ECONOMIC PERFORMANCES OF BROILER FARMING ENTERPRISES AT SOME SELECTED AREAS IN GAZIPUR SADAR UPAZILA UNDER GAZIPUR DISTRICT

A Production Report Submitted in Partial Fulfillment of the Requirement for the Degree of Doctor of Veterinary Medicine

A Production Report Submitted By

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ABSTRACT

The purpose of the study was to determine the differences in the socio-economic conditions of broiler farmers in Gazipur Sadar, Gazipur. A total of 20 commercial broiler farms were selected. The study was carried out from 17 February to 17 April 2022. The farmers and farming were assessed using data obtained in a pre-structured questionnaire and analyzed. The research was conducted to determine the farmer's socioeconomic level. Geographic distribution, husbandry and feeding procedures, a health-protection program, and the cost and return from the flocks are all discussed. Results show that the overall broiler farming in Gazipur Sadar Upazila is profitable where the average weight gain was highest in Farm-9 & Farm-10. Feed intake was found highest at 3.4kg per bird in 3.4kg in Farm-9 & Farm-15. The best Feed conversion ratio was found in Farm-2 & Farm-7 (1.77). The highest mortality rate was found at 3.5% in Farm-4, Farm- 10, Farm- 17. Whereas highest livability rate was found at 97.9% in Farm-3, Farm-9 & Farm-16. The broiler performance efficiency factor of this study is found higher 137.82 in Farm- 2. In our study, all the selected farms maintained better management, but Farm-9 has the highest value of 3.81 of the Broiler Farm Economy Index. The cost involved per bird of selected farms was found highest 160.52 TK in Farm-5, whereas highest return per bird 277.2 Tk in Farm 13, highest benefit per bird was found 119.25 Tk in Farm-10 & Benefit-cost ratio was determined best 1.75 in Farm-9 & Farm-10. Overall economic analysis from different aspects it is found that Farm-9 has better condition than rest of the selected farms. This study revealed that comparatively rich farmers (40% had 4.95 acres of land) were involved in farming. There were variations in source of investment (25% own, 60% bank loan, 10% from money lenders with interest, and 5% from money lenders without interest), farming as an occupation for the farmers (40% main and 60% subsidiary occupation), Flock Size (majority of flocks comprised 2000-3000 birds), management skills of the farmers (30% high, 45% medium & 25% poor), sources of drinking water (80% have own tube-well), latrine condition (75% have sanitary latrine) and health status of the farmers (35% good, 50% moderate and 15% poor). However, the overall goal of this study is to estimate the economic analysis of broiler farming and to examine the socioeconomic state of broiler farmers in Gazipur Sadar Upazila. According to the findings of the study, farmers always felt intimidated to grow broiler chickens owing to a variety of issues. Though the likelihood of broiler farming was shown to be great, the facility was discovered to be quite low. The study concludes that broiler farming is profitable and has the

potential for economic empowerment, food/nutritional security, and long-term rural development if significant problems are solved.

Keywords: Socio-economy, Farmers, Economic analysis, Broiler farming.

CHAPTER-I

1. INTRODUCTION

Bangladeshi people are blessed with a range of agricultural resources, including chicken farming, which is seen to offer promise for both poverty reduction and food production (Sumy et al., 2010). The poultry industry has shown to be a vibrant and productive sector with huge potential for quick poverty alleviation. Over the 1990s, this industry as a whole grew at a pace of roughly 2.8 percent each year (PRSP, 2004). As a result, broiler farming plays an essential role in boosting livelihood, food security, and poverty reduction in developing nations such as Bangladesh.

Broiler manufacturing is becoming a specialized and fast-paced enterprise for the people of the country. The short life cycle of the broiler and the need for relatively little capital contributed to its appeal among farmers. This business has enormous potential in terms of the country's economic growth, as well as the fulfillment of fundamental necessities, keeping prices down, and assuring food, particularly animal protein, for humans. This enterprise offers enormous potential for the country in terms of changing livelihood and dietary habits, reducing reliance on meat from cows and goats, and eventually having a favorable influence on the country's GDP growth rate (Ahmed JU et al.,2009). Following the intervention of the Smallholder Livestock Development Project, the beneficiaries' general socioeconomic status, their capacity to consume eggs and meat, empowerment of rural women in decision making, and job prospects were greatly improved by producing poultry (SLDP) (Alam J, 1997).

According to the study's findings, commercial broiler farming provided employment opportunities for jobless family members, improved socioeconomic conditions, and increased women's empowerment among Bangladesh's rural population (Rahman SMA et al.,2006). Broiler farming has inspired individuals from many backgrounds, such as small farmers, landless laborers, and educated jobless, as well as industrialists, to create small and large-scale broiler farms. The improved growth performance of broiler birds might simply be

due to increased meal intake. Feed consumption followed a similar pattern to weight increase. These non-significant differences in growth performances support the finding of Haque and Chowdhury (1994), Anisuzzaman & Chowdhury (1996), and Sarica et al (1998). The study's findings clearly show that all broiler farms produced a respectable profit, with the biggest farms making a bit more.

Broiler meat has high-quality protein and micronutrients, which has had a significant influence on the health and nutrition of rural poor people (Neumann et al., 2002; Barroetoa, 2007). Another research found that it might be the primary source of income for a family or give an adequate income and gainful work opportunities to rural farmers throughout the year (Bhende, 2006). As a result, broiler farming has played an important role in producing meat to combat hunger while also serving as a vehicle for job creation and poverty alleviation (Raha, 2007). All of this evidence showed that commercial broiler farming should be expanded on a larger scale throughout the country as a poverty-reduction activity. Despite its enormous potential, broiler farming lacks solid foundations. According to studies, the majority of broiler farm owners did not have an acceptable quantity of credit to manage their farms, and financing for poultry farming is not yet a very common and well-established practice among all financial organizations - banks and NGOs in Bangladesh (Jabbar et al., 2005). As an outcome, broiler farm owners face a variety of issues, including a shortage, high price, and poor quality of DOC (Day-old chick); a high price, poor quality, and unavailability of feeds; a high cost and low quality of medicine, vaccine, and veterinary services; a lack of capital; insufficient marketing facilities; and poor transportation and communication (Raha, 2007).

