# CHAPTER- I

# INTRODUCTION

**1.1 Background of the study**

The people of Bangladesh are blessed with a variety of agricultural resources of which chicken rearing is considered to have potential both for poverty alleviation and food production (Sumy et al., 2010). Poultry sector has turned out to be promising dynamic sector with enormous potential for rapid poverty reduction. This sector as a whole has shown growth rate of about 2.8 percent annually over the nineties (PRSP, 2004). Therefore, broiler farming plays an important role in improving livelihood, food security and poverty alleviation in rural and semi-urban communities in developing countries including Bangladesh.

Broiler production has become a specialized and speedy business at present time for the people of the country. Short life cycle of the broiler and requirement of relatively less amount of capital attributed to its popularity to the farmers. This industry has immense potentialities from the point of view of the economic growth of the country as well as fulfillment of basic needs and to keep the price at a minimum level and ensuring food especially animal protein for the human being. This industry has immense scope for the country through changing livelihood and food habit, reduction of dependence of meat related to cow and goat and ultimately has positive impact on GDP growth rate of the country (Ahmed JU et al., 2009). The overall socio-economic condition of the beneficiaries, their egg and meat intake ability, empowerment of rural women in decision making and employment opportunities were significantly increased by rearing poultry after the intervention made by Smallholder Livestock Development Project (SLDP) (Alam J, 1997).

Study showed that commercial broiler farming provided employment opportunities for unemployed family persons, developed socio economic conditions and increased women empowerment among rural people of Bangladesh (Rahman SMA et al., 2006). Broiler farming has encouraged the people of different sections such as small farmers, landless labourers and educated unemployed as well as for industrialists to establish broiler farms on small &large scale. The better growth performance of broiler bird might simply be a function of higher feed intake. Feed consumption followed similar trend to that of weight gain. These non-significant differences in growth performances support the finding of Haque and Chowdhury (1994), Anisuzzaman & Chowdhury (1996) and Sarica et al (1998). Finding so the study clearly indicate that all broiler farms made good profit & the large farms, however, carried little higher profit.

Broiler meat contains high quality protein and micro-nutrients which has had a tremendous impact on health and nutrition for the poor people in rural areas (Neumann et al., 2002; Barroetoa, 2007). Again, another study reported that it can be the main source of family earning or can provide sufficient income and gainful employment opportunity to rural farmers throughout the year (Bhende, 2006). For this reason, broiler farming has been playing a key role in providing meat to overcome the malnutrition and serve as a tool for employment generation and poverty alleviation (Raha, 2007). All these evidences suggested that commercial broiler farming deserve wider scale expansion throughout the country as a poverty reduction activity. Despite its high potential the broiler farming is not based on sound footings. Studies revealed that most of the broiler farm owners suffered from adequate amount of credit to run their farms and provision of credit for poultry farming is not yet very regular and well established practice among all the financial institutions - banks and NGOs in Bangladesh (Jabbar et al., 2005). So, broiler farm owners face various problems like shortage, high price and poor quality of DOC (Day-old chick); high price, poor quality and unavailability of feeds; high cost and low quality of medicine, vaccine and veterinary services shortage of capital; inadequate marketing facilities; and poor transportation and communication (Raha, 2007).

Though broiler farming faces various problems, a huge scope exists for development of broiler industry in Bangladesh. It is interesting to note that broiler farming is solely in the private sector particularly in the hands of small farmers who are running their enterprise through self-finance. So it is very much necessary to assess whether broiler farming is contributing positively for the socio-economic development of the broiler farmers or not. The present study was undertaken to describe the socio-economic analysis of broiler farming enterprises by estimating the weight gain and feed conversion ratio, assess the cost and return of broiler fanning and finally to identify some problems and make recommendations for improvement of broiler farming practices under Dinajpur district of Bangladesh.

**1.2: Justification of the study:**

The poultry sector is possibly the fastest growing and most flexible of all livestock sectors. Driven primarily by very strong demand it has expanded, consolidated and globalised over the past 15 years in countries of all income levels. Broiler farming at small scale level is a very important issue to address for the rural economy of Bangladesh. Hybrid broiler of today is the results of the long periodical efforts of many more poultry geneticists and breeder in the broiler industry. This great complete protein source is one of the blessings of the Almighty. Poor peoples of the third world country are having complete protein in a cheaper rate for the expansion of broiler farming at rural village level. Consumption and production of broiler meat is constantly growing, but also an increasing number of producers who are facing few problems in this farm business in the study area. Therefore, a feasibility analysis of investment in the reconstruction of existing and erection of new production facilities becomes more important to perceive the consequences and changes in the current production process. In light of the above reasons, the economic profitability of broiler farming enterprises is investigated with a view to identify the farming problems and make suggestions to overcome for making its as a sustainable farm business for creation of huge employment in Bangladesh as well as for partial fulfillment of the requirements for the degree of Masters of Science in Agricultural Economics under the department of agricultural economics and social sciences in CVASU.

**1.3 Aim and objectives of the Study:**

The aim of this study is to analyze the present socio-economic condition of broiler farmers and their economic analysis at Birampur Upazilla. 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 for creation of self employment sustainably.

**The specific objectives of the study are as follows:**

1. To describe the socioeconomic status of the broiler farmers in Birampur Upazila;
2. To estimate the farm profitability of broiler farming practices;
3. To identify broiler farming problems and prospects in the region;
4. To make summery conclusion and recommendations for improvement of the broiler enterprises in the study area.

# CHAPTER-II

# REVIEW OF LITERATURE

**2.1: Related Research**

The analysts checked on are Saleque et al. (2002), Mandal et al (2005), Alans (2004) and Bhayan (2003) however none of them tended to the administration arrangement of business grill in Bangladesh. The current examination is an endeavor to distinguish the financial state of the ranch family and normal management system rehearsed that are performed by the ranchers of Bangladesh.

**2.2: Socio-economic status of the farmers**

Islam et al (2010) found in their investigation that here are no huge contrast in factors old enough, training, experience, relative, landholdings and normal clumps each year among the ranchers in three gatherings. Consequently all example ranchers might actually have the equivalent financial foundation. In any case, a few specialists shows impressive variety of financial condition in various level

**2.2.1: Land**

Rahman et al (2002) detailed that around 45 3% enormous, 30.7% medium, 12.5% little, 7% minor and 4.5% landless rancher were engaged with grill cultivating in Rajshahi distict. It appears to be that relatively rich rancher are associated with poultry cultivating Many creators in their investigations saw that comparable sort of rustic poor, landless workers, little and minor ranchers are associated with poultry cultivating (Sirohi, 1982, Alam et al., 1998; Prodhan, 1995, Rahman et al., 2006).

The assessed normal land regions per ranch family are 1.45 section of land for Sujanagar and 1.35 section of land for Bera and 1.37 acte for Santhia thana in Pabna region (Sumy et al., 2010). Sumy et al. (2010) additionally announced that chicken numbers expanded with the expanding land size. Despite the fact that Islam et al., (2010) detailed that the entireties of the ranchers engaged with their examination were under little classes (having 6-49 decimal land) according to arrangement by BBS (2006).

**Table-1: Variation in size of small farms in Bangladesh. (Adapted from Devendra, 1993)**

|  |  |  |
| --- | --- | --- |
| **Country** | **Landholding** | **Definition** |
| **Bangladesh** | <0.4 ha | Subsistence farmer |
| 0.4-0.8 ha | Viable and potentially viable owners |

**2.2.2 Educational level:**

Rahman et al.(2002) found that, in case of educational level, about 47.3% of the farmers were in above secondary, 36% were in secondary, 12.2% were in primary and rest of the (4.5%) farmers had no educational qualification. It was revealed that 71.43% of the farmer had high level of knowledge about broiler farming (Table-2).

**Table -2: Educational status of farmers (Adapted from Rahman et al., 2002)**

|  |  |  |
| --- | --- | --- |
| **Level** | **Categories** | **Percent of total farmers** |
| Educational level | No education | 4.5 |
| Primary | 12.2 |
| Secondary | 36 |
| Above secondary | 47.3 |
| Level of Knowledge about farming | High | 71.43 |
| Medium | 24.29 |
| Poor | 4.28 |

School-going young men and young ladies of oven ranchers were expanded by 52.54 % and 54.43 % separately after associated with cultivating (Ahmed er al.,2009). Islam et al.(2010) in their investigation showed that all example ranchers might actually have the equivalent financial foundation as far as instructive level.

**2.2.3 Occupational status:**

Ahmed et al. (2009) detailed that in their examination plainly the fundamental occupation (from which the respondents procure enormous piece of their pay) of 34% respondents was cultivating and the leftover 66% respondents associated with cultivating as their auxiliary occupation. Among these 66% respondents, 4% associated with fisheries, 6% were business, 8% were administration holders, and 2% engaged with others occupation as their important occupation.

**2.2.4 Monthly household income**

Ahmed et al. 2009 showed that the general month to month pay (determined by deducting cost caused for broiler farming from the all out return) of the owners expanded from Tk. 6394.00 to Tk 12494.66 because of broiler farming is a profitable farm business. Sumy et al. (2016) tracked down, the yearly pay of most extreme farm proprietors had above Tk.40,000 and least farmers had pay of up to Tk 10000. Banerjee (2004) sees that in contrast with other domesticated animals Poultry requires fewer ventures to begin the farming. People from low pay gathering may likewise begin the business on a limited scale. Islam and Sasaki (2009) showed per capita pay increment with the expansion of farm size. Islam et al. 2010 discovered, the ranchers raised oven going from 1000-5000 are care comparable pay which might be named as First Income Goal Group (FIGG) and ranchers raised in excess of 5000 broilers accomplish most elevated pay that might be named as Second Income Goal Group (SIGG).

