

Profitability Analysis of Poultry Farming in Bangladesh: A Case Study on Trishal Upazilla in Mymensingh District

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Abstract

This study aimed to determine the cost, return, and profitability of broiler production in some selected areas of Trishal Upazilla in Mymensingh district, Bangladesh. It was mainly based on primary data which were collected through well structured questionnaire from the respondents of poultry production during the month of October, 2014. Selected samples consisted of 80 poultry farm owners selected by using purposive sampling technique. In the selected area maximum people are related with agriculture. The findings revealed that poultry production was a profitable enterprise. The people of this area said that, poultry farming and vegetables cultivation are profitable farm activity in a short run. This study also identified some problems in the production of poultry in the study area. Finally, based on the findings of the study, some recommendations were made for the development of poultry production in Bangladesh.

Keywords: Poultry farming, Production, Cost, Return, Profitability.

1. Introduction

Bangladesh is a densely populated developing country and its economy is very much dependent on agriculture. Poultry is a part of agricultural farming system in Bangladesh. Even though raising poultry birds is mostly a subsistence practice in Bangladesh. The contribution of poultry production is vital to the national economy in case of generating employment opportunity, additional income for households and improving the nutritional level of the people. About 2.58 percent of GDP came from animal farming during the 2010/11 financial year (MoF 2012). The poultry sector has emerged as a flourishing and promising commercial sector in Bangladesh during the recent years. The poultry sector registered a per holding increase of 38.8 percent and per capita increase of 64.8 percent for the period between 1983/84 and 2005 (Planning Commission 2011). In fact, there has been a silent revolution in the poultry sector during the last decade. During the 2000/01-2008/09 decade poultry population registered a growth of over 5 per cent (ibid.). It is one of the fastest growing sectors with bright future and plays a crucial role in supplying nutritious food and generating income. It is recognized as a profitable business by many people and getting popularity day by day as employment opportunity is being created among people. As a developing country, unemployment, inadequate nutrition and poverty, scarcity of arable land are the major problems in Bangladesh. About 31 percent of the population in Bangladesh lives below the absolute poverty line and the number of landless people has been increasing by 3.4 percent per annum (BBS, 2009). About 50 percent of the children are born underweight and 52 percent of the mothers suffer from nutrition deficiency (BBS 2007). The per capita intake of poultry meat in Bangladesh is only 11.2 grams per day (HIES 2011) compared to a standard requirement of 36 grams per day (Ahmed and Islam 1985). Commercial broiler farming serves as ready source of income among the poor people when need money and creates the employment opportunity for educated unemployed youth and also for women. It has been acting as an important tool for reducing the migration from rural poor people to the urban areas. Millions of rural women are involved in poultry rearing under the poverty alleviation program of direct Non-Government Organizations (NGOs) and Department of Livestock Service (DLS) under its packages program. For this purpose it is necessary to help the growers. An important way of helping the growers is to reduce their production cost, so that the prices of locally produced poultry become more competitive and profitable.

2. Objectives of The Study:

The aim of this study is to analyze the present condition of poultry production. This study aims to provide information about cost of production and return on poultry farming. The result of this study may be helpful in making right decision for the growers. Again, it will help them to allocate their resources more efficiently.

The specific objectives of the study are:

1. To assess the profitability of poultry farming through cost and return of poultry farming.
2. To identify the problems and constraints associated with poultry farming.
3. To suggest possible solutions for those problems.

3. Literature Review

Literature review refers the examination of other works previously done by other researchers on economic analysis of poultry farming and of Bangladesh. We have found that in our country several studies have been made by several researchers on illustrated topic.

Begum, S. (2000) calculated cost and return of both broiler and layer firm. And found that both kinds of species provide benefit to farmers. And she said that poultry farming is a profitable business in Mymensingh district.

Ahmed, M. F. U. (2001) made an economic analysis of broiler production under PROSHIKA supervision and private management. And he found that PROSHIKA provides better training to farmers under its supervision. And the trained farmers are skilled and their productivity is greater than the private management.

K. M. A. Al-Mamun Rana, M. S. Rahman and M. N. Sattar (2012) determine the cost, return, and profitability of broiler production in some selected areas of Mymensingh district. They identified some problems in the production of broiler in the study area and finally give some recommendations for the development of broiler production in Bangladesh.

