure 4.2**  
**Income from Layer Production**



### 4.1.3 Profit from the poultry farming

#### 4.1.3.1 Profit from Broiler Production

Broiler are reared for meat production the broilers grows very faster and are ready for sale at 45 days. Most of the small poultry farmer keep the broiler birds because they cannot wait a long term for returns due to lack of capital.

Profit is the money a business makes after accounting for all the expenses. Where total cost includes fixed cost and variable cost. In the case of broiler production total cost per broiler birds is Rs. 259.7 and total revenue per broiler birds is Rs. 316.9. So the profit per broiler birds is difference between total revenue and total cost.

Symbolically,

$$(\Leftrightarrow) = TR - TC$$

Where,

$$\Leftrightarrow = \text{Profit}$$

TR = Total Revenue

TC = Total Cost

Profit from broiler production can be calculated as below:

$$(\Leftrightarrow) = TR - TC$$

$$= \text{Rs. } 316.9 - \text{Rs. } 259.7$$

$$= \text{Rs. } 57.3$$

Above calculation shows that poultry farmer can earn Rs. 57.2 profit per broiler birds. Similarly profit percent can find by using following formula.

$$P \% = \frac{\Leftrightarrow}{\text{TC}} \times 100$$

Where,

P% = Profit percent

$\Leftrightarrow$  profit

$$\frac{\text{Rs. } 57.3}{\text{Rs. } 259.6} \times 100$$

$$= 22.1\%$$

#### 4.1.3.2 Profit from Layer Production

The poultry birds which are raised for egg production are called layer. They start laying eggs regularly at their 25 weeks of age. After 71-73 weeks of age egg production of layer poultry get reduced layer can be sold out when they are no longer productive in laying eggs large farmers mostly keep layers birds.

The profit of layer production is difference between total revenue and total cost where, total revenue per layer bird is Rs. 2674.9 and total cost per layer bird is Rs. 2241.3 so,

$$\Leftrightarrow \text{TR} - \text{TC}$$

$$= \text{Rs. } 2674.9 - \text{Rs. } 2241.3$$

$$= \text{Rs. } 433.6$$

Above calculation shows that farmer can earn Rs. 433.6 per layer birds. Similarly profit percent can be calculate by using following formula:

$$p\% = \frac{\Leftrightarrow}{\text{TC}} \times 100$$

$$= \frac{\text{Rs. } 433.6}{\text{Rs. } 2241.3} \times 100$$

$$\text{Rs. } 19.3\%$$

Above data shows that broiler production are more profitable than layer production. But broiler production is short term profitable business.

## 4.2 Employment Analysis

Labour is any type of manual activity done with a view of earning a reward. In poultry farming, generally labours are used for feeding, watering, sanitation and other managerial activities. The labourers are of two type i.e. family labour and waged labour. The studied result indicates that majority percentage of poultry owners involved their own family members to conduct different activities in the farm. Only few poultry owner hired labours in their farm. Among the waged labour, maximum labours were couple and non local. The waged labour also got different levels of salary. In this study, some labours reported that there is discrimination between male and female labour. According to them, the salary of male labour is comparatively higher than that of female labour. The problem of child labour is decreasing due to the awareness of public organization.

**Table 4.6**  
**Distribution of Labour in Sample Farms**

Types of farm	No of farm	Family members		Waged labour		Percent of family labour	Percent of waged labour
		Male	Female	Male	Female		
Small	12	11	9	0	0	100	0
Medium	8	9	9	3	0	85.7	14.3
Large	6	6	5	22	9	26.2	73.8
Average						70.6	29.4