**2.2.5 Livelihood Impact:**

In spite of just being a minor pay increment from poultry, this pay by the by has s constructive outcome on the occupation effect of the recipients as far as further developing the family diet, further developing the lodging states of the family, family resources and instructive consumptions of the youngsters. Discoveries from the overview show that a portion of the more unfortunate recipients who in any case figured out how to fit the bill for project support did in a few occurrences graduate out of destitution after which they diminish interest in poultry farming. However, it is indistinct the degree to which the underlying poultry exercises or the credit access worked with this positive result. By the by as poultry ought to be seen as an initial step out of destitution (Todd, 1997), and not an objective in itself, get the focusing on directly all along (Jensen and Dolberg, 2002), just as try not to see drop-out rates as a sole standards for progress or disappointments.

It has been seen that goat and poultry rising are exceptionally powerful means for destitution mitigation in Bangladesh. It has additionally been seen that with 7-8 goats and 15-20 poultry given to a destitution stricken homestead family, under conventional taking care of frameworks could easily reduce neediness. Ladies and youngsters additionally assume a significant part in bringing domesticated animals and poultry up in Bangladesh (Paul and Saadullah, 1991)

**2.3 Farming system and managemental practices of poultry farm:**

**2.3.1 Farming system-concepts and definitions:**

As per Sharma et al. (1991) Farming framework alludes to the ranches where in at least two undertakings are coordinated with the homestead assets with a goal of accomplishing more full usage of accessible assets to acknowledge greatest benefits and furthermore to settle returns. It gives att freedom to use the land, work, water, compost and manures all the more effectively Swawaminathan (1996) records the standard parts of serious coordinated cultivating frameworks (IFS) as seven columns that, incorporate soil medical services, water reaping and the board, yield and nuisance the executives, energy the board, post-collect administration, selection of harvests, livestock and different parts of the cultivating and data, ability, association and the executives strengthening. Devasenapathy er every one of the (1995) sees as one of the methodologies where in cultivating framework approach hazard in managing single part can be through successful reusing Sharma et al. (1991) saw that, the farming framework likewise alludes to the farm as a substance of bury subordinate endeavors did on the homestead. The farming framework reasonably is a bunch of components or parts that are between related which collaborate among themselves. At the focal point of cooperation is the farmer practicing his control and decision with respect to the sort of exercises.

As the cultivating arrangement of Bangladesh, similar to all customary farming frameworks all through non-industrial nations of the world, is a framework where different components, that are family, yield and animals are firmly incorporated. It creates the impression that about 75% of the all out family cultivates contain harvest, ruminant and poultry (BAU-FSRDP, 1986).

**2.3.2 Poultry farming systems in Bangladesh:**

The current cultivating frameworks of poultry in Bangladesh can be comprehensively isolated into two classes: conventional country terrace or searching/semi-rummaging framework and business cultivating framework Traditional poultry creation is a fundamental piece of rustic ranch family exercises; a couple of birds are raised with practically zero feed supplement to deliver eggs and meat for home utilization and any excess is sold. Business poultry ranches are characterized as those that raise birds in bound conditions dependent on high yielding varieties, business feeds and the board rehearses (Ali, 1993). Anyway the Department of Livestock Services (DLS) and a non-legislative association (NGO), Bangladesh Rural Advancement Committee (BRAC) have advanced a limited scale semi-rummaging business poultry model utilizing nearby or crossbreeds and fractional supplementation with concentrate takes care of (Salequs, 2000, Islam and Jabbar, 2005).

Broiler farming is quickly expanding interest for creature items and growing business sector opportunity in the mid 1990s, a business grill and layer area has arisen in Bangladesh The area is described by escalated creation methods (intriguing and crossbred birds, concentrate feeds and medications) and specialized and strategy support (financed credit, nearby creation and import of day-old chicks, drugs and so on) The customary poultry area, where helpless smallholder makers rule, actually stays the significant provider of poultry meat and eggs in the provincial regions. In any case, the rustic poor have been not able to catch any critical portion of the quickly growing metropolitan market (Islam and Jabbar, 2005).

Most business poultry ranches in Bangladesh are limited scale (under 5000 birds for each group) In 1995, enormous and limited scope business poultry rears individually represented 12 and 2% of all out poultry meat creation in the country with the searching framework representing the rest (Alam, 1995). The recently settled business poultry ranches were minuscule in the mid 1990s. Most homesteads actually back somewhere in the range of 1000 and 2500 birds yet the normal size of farm have been expanding gradually over the long run. A new report showed economies of scale in poultry cultivating. some portion of which emerged from stowed away sponsorships, for example, modest credit and information sources which for the most part are not open to smallholder helpless ranchers Rapid industrialization of poultry creation could wrongly hurt the system of pay age for the poor in the country (Jabbar et al.2005b).

**2.3.3 Management systems in intensive poultry production:**

Serious poultry creation depends on exceptional poultry breeds. In serious administration framework, makers target utilizing suggested practices like type of decision, fitting lodging. Taking care of, wellbeing and infectious prevention (Katalyi, 1998). The frameworks engaged with concentrated poultry creation incorporate; scheduled floor, profound litter and battery confine frameworks.

**(a) Slated floor system**

Here birds are loaded at a pace of 0.09 square meter per bird and little work is required (Sainsbury, 1993).

**(b) Deep litter system**

Most ranchers have taken on the profound litter framework; but its viability is frustrated by helpless house development and spillage of water. Espresso husks, saw residue and wood shavings are utilized a litter. The accomplishment of profound litter framework is subject to decay of litter by microscopic organisms (Sainabury, 1993). Litter keeps ties spotless and agreeable and ingests dampness from droppings (Ensimiger, 1992). This is the most effective on the grounds that egg creation and feed change proficiency are high. The weaknesses of this framework are, it is exorbitant to butt-centric many eggs get breaks and poultry are exceptionally inclined to vermins and bugs. The poultry house unit is developed and fitted with battery confines that might be common or individual, feces gathers on waste plate under the battery confines that are cleaned physically (Portsmouth, 1989).

**(c) Battery cage system**

This is the most effective on the grounds that egg creation and feed change effectiveness are high. The inconveniences of this framework are, it is exorbitant to butt-centric many eggs get breaks and poultry are exceptionally inclined to vermin and bugs. The poultry house unit is developed and fitted with battery confines that might be mutual or individual, feces gathers on waste plate under the battery confines that are cleaned physically (Portsmouth, 1989).

**2.3.4 Poultry environment and housing:**

1. **Ventilation and humidity**

The primary goal of proficient ventilation is to guarantee a sufficient stock of outside air to the birds, eliminate undesirable gases and abundance dampness Poultry houses might be ventilated normally or precisely (Portsmouth, 1989). Normal ventilation is generally utilized in Africa and relies upon the distinction in temperature between air inside the poultry house and that outside. On the off chance that the air outside is cooler than that inside, warm air inside the house is overwhelm and is supplanted by cooler air. The open side dividers go about as bays edge ventilators or openings on the end dividers close to edges go about as outlets Air speed is of significance in regular ventilation since it influences the pace of progress of air. Nonstop edge ventilators are attractive for long structures however for little structures two power source ventilators close to the rooftop on each side of the divider are sufficient (Kekcocha, 1984).

North and Bell (1990) recommended to give 1.75 ft of wind stream each minutes per pound of live bird in the house or to give 0.11 m²' of wind current each moment per kilo of live birds in the house. Relative stickiness of 60-80% is wanted in the house for ideal creation (Partisan, 1993). Ensminger (1992) suggests relative stickiness of 60-70% for layer houses as high dampness lessens vanishing and expands endurance of microbes

**(b) Lighting**

Egg creation is invigorated by expansion in day length. Decrease in day length prompts suspension of egg creation and birds shed. Under regular light conditions, day length shifts with the season and scope. At equinox (21 March and 23 September), the days and evenings are equivalent long. At the equator, day length is barely 12 hours. Open sided houses are a standard in the jungles and along these lines enhancing light in typical. In damp regions, where there is little change in day length consistently, 2-3 hours of sufficient lighting is suggested for laying birds (Smith, 1993). On the off chance that light power is unevenly circulated in the house, with brilliant and dim regions, coves and to move in regions with light and this will in general reason improvement of indecencies and respiratory sicknesses (Sainsbury, 1993). Longer days invigorate egg creation and urge hens to devour more feed. In ovens, a lot of light might expand their exercises and accordingly lessen the effectiveness of feed use (Smith, 1993)

**(c) Temperature**

Sufficient lodging should give the herd ideal air quality and warm conditions with the goal that presentation might be upgraded. Poultry house protection is an imperative for open sided and earth controlled houses Most protection is restricted to the rooftop where most prominent warmth is lost during chilly climate conditions and furthermore where sun beams strike (North and Bell, 1990).