Even though broiler farming confronts several challenges, there is significant potential for the growth of the broiler business in Bangladesh. It is worth noting that broiler farming is entirely in the hands of the private sector, particularly small farmers who manage their businesses on their own. As a result, it is critical to examine whether broiler farming contributes favorably or negatively to the socio-economic development of broiler farmers. The current study was done to quantify the weight increase and feed conversion ratio, estimate the cost and return from broiler fanning, and examine the extent to which small-scale commercial broiler farmers' livelihoods may be improved. It also identifies and evaluates farm holder difficulties, as well as the management style of broiler farming in Gazipur Sadar Upazila of Bangladesh.

The purpose of this research is to examine the current socio-economic situation of broiler farmers in Gazipur Sadar Upazila, as well as their economic analysis. The purpose of this research is to offer information on the cost of production and the return on investment in chicken farming. The findings of this study may aid producers in making sound decisions. Once again, it will assist them in allocating their resources more efficiently.

The specific objectives of the study are:

1.Cost-benefit Evaluation of broiler farming in Gazipur Sadar Upazila

2.To assess the socio-economic status off broiler farmers in Gazipur Sadar Upazila

CHAPTER-II

2. METHODOLOGY

2.1. Study area:

The study was conducted in the Gazipur Sadar Upazila of the Gazipur District, which covers an area of 49.32 square kilometers.

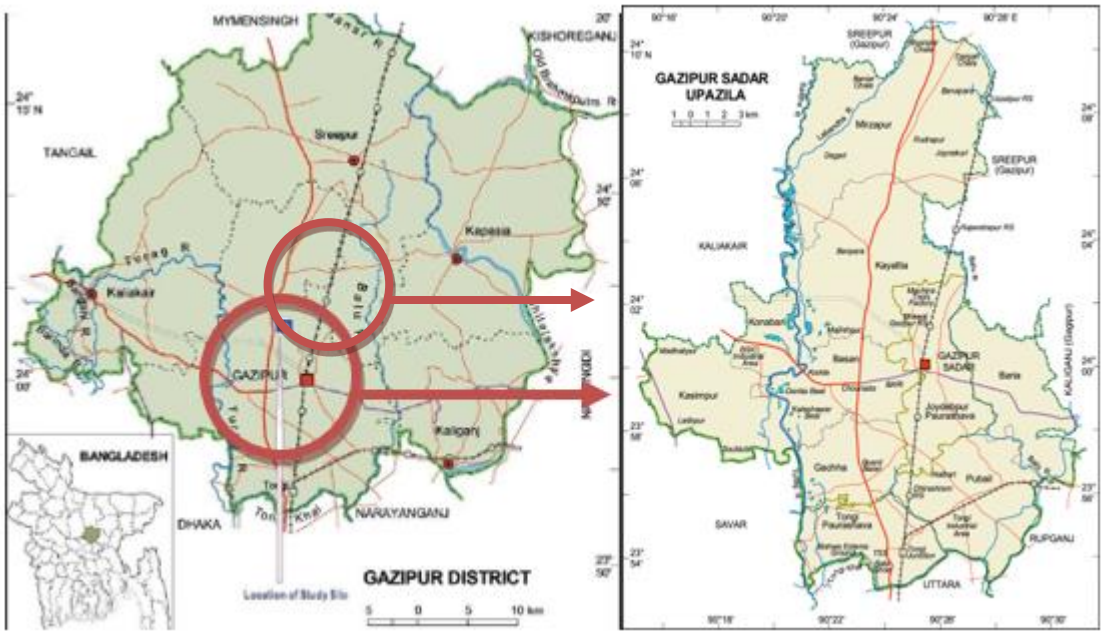


Figure 1: Location of the study area

The majority of farms in Gazipur Sadar Upazila are located near the house. Some of the farms are located apart from the home. Transport and other amenities are examined throughout the site selection process for farming to optimize the agricultural system.

2.2. Study period:

The study was conducted in Gazipur Sadar Upazila, Gazipur, from February 17 to April 17, 2022. During this time, 20 farms were chosen for the study, and data on the possibilities and challenges of broiler farming in Gazipur Sadar Upazila were obtained utilizing an interview schedule and face-to-face interviews.

2.3. Population and sample size:

As a population, all of the poultry farms in the district involved in chicken production were evaluated, and a sample size of 20 broiler farms was selected.

2.4. Sampling methods:

Gazipur Sadar Upazila of Gazipur district was selected in bias (Non-random selection). 20 farms of Gazipur Sadar Upazila were selected randomly (Stratified random sampling). Each farm rearing at least 1000 birds are taken under consideration.

2.5. Methods of data collection:

Data were collected through direct interview schedule and recorded in a questionnaire. The schedule was prepared to maintain relevance with the objectives of the study. Before launching the survey, the questionnaire was pre-tested and improved accordingly. To collect more purified data from various farms an organized questionnaire was formatted.

2.6. Data analytical Techniques:

The collected data were analyzed after coding, decoding, summarizing. Simple statistical methods such as mean, percentage, standard deviations, etc. were applied for analyzing the collected data to meet up the study goals and the specific objectives.

CHAPTER-III

STATUS OF FARMER AND FARMING PRACTICES

3.1. Socioeconomic status of the farmers:

Broiler farming was an income-generating enterprise for almost all the farmers. People from all strata of the society, irrespective of religion, education, occupation & economic background were involved. The overall farmer's socio-economic status were observed and found about one-third of the farmers were literate, the others were illiterate. The majority farmer's treated broiler farming as subsidiary enterprises, someone depend on the income of this enterprises as a family business, few one engaged in another form of occupation and occupying in this profession, their economic condition be was as sound enough to maintain their family. Most of the farm owners were in middle aged and took this business as a challenging job and like to continue at future.

3.2. Strains that are used by farms:

The broiler is nondescript types widely differing phenotypes. The so-called Hubbard Classic, Starbro, Cobb-500, Arber Acer, Ross, Lohmanh, ISa-I 757 are common.

3.3 Husbandry practices:

The most practical program for broiler rearing has been the use of an all-in all-out system in which only one age of broilers is on the farm on the same day and later sold on the same day, after which there is a period when no birds are on the premises. This lack of birds breaks any cycle of an infectious disease: the next group of birds has a clean start with no possibility of contracting a disease from older flocks on the farm. The downtimes maintained by the farmer range from 14 to16 days.

3.4. Flock Size

The majority of flocks comprised 2000-3000 birds within the overall range between 1000- 5000.