4. Methodology

This study is based on field level primary data collected from selected farmers through field survey method. We have followed interview survey method using questionnaire to collect data from respondents to fulfill the objectives of the study. We have conducted a survey in Trishal Upazilla under Mymensingh District in Bangladesh. In case of poultry farming there are many birds like chickens, ducks, turkey, swans, pigeons etc. From which we have selected layer and broiler chicken. The duration of layer and broiler farming is 18 months. From all sample 80 respondents are selected as sample. The selected farmers were interviewed about cost and return that comes from their farm. In this study October of the year 2014 was considered as sample time duration. To calculate net return we have used following formula-

Net return= GR-GC

Where, GR=Gross return, GC=Gross cost

Here, GC=TFC+TVC

Where, TFC=Total fixed cost, TVC=Total variable cost

To calculate benefit-cost ratio we use following formula-

$$\text{Benefit-Cost ratio} = \frac{\text{Gross return (GR)}}{\text{Gross cost (GC)}}$$

Gross return includes the average return from main product and it's by product. Gross cost includes total fixed cost and variable cost and total variable cost. Where total fixed cost includes land use cost and cost for machines and tools. Benefit cost ratio is a relative measure which is used to compare benefit per cost. It helps to analyze the financial efficiency of the farms (Z. Monsura, H.A. Rokhsan, F. Tahmina , 2010) .

We have also used secondary data collected from Bangladesh Bureau of Statistic, Bangladesh Economic Review, newspapers, relevant websites, important books, journals etc.

5. Importance of Poultry Farming in Bangladesh

Agriculture is the backbone of the economy of Bangladesh. Agriculture contributes 21.84% demand for balanced diet. Poultry is one of the important segments of agriculture in Bangladesh. The term poultry is used to designate those species of bird which render man an economic service and reproduce freely under his proper care. At present poultry is produced for commercial perspectives. It helps to generate employment and income and to build a poverty free and healthy society.

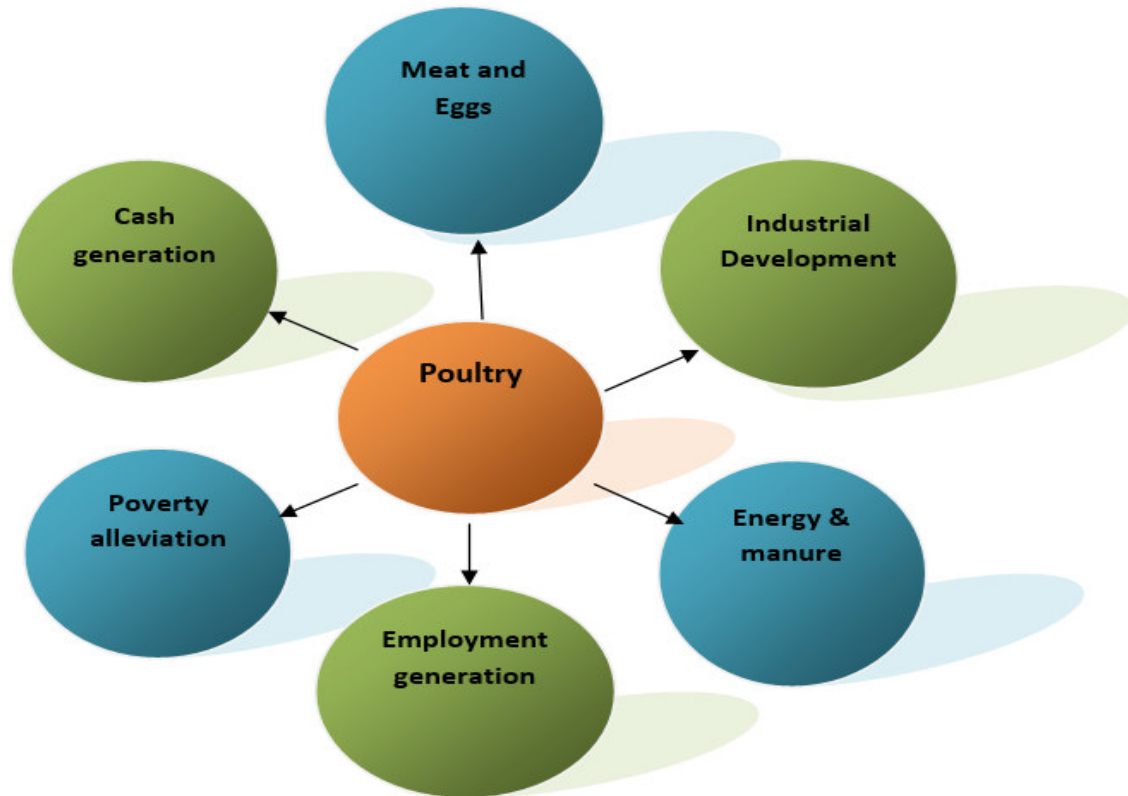
In Bangladesh poverty, unemployment and malnutrition is the major obstacle for development. Here major portion of population lives below the poverty line. In our country 2.2 million educated people are unemployment. Our children and mothers are victims of malnutrition. About 50% children are born under weight and 52% mothers suffer from nutrition deficiency (BBS, 2014). At this situation poultry rising is a good way of meeting the protein gap, employment generation and poverty alleviation in the shortage possible time. It also provides financial benefit. So, poultry is one of the most important emerging agro-based industries in the country.