*Source: Field Survey, 2012*

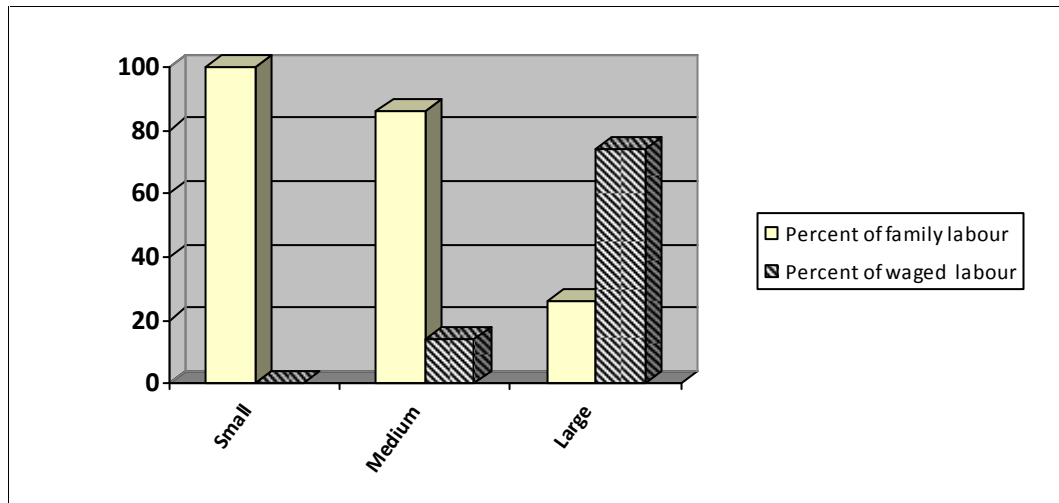
Most of the farmers (less than 1000 birds) used their family members as labour force thinking that it might be less affordable due to the economic status and unemployment problem of family members. 100 percent of the

small farmers and farm owners themselves are involved in poultry farm. Medium farmers owing 1001 to 2500 birds had 85.7 percent of the labour force supplied by the family members and only 14.3 percent of the labours were hired. In large farms (more than 2501 birds), labour supply ratio was recorded different than small and medium farms. Large farmers used the majority of the hired labours because family members alone could not cover all the farming activities. In large farms, only 26.2 percent of the labour force was supplied by the family members and rest 73.8 percent labors were hired. In the data, the average supply of labour from the family members was recorded to be 70.6 and only 29.4 percent of the labour force was supplied from out of the family.

The involvement of female in this sector is very low. Only 46.9 percent female from the family members and 26.5 percent from out of the family members were recorded to have participated in this sector. In average, only 36.7 percent females were involved in poultry farming.

Labour supply in poultry farm was irregular in nature. Small farm owners could not employ the waged labours due to the low level of income and had family involvement in farming activities. Among 26 farms, only 83 labours were employed in various farms. Large 6 farms employed 42 labourers, medium 8 farms employed 21 labourers and small 12 farms employed 20 laborers in this sector. While calculating in percentage, large farms provided 50.6 percent medium 25.3 percent and small farms provided 24.1 percent employment opportunities to the people. Wage rate is not fixed in different farms. There is discrimination of wages in male, female and child labour. Above table has presented by flowing percentage diagram.

**Figure 4.3**  
**Distribution of Labour in Sample Farms**



### 4.3 Role of Government Sector

The third five year plan (1965-70) targeted to establish hatcheries in Kathmandu, Tarahare Bhairahawa and Nepalgunj. Target was also set to expand the capacity of parwanipur Hatchery from 6000 chicks a year to 80000 chicks.

The fourth five-year plan (197-75) set a target of increasing the fowl meat production in the country by 16 percent (from 300 to 8475 tons) in five years. During this period, government aimed to establishing additional feed mills at Biratnager, Nepalgunj, Bhairahawa and Dhangadi with private sector investment to increase the feed production from 2,500 to 12,500 tons by the end of this period. By the year 1975, five hatcheries produced in total 20,00,000 chicks a year.

The fifth five year plan (1975-80) targeted to increase poultry meat and eggs production by 16 percentage i.e from 9310 to 10802 tons and by 16.9 percentage perspectival (HMG, 1975). The government established one hatchery at pokhara and a brooding farm at Nepalgunj. It targeted to produce

in total 23000 chicks of which government and private sectors were to produce 44.3 and 55.7 percentage respectively.