3.5. Poultry population of selected farms:- The poultry population of 20farms is given below.

Table 1: Poultry population of 20 farms

Serial No.	Name of the farm	Flock size
1	Abir poultry farm	1500
2	Komolesh poultry farm	1500
3	Junaira poultry farm	1200
4	Nawal poultry farm	1000
5	Moshiur poultry farm	1000
6	Shehzadpoultry farm	2000
7	Arafpoultry farm	1500
8	Mukit poultry farm	5000
9	Saiba poultry farm	2000
10	Zaraf poultry farm	3000
11	Mosiur poultry farm	2500
12	Jarful poultry farm	5000
13	Farkin poultry farm	4000
14	Russel poultry farm	2000
15	Siddiq poultry farm	1000
16	Joana poultry farm	1500
17	Shaju poultry farm	1500
18	Joseph poultry farm	3000
19	Bodrul poultry farm	4000
20	Takib poultry farm	2000

Source: Field Survey, February–April 2022

3.6. Housing:

There are of course many different styles and designs of houses such as shed type, combination type, gable type, etc. During this study, most of the farmers constructed gable-type house for their bird which is made of bamboo & tin, and suing the wire net around the houses, almost all of the houses are south facing& keep the house well ventilated.

3.7. Floor, Feeder, and water space:

Almost all of the selected farmers followed the following measures in their farms. This measurement is somewhere very but almost similar in maximum farms of Gazipur Sadar Upazila.

Table 2: Floor, Feeder, and water space

Age	Floor space	Water space	Feeder space
First week	0.5sqft/bird	0.5 inch/bird	1 inch/bird
Second week	0.5sqft/bird	0.57 inch/bird	1.5 inch/bird
Third week	1 sqft/bird	0.75 inch/bird	1.5 inch/bird
Fourth week	1 sqft/bird	1 inch/bird	2 inch/bird
Fifth week	1 sqft/bird	1 inch/bird	2 inch/bird

Source: Field Survey, February–April 2022

3.8. Treatment of the chick in the house:

After the arrival of the chick in the house farmers firstly gave the chick water mixed with Glucose, vitamins, and minerals. Then feed is given in a paper sheet for the first 3 hours, after that feed was given in the feeder.

3.9. Use of feeder and waterer:

All most all of the skilled farmers use a sufficient number of feeders and waterers in their broiler farms. Number of feeders used by the farmer is shown in the following table.

Table 3: Number of Feeders

	0-2 Weeks	3-5 Weeks
Chicks feeder	2 ft long feeder/ 50 chicks	-
Tube Feeder	-	4 in number/100 birds

Source: Field Survey, February–April 2022

The necessary number of waterers were used by the farmer is shown in the following table.

Table 4: Number of waterers in each Farm

	0-2 weeks	3-5 weeks
Waterer	1 plastic drinker/50 birds	-
	-	1 Plastic drinker/50 birds

Source: Field Survey, February–April 2022

3.10. Applied Brooding system:

Artificial heat was used in brooding chicks. It was seen that 5-10 brooder /500 bird & electric bulbs were used by the farmers as a heat source for the first 2 weeks of age. A number of electric bulbs were used by farmers for a heat source is shown in the following table:

Table 5: Number of electric bulbs were used by farmers for a heat source

Number of chicks	No. of electric bulbs	
	Summer	Winter
500	100 watt 2 in number and 60 watt 1 in number	200 watt 2 in number and 100 watt 2 in number

Source: Field Survey, February–April 2022

After 2 weeks brooder guard had been withdrawn and the brooder house are used as grower house.

3.11. Temperature scheduling program:

It was seen that most of the farmers used thermometers for measuring temperature.

Table 6: Schedule of temperature

Age(weeks)	Temperature of Brooding
0-1	90ºF
1-2	85ºF
2-3	80ºF
3-4	75ºF
4-5	75ºF

Source: Field Survey, February–April 2022

3.12. Litter management:

Quality of litter in broiler houses is given sufficient emphasis because litter conditions significantly influence broiler performance and, ultimately, the profits of growers and integrators.

Table 7: Litter materials and depth of the litter utilized in the Farm

Litter material	Depth	
	Winter	Summer
Rice husk	1.5-2 inch	1 inch

Source: Field Survey, February–April 2022

3.13. Feeding system adopted in the farm:

Feeding is main function in rearing broiler chicks. More feed consumption, more weight gain. The chicks should be given small quantity of feed frequently for the 1st week. The farmer use the following way for feeding the broiler.

Table 8: Feeding Practices adopted in the Broiler Farming system

Age	Nature of feed
1st week	Crumble
2nd week	Crumble
3rd week	Pellet
4th week	Pellet
5th week to finishing	Pellet

Source: Field Survey, February–April 2022

3.14. Weight gain of birds:

After proper feeding weight gain which is recorded by the farm owner are given below:

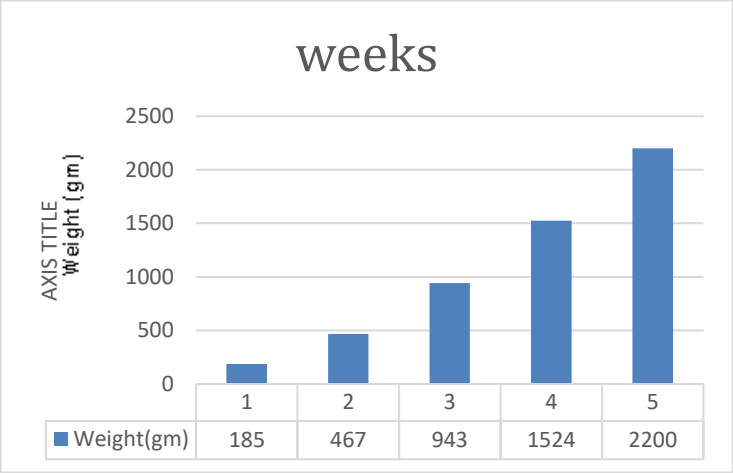


Figure 2: Graphical presentation of weight gain

3.15. Health maintenance program:

A health program is fundamental for successful broiler production. Underhealth program farmers only did vaccination & used foot bath (1% ppm) in front of the shed.

Table 9: Vaccination scheduling program

Age	Vaccine(Trade)	Route
1st day	Marek's (at hatchery)	S/C at neck
3rd day	BCRDV	Eye drop
7th day	Gumboro (228E)	Eye drop

14th day	Gumboro (228E)	Eye drop
21st day	BCRDV	Eye drop
28th day	ND-Killed	S/C at neck

Source: Field Survey, February–April 2022

3.16. Marketing information of Broilers:

Broilers in this region were raised & sold when age at 5 weeks either at the local market or at the farmer's doorstep to individual and local traders.