i) Economic importance:

Poultry production requires relatively less capital and land than crop, dairy production. It provides more cash income within short time and creates employment opportunity for small farmers, landless, labours, unemployed people and destitute women. Income earned from sale of egg and meat is used to meet farm and family expenses. It also helps them to satisfy their various economic needs. Poultry industry creates various job opportunities through the establishment of hatchery, feed mill, pharmaceutical company and marketing of poultry birds. Poultry excrement is used as fertilizer for growing crops. It is also used as fish feed. That is, additional income may be obtained from the sale of poultry excrement. By this way poultry farming leads poverty alleviation

(Ahmed, M.F.U 2001). However, the economic contributions of poultry farming can be shown by following figure-

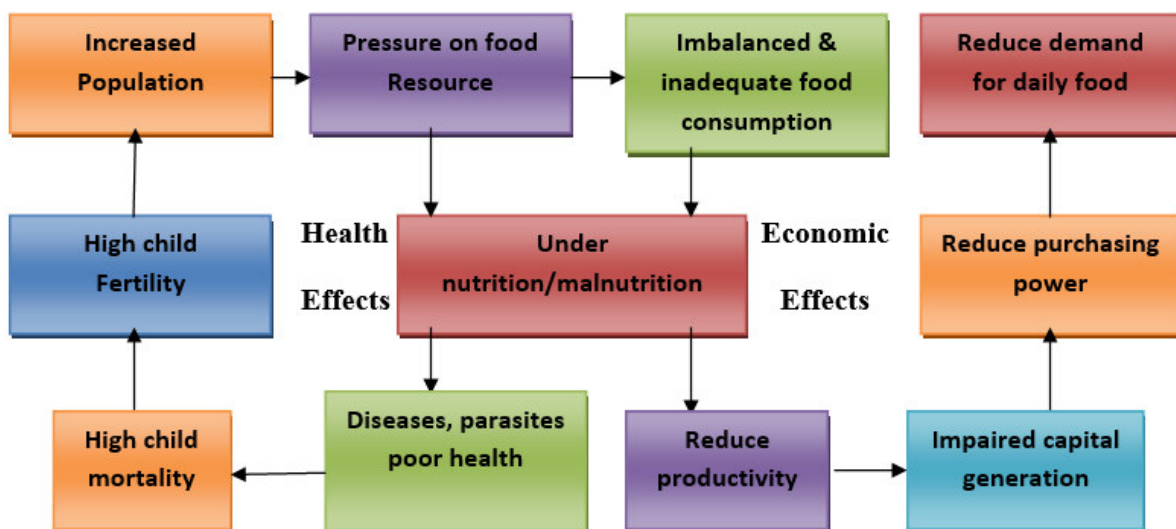
Figure-1: Economic contributions of the poultry industry to the economy.



ii) Nutritional Importance:

Poultry eggs and meat are used as human food. Egg has more nutritional value than any other food. They are good sources of proteins, minerals and vitamins. To supply animal protein poultry plays significant role. In Bangladesh about 22 to 27% of total animal proteins are supplied by poultry industries (Haque, 1996). In spite of this, 60% families of Bangladesh cannot meet their protein need in their daily food consumption (BBS-2007). This malnutrition has an adverse affect on health. As a result, the livelihood is seriously affected. These effects are given in following figure-

Figure-2: Flow chart of nutrition; some implications of under nutrition or malnutrition.