Sixth five-year plan (1980-85) targeted to achieve 20.6 percentage growth in poultry meat and 8 percentage in eggs production. The government initiated two programmes namely 'co-ordinated programme' and 'general programme'. Under the first programme, efforts were made to promote further commercial poultry in urban and peripheral areas. While the general programme focused on distributing eight week old brooder chicks to marginal farmers in remote and hilly areas for their additional income generation.

The eight five-year plan (1992-97), which was initiated after the restoration of democracy in the country, aimed to further promote the private commercial poultry enterprises on the basis of physical infrastructure as well as to develop them in urban centers. This plan also introduced a special poultry programs for rural women and backward population. Further, it recognized the need for establishing veterinary hospitals, dispensaries and commercial slaughter houses in the private sector.

The Ninth five-year plan (1997-2002) generally followed the policies outlined in the eighth five-year plan and agriculture perspective plan (APP). It also introduced the concept of farming poultry raising group in rural areas to be supported by livestock extension services at village level. This plan has set a target to achieve egg production with a growth rate of 7.2 percentage in the end of the plan period. But achievement in the egg production was 548 million during the last year of the plan period. The overall progress during the plan period i.e. 5.1 percentage growth could not meet the target.

The objective of tenth five-year plan (2002-2007) was to develop the livestock sector to support for income generation, food security and poverty

alleviation thereby increasing production and productivity of livestock and poultry. Strategy of this plan was to promote livestock and poultry industry based on raw materials produced in the country itself and by improving health service as per the international standard.

The objective of the current three year plan (2010/11-2012/13) is production of per person meat would have been increased from 9 kg. to 11 kg; and egg 23 kg. to 31 kg. and produce 255 thousand M ton meat and 7150 lakh eggs in the last year of interim plan. Through in FY 2068/69 the production of meat was 288.50 M ton and 7870 lakh eggs were produced. It has focused that poultry farming is a profitable business and it may help the country to improve its economic development. It suggested that the poultry farming and feed production activities are inter-related and should be developed side by side. The strategy of this current three year plan is to enhance competitive capacity by making easy availability of improved breed livestock and reducing the cost of livestock production. And make quality control, monitoring and regulation of food agriculture and livestock commodities effectives. According to the animal service program, by distributing improved breed livestock, development of shed, animal insurance, animal health, feeding of the animals with package, the income of targeted community can be increased. And other programs are also there like: the health certificate of animals to transport from any also there like: the health certificate of animals to transport from any place another, use of animal transportation scaling, development of market infrastructures. In addition to that, the program will run to maximize the production of meat and eggs by applying the professional poultry farm program.

#### **4.4 Current Situation of Chitwan District**

The contribution of this Chitwan district in total production of the country is approximately 95% production in layer, 34% in broiler and 60% production in eggs. Similarly this district has produced 28% feed and 21% in

meat in total production of the country. The Supply and consumption of the medicine and raw materials are in the same ration (Pokhrel, 2069/70)

#### 4.4.1 Numbers of Birds in Chitwan District

In fiscal year 2067/068 production of Broiler birds for meat purpose are increased by 106.1% then in fiscal year 2066/067. Where number of layer birds for eggs products are increases by 37% in Chitwan district. The data shows that broiler poultry farming had increased significantly. Number of birds in Chitwan district is shown in the table below.

**Table 4.7**  
**Numbers of Birds in Chitwan District**

Particulars	Fiscal Year		Percentage Change
	2066/067	2067/068	
Broiler birds	1,22,534.2	2,81,464.4	129.7
Layer birds	90,067.9	75,349.8	-16.3
Commercial Broilers	98,20,071.5	2,02,39,212.0	106.1
Commercial Layers	38,93,044.8	53,33,352.0	37.0

*Source: Arthabodh, 2069*

#### 4.4.2 Poultry Production in Chitwan District 21

Due to increase in number of broiler birds, production of meat has increased highly by 115.3% in FY 2067/68 compared to above FY. But eggs production is decreased by 11.6% in FY 2067/068. The data related to it was showed in following table.