Agonizing temperature is 35-37.7 degrees Celsius in the primary seven day stretch of life. This is diminished by 3 degrees every week as birds develop Huddling of chicks together around the warmth source shows that the temperature is too low Chicks are generally fanned out in case temperature is too high however those that are satisfied are uniformly spread over the agonizing region (Portsmouth, 1989). Grown-up hen produce eggs maximally with ideal temperature near 24degroes (Austic land Nesheim, 1990) yet in seriously oversaw birds, ideal temperature ought to be 21degrees (Partisan, 1993) Oba (2000) suggests a temperature 75 for ovens. Expansion in encompassing temperature lessens craving, water admission builds, egg weight and egg usefulness decreases. It likewise brings about laying meager shelled eggs (Kekeocha, 1984, Smith, 1993). Temperature beneath the ideal level pushes down hatchability, feed change productivity and egg weight (North and Bell, 1990).

**(d) Chicken spacing**

Chicken separating is of significance in the poultry house to try not to stuff since this works with sickness transmission. Loading relies upon the sort of chicken, the board framework, age and size of chicken. The floor space necessity of ovens is 0.3 sq feet from 0 a month old enough and 0.75 sq feet from 4 two months old enough while layers need 0.3 sq feet of room from 0 a month, 0.6 sq feet from 4 two months, 1.25 sq feet from 9 four months and 1.5 sq feet for over 16weeks old enough (Ensminger, 1992).

In the brooder, 7 meters of drift space is permitted per 1000 chicks and feeder space of 2.5cm per chick in the initial a month, 5cm per chick in the subsequent month and 7 cm in the third month. Water space of 2.5 cm is permitted per chick in the initial fourteen days of their life and 5cm in the excess time frame (Kekeocha, 1984).

**(e) Feeding and nutrition**

Commonwealth food sources are alluded to as complete feed since they contain proteins, blow out, nutrients, minerals and different supplements important for legitimate development, egg creation and soundness of herds. Carbohydrates and files are essential wellsprings of energy expected to keep up with internal heat level, development of the body and for substance responses engaged with union of body tines and end of squanders (Austic and Nisheim, 1990).

**Table-3:** **Feeder space requirement per bird**

|  |  |
| --- | --- |
| **Age weeks** | **Feeder space per bird (Lineal cm.) Minimum** |
| 0 to 2 | 2.5 |
| 3 to 6 | 4.0 |
| 7 to 12 | 7.5 |
| 13 and above | 10.0 |

**Source: Banerjee, 1998.**

The customary staples utilized in feed detailing are maize, sorghum, fishmal, soybean feast as wellsprings of starches and proteins separately. Different fixings added incorporate, mineral salts, nutrients, coccidiostats and cell reinforcements like ethoxyquine or butylated hydroxytoluene, nutrient and mineral premises (Smith, 1993).

**(f) Water consumption**

Water is regularly given adlibitum. Water utilization increments with expansion in age of the bird, protein and sodium chloride levels in the feed Water hardship can prompt passing of poultry inside 24 hours. A 10% limitation of water accessibility can lessen the development rate and feed change productivity of grills. In layers, water hardship can prompt shedding and suspension of egg creation (Smith, 1993).

**Table-4:** **Amount of water required and watering space for chicken**

|  |  |  |
| --- | --- | --- |
| **Age (weeks)** | **Water space per chick in linear cm** | **Amount of water per 100 birds (liters)** |
| 0 to 4 | 0.6 | 2.8-4 |
| 5 to 8 | 1.2 | 12-14 |
| 9 to 12 | 10 | 20-25 |
| 13 to 16 | 12.5 | 35-40 |
| 16 and above | 15 | 45-48 |

**Source: Banerjee, 1998.**

**(g) Litter management**

Water is regularly given adlibitum. Water utilization increments with expansion in age of the bird, protein and sodium chloride levels in the feed Water hardship can prompt passing of poultry inside 24 hours. A 10% limitation of water accessibility can lessen the development rate and feed change productivity of grills. In layers, water hardship can prompt shedding and suspension of egg creation (Smith, 1993).

Consumer focuses and drinking regions are risky because of water sprinkling and grouping of birds. Accordingly it is fundamental to often turn this litter. Wet litter is cold and will in general take up heat trying to evaporate. It's fitting to begin with about 70mm layer of litter and add to it with time Adding litter weakens droppings and the state of litter is improved. High alkali levels are perilous and terrible to administrators. Alkali levels ought not to surpass 15-20 p.p.m., levels more than 40 p.p.m may decrease feed admission. Levels more than 50 p m influence the mucous layers wing the respiratory lot, influence breath and may likewise cause visual impairment (Sainsbury, 1993).

**2.3.5: Beak Trimming**

Beak trimming has turned into an exceptionally disputable administration device. Managing snouts includes eliminating a part of the nose. Snout managing adequately lessens feather pecking, forceful pecking and human flesh consumption in laying hens and turkeys. Thus, it tends to be expressed that the government assistance of nose managed birds is worked on over full-bent birds, which are confronted with the aggravation and coming about dread of being pecked or torn apart. This will bring about decreased pressure in the managed birds.

**Table-5:** **Methods of beak trimming at different age of layer chicken.**

|  |  |
| --- | --- |
| **Age** | **Method** |
| 1st day | High speed trimming/ Notch type trimming |
| 1 day 6 to 8 days | Block trimming Side type beak trimming |
| 6 to 12 weeks | Electric beak trimming method |
| 18 weeks | Electric beak trimming method |

**Source: North and Bell (1990).**

The age that birds are beak trimmed has an immense effect the age that birds are snout managed immensely affects the term of torment and mending level of the nose. At the point when chicks are bill managed at either1 or 10 days old enough, torment brings about the principal week following the method, however manifestations don't show up after that time. Birds managed at 28 days old enough gave indications of agony for three weeks post managing. The actual bill re-develops, however won't recapture the afferent sensory system or the tangible receptors in the tip. In any case, birds managed at about four months old enough gave off an impression of being in constant agony.

**2.3.6: Waste Handling**

Squanders are delivered in a wide range of poultry tasks. After poultry houses are cleaned and disinfected, the squanders ought to be bound in one region for later evacuation by particular organizations for fertilizing the soil or legitimate removal to try not to pollute the climate. This repression region can be utilized for a wide range of squanders including litter from most poultry ranches and un-brought forth eggs from incubation facilities.

A review was completed by Sarker et al. (2009) in the 10 little, 6 medium and 4 huge ranches of Kishoregonj. Mymensingh and Gazipur regions to distinguish the poultry squander materials and how to know their removal technique in Bangladesh. They distinguished the poisons in the poultry ranch incorporate litters, composts, scents, commotion, quills, residue and synthetics wastewater, bugs, dead birds, incubation facility trash and residue from feed fabricating plants. Litter is by and large a combination of excrement, bedding materials, squandered feed, plumes and some piece of soil. Among the little homestead proprietors 20% ranchers couldn't utilize their poultry litter for a specific work, 40% of them sold their poultry litter on the lookout, 30% of them utilized their poultry litter for crop creation and, 10% of them utilized their poultry litter for fish culture About half of the medium ranch.

**2.3.7: Record keeping**

The way to great business and the board is records. Records are kept to give data from which the poultry business may broke down so the administrator might foster more successful designs to foster the venture, to give benefit and deficit accounts, to give total assets explanation showing monetary advancement consistently, to keep creation records on birds and to save a total authentic record of monetary exchanges for future reference (Ensminger, 1992). Issues recorded by most ranchers incorporate; all out number of housed, the expense of birds or the expense of raising birds in case it's finished by the proprietor, eggs gathered every day, deals made, feed utilization, mortality and work costs (Sainabury, 1993). Records ought not to be explained else they may not be kept as expected by laborers (Smith, 1993).

**2.3.8: Farm profitability oriented research works**

The total cost of meat production per bird, returns per bird over the variable costs has been found highest on small broiler farms, followed by medium and large farms. The study has observed that broiler farming is a profitable venture and has a bright future in the Tamil Nadu agro based industry for improving economic status of the farming community in general and in the study are in particular. Study reveal that the total variable cost per bird was the highest on small farms (Rs 101.23), followed by medium (Rs.98.27) and large (Rs.96.28) farms, with the overall average of Rs 98.56. The total cost of production per bird was Rs.113.93, Rs.111.36 and Rs. 108.99, on the overall average Rs.111.42. Also reported the accounted gross return was Rs.222119.16, Rs.332322.34 and Rs.664766.48 in small, medium and large size farms, on overall average Rs.398994.62 (V. Balamurugan and M.Manoharan-2014).

Another socio economic study conducted by Santoshkumar *et al.* 2018 detailed analysis of the economics of commercial broiler chicken production, the total production cost on non-contract and contract farms were was Rs.71.01 and Rs.5.34 respectively. The share of fixed cost in total cost was 3.82 and 53.13 per cent while variable cost was 96.18 and 46.87 per cent in non-contract and contract farms respectively. The gross returns per kilogram of live weight was Rs.78.59 and 6.85 in non-contract and contract farming respectively. Net returns over variable cost and net returns over total cost were found to be Rs.10.78 and Rs.8.09 in non-contract farms whereas in contract farms it was Rs.4.35 and Rs.1.51 respectively. Benefit-cost ratio was analyzed and found to be 1.11 and 1.28 in non-contract and contract farming system.