Source: Islam, 1995.

Increased population creates pressure on food resources. It leads to inadequate food consumption. For that malnutrition is created. This malnutrition has two effects, such as- health and economic effect. In case of health effect people suffer from various diseases. For that child mortality rises. In case of economic effect

malnutrition reduces productivity. It leads to low capital generation. So, people's purchasing power reduces and it reduces demand for daily food. Anyway, poultry can solve these problems. It provides various nutrients, which very essential for building of our body. When body is fit everything is fit.

6. Poultry Farming Condition of Trishal Upazilla According to Field Survey:

i) Size of Farm and Employment Generation:

In Trishal Upazilla we have selected 80 layer and broiler farms as sample. Every farmer has license. Among them 38, 32 and 10 farms are small, medium and large farms respectively. Among these farms total 78 labors are employed without finally labor and entrepreneurship. So, poultry farming is a large source of employment generation.

ii) Education Level of Respondents:

Education grows skill among people. Educated person can manage his farm properly. In our field survey education level of poultry farmers are shown as follows-

Table-1: Educational status of the respondents.

Number of Respondents	Illiterate	Below SSC	SSC	HSC	Graduation
80	27	25	13	10	5
Percentage	33.75%	31.25%	16.25%	12.5%	6.25%

Source: Field survey (October, 2014)

Among the total respondents 16.35% people have education level of SSC and 31.25% people also have received education that is helpful for their farm management. Again, 6.25% higher educated person also related to poultry farming. Though 33.75% people are illiterate they take suggestion from skilled persons. As maximum entrepreneurs are educated they can manage farm properly and it helps them to earn more profit.

iii) Sources of Food and Power for Light and Heat:

From 80 respondents' only fifteen farms has food production machine. But remaining 65 farms purchase food for birds from market at market price. On the other hand, for light and heat every farm uses electricity. And in the absence of electricity maximum uses generator. Here, one or two farm uses solar power. Again from 80 farms only five has a hatchery for the production of little chicken. But remaining farms purchase little bird from the market.

iv) Uses of Bird's Excrement:

One can use the excrement of bird by three ways. Such as, one can sale it, or can throw away or someone uses it as fertilizer in their land for vegetable cultivation. In our field survey, the uses of bird's excrement are given below-

Table-2: Uses of bird's excrement.

Number of households	Thrown away	Soled	Used as fertilizer
80	20	50	10
Percentage	25%	62.5%	12.5%

Source: Field survey (October, 2014)

From our field survey we can see that 25%, 62.5% and 12.5% respondents throw away the excrement, sale or used as fertilizer respectively. Thus most of the farmer are rational and earn extra income by selling the bird's excrement. And some farmer uses the bird's excrement as productive purpose by using it as fertilizer. Moreover, the farmer who throws their excrement in the environment it creates pollution and bad smell.

7. Profitability Analysis:

Profit maximization is the main goal of a producer. To earn profit producer wants to maximize profit through minimizing cost. The focus of our study is to estimate the costs returns and finally the profitability of the farm. The main aim of layer farm is the production of egg. After egg production rejected birds are sold this meets the demand for meat. Thus layer farm's return comes from both egg and meal.