Table 10: Marketing information of Broilers at farmgate

Parameters	Purchasing cost per DOC	Per Kg Feed cost (in Taka)	Price of per Kg live bird
Farm-1	29	35	132
Farm-2	31	36	128
Farm-3	30	35	130
Farm-4	31	37	130
Farm-5	29	36	131
Farm-6	29	36	127
Farm-7	30	36	130
Farm-8	30	35	129
Farm-9	29	34	127
Farm-10	31	35	130
Farm-11	29	36	130
Farm-12	30	36	130
Farm-13	30	35	132
Farm-14	29	34	129
Farm-15	30	35	128
Farm-16	29	36	127
Farm-17	30	35	130
Farm-18	30	36	129
Farm-19	29	36	127
Farm-20	31	35	130

Source: Field Survey of Gazipur Sadar Upazila, February – April 2022

CHAPTER - IV

4. RESULT & DISCUSSION

4.1. Economic Performances of Commercial Broiler Farming Practices:

Table 11: Performance of commercial broiler of the selected 20 farms

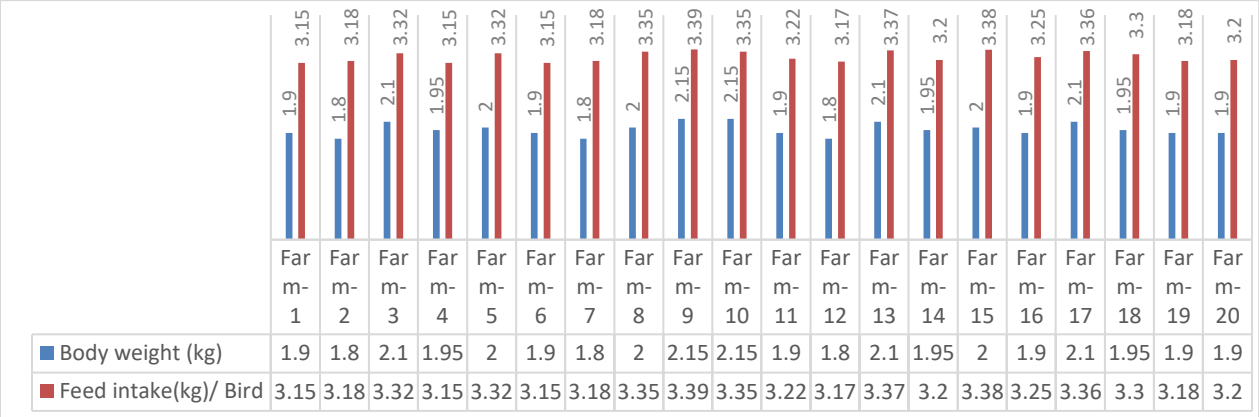
Farm ID No.	Particulars of Parameters										
	Body wt (kg)	**Feed intake (Kg)/bird**	**FCR**	**Mortality rate (%)**	**Livability (%)**	**Broiler Performance Efficiency Factor (BPEF)**	**Broiler Farm Economy Index (BFEI)**	**Cost per bird (Taka)**	**Return per bird (Taka)**	**Benefit per bird (Tk)**	**Cost-Benefit Ratio (CBR)**
F-1	1.9	3.15	1.66	2.5	97.5	114.46	3.19	151.25	250.8	99.55	1.66
F-2	1.8	3.18	1.77	3	97	101.69	2.82	157.48	230.4	72.92	1.46
F-3	2.1	3.32	1.58	2.1	97.9	132.91	3.72	158.2	273	114.8	1.73
F-4	1.95	3.15	1.62	3.5	96.5	120.37	3.32	159.55	253.5	93.95	1.59
F-5	2.0	3.32	1.66	2.4	97.6	120.48	3.36	160.52	262	101.48	1.63
F-6	1.9	3.15	1.66	2.5	97.5	114.46	3.19	154.4	241.3	86.9	1.56
F-7	1.8	3.18	1.77	2.9	97.1	101.69	2.82	156.48	234	77.52	1.50
F-8	2.0	3.35	1.68	3	97	119.05	3.30	159.25	258	98.75	1.62
F-9	2.15	3.39	1.58	2.1	97.9	136.08	3.81	156.26	273.05	116.79	1.75
F-10	2.15	3.35	1.56	3.5	96.5	137.82	3.80	160.25	279.5	119.25	1.75
F-11	1.9	3.22	1.69	2.8	97.2	112.43	3.12	156.92	247	90.08	1.58
F-12	1.8	3.17	1.76	3	97	102.27	2.83	156.12	234	77.88	1.50
F-13	2.1	3.37	1.60	3.1	96.9	131.25	3.63	159.95	277.2	117.25	1.73
F-14	1.95	3.20	1.64	2.5	97.5	118.90	3.31	149.8	251.55	101.75	1.68
F-15	2.0	3.38	1.69	3	97	118.34	3.28	160.3	256	95.7	1.60
F-16	1.9	3.25	1.71	2.1	97.9	111.11	3.11	158	241.3	83.3	1.53
F-17	2.1	3.36	1.6	3.5	96.5	131.25	3.62	159.6	273	113.4	1.71
F-18	1.95	3.3	1.69	2.4	97.6	115.38	3.22	160.8	251.55	90.75	1.56
F-19	1.9	3.18	1.67	3.1	96.9	113.77	3.15	155.48	241.3	85.82	1.55
F-20	1.9	3.2	1.68	2.5	97.5	113.10	3.15	155	247	92	1.59

Source: Field Survey, February–April 2022

4.2. Measures of performance efficiency in broilers

4.2.1. Body weight & Feed intake:

Data of day old chick weight and live broiler weight at market age were collected. Day old broiler birds with 20 to 75gm body weight were loaded in the farms and birds were sold with 1200 to 1800gm body weight at marketing. Broiler birds were marketing at the age of 30 to 35 days. In our study highest body weight was found 2.15 kg in Farm-9& Farm-10, whereas lowest body weight 1.8 kg was found in Farm- 2, Farm-7 & Farm-12.