**Table 4.8**  
**Poultry Production in Chitwan**

Particulars	Fiscal Year		Percentage Change
	2066/067	2067/068	
Meat Production (Kg.)	17523178.89	37731231.25	115.3
Egg production (Numbers)	756,495,064	668,783,493	-11.6

*Source: Arthabodh, 2069*

#### **4.4.3 Chicks Production in Chitwan district**

Chicks were produced by Hatchery Farm according to data given by Forum of Nepal Poultry Farms these are around 46 Hatchery farms in Chitwan. Which produced layer and broiler Chicks. Following table shows number of broiler chicks and layer chicks in Chitwan district between the FY 2066/067 and 2067/068.

**Table 4.9**  
**Chicks Production in Chitwan**

Particulars	Fiscal Year		Percentage Change
	2066/067	2067/068	
Broilers Chick	10,336,917.36	21,304,433.85	106.1
Layers Chick	70,65,155.16	5,393,011.67	-23.7

*Source: Arthabodh, 2069*

In fiscal year 2067/068 Broiler chicks production had increased by 106.1% but the layer chick production is decreases by 23.7% .

#### **4.4.4 Percent of Chitwan in Total Production**

Chitwan district had produced Total 21% chicken meat and 60% eggs in fiscal year 2066/067 which increases and reached to 35% and 60% in FY 2067/068. It shows that Chitwan district has important role in meat and eggs production.

**Table 4.10**  
**Percent of Chitwan in Total Production**

Particulars	Fiscal Year	
	2066/067	2067/068
Broiler chicks	21	35
Layer Chicks	98	87
Meat Production	21	35
Egg Production	60	60
Feed Production	28	28

*Source: Arthabodh, 2069*

Above table shows that broiler chick production and meat production in Chitwan district are increases in FY 2067/068. While the egg production and feed production are remain same but Layer chick production is decreases by 11% in FY 2067/068.

#### **4.4.5 Percent of Chitwan in Meat Production**

Comparison to other meat production chicken meat production is always in maximum amount in Chitwan district which is increased every year while total meat production by this district has decreased. The related data was shown in following table.

**Table 4.11**  
**Percent of Chitwan in Meat Production**

Fiscal Year	Area		Percent
	Nepal	Chitwan	
2065/066	6.9	27.4	6.8
2066/067	7.0	27.7	6.8
2067/068	13.0	27.7	6.4

*Source: Nepal Poultry*

Above table shows that broiler chick production and meat production in Chitwan district are increases in FY 2067/068. While the egg production

and feed production are remain same but Layer chick production is decreases by 11% in FY 2067/068.

#### 4.5 Current Situation of Nepal

The number of fowls expected to swell up by 6.2 percent from last year's 44610305 to 47956078 this year. Among the fowls, the number of egg layers is estimated to be 8233091 and increase of 4.1 percent as compared to last year. Total meat production is estimated to increase by 2.6 percent to reach 295000 MT in the current FY. Of the total meat produced, share of fowl is estimated at 43112 MT and remaining from other animals like buffalo, goat, pig, duck etc. Previously, fowl production was taken only from the district livestock service office; however from this year onwards, an improvised counting method was applied by the Department of Livestock services bringing the broiler chicken that is produced around 4 times a year into country. This was the main reason for the increase in fowl meat production in particular and in general, for the rise in overall meat production. In the current FY, egg production is estimated to climb up by 4.7 percent from 787.0 million units last year to 838.9 units this year. Of it, the share of fowl egg is estimated to be 826.0 million units and that of duck eggs 13.0 million units [MOF], 2069.

**Table 4.12**

#### **Poultry population in Nepal**

<b>Birds</b>	<b>2009/10</b>	<b>2010/11</b>	<b>2011/12</b>
fowl	2,57,60,373	3,95,30,620	4,46,10,305
Laying hens	72,90,875	74,78,645	78,97,449
Duck	3,79,553	3,78,050	3,76,916
Laying Duck	1,75,300	1,75,150	1,74,980

*Source: Arthabodh, 2069*

Above table shows, that total number of fowl and laying hens are increases after fiscal year 2009/10. Similarly, it shows that number of Duck and laying Duck are continuously decreases to the fiscal year 2012.