The relevant cost and returns of the present study are discussed below-

A. Total cost:

The cost items are classified into two broad categories, i.e. (i) Fixed cost and (ii) variable costs. Poultry production includes different types of costs under the following heads-

a) Fixed Cost:

i) Housing Cost:

Housing cost is the most important cost for poultry production. In the present study, some poultry house found within the living house and some were outside of living house. The housing cost is calculated by the summation of total making cost. Here, we have considered depreciation 10% for the five years. House is a fixed asset. In our study area average housing cost is 82125tk per 3month.

iii) Electricity and Equipment Cost:

Electricity is considered as fixed cost. If electricity is connected for once its bill is paid by month. For a farm

with 1000 birds has average electricity bill of 700tk. It raises as the number of birds rises. Again for equipment farmer bear a cost. The farmers use different tools and equipment, such as- coop, water jar, feeder, bowl, case etc. So, we have also considered depreciation in case of calculating cost of these equipment. In our study area, average equipment cost is 116933 per 3months.

b) Variable Cost:

i) Labour Cost:

There are broadly two kinds of labour for poultry farm. Such as-hired labour and family labour. Here we have considered hired labour only. In this study, we have found that, each labour is paid 7000tk per month. A labour gets 21000tk per 3 months and in study area average labour cost is Tk. 40563. So, it is a major cost item for poultry farm.

ii) Feed Cost:

Feed cost is the major cost item for poultry farms. In our study area only one firm produces their feed inside his farm. But, remaining farm purchase feed from market at an average 35tk per kg. So, in every day a part of capital is invested for feeding the bird. In the study area average feed cost for 3month is 679669tk.

iii) Veterinary Cost:

Veterinary expense is another important cost item of poultry production. Veterinary services included cost of vaccine, medicine, and fees of doctors. Total medicines costs were calculated by taking current market prices. Here average veterinary cost is 9208tk.

iv) Bird Purchasing Cost:

This cost is primary cost for the poultry grower. This cost varies from one farm to another according to the size and numbers. In our study area we have found that, price of little bird varies from 15-25. So, the farm that purchases bird for 25tk their cost goes high than the farm that purchase for 15tk. Here average bird purchasing cost is 43940tk.

v) Transportation Cost:

Transportation cost includes two types of cost. Such as- cost for bringing feed from market and cost for bringing feed from market. Here, we found that, for a bag feed transportation cost is 10-30 based on distance from market. Here, average total cost is 20tk per bag. And average total cost for 40 firms is 2055.25tk for 3months.

vi) Other Cost:

Other cost incurred due to sudden occurrences, such as- need for extra bird purchase, repairing of poultry house, extra medicine and other managerial cost. Here, average other cost is 5953tk.

Now the cost items for poultry production is shown by following table-

Table-3: Total cost of poultry production per farm per season.

Cost items	Unit	Average unit price	Average total cost	Percentage
A) Variable cost	Tk.		788269.5	
Labour cost	Per 3 months	21000	40562.5	4.1
Feed cost	Per kg	35	679668.75	68.5
Veterinary cost	Per 3 months		920.75	0.93
Bird purchasing cost	Per bird	20 Tk.	43940	4.4
Transportation cost	Per bag	20 Tk.	8937.5	0.9
Other cost			5953	0.6
B) Fixed cost			204410.5	
Housing cost	Per 3 months		82125	8.27
Electricity Bill	Per 3 months		5352.5	0.54
Equipment cost	Per 3 months		16933	11.78
C) Total cost (A+B)			992680	

Source: field survey (October, 2014)

B. Gross Return:

The return item includes sale of bird, egg and bird's excrement. After the egg production a rejected bird is weighted as 1kg to 1.5kg and 1kg is sold for 120 to 150tk. And a farm provides 80%-98% egg. So, a farm with 1000 birds gives on an average 890 eggs per day. And sale one egg on an average of 5.5Tk. On the other hand, by selling bird's excrement a farm also gets a lump sum payment. These 3 items provide total return to the farm.

C. Net Return:

Net return is the amount obtained by deducting all the costs from the gross return. The average value of net return is 254945tk which is shown by following table-

Table-4: Gross cost, Gross return and benefit cost ratio of the farm.

Items	Unit	Average unit price	Average total cost and return
A) Gross cost			992680
B) Gross return			1247625
Sale of bird	Kg	130	343529
Residual			7494
Egg	Hali (4)	24	896601
C) Net return (B-A)			254945
D) Benefit-Cost ratio			1.26

Source: Field survey (October, 2014)

D. Benefit-Cost Ratio:

Benefit cost ratio indicates return per Tk invested. Benefit cost ratio represent financial feasibility of any farm. In our study, the value of BCR is 1.25. This positive cost benefit ratio indicates the poultry farming is profit able and financially efficient.