	Farm-1	Farm-2	Farm-3	Farm-4	Farm-5	Farm-6	Farm-7	Farm-8	Farm-9	Farm-10	Farm-11	Farm-12	Farm-13	Farm-14	Farm-15	Farm-16	Farm-17	Farm-18	Farm-19	Farm-20
Body weight (kg)	1.9	1.8	2.1	1.95	2	1.9	1.8	2	2.15	2.15	1.9	1.8	2.1	1.95	2	1.9	2.1	1.95	1.9	1.9
Feed intake(kg)/ Bird	3.15	3.18	3.32	3.15	3.32	3.15	3.18	3.35	3.39	3.35	3.22	3.17	3.37	3.2	3.38	3.25	3.36	3.3	3.18	3.2

Figure 3: Farm wise graphical presentation of body weight gain and feed intake of the bird

Amount of feed intake was found almost 3.4kg in Farm-9& Farm-15, whereas the lowest 3.15kg in Farm- 1 &4. From these data, it is clear that Farm-9 had intake higher feed and gained higher body weight. On the other hand, Farm-1intakethe lowest amount of feed and gained the lowest body weight.

4.2.2.Feed Efficiency or Feed conversion ratio

$$\text{FCR} = \frac{\text{The total quantity of feed consumed per bird in kg}}{\text{Bodyweight gain per bird in kg}}$$

A value of 1.8 or lesser at 5 weeks of age is preferable.

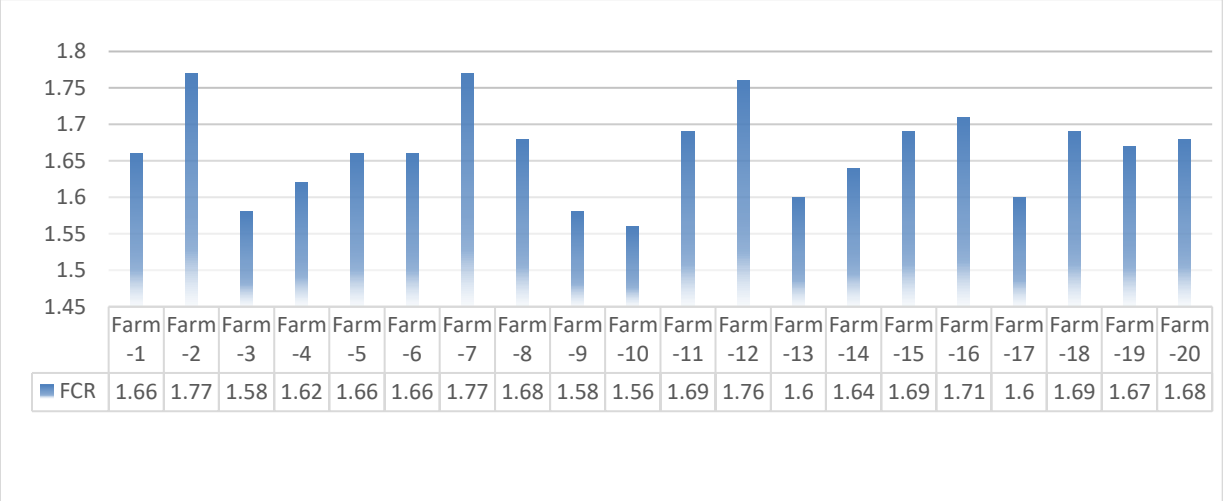


Figure 4: Farm wise Graphical presentation of FCR

In our study highest FCR was found 1.77 in Farm-2 & Farm-7, whereas the lowest FCR 1.56 was found in Farm- 10.

4.2.3 Mortality rate:

Mortality rate of selected farms ranged from 2.1% to 3.5%. The mortality in this study is found higher in Farm- 4, Farm- 10, Farm- 17. The mortality in this study is lower in Farm-3, Farm-9, Farm-16, and the rate is 2.1%.

4.2.4. Livability:

$$\text{Livability \%} = \frac{\text{Number of birds sold} * 100}{\text{Number of birds at the beginning}}$$

Normal value of livability is about 97% to 98%. In our study, it was found the highest livability was 97.9% in Farm-3, Farm-9, Farm-16 and the lowest livability was 96.5% in Farm-4, Farm-10, and Farm-17.

4.2.5. Broiler Performance Efficiency Factor (BPEF)

$$\text{BPEF} = \frac{\text{Live weight in kg} \times 100}{\text{Feed efficiency}}$$

The higher the value better will be the index. A value of 100 or more is desirable.

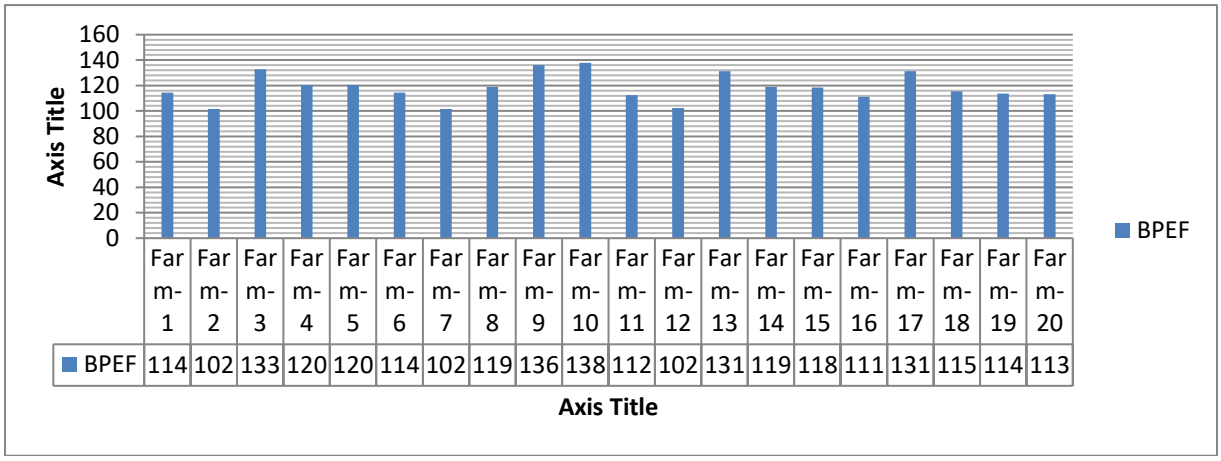


Figure 5: Farm wise graphical presentation of Broiler Performance Efficiency Factor (BPEF)

Broiler Performance Efficiency Factor of selected farms ranged from 101.69 to 137.82. BPEF of this study is found higher in Farm-10. BPEF of this study is lower in Farm-2, Farm-7.