**Table 4.13**

**Poultry production in Nepal**

	<b>2008/09</b>	<b>2009/10</b>	<b>2010/11</b>	<b>2011/12</b>
Chicken Meat (Kg.)	16,662	17,551	36,085	40,346
Hen egg (000 numbers)	6,16,312	6,34,660	6,91,070	7,73,950
Duck (Kg.)	226	225	218	217
Duck egg (000 number)	13,628	13,440	13,065	13,060

*Source: Arthabodh, 2069*

Above table shows that chicken meant and Hen eggs are increasing continuous and Duck meat and Duck eggs are decreasing continuously .

## **4.6 Major Problems**

Detailed observation of poultry farms and discussions with the farmers, including large-scale producers, clearly indicate that farmers in this area keep poultry in substandard managerial conditions. The major problems perceived related to the development of commercial poultry farming are described below:

### **4.6.1 Adverse Taxation policies and Practices**

The poultry farmer argued that there is adverse taxation policies and practice. All poultry production items such as breeding stocks, feeds medicines and equipment or machinery hectare mostly Imported from India and the government has been levying costoms duties and other taxes ranging from one to 25% on these items the duties and the additional cost of transporting the inputs make the production cost main higher in Nepal

compared to India. In addition, the government levies charge on local raw materials such as rice and wheat bran and agro by products, which again adds to the cost of production.

#### **4.6.2 Lack of Government priority**

In spite of the fact that poultry have tremendous potentiality to provide employment and income to large numbers of households in rural and urban areas of the country, this sector has yet to be recognized as an important agro-industrial enterprise to receive high national priority. Poultry development in Nepal, particularly in the commercial sector, is badly organized and haphazard in operation. None of the plans has been given high priority to poultry for poultry development. A clear national policy and a long term vision of the government are required for development of rural poultry at individual household level and commercial poultry at industrial level.

#### **4.6.3 Lack of Fund**

The poultry diseases diagnostic facility is inadequate in terms of both number and quality prompt and reliable services to the farmers. The government laboratories are not able to diagnose disease quickly and accurately. There is a shortage of biological and specific vaccines to prevent different poultry diseases of Nepal.

Arranging financial resources for avian research in government sector has been a consistent problem for the research and development in poultry industry. Limited facilities are available in the public sector for the laboratory services in disease diagnosis and control.

#### **4.6.4 Lack of Technical and Managerial Skill**

Majorities of the poultry producers have not received any poultry management training. Also, with the exception of a very few large hatcheries,

most of the hatcheries do not have specifically qualified staff. There is inadequate information available on production technology and the government livestock extension services do not have any programmes to meet the specific service needs of commercial poultry farmers. In general, poultry hatcheries and commercial farmers are facing different problems of high cost, heavy mortality, and technical mismanagement mainly due to very low levels of technological input and technical skills of staff.

#### **4.6.5 Problem of Feed Quality**

Management and quality aspects of hatcheries and feed in Nepal are disordered. The sanitation and hygiene standards of most of the hatcheries, except for a few large ones, are below acceptable standards. Hatchery-related disease and marketing of diseased chickens are common. Similarly, the feed quality is of low standard. The quality of feed varies significantly between lots. This unnecessarily raises the management cost as well as the mortality rate of chicks. Although, there are feed quality standards, there is no mechanism to monitor the feed. The feed testing laboratory is not developed to cater the need for poultry feed and there are no private sector laboratories for this job.

Lack of trained and qualified technicians, in the feed industry to formulate hygienic balance diet, most of the feed industries compute poultry diet by hit and trial method using the available book values, which may not be the real value. Except few large feed industries, most of the industries no have laboratory facilities. There are no facilities for testing the anti-nutritive factors present in the ingredients, which is of great importance to the availability of the nutrients present in the diet for the birds.