A study regarding commercial broiler farming cost and benefits conducted by K. M. A. Al-Mamun Rana *et al.* had estimated the average cost of raising broiler to be Tk. 8, 35,910.65 per farm per year. It was found that the variable cost per farm per year stood at Tk. 8, 23,735.93 which accounted for 98.54 percent of total cost. The total fixed cost per farm per year accounted to Tk. 14,041.66. It is evident from the study that the gross return per farm per year stood at Tk. 10, 78,022.39. The net return per farm per year was calculated at Tk.2, 42,111.47 for large scale commercial broiler farm.

**2.3.9 Marketing oriented research works:**

In tropical regions, showcasing of eggs and poultry isn't profoundly coordinated. Offer of eggs and poultry relies upon the rancher's drive. Endeavors to build up market plans in various regions have n yet succeeded and there are not many business parkers in this manner making it an issue to ranchers and ac as a brake to poultry creation. In an overabundance, value cutting becomes intense and ranchers need to s off their produce at lower cost to diminish the stock (Kekeocha, 1984). Islam (2003) detailed that generally chickens are sold alive till today in Bangladesh, beca of lacking trust on butchering strategy (Halal or not), dread of illness or dead birds butcher absence of preparing and safeguarding innovation and expertise labor. Egg evaluating and pressing not yet been created. Accordingly makers are not getting profitable value that is mediator is being gainer.

Subsequent to examining the previously mentioned survey of writing the scientist himself like to make an exploration study entitled as "Socio-economic analysis of broiler farming enterprises in some Selected areas of Birampur Upazilla under Dinajpur District" for partial fulfillment for the level of Masters of Science in Agricultural Economics under the Department of Agricultural Economics and Social Sciences of CVASU, Bangladesh.

**CHAPTER-III**

# METHODOLOGY OF THE STUDY

## 3.1: Study area

The study was led in Birampur Upazila in Dinajpur District which is about 211.81 square km, situated in the middle 25°18' and 25°29' north scopes and in the middle 88°50' and 89°05'east longitudes.



**Figure-1: Location of the study area**

In Birampur Upazilla, a large portion of the homesteads are arranged close to the house. A portion of the homesteads are isolated from the house. For improved faming framework, transport offices and different offices are considered during site determination for farming.

## 3.2: Study period

## The investigation was completed in Upazila Birampur, Dinajpur during period from 15 January to 15 June, 2020. During this period, 45 ranches were chosen for study &data were collected on possibilities and issues of grill cultivating at Birampur upazila by utilizing a meeting plan through eye to eye meeting.

## 3.3: Population and sample size

## All the poultry ranches of the locale occupied with poultry creation were considered as populace and an example size of 45 farm were chosen and divided 3 categories, Flock size-1 (Up to 1500 birds), Flock size- 2 (1500 to 2500 birds), Flock size-3 (Above 2500 birds)

## 3.4 Sampling methods:

## Birampur Upazila of Dinajpur region was chosen in inclination (Non-arbitrary determination). 45 ranches of Birampur upazila were chosen arbitrarily (Stratified random sampling).

## 3.5 Methods of data collection:

Information were gathered through direct meeting plan and recorded in a poll. The timetable was arranged keeping up with significance with the destinations of the examination. Prior to dispatching the overview, the survey was pre-tried and improved appropriately. To gather more sanitized information of different homesteads a coordinated poll was designed.



**Figure- 2: Data collection from farmer.**

## 3.6 Data analysis:

The collected data were analyzed after coding, decoding, summarized. Descriptive and analytical statistical tools and methods such as mean, percentage, standard deviations etc. as well as Pearson’s correlation and multicolinearity test were applied for analyzing the collected data to meet up the study goals and objectives.

# CHAPTER- IV

**RESULT DISCUSSION**

## 4.1 Introduction

## Animal husbandry, dairying and fisheries activities play an important role in national economy and socio-economic development of the country. These activities have contributed to the food basket, nutritional security and household income of the farmers and play a significant role in generating gainful employment. Poultry development in the country has shown rapid progress over the years. In this chapter the researcher describes the result and discussion on findings of the study. The areas of results are examined on socio economic characteristics of broiler farmers, farm profitability of the farms, identifying farming problems and prospects of broiler farming and simultaneously discussed on the respective results in comparison with other respective similar study.

**4.2 Results of the study:**

## In this section the researcher describe the socioeconomic characteristics of broiler farmers, farm profitability of the farms, identifying farming problems and prospects of broiler farming in the study area.

## 4.2.1 Socioeconomic status of the farmers:

## The studied socioeconomic profiles were reported as type of farmers as per land ownership and flock size, Sources of Investment sources, poultry farm management skills, occupational status of the farm owners, Source of drinking water of the farmers, Condition of sanitary latrines, health status of farmers, Monthly household income and expenditure, Current savings and investment Conditions of school-going children etc.

Broiler farming was a pay producing undertaking for practically every one of the farmers. Individuals from all layers of the general public, regardless of religion, training, occupation and financial condition were included. Around 33% of the farmers were educated, the other were unskilled. The greater part was not occupied with other type of occupation and by this occupation their monetary condition was sufficiently sound to keep up with their family.

4**.2.1.1 Types of farmer:**

Now a day a large number of younger and educated youth is practicing broiler farming as creation of subsidiary employment and economic earnings as per their economic capacity. As there have no referral cases to identify types of farmers as per poultry population. So in the present study divided the farmers by their possession of land holdings under their family owner. The study revealed that about 6.67 % were landless farmers and 6.67% marginal, 13.33% small, 26.67% medium & 46.66% were large farmers (Table-6).

**Table-6: Distribution of Broiler farmer’s as per their land holdings.**

|  |  |  |
| --- | --- | --- |
| Particularizes | Number | Percentage |
| Landless (0.00-0.50 Acre) | 3 | 6.67 |
| Marginal (0.51-1.24 Acre) | 3 | 6.67 |
| Small (1.25-2.47 Acre) | 6 | 13.33 |
| Medium (2.48-4.94 Acre) | 12 | 26.67 |
| Large ( 4.95 Acre) | 21 | 46.66 |
| Total | 45 | 100 |

Source: Field survey, 2020

**4.2.1.2 Investment sources & bank loan:**

This study revealed that about 26.66% farmers start their business with their own resource, 11.11% take money from money lender with interest, and 8.89% starts without interest from money lender & rest of them start their business taking money from bank (Table-7).

**Table-7: Investment source & bank loan.**

|  |  |  |  |
| --- | --- | --- | --- |
| Particularizes | | Number | Percentage |
| Own | | 12 | 26.66 |
| Bank loan | <100000 Tk. | 7 | 15.56 |
| 100000-500000 Tk. | 9 | 20 |
| 500000 Tk.< | 8 | 17.78 |
| With interest from money lender | | 5 | 11.11 |
| Without interest from money lender | | 4 | 8.89 |
| Total | | 45 | 100 |

Source: Field survey, 2020

**4.2.1.3 Poultry farm management skill:**

In our study, there are 45 farms of Birampur upazila. These farms are of different places and the owner was also different in education & concern level. Farmers trained from different places and their farm management skill also vary from one another.

**Table-8: Management skill of farm.**

|  |  |  |
| --- | --- | --- |
| **Parameter** | **Number** | **Percentage** |
| High | 14 | 31.11 |
| Medium | 20 | 44.44 |
| Poor | 11 | 24.45 |
| Total | 45 | 100 |

Source: Field survey, 2020

It is seen that 31.11% farmers maintain high management skill, 44.44% medium & 24.45% maintain poor management skill in their farm (Table-8). Skills are measured by evaluating the number of obtained trainings and extend communication to the livestock personnel in the local DLS office.

**4.2.1.4 Occupational status of the farm owners:**

From the underneath table, plainly the fundamental occupation (from which the respondents acquire huge piece of their pay) of 40% respondents was oven cultivating and the leftover 60% respondents associated with broiler farming as their auxiliary occupation. Among these 60% respondents, 37.78% engaged with crop creation, 4.44% engaged with fisheries, 6.67% were business, 8.89% were administration holders, and 2.22% associated with others occupation as their main occupation (Table-9).

**Table -9: Occupational status of respondents**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Occupation | Main | | Subsidiary | |
| No. of respondents | Percentage | No. of respondents | Percentage |
| Broiler farming | 18 | 40 | 27 | 60 |
| Crop production | 17 | 37.78 | 6 | 13.33 |
| Fisheries | 2 | 4.44 | 4 | 8.89 |
| Business | 3 | 6.67 | 7 | 15.56 |
| Services | 4 | 8.89 | 1 | 2.22 |
| Others | 1 | 2.22 | 0 | 0.0 |
| Total | 45 | 100.0 | 45 | 100.00 |

Source: Field survey, 2020

About 40% ranchers themselves were working in their homestead as primary occupation while the relatives of other rancher were additionally working with them in their oven ranch. This is demonstrating that oven cultivating in Birampur Upazila creating work at ranchers and family level.

## 4.2.1.5 Source of drinking water of the farmers:

## Almost all the farmer use safe tube well as drinking water.

## 

## Table-10: Source of drinking water

|  |  |  |
| --- | --- | --- |
| Particularizes | Number | Percentage |
| Own Tube-Well | 36 | 80 |
| Shared In Tube-Well | 3 | 7 |
| Deep Tube-Well | 6 | 13 |
| Total | 45 | 100 |

Source: Field survey, 2020

## In our study, 80% of the farmers have their own tube-well, 7% use shared in tube-well & 13% have deep tube-well (Table-10).