4.2.6. Broiler Farm Economy Index (BFEI):

$$BFEI = \frac{\text{Average live weight (kg) x percent of livability}}{\text{Feed efficiency*growing period (days)}}$$

A BFEI value of 2.0 and above indicates better management of the farm and optimal performance of the birds, whereas a value less than 1.3 indicates poor performance of the flock. In our study, it ranged from 2.82 to 3.81. It indicates that all the selected farms maintained better management. The highest value 3.81belonged to Farm-9 and the lowest value 2.82 belonged to Farm-2 & Farm-7.

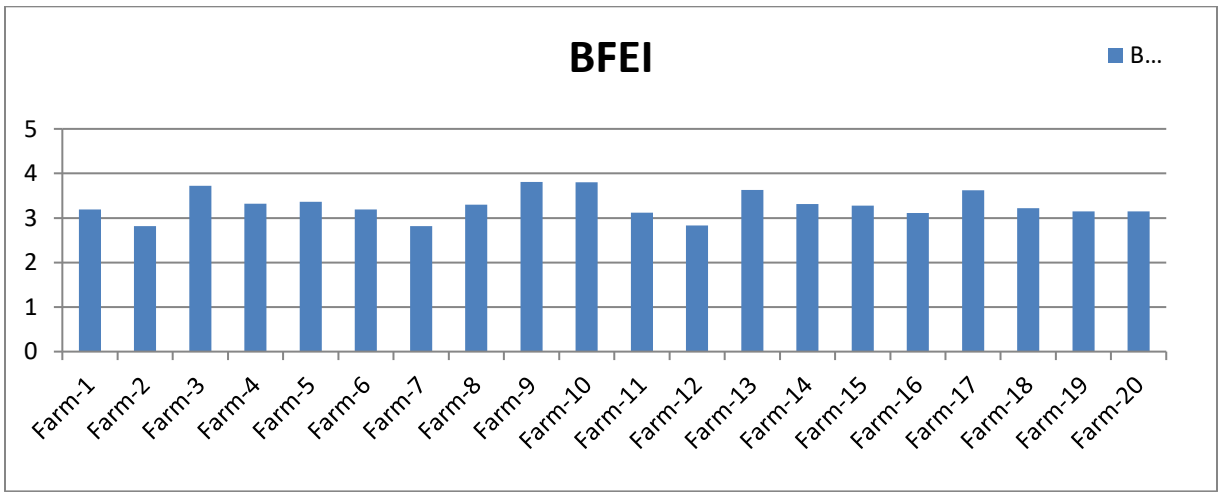


Figure 6: Farm wise graphical presentation of Broiler Farm Economy Index(BFEI)

4.2.7. Cost estimated per bird:

Cost involves per bird including housing, vaccination, medication, electricity, feed and chick cost. Depending on the availability, supply and demand of breeds, DOC, Feed, Litter, Medicine, etc in the market, the cost price fluctuated throughout the study period. In this study, cost for vaccination, medication, electricity and another cost except feed and day old chick, the price was 12 taka in average.

$$\text{Cost involve/bird} = \frac{\text{Total Cost (TC)}}{\text{Total number of Birds}}$$

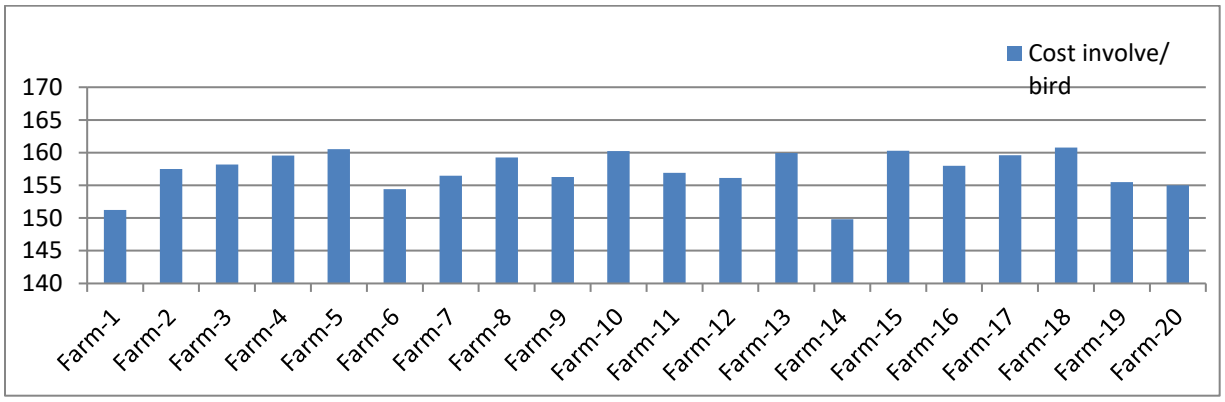


Figure 7: Graphical presentation of farm wise per bird Gross Cost

Cost required per bird of selected farms as per records ranged from tk. 151.25 to tk. 160.52 Cost involve per bird of this study is found higher in Farm-5 and lower in Farm-1.

4.2.8. Gross Returns per Bird

Return per Bird=Live body weight x Price of live bird in kg. Return per bird varied from farm to farm due to variation of market price day to day at farm gate areas.

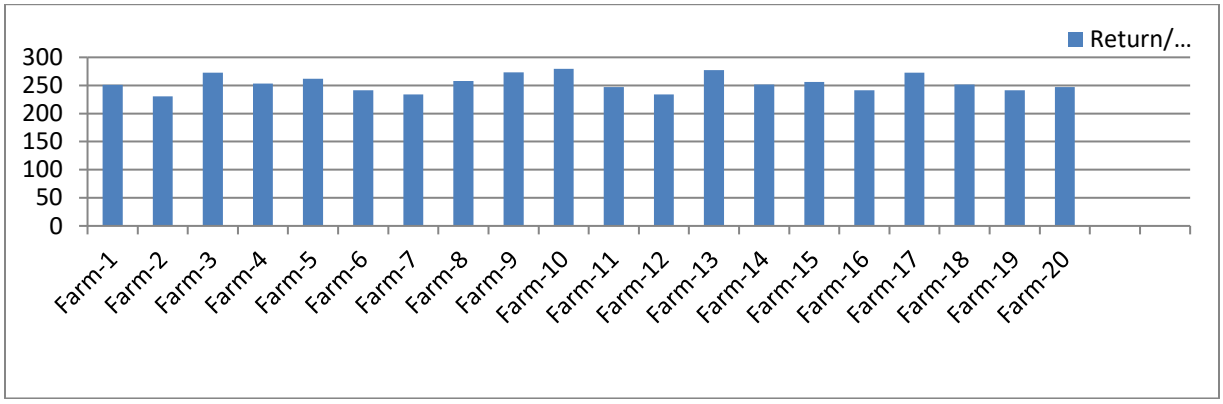


Figure 8: Graphical presentation of Farm wise Gross Return per Bird

In our study, it was found the highest return per bird 277.2Tk. from Farm-13and the lowest return per bird 230.4 Tk. from Farm-2 .