#### **4.6.6 Lack of Insurance scheme for poultry Development**

There is lack of poultry insurance scheme for poultry produce to prevent their financial risks.

#### **4.6.7 Lack of Qualitative chicks:**

Entrepreneurs have complained about qualitative chicks. Many types of chicks are available in the market but the entrepreneurs do not know which types of chicks are available in the market but the entrepreneurs do not know which is best on quality of chicks.

#### **4.6.8 Increasing price of chicks:**

Farmers have complained about increasing price of chicks Nobody control that increasing price.

#### **4.6.9 Noise of Bird flu**

Bird flu is another problem of poultry farm in all over the world the price of chicken and egg are heavily decrease due to noise of bird flu at that time entrepreneurs had great loss in poultry business.

#### **4.6.10 Poor Marketing Condition**

There are lacks of infrastructures for collection, transportation, handling, processing and marketing of poultry products. There are no market and price information mechanisms. There is mismatch between demand and supply. Due to the lack of marketing infrastructure, the market prices of perishable poultry products fluctuate heavily, which make the profitability of poultry farming highly uncertain and often causes loss to the poultry producers.

Existing chicken selling system is poorly organized and no infrastructures development. Brokers and commission agent play key role for line poultry supply. There is poor facility and poor sanitation in the processing hall and meat shop. The meat traders are unknown about the effect of poor quality, contamination and health hazards etc.

#### **4.6.11 Less Monitoring of credit from ADB/N**

There is lack of insurance scheme for poultry producers to prevent their financial risks. The ADE/N is the leading credit institution for commercial poultry. However, it does not have a strong institutional mechanism to monitor and supervise its borrowers. Hence, the chance of abuse of credit is very high. Also it does not have the capacity to provide technical support to its borrowers.

#### **4.6.12 Other Problems**

Besides, there are other problems which discourage the farmers in this sector. Some of them are poverty and illiteracy of farmers, strike and violence by the political parties and a small group of people, unfair competition of the farmers, monopoly in the price of the suppliers and big parties, Lack of poultry loan and lack of veterinary services.



## **CHAPTER FIVE**

### **SUMMARY, CONCLUSION AND RECOMMENDATION**

The main objectives of this study is to analyze the economic aspect of poultry farming with special reference to the income and employment level in Bharatpur municipality on the basic of the analysis and the diagnosis of the collected date and to provide the suggestion and recommendation for the poultry farmers. After interpretation and analysis of the data the researcher comes to following conclusion.

#### **5.1 Summary**

The objectives of the study were

- a) To examine the income status of the poultry farming.
- b) To analyze the employment opportunity of the poultry farming.
- c) To the problems faced by the poultry farmers, and
- d) To suggest appropriate measures to owner of its problems.

For the purpose of the study, the necessary data are collected from field survey.

There were the total of 525 poultry farms in Bharatpur Municipality out of which 5 percent (26 farms) were selected by the random sampling with lottery method. The research design followed in the study was descriptive.

The research findings showed that most of the farmers who are involved in poultry farming are small farmers having less than 1000 birds and they are farming broiler birds. The percentage of small size farms is maximum 62.5 percent among 525 farms altogether but in the sample it occurs only 46.2 percent.

In the study time period, the fixed cost of production per layer bird is Rs. 69.7. Similarly, the fix cost of production per broiler bird is only Rs. 30.3. Variable cost per layer bird is Rs. 2171.6 but the variable cost of production per broiler bird is Rs. 229.3. So, the total production cost per layer bird is Rs. 2241.3 and broiler bird is Rs, 259.6 for the broiler birds, fixed cost is maximum in large farms and variable cost is maximum in small size farms. Similarly, in the layer farm fixed cost is maximum in small size farms. The economically analyzed result showed that in the total cost of broiler production 88.3 percent and 11.7 percent cost was shared by variable and fixed cost. Similarly, 96.9 percent and 3.1 percent cost was shared by variable and fixed cost respectively in layers production.