## Figure- 3: Graphical presentation of source of drinking water

## 4.2.1.6: Condition of sanitary latrines

## The study revealed that, all the farmers use sanitary latrines. 26.67% of the farmers use Semi-sanitary and 73.33% use sanitary latrines (Table-11).

## Table- 11: Condition of sanitary latrines.

|  |  |  |
| --- | --- | --- |
| Particularizes | Number | Percentage |
| Non-sanitary | - | - |
| Semi-sanitary | 12 | 26.67 |
| Sanitary | 33 | 73.33 |
| Total | 45 | 100 |

**Source: Field Survey, 2020**

## 4.2.1.7 Health status of farmers:

## About 33.33% of the farmers of our study belong to good health status, about 53.34% have moderate and about 13.33% have poor health status (Table-12).

## Table-12: Health status of broiler farmers.

|  |  |  |
| --- | --- | --- |
| Parameter | Number | Percentage |
| Good | 15 | 33.33 |
| Moderate | 24 | 53.34 |
| Poor | 6 | 13.33 |
| Total | 45 | 100 |

Source: Field survey, 2020

## 4.2.1.8 Monthly household income and expenditure:

The overall monthly income of the farmers increased day by day. Thus positive changes in household income occurred due to the adoption of broiler farming in Birampur Upazila.

## 4.2.1.9 Current savings and investment Conditions:

## The percentage of exchange of cash in hand and savings with banks were increased by adoption of broiler farming. These changes were bearing a direct financial impact on investment in broiler business.

## 4.2.1.10: Conditions of school-going children

From the study it has been found among 112 children (above 5 years) of 45 broiler farmers 70 are boys and 52 are girls. Most of the respondents expressed that the education expenses of their children which was affordable with their income from broiler farming.

**Table-13**: **Conditions of school-going children.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Particularizes | Boys | | Girls | |
| Number | Percentage | Number | Percentage |
| Primary level | 30 | 42.86 | 24 | 46.15 |
| High Secondary School | 25 | 35.71 | 15 | 28.85 |
| College level | 10 | 14.29 | 6 | 11.54 |
| University level | 4 | 5.71 | 2 | 3.85 |
| Out of educational  institution | 1 | 1.43 | 5 | 9.61 |
| Total= | 70 | 100 | 52 | 100 |

Source: Field survey, 2020

Educational background of the child of 45 respondents, as observed in the study, 98.57% of boys & 90.49% of girls are engaged in education & rest 1.43% of boys & 9.61% of girls are out of education, suggesting that the maximum broiler farmer’s child were within the primary level of education (Table-13).

## 4.2.1.11 Poultry population and flock size of selected farms:

## Poultry population of selected 45 farmers is given below by flock size with respective farm ID number and owners name in the study area.

## Table -14: Distribution of broiler farmers as per flock size and number of birds.

|  |  |  |  |
| --- | --- | --- | --- |
| Particular of flock | Number of farms | Per cent of farmer | Number of bird per farm |
| Flock size-1(Up to 1500 birds) | 11 | 24.44 | 1290 |
| Flock size-2(1500 to 2500 birds) | 16 | 35.56 | 2094 |
| Flock size-3(Above 2500 birds) | 18 | 40.00 | 3917 |
| ALL | 45 | 100.00 | 2434 |

Source: Field Survey, 2020

## The selected broiler farms are 3 categorized as per number of birds reared under a batch of broiler farming practices. Broiler farmers are categorized into 3 flocks like as size-1, flock size-2 and flock size 3 (Table-14).

Figure-04: Graphical presentation of Distribution of broiler farms

## The result of the above table indicated that, most of the broiler farm operated under flock size-3 is about 40.00 % of total farmers, where flocks-2 had 35.56% and flock size-1 it about 24.44 %. The overall number of bird per flock was found 2634 birds per farm (Table-14).

**4.2.1. 12** **Vaccination program adopted by the Farmers:**

The overall vaccination program are adopted by the farmers and the applied vaccines in different ages of birds as Marek’s (at hatchery), BCRDV, Gumboro (228E),Gumboro (228E),BCRDV and ND-Killed and applied (Table-15).

## 

## Table-15: Vaccination program adopted by the farmers to the birds.

|  |  |  |
| --- | --- | --- |
| **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, 2020

All the farmers reported that, they adopted timely the above vaccines in each batch of broiler farming system in the study area for better performance and reducing mortality of birds.

**4.2.1.13 Marketing information of Broiler of the farmers:**

Broilers in this area were raised and sold when age at 5 weeks either at the nearby market or at the rancher doorstep to individual and neighborhood merchants. They noticed on Day Old Chicks (DOC) price, Feed cost and live broiler selling value accounted in Table-16.The average DOC price is accounted Tk. 29.81 which on higher in flock size-1, considering all flock per kg ready made broiler feed price is found Tk. 35.56 and it also higher (Tk.35.82) in flock-1.

**Table-16: Marketing information per bird of the broiler farms.**

|  |  |  |  |
| --- | --- | --- | --- |
| Particular of flock | **Price per DOC** | **Feed price**  **per Kg** | **Price per kg**  **live bird** |
| Flock size-1(Up to 1500 birds) | 30.09 | 35.82 | 129.73 |
| Flock size-2(1500 to 2500 birds) | 29.56 | 35.25 | 129.25 |
| Flock size-3(Above 2500 birds) | 29.78 | 35.61 | 129.67 |
| All average | **29.81** | **35.56** | **129.55** |

Source: Field survey, 2020

The ammounted per kg live broiler price is found Tk. 129.55 where the farmer’s under flock -3 got better price than other flocks (Table-16).

**4.3 Performances of broiler chickens of the farms:**

Primarily the farm wise overall parameters of performances of the broiler chicken were examined mentioned in the following table like as marketable body wt (kg), Feed intake (Kg)/bird, FCR, Mortality rate (%), Livability (%), Broiler Performance Efficiency Factor ( BPEF), Broiler Farm Economy Index (BFEI), Per bird Cost and return, net return per bird, BCR etc. Then flock wise summarized average value of each parameter was estimated and put them in Table 17 for economic consideration and result analysis.

**4.4 Measures of performance efficiency in broilers:**

In this section, flock size wise broiler performance efficiency is measured by evaluating live bodyweight, feed intake, Feed Conversion Ratio (FCR), rate of mortality & liability, Broiler Performance Efficiency Factor (BPEF), Broiler Performance Efficiency Factor (BPEF) to evaluate economic performance indicators.

**Table -17: Performances of broiler chickens of the farms**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Flock Size | Body Wt (kg) | Feed intake  (Kg)/bird | FCR | Mortality (%) | Livability (%) | Broiler Performance Efficiency Factor  ( BPEF) | Broiler Farm Economy Index (BFEI) |
| **FlockSize-1** | 1.95 | 3.25 | 1.67 | 2.82 | 97.18 | 116.62 | 3.24 |
| **FlockSize-2** | 2.01 | 3.28 | 1.63 | 2.70 | 97.30 | 123.51 | 3.43 |
| **FlockSize-3** | 1.99 | 3.27 | 1.65 | 2.91 | 97.09 | 121.21 | 3.36 |
| **ALL** | 1.98 | 3.27 | 1.65 | 2.81 | 97.19 | 120.45 | 3.34 |

Source: Source: Field Survey, 2020

**4.4.1 Body weight & Feed intake:**

Information of day old chick weight and live broiler weight at market age was gathered. Day old Chick with 20 to 75gm body weight was stacked in the homesteads and birds were sold with 1200 to 1800gm body weight at advertising. Broiler chicken was advertising at 30 days old to 35 days. In our investigation most elevated body weight was discovered 2.01 kg under flock 2 while least body weight 1.95 kg was found in flock -2 (Table-17).

Figure -04 expresses flock wise the graphical presentation of per bird average feed intake and body weight gain of broiler farming enterprises.\

**Figure-05: Graphical presentation of flock wise body weight and feed intake**

**4.4.2: Farm wise Feed Efficiency or Feed Conversion Ratio**

Total quantity of feed consumed per bird in kg

**FCR** =

Body weight gain per bird in kg

A value of 1.8 or lesser at 5 weeks of age is preferable for selling as per consumer demand size it.

**Figure-06: Graphical presentation of flock wise per bird FCR of broiler**

Figure -05 expresses flock wise the graphical presentation of per bird average feed intake and body weight gain of broiler farming enterprises. In this study the highest FCR per bird was found 1.67 in flock-1 whereas it is found lowest 1.63 in flock-2 that indicates flock-2 is better than other 2 flock (Table-17).

**4.4.3 Mortality rate:**

Mortality rate is termed as the number of birds dying under a batch up to marketing age divided by the number of beginning number of birds in a batch of broiler farming which is express in percentage.. The mortality rate of selected farms under flock -3 is found 2.91 per cent which is discovered higher. The mortality in this examination is found lower of the farms under flock-1 and the rate is about 2.82 % which indicates flock-1 farms is better perform in management of birds (Table- 17) .