4.2.9. Net Benefit per bird:

Net Benefit per bird **= Gross** Return per bird – Gross Cost per bird.

In our study, benefit per bird ranged from 72.92 to 119.25 Tk. The highest benefit per bird was found 119.25 Tk. in Farm-10 and the lowest 72.92 Tk. in Farm-2.

4.2.10. Benefit Cost Ratio (BCR) (Full Cost basis):

$$\text{Cost-Benefit Ratio} = \frac{\text{Present value of Benefit}}{\text{Value of cost and investment}}$$

BCR<1, indicates option generate losses

BCR=1, indicates investment option is neither profitable nor loss

BCR>1, indicates investment option is profitable

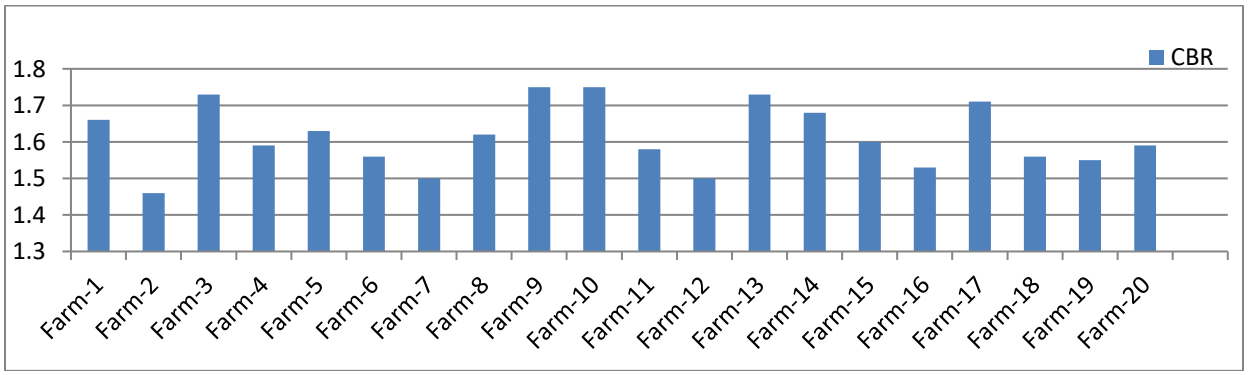


Figure 9: Graphical presentation of Farm wise BCR per bird

In our study, CBR was determined best in Farm-9 & Farm-10(1.75)and lowest in Farm-2(1.46).

In the study, we notice that production performance long stand depends on chick's quality i.e. different hatchery. Production variation was also dependent on different strains (Zaman, 2008). It is also observable that some hatchery supply often different quality maintaining chicks. It is dependent on demand and supply of chicks. Overall, the whole study showed that the average weight gain, feed conversion ratio & benefit-cost ratio of broiler at Gazipur Sadar Upazila treated as a profitable enterprise.

CHAPTER–V

5. PROBLEMS AND PROSPECTS OF BROILER FARMING

In this chapter we identified few crucial problems as well as future prospects of rearing broiler farming as profitable enterprises in the study areas at Gazipur Sadar Upazilla as listed belows:

5.1.1: Fluctuate price of chicks and live broiler:

The cost of day old chicks is relatively unstable throughout the year. During 2021, it varied from BDT 19/- to BDT 48/- per DOC. Live broiler was also relatively unstable in the same year. It varied from BDT-110/- to BDT 155/- per Kg live broiler at producer level. This variation made farmers unhappy and serous frustration. Price instability of both chicks and live broiler was second constraints (Kawsar, 2014). Fluctuation of market price of broilers affected the profitability, consisted with some researchers (Raha 2007; Begum and Alam 2009).

5.1.2: Variability in chick:

Lack of chick's quality is a common complaint to the farmers. Chick quality was the highest in scoring among the constraints of the farmers (Kawsar et al., 2013 and Chand et al., 2009). A number of factors relate to breeder farm and hatchery management affects the quality chick's production (Chowdhury, 2013). The chicks are delivered to dealers and agents after so called grading. Chicks of different grades like A, B,C, etc. clearly indicate variation in quality (Chowdhury, 2011). Consequently, farmers are receiving different quality chicks which affect performance. This makes farmers unhappy during management and marketing. quality feeds

5.1.3: Variability in quality feed:

It was another major problem for poultry farming of all categories of farm holders. All of the poultry farmers depend on commercial feed mills for feed. Having quality feed in time may become a challenge for broiler production.

5.1.4: Marketing system:

Since the farmers are not well organized and there is no regulatory body for them, they have to follow the traditional system of marketing which permits this chance little bargaining. Farmers are deprived from legal prices of their products frequently. The middlemen exploit. Marketing of live broiler was also a problem, and 37% broiler production is affected of small-scale broiler farming (Emaikwuet al., 2011).

5.1.5 Summer stress affecting productivity and survivability:

Exotic high yielding strains of broiler chicks are not heat tolerant. The problems are arisen in summer because of temperature raised 35-42^{0}C. Therefore, productivity and survivability are decreased. So, some strategies should be applied against heat stress (Lin et al., 2006). Das et al. (2008) also reported that small farmers kept their broilers in open sided house for minimizing heat stress.

5.1.6 Treatment of diseases:

Although prevention is the key to make success in combating diseases (Chowdhury, 1984). Treatment of diseased birds may be applied in some cases. However, the quacks and nonqualified personnel should not be involved in veterinary practices that may affect negatively in poultry farming as well as profitability.

5.1.7: Insufficient bank loan:

Since the outbreak of COVID-19, access of farmers to credit facilities has decreased considerably. Financial institutions reduced interest to encourage farmers for poultry farming as well as the recovery of their credit.

5.1.8: Lack of quality vaccine:

Some important diseases can be preventing by vaccination. Disease outbreak was one of the major constraints for the development of broiler farms in Gazipur sadar. These diseases was prevented by proper vaccination programmed in the study area but high price of vaccine, improper storage and unavailable supply hamper the prevention of diseases prevalence in study area. The quantity and quality of vaccines available against the major diseases were not up to the desired standard. However, the potency declined from the district livestock office to the Thana livestock office and finally falls to between 45-80% potency at the user's level.