8. Problems Faced by The Poultry Growers:

The major problems of poultry farming is given below-

A. Economic Problems:

i) Lack of capital:

Cash capital is an important input for establishing and operating a poultry farm. But in our study area 27.5% people face capital problems. They don't get financial support from various institutions. Because institutional credit is hardly available and interest rate is very high.

ii) High Price of Feed:

Major part of expenses of farmers is needed in purchasing feed. Recently feed price has gone up which reduce poultry production in the area. Table-5 shows that 20% farmers face these problems. Farmers collect feed from local agents, but local agent provides feed against high price.

iii) Lack of Credit Institution:

There is a lack of credit institution in the study area. Here 17.5% farmers face problems of not having credit institution. Thus economic problem is an obstacle for poultry production.

B. Social and Natural Problems:

In our study area 58 farmers face various social and natural problems. This are-

i) Outbreak of Diseases:

The affects of various types of diseases reduce poultry production. Because for purchasing vaccine and medicine their production cost rises. In our study area 22.5% farms are affected by various diseases like ND, IDV, Foul Pox, Plasmasia, Salmonia, Gamboro, Foul kolera, Ranikhat etc.

ii) Environmental Pollution:

In our study area 10% people face problem of environment pollution. They have no proper system for the management of bird's excrement. They throw away their excrement in environment and it is responsible for various diseases in human body. For that they have to bear cost, which hampers production.

iii) Lack of Communication Facilities:

In our study area there is lack of communication facilities. Their road is not well. For that 40% farm bear a large transportation cost. As transportation cost rises their return from the farm reduces.

C. Marketing Problems:

In our study area 26 farms face various marketing problems. Such as-

i) Lower Price of Egg:

The price of egg fluctuates more. When price falls very low farms face loss. Here 22.5% farms face this problem.

ii) Lack of competitive market:

In our study area market is not so competitive. For that price of meat reduces more. 10% farmers suffer from low price of meat.

D. Technical problems:

In our study area 20 farms face various technical problems. Such as- lack of training facilities and housing problems.

In our study area poultry farmers face a number of problems in their farming. We can see this by the following table-

Table-5: Problems faced by poultry grower.

Problems	No of responding farmers (n=80)	Percentage (%)
Economic problem	52	65
Lack of capital	22	27.5
High price of feed	16	20
Lack of credit institution	14	17.5
Social and nutritional problem	58	72.2
Outbreak of diseases	18	22.5
Environment pollution	8	10
Lack of communication facilities	32	40
Marketing problems	26	32.5
Lower price of egg	18	22.5
Lack of competitive market	8	10
Technical problems	20	25
Lack of training facilities	12	15
Housing problems	8	10

Source: Field survey (October, 2014)

Anyway though there are many problems in managing poultry farm it gives maximum returns with minimum expenses to the other meat producing animals. So in recent years poultry farming in Bangladesh has emerged as a commercial basis.

9. Recommendations and Conclusion:

Poultry farming is important segments of agriculture. At present, a large number of educated unemployed persons are related to poultry farm. These sectors play important role to solve poverty, unemployment and malnutrition problem. Though, poultry sectors are important for poverty alleviation but it is not so profitable than other sector. Farmers of these sectors face various problems.

To overcome the difficulties of poultry farming and to make this production more profitable in the economy, the following recommendation are put forward-

- i) Quality of poultry feed should be increased.
- ii) Government should formulate national poultry development policy to sustain present growth of poultry production.
- iii) Necessary steps should be taken by government to provide adequate financial support to establish large scale farm.
- iv) Government should offer price support to make sure the minimum level of profit.
- v) More research should be taken place to improve the quality of feed, vaccine, etc.
- vi) Social security should be provided and awareness about poultry should be developed.
- vii) Government should take steps to provide training among farmers about poultry rearing.
- viii) Government and mass media should take initiatives to reduce information gap to reduce diseases.

The economy of Bangladesh depends on agriculture to a great extent. In respect of nutrition poultry meat and egg are excellent source of protein and vitamin. These sectors are really helpful for income generation, women empowerment and nutritional improvement for the family. Though, poultry farms are profitable. Again, in our study area 85% farmers opined that either poultry farming helped them to improve their life style. Thus, there is potentiality for further improvement of these sectors.

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