**4.4.4 Livability:**

Number of birds sold

Livability % = x 100

Number of birds at the beginning

The livability rate of selected farms under flock-3 is found 97.18 per cent which is higher about. The mortality in this examination is found lower of the farms under flock-3 and the rate is about 97.09 per cent which indicates flock-1 farms is better perform in management of birds (Table- 17) .

**Figure-07: Graphical presentation of flock wise rate of liability and mortality of broiler**

Figure -06 expresses flock wise the graphical presentation of per bird average liability and mortality per cent of broiler farming enterprises. In this study it is found mortality and livability are almost same in the boiler farming in the study region.

**4.4.5: Broiler Performance Efficiency Factor (BPEF)**

Live weight in kg

BPEF = x 100

Feed efficiency

Higher the value better will be the index. A value of 100 or more is desirable. The average Broiler Performance Efficiency Factor (BPEF) of selected farms under different flock size went from 116.62 to 123.51.This examination is discovered it is higher in flock size -2 and lower in flock size-1 though it varied individual farm to farm under each flock. Thus the farm under flock size-2 is performing better in management aspect of farms (Table -17).

**Figure 08: Graphical presentation of flock wise BPEF and BFEI of broiler**

**4.4.6 Broiler Farm Economy Index (BFEI):**

Average live weight (kg) X percent of livability

BFEI =

Feed efficiency X growing period (days)

A BFEI worth of 2.0 or more demonstrates better administration of the farm and ideal execution of the birds. The average BFEI of selected farms under different flock size went from 3.24 to 3.43. This examination is discovered it is higher in flock size -2 (3.43) and lower in flock size-1 (3.24) though it varied individual farm to farm under each flock. Thus farms under flock-2 are performing better in management aspect of farms (Table-17). Figure-10 expresses flock wise the graphical presentation of per bird average BPEF and BFEI of broiler farming enterprises. In this study it is found that both in BPEF and BFEI the farms under flock -2 are administered comparatively well than other flocks.

**4.5 Cost and Return Cost of Production broiler:**

The purpose of cost estimation is to predict the quantity, cost, and price of all the resources required from broiler farming from DOC to last day of marketable age of birds in the farm. Cost estimates are used to minimize per bid cost of rearing by evaluating the alternative sources of all resources require in the farm business. On the other hand, the return from farm business is term as the performance measure used to evaluate the efficiency or profitability of an investment or to compare the efficiency of a number of different investments alternatives. In this study return per bird is estimated by adding up all sale proceeds of rearing per bird on a examination particular of batch of broiler farming relative to all the required cost of farming.

**4.5.1 Cost of rearing per bird:**

Cost estimated per bird including lodging, inoculation, drug, power, feed and chick cost. Contingent upon the accessibility, market interest of breeds, DOC, Feed, Litter, and Medicine and so on differed time to time according to creation capacity and accessibility in the separate market.

**Total Cost (TC)**

**Cost involves per bird =**

**Total number of bird**

**4.5.2 Parameters to compute the cost of production of broiler:**

Data in the Table -18 revel that the average live weights per bird was found about 1.95, 2.01 and 1.99 kg respective flock size-1, flock size-2 and flock size-3, respectively.

**Table-18: Estimation cost of production per broiler bird.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Particulars of Cost** | **Flock Sizes of the farm** | | | **Pooled**  **(N=45)** |
| **Flock size-1**  **(N=11)** | **Flock size-2 (N=16)** | **Flock size-3**  **(N=18)** |
| Live weight per bird (Kg): | 1.95 | 2.01 | 1.99 | 1.99 |
| Feed intake (Kg)/bird | 3.25 | 3.28 | 3.27 | 3.27 |
| Average Flock size | 1291 | 2094 | 3917 | 2434 |
| Livability rate (%) | 97.18 | 97.30 | 97.09 | 97.19 |
| Mortality rate (%) | 2.82 | 2.70 | 2.91 | 2.81 |
| Feed Conversion Ratio FCR | 1.67 | 1.63 | 1.65 | 1.65 |
| Marketing age (in days): | 33 | 34 | 35 | 34 |
| Broiler Performance Efficiency Factor ( BPEF) | 116.62 | 123.52 | 121.21 | 120.45 |
| Broiler Farm Economy Index (BFEI) | 3.24 | 3.43 | 3.15 | 3.27 |

Source: Field survey, 2020.

It was found that flock wise average feed intake per bird was 3.25, 3.28 and 3.27 kg, respectively. Flock wise the livability and mortality rate was found 97.18, 97.30, 97.09 per cent and 2.82, 2.70, 2.91 per cent respectively which are directly instigate the cost of production of broiler in farm business.

Flock wise the Feed Conversion Ratio (FCR) were recorded as 1.67, 1.63, 1.65 and the average marketing age of birds was 33, 34, 35 days, respectively. The Broiler Performance Efficiency Factor (BPEF) and the Broiler Farm Economy Index (BFEI) were found 116.62, 123.52, 121.21 and 3.24, 3.43, 3.15 respectively. Borah and Halim (2017) reported that on an average, the broiler chicken meat produced per bird was 2.18 kilogram. Dahake et al. (2016) reported that the benefit-cost ratio was 1.15. Singh (2017) reported that the average body weight at 42.21 days of age was 1.80 and FCR was 1.60 and the livability per cent was 95.00 per cent.

**4.5.3 Estimation of per bird cost of broiler farming:**

The results in Table-19 indicate that the average per cent of fixed cost and variable cost in total cost was accounted about 2.0 and 98 per cent.

**Table-19: Estimation of per bird cost of broiler farming enterprises.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Particulars of Cost** | **Flock Sizes of Farm** | | | **Pooled**  **(N=45)** |
| **Flock size-1**  **(N=11)** | **Flock size-2 (N=16)** | **Flock size-3**  **(N=18)** |
| **A. Variable Cost:** |  |  |  |  |
| Chick Cost | 30.00 | 29.56 | 29.67 | 29.74 |
| Feed Cost | 115.83 | 115.23 | 116.64 | 115.90 |
| Medicine Cost | 1.24 | 1.18 | 0.93 | 1.12 |
| Mineral, Vitamins and premix etc. | 0.18 | 0.19 | 0.17 | 0.8 |
| Shed Cleaning Cost | 0.39 | 0.36 | 0.30 | 0.35 |
| Litter Cost | 0.78 | 0.76 | 0.63 | 0.72 |
| Labour Cost | 1.54 | 1.41 | 1.22 | 1.39 |
| Disinfectant | 0.15 | 0.16 | 0.17 | 0.16 |
| Brooding & Heating cost | 0.55 | 0.52 | 0.43 | 0.5 |
| Electricity Charges | 0.38 | 0.35 | 0.29 | 0.34 |
| Miscellaneous Expenses | 0.48 | 0.50 | 0.50 | 0.49 |
| Interest on Working Capital | 3.74 | 4.38 | 3.96 | 4.03 |
| Total Variable Cost: | 155.26 | 154.60 | 154.91 | 154.92 |
| **B. Fixed Cost:** | | | | |
| Rental Value of land/house: | 0.89 | 0.90 | 0.88 | 089 |
| Depreciation on Fixed Assets | 0.75 | 0.74 | 0.72 | 0.74 |
| Repairs and Maintenance | 0.50 | 0.49 | 0.48 | 0.49 |
| Interest on Fixed Capital: | 0.97 | 0.97 | 0.95 | 0.96 |
| Total Fixed Cost | 3.11 | 3.11 | 3.03 | 3.17 |
| Total Cost (TC) per bird | 158.37 | 157.71 | 157.94 | 158.01 |
| Average live (A+B) weight of Chicken | 1.95 | 2.01 | 1.99 | 1.98 |
| Cost of production per Kg of live broiler meat | 81.22 | 78.46 | 79.37 | 79.68 |

Source: Field survey, 2020.

This is in consonance with the findings of Akther et al. (2009) where the authors reported that the fixed cost accounted for 3.20 per cent and 96.80 per cent was variable cost. Whereas Kumar (2016) reported that, the fixed and variable cost share in total cost of production 3.76 and 96.23 were in non-contract farming.

The flock size wise share of fixed and variable cost broiler farming amounted to 2.01, 1.97, 1.92 per cent and 97.99, 98.03, 98.08 per cent of total cost and the amounted Total Cost (TC) per bird was accounted Tk.158.37, Tk.157.71, and Tk 157.94 of respective flock siz-1, Flock size-2 and Flock size-3. The average production cost per kilogram of live broiler weight was amounted in Tk.81.22, Tk.78.46 and Tk. 79.37 in the respective sizes of flock whereas Dahake et al. (2016) reported that the production cost of one kilogram live broiler weight was Rs.63.31 in non-contract farming. Kumar (2016) reported that Rs.53.97 and Rs.4.42 were the production cost per kilogram in non-contract and contract farming respectively.

The findings of the above examination it was found that, per bird even per kg live broiler production cost is lower than that of the farms under flock size-2 of broiler farming.

Figure -09: Graphical Presentation of cost of production per bird of broiler

Figure-11 expresses the flock wise the graphical presentation of per bird average cost of production of broiler farming enterprises. In this study it is found that, the farms under flock size -2 are performed comparatively well than other flocks in consideration in cost of production per bird.

**4.5.4 Per bird return of broiler farming:**

The data in the Table-20 indicate that the overall gross return per bird is Tk. 251.06 and flock wise returns from sales of broiler birds accounted Tk. 247.62, Tk. 253.19 and Tk. 252.36 which was accounted 98.11, 96.64, 97.82 per cent of the gross return, respectively and as whole it was 97.52 per cent.