Total income per layer birds is Rs. 2674.9 and profit is Rs. 433.6 which is 19.3 percent and total income per broiler bird is Rs. 316.9 with profit Rs. 57.3 which is 22.1 percent.

Chitwan district including Bharatpur is the poultry pocket of the country and it is self sufficient in eggs, chicken and feed. But there were some problem reported by the farmers for successful poultry farming which were in policy, Technical and management level. Having various problems in this sector, the sector is able to provide a certain employment opportunities for women, illiterate person and youths as well as the skilled people. Out of total employment, 50.6 percent opportunities are provided by the large size farms, 25.3 percent is given by medium size farmers and 24.1 percent by small size farms.

## **5.2 Conclusion**

This study was conducted to acquire the knowledge about the poultry farming for its success and profitable operation as well as the problems faced by the poultry farmers. The analysis of various economic information related to the study indicate the valuable conclusion of the poultry business.

Due to the lack of adequate capital investment and other permanent source of income, most of the small farmers are used to farming the broiler birds which can be ripen in short period of time. Large farmers who are keeping more than 2501 birds keep layer birds. Most of than keep more than 5000 layer birds. It shows the attraction of large farmers towards the eggs production. Comparatively, broiler production is more profitable than the layer production, according to the cost and income analysis of broiler and layers. Income from per layer bird and production cost is Rs. 2674.9 and Rs. 2241.3 respectively. From this, profit is calculated to be Rs. 433.6. Similarly, the income from per broiler bird is Rs. 316.9 and cost per bird is Rs 259.6. The profit is Rs. 57.3. There is 19.3 percent profit in layer bird but in broiler bird, profit is 22.1 percent. Above data conclude that there is more risk in broiler production in comparison to layers.

Most of the poultry farms are small in size mainly they keep the broiler production they cannot wait a long term for returns due to lack of capital, that's why they attracted in production which is short-term profitable business. The small farm which is run by family member is not sure to continue for a long period. Similarly in large farm 4 to 10 laborers are used in this area but they are not satisfied in their salary and other facilities. Very low salary and hard work from early in the morning to the late night force them to change their job.

There are various problems faced by the poultry farmers. Marketing system is not systematize. Individuals are free to determine the rate of product, which makes cut throat competition among the farmers. The farmers are uneducated and unskilled about the poultry farming. They need training and poultry education. Frequently occurring strike, closure and bird flu create horror in this business. Now days bird flu is main problem of poultry farm in all over the country due to noise of bird flu entrepreneurs had great loss in poultry business. It should be solved by the government sector.

### **5.3 Recommendations**

There are various unsolved problems in the poultry farming. The study is only a small step of the way. Further research is necessary in field of poultry development. Researchers are requested for the further research on the consumers' behaviors, market trade and problems, feed quality and their affect in chicks, contribution in national income, in management in poultry sectors and their result, exploitation of the middle man and poultry of farmer as a contains.

The following recommendation will be supportive to increase the efficiency, income and sustainability of poultry farming:

- a. Government should give priority to the poultry sector in its periodic plan considering the significant role of poultry farming in poverty alleviation, women employment and promotion of agriculture enterprises.
- b. Government should focus on technology generation related to production management, marketing and diagnostic service. Trained veterinarians and feed technicians should be assigned to work with private sectors. Research on avian disease and management aspect should be conducted by the government organization of the poultry farmers.
- c. Training opportunities to hatchery owners and commercial poultry farmers should be provided to upgrade their skills and knowledge on breeding, feeding and marketing.
- d. The poultry producers should be aware of the bad consequences of low quality feed. So, strict regulatory mechanism should be enforced to punish the defaulters. There should be promotion of the production of poultry ingredients such as soybean, sunflower, maize etc. which are used in poultry feed.
- e. The regular rising trend of feed prices should be checked from the government side.
- f. The price of product and demand situation should be made available through the medium of radio, television and local newspaper.

Medicine facilities should be made available in sufficient quantity and easily accessible.

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