5.1.9: National policy:

Our national policy is so weak that hampers the development of broiler farming. Lack of Govt. influence works behind that. There are also some problems that remain in broiler farming like -

-Shortage of feed & proper nutrition,-Lack of transport facilities, -Lack of well-established diagnostic lab and postmortem facilities, Lack of bio-security knowledge, unavailability of expert consultants, unavailability of drugs and High cost of drug, absence of proper disease control model, acute shortage of veterinary support staff, influence of Drugs Company and influence by feed supplying company

5.2: Prospects of broiler farming Practices:

5.2.1: Additional sources of income

Farmers answer that broiler farming is an extra source of income for them in addition to their current property. It was clear that all of the marginal and small farm owners saw farming as a source of additional income. (Miah, 1990).

5.2.2: Profitable business

All of the farm holders respond in this point well. There is aslo found similarities in the study of Miah (1990) and Mohd-Shoriff-Saleh (1985).

5.2.3: As a profession

Pandey and Tewary, (1985) declare that broiler farming as a profession and a lot of people involves in this sector. Day by day many educated people become involves in this profession.

5.2.4: Broiler as industry

The broiler production process is very much an industrial one now. Worldwide, in 2005 production was 71,851,000 tonnes. From 1985 to 2005, the broiler industry grew by 158%.

5.2.5: Need less capital:

Broiler farming needs less capital than other business. But more profit can be gained in short time.

5.2.6: Importance of Broiler Farming in Bangladesh

Agriculture is the backbone of Bangladesh's economy. Agriculture accounts for 21.84 percent of the need for a well-balanced diet. Poultry, particularly broiler, is a significant agricultural sector in Bangladesh. The term poultry refers to bird species that provide an economic benefit to man and breed freely when properly cared for. Currently, broiler farming is generated for commercial purposes. Poverty, unemployment, and malnutrition are important development barriers in Bangladesh. The majority of the population here is impoverished. Many educated individuals are unemployed in our nation. Malnutrition is a problem for our children and mothers.In this circumstance, broiler farming is an excellent solution to fill the protein shortfall, create jobs, and alleviate poverty in the shortest amount of time feasible. It also has a monetary benefit. As a result, broiler farming is one of the country's most important rising agro-based sectors.

CHAPTER-VI

6. CONCLUSIONS AND RECOMMENDATION

6.1 Conclusions

From the above discussion, it can be concluded that Gazipur Sadar Upazila under Gazipur district is a very suitable and prospectus zone for broiler farming and broiler production. But first, it is crying need to solve the above-mentioned problems and other constraints. Then it would be possible to establish broiler farms to meet the protein demand of the people and to remove the poverty of people creating employment opportunities for the unemployed people. Government is to take proper steps and play an important role for the establishment of a poultry zone in this area by solving the problems and giving more opportunities to the existing farm owners. The government can take a mega plan to establish a farm in each Upazila of Bangladesh using which as a model, local people would create their own farm. Finally, it can be said that broiler farming contributed positively to the socio-economic development of the broiler farmers as well as the improvement of rural livelihood in the study area.

6.2 Recommendation

The following recommendations may be put forward:

❖ Government should monitor the reasonable price of poultry feed and day old chicks.

❖ Facilities of the institutional loan to the owners of poultry farms should be made so that they can get the credit on easy terms.

❖ Hatcheries should increase the supply of day old chicks.

❖ For proper housing, nutrition, disease control, marketing and management-DLS should provide short term training for the owners of the poultry farms.

❖ The regular supply of electricity should be ensured.

❖ Government support should be provided to medicine and vaccine producing Institutions to ensure the availability of the medicine and vaccine in the area.

❖ Price stabilization of the market should be monitored by the government to ensure the reasonable profitability of the farmers.

❖ Small & Medium Enterprise farmers must have at least minimum knowledge for poultry husbandry practices. Non trained farmers should not be registered for farming.

❖ Training of dealers and agents need be taken for maintaining the quality of inputs.

❖ Efficient summer management of broilers is the necessary to combat acute heat stress in broiler production. Different feeding strategies; diurnal feeding patterns, choice feeding from different feed ingredients (rich in protein or in energy), wet feeding etc. may be applied to reduce the effects of heat stress.

❖ A policy should be developed by the government to remove unexpected growth promoters and antibiotics in case of poultry production. Awareness should be developed against the use of such Antibiotics or Antibiotics growth promoters.

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8. APPENDIX

Study on Commercial Broiler farming in Gazipur Sadar Upazila

Questionnaire

1. A. Name of the farm.....

B. Name of the owner/Farmer/Employee.....

C. Address: Village.....Union.....

P.O.....Thana.....District…...

D. Farmer's education.....

E. Children number.....

F. Farmer's economic condition.....

2.Husbandry practice:

A. Housing: a. Brooder house b. Grower cum finisher house

B. Feeding:

- Collection of feed.....
- Storage of feed ….....
- Types of feed.....
- How many times feed supplied daily.....

C. Watering:

- Source of water
- Frequency of water supply

D. Litter materials.....

E. Ventilation

a. Sufficient. b. Insufficient

F. Lighting schedule……

G. Biosecurity.....

H. Foot bath: ……...

3. Number of sheds.....

4.Incidence of diseases……..

5.Management of disease condition:

a. Self-management

b. Quack

c. Veterinary doctor

b) .Health programme:

a. Vaccination

b. Anthelmintic

7. Mortality rate: .....

8. Marketing system: …….

9. Cost & return: ……

10. The farm is profitable or not.....

Name of the interviewee..... Name of the interviewer.....

Date..... Date: …….....

Signature..... Signature.....

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The Author, April 2022

BIOGRAPHY

This is **Md. Shafinul Islam,** son of Md. Rashedul Islam and Alish Akhter Shahnaj Parvin. I was born in Pabna District and raised in the Gazipur District. I graduated from Rani Bilash Moni Govt. Boys High School in 2013 with an S.S.C and Gazipur Cantonment College with an H.S.C in 2015. In the 2015-16 academic year, I was accepted into Chattogram Veterinary and Animal Sciences University's Doctor of Veterinary Medicine (DVM) program. As a future veterinarian, I hope to devote the remainder of my life to animal welfare. I want to work as both a field veterinarian and a professional practitioner