**Table-20: Estimation of per bird return of broiler farming enterprises.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Particulars of Return**  **(in Taka)** | **Flock Sizes of Farm ( Number of Birds)** | | | **Pooled**  **(N=45)** |
| **Flock size-1**  **(N=11)** | **Flock size-2 (N=16)** | **Flock size-3**  **(N=18)** |
| Sale of Broiler birds | 247.62 | 253.19 | 252.36 | 251.06 |
| Sale of Manure | 3.50 | 4.50 | 4.20 | 4.07 |
| Sale of empty bags | 1.50 | 2.10 | 1.80 | 1.80 |
| A. Gross Returns | 252.40 | 261.98 | 257.98 | 257.45 |
| B. Gross return per kg live  broiler | 129.44 | 130.34 | 129.64 | 130.03 |
| C. Gross Margin | 97.14 | 107.38 | 103.07 | 102.53 |
| C. Net Return (NR) | 94.03 | 104.27 | 100.04 | 99.44 |
| E. BCR | 1.59 | 1.66 | 1.63 | 1.63 |

Source: Field survey, 2020.

The flock wise gross return per kilogram live broiler meat was Tk.129.44, TK.130.34 and Tk. 129.64, respectively. Rahman et al. (2016) reported that 97.75 per cent of the obtained gross return was from the sale of broiler birds. Kumar (2016) reported that 97.86 and 77.97 per cent of the gross return was from the sale of broiler birds whereas Rs.69.13 and Rs.6.41 were the gross returns per kilogram broiler live weight on non-contract and contract farming systems respectively. Reddy (2016) reported that 97.90 and 84.18 per cent of gross returns was from the sale of broiler birds whereas Rs.64.83 and Rs.4.87 were the gross returns per kilogram on non-contract and contract farming systems respectively. Gopala et al. (2017) reported that in contract farming Rs.6.46 was the gross returns per kilogram which constituted 88.85 per cent of the returns from the sale of broiler birds and 11.15 per cent was from the sale of manure and gunny bags.

The gross returns obtained in the present study were comparatively higher than that of earlier reports and this could be due to the higher market price and demand in the studied region. The data in the Table-20 also indicates the flock wise net returns per kilogram live weight of birds were found Tk. 94.03, Tk.104.27, and Tk.100.04; respectively where as the overall net returns per bird in the study area was found Tk. 99.44, respectively. The Reddy (2016) reported that the net return was an Rs.8.84 and Rs.1.51 for non-contract and contract farm which is in consonance with the findings of the present study.

Kumar (2016) reported that Rs.7.15 and Rs.1.99 were the net return in non-contract and contract farming respectively. The authors also opined that return depends most often on market demand for broiler chicken.

Figure-09 expresses the flock wise the graphical presentation of cost and returns per bird average of broiler farming.

**Figure-10: Graphical presentation of per bird cost and returns of broiler**

In this study, it is found that, the farms under flock size-2 are performed is comparatively well than that of other flocks in consideration in cost and returns of production per bird.

**4.5.5 Benefit Cost Ratio (BCR):**

A benefit-cost ratio (BCR) is an indicator showing the relationship between the relative costs and benefits of a proposal or investment of a farm business.

Gross Benefit

**Benefit Cost Ratio (BCR)** =

Gross Cost

BCR<1, indicates option generate losses

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

BCR>1, indicates investment option is profitable

**Figure-11: Graphical presentation of BCR of Broiler Farming**

**4.6 Data Analysis:**

Descriptive statistics Descriptive statistics like sum, average, percentage, etc. were used to show the performance of broiler fanning. Profitability analysis was done on the basis of variable cost, fixed cost, etc. Table-21, it was telling about the mean, standard deviation, minimum and maximum value of all studied variables. The average body weight, feed price, selling price, per bird cost, per bird return were accounted 1.99 kg, Tk. 35.47, Tk.129.56, Tk.157.96 and Tk.258.04, respectively. Table-21 describes the all studied variables across the flock size.

**Table-21: Descriptive statistics of different parameters/variables per bird.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Parameters** | **Mean** | **Standard deviation** | **Minimum** | **Maximum** |
| Body wt (kg) | 1.99 | 0.11 | 1.80 | 2.20 |
| Flock size | 2626.67 | 1238.29 | 1000 | 5000 |
| Cost of day old chick | 29.71 | 0.69 | 29 | 31.00 |
| Feed price per kg | 35.47 | 0.73 | 34 | 37.00 |
| Selling price of live bird | 129.56 | 1.57 | 127 | 132.00 |
| Feed intake per bird (kg) | 3.27 | 0.09 | 3.10 | 3.40 |
| FCR | 1.65 | 0.06 | 1.55 | 1.77 |
| Mortality rate | 2.81 | 0.35 | 2.10 | 3.50 |
| Livability rate | 97.19 | 0.35 | 96.50 | 97.90 |
| Per bird cost | 157.96 | 3.60 | 149.80 | 165.40 |
| Per bird return | 258.04 | 16.07 | 230.40 | 286.00 |
| Net profit | 100.07 | 14.35 | 72.92 | 124.00 |

**Source: Field survey data, 2020**

The flocks were consists of Flock-1 (1500), Flock-2 (1501 to 2500) and Flock-3 (> 2500) birds. It was observed that there was no significant mean difference of all variables for flock size.

**Table-22: Distribution of all variables across the flock size.**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Parameters** | **Flock-1**  **(Mean SD)** | **Flock-2**  **(Mean SD)** | **Flock-3**  **(Mean SD)** | **F-value** | **P- value** |
| Body weight(kg) | 1.95 0.10 | 2.01 0.10 | 1.99 0 .13 | 1.15 | 0.326 |
| Cost of day old chick (Tk.) | 30 0.77 | 29.56 0.73 | 29.67 0.59 | 1.38 | 0.264 |
| Feed price per kg | 35.64 0.67 | 35.13 0.81 | 35.67 0.59 | 3.01 | 0.06 |
| Selling price of live bird | 129.55 1.57 | 129.25 1.65 | 129.83 1.54 | 0.57 | 0.57 |
| Feed intake per bird (kg) | 3.25 0.086 | 3.28 0.09 | 3.27 0.10 | 0.41 | 0.67 |
| FCR | 1.67 0.06 | 1.63 0.046 | 1.65 0.07 | 1.55 | 0.22 |
| Mortality rate | 2.82 0.49 | 2.70 0.29 | 2.91 0.27 | 1.63 | 0.21 |
| Livability rate | 97.18 0.49 | 97.30 0.29 | 97.09 0.27 | 1.63 | 0.21 |
| Per bird cost | 158.37 3.02 | 157.71 4.55 | 157.94 3.11 | 0.11 | 0.90 |
| Per bird return | 252.40 13.85 | 261.98 14.62 | 257.98 18.23 | 1.17 | 0.32 |
| Net profit | 94.03 13.23 | 104.27 12.01 | 100.04 16.20 | 1.72 | 0.19 |
| BCR | 1.59 0.08 | 1.66 0.07 | 1.63 0.10 | 1.95 | 0.16 |

Source: Field survey data, 2020

Table-23 shows the correlation between body weight and other covariates. It portrays that body weight was positively significantly correlated with feed intake, per bird costs, per bird return, net profit and cost benefit ratio (BCR). On the other hand, body weight was negatively significantly correlated with feed price and feed conversion ratio (FCR). Table-24 gives the parameter estimate of Pearson’s correlation co-efficient. It was good fit and the adjusted was 0.99.

**Table-23: Flock Size Wise Pearson’s correlation between body weight and other covariates.**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Parameters** | **body wt (kg)** | **Flock size** | **DOC cost (Tk.)** | **Feed price per kg** | **Selling price per live bird (Tk.** | **Feed intake per bird (Kg)** | **FCR** | **Mortality rate (%)** | **Livability**  **rate (%)** | **Per bird costs**  **( Tk)** | **Per bird returns**  **Tk)** | **Net profit (Tk)** | **BCR** |
| Body wt (kg) | 1 |  |  |  |  |  |  |  |  |  |  |  |  |
| Flock size | 0.04 | 1 |  |  |  |  |  |  |  |  |  |  |  |
| Cost of day old chick | 0.02 | -0.12 | 1 |  |  |  |  |  |  |  |  |  |  |
| Feed price per kg | -0.31\* | 0.05 | 0.09 | 1 |  |  |  |  |  |  |  |  |  |
| selling price of live bird | 0.20 | 0.19 | 0.09 | 0.05 | 1 |  |  |  |  |  |  |  |  |
| Feed intake per bird (kg) | 0.85\*\* | 0.04 | 0.05 | -0.24 | 0.20 | 1 |  |  |  |  |  |  |  |
| FCR | -0.91\*\* | -0.02 | 0.03 | 0.31\* | -0.17 | -0.55\*\* | 1 |  |  |  |  |  |  |
| Mortality rate (%) | 0.12 | 0.14 | 0.39\*\* | 0.15 | 0.08 | 0.05 | -0.14 | 1 |  |  |  |  |  |
| Livability rate (%) | -0.12 | -0.14 | -0.39\*\* | -0.15 | -0.08 | -0.05 | 0.14 | -1.0\*\* | 1 |  |  |  |  |
| Per bird costs | 0.55\*\* | -0.10 | 0.24 | 0.24 | 0.08 | 0.68\*\* | -0.32\* | 0.17 | -0.17 | 1 |  |  |  |
| Per bird gross returns | 0.93\*\* | 0.04 | 0.01 | -0.26 | 0.30\* | 0.73\*\* | -0.89\*\* | 0.10 | -0.10 | 0.57\*\* | 1 |  |  |
| Net return per bird | 0.90\*\* | 0.07 | -0.05 | -0.36\* | 0.32\* | 0.65\*\* | -0.92\*\* | 0.07 | -0.07 | 0.38\*\* | 0.98\*\* | 1 |  |
| BCR | 0.85\*\* | 0.08 | -0.09 | -0.42\*\* | 0.32\* | 0.56\*\* | -0.91\*\* | 0.04 | -0.04 | 0.22 | 0.93\*\* | 0.99\*\* | 1 |

Source: Field survey, 2020\* Significant at P<0.05; \*\* Significant at P<0.1

All assumptions were satisfied of this good fitted model. Multicolinearity was checked by variance inflation factor (VIF) and no multicolinearity wasobserved in this model (VIF<1).

**Table-24: Flock size wise Parameter estimates of body weight and other covariates.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Parameters** | **Estimate** | **Standard error** | **P value** | **VIF** |
| Intercept | 1.99548 | 0.06380 | <.0001 | 0 |
| Feed intake | 0.60874 | 0.01232 | <.0001 | 1.44 |
| FCR | -1.21208 | 0.01942 | <.0001 | 1.41 |

Source: Field survey data, 2020

It was observed body weight was significantly associated with feed intake and FCR. Due to one unit increases of feed intake the body weight was increased 0.61 gm. Again body weight and feed conversion ratio was inversely related.

**CHAPTER-V**

**PROBLEMS AND PROSPECTS OF BROILER FARMING**

**5.1 Problems of broiler farming in Birampur Upazila:**

## Practically all the broiler farm owners dealt with numerous issues in rearing and marketing of broiler birds. The serious issues looked by the broiler farm owners included as low status of oven raising, oven contaminates climate, broiler make family disturbance, out-break of sickness, non-accessibility of medication and antibody. Insufficient information on broiler diet, low market price of live bird, promulgation against broiler meat, non-accessibility of quality day-old-chicks, excessive cost of feed, unstable price of chicks, power issue, space issue, the executives issue and assault by savage animals, absence of market data and lower market rate as well as troublesome political condition, tips and gift etc are reported by the farmers. Some crucial reported problems in the study area are forwarding as under:

## 5.1.1: Irregular supply and fluctuation of price of chicks and live broiler

The expense of day old chicks is generally unsteady consistently. During 2020, it fluctuated from BDT 18/ - to BDT 45/ - per DOC. Live oven was likewise somewhat unsound around the same time. It differed from BDT-105/ - to BDT 145/ - per Kg live grill at maker level. This variety made ranchers miserable and serous dissatisfaction. Value shakiness of the two chicks and live grill was second imperatives (Kawsar, 2014). Change of market cost of grills influenced the benefit, comprised for certain analysts (Raha 2007; Begum and Alam 2009).

**5.1.2: Variability in chick quality**

Absence of chick's quality is a typical grumbling to the ranchers. Chick quality was the most elevated in scoring among the imperatives of the ranchers (Kawsar et al., 2013 and Chand et al., 2009). Most of the farmers reported about variability and irregular supply of Day Old Chicks (DOC). Various variables identify with breeder farms and incubation facility the board influences the quality chick's creation (Chowdhury, 2013). The chicks are conveyed to vendors and specialists after purported reviewing. Chicks of various grades like A, B,C, and so forth unmistakably demonstrate variety in quality (Chowdhury, 2011). Thus, farmers are getting diverse quality chicks which influence execution. This makes ranchers miserable during the executives and advertising.

**5.1.3 Variability in feed quality:**

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

**5.1.4: Un-organized marketing system**

Since the ranchers are not efficient and there is no administrative body for them, they need to follow the customary arrangement of advertising which allows this possibility little dealing. Ranchers are denied from legitimate costs of their items as often as possible. The agents exploit. Advertising of live oven was additionally an issue, and 37% grill creation is influenced of limited scope oven cultivating (Emaikwu et al., 2011).

**5.1.5 Summer stress affecting productivity and survivability**

Fascinating high yielding strains of oven chicks are not heat lenient. The issues are emerged in summer due to temperature raised 35-420C.Therefore, efficiency and survivability are diminished. Along these lines, a few methodologies ought to be applied against heat pressure (Lin et al., 2006). Das et al. (2008) likewise revealed that little ranchers saved their grills in open sided house for limiting warmth stress.

**5.1.6 Treatment of diseases**

In spite of the fact that, counter action is the way to make accomplishment in battling infections (Chowdhury, 1984). Treatment of unhealthy birds might be applied now and again. Nonetheless, the quacks and nonqualified work force ought not be engaged with veterinary practices that might influence adversely in poultry cultivating just as productivity.

**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 significant infections can be forestalling by immunization. Infection episode was one of the significant requirements for the advancement of grill cultivates in Birampur. These sicknesses was forestalled by appropriate inoculation customized in the investigation region yet excessive cost of antibody, ill-advised capacity and inaccessible stock hamper the avoidance of illnesses pervasiveness in examination region. The amount and nature of antibodies accessible against the significant sicknesses were not up to the ideal norm. In any case, the power declined from the locale animals office to the Thana animals office lastly tumbles to between 45-80% strength at the client's level.

**5.1.9: Poor National policy**

Our national policy is so weak that hamper the development of broiler farming. Lack of Govt. influence works behind that.

There are also some problems remain in broiler farming in the study areas like as under-

* Shortage of quality feed &proper nutrition.
* Lack of transport facilities and timely marketing.
* 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.
* Influence by feed supplying company.

**5.1.10 Impact of COVID-19 on broiler farming:**

The effect of COVID-19 on Bangladesh poultry area is plainly apparent. The Covid-19 has terribly disturbed the poultry creation framework and made an undesirable bungle between the interest and supply of poultry items. There is a negative development in ranch information sources and end results. A particular effect of COVID-19 on the poultry area was a change in live chicken and egg costs preceding, during and following lockdown (January–June 2020). During this period, the public authority requested conclusion, all things considered, and foundations other than clinics, kitchen markets (kachar bazar), drug stores, and other crisis and wellbeing related administrations (World Health Organization, 2020b). These have brought about some inescapable adverse results. In general, feed creation diminished by close 40% among April and June 2020 (Saeque, 2020). One assessment found that it came about in with regards to 35% drop in business day-old chicks (DOC), eggs and meat creation in our nation (BPICC, 2020). According to BPICC (2020) the complete misfortune in the poultry area is around 7000 crores and around 25-30% of the business visionaries lost their functioning capital in the course of the last 4/5 months because of Covid-19.

It is expected that the danger of 20-30% credit acknowledgment from sellers/ranchers and others (BPICC, 2020). Adverse consequence has been seen on business grills birds creation and it was considerably more extreme during April to June, 2020. Value variance as yet exists in DOC and experience birds' cost. The conclusion of schools, eateries, shops and markets, constraints on open get-togethers and travel have decreased interest for creature items (Marchant-Forde and Boyle, 2020). Diseases among laborers and resulting conclusion of slaughter houses and food preparing plant has decreased butchering and handling throughput (Good, 2020). These elements brought about the overloading or separating of animals and animal items (Huffstutter, 2020), with ranchers eradicating their homesteads to decrease the expenses of keeping up with animal populaces which they could neither feed nor exchange (Barrett, 2020). Unavoidably, this influenced poultry creation and exchange (Mulder, 2020). As of late government has endorsed more than 700 cores to offer help to 620,000 poultry and dairy farmers.

**5.2 Prospects of broiler farming:**

Poultry industry is one of the most promising sectors for Bangladesh. This industry can provide various opportunities to increase GDP growth rate plus equitable distribution through arranging food security as well as ensuring self -employment, creating purchasing power and reducing poverty at a large scale. The following are the outlines of future prospects of broiler industry:

**5.2.1 Generate additional income**

Broiler farmers react that oven cultivating is an extra pay inside existing residence of them. It was apparent that the entirety of the minimal and little homestead holders viewed cultivating as an extra pay (Miah, 1990).

**5.2.2 Profitable Cash earning 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: Treat 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 Treat Broiler as an 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 and short duration capital:**

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

**5.2.6 Increase importance of Broiler Farming in Bangladesh**

Farming is the foundation of the economy of Bangladesh. Farming contributes 21.84% interest for adjusted eating regimen. Poultry exceptionally grill is one of the significant sections of agribusiness in Bangladesh. The term poultry is utilized to assign those types of bird which render man a financial help and duplicate openly under his appropriate consideration. At present oven cultivating is delivered for business points of view.

In Bangladesh destitution, joblessness and unhealthiness is the significant impediment for advancement. Here significant part of populace lives beneath the destitution line. In our country many taught individuals are joblessness. Our youngsters and moms are casualties of lack of healthy sustenance. At the present circumstance grill cultivating is a decent method of meeting the protein hole, business age and neediness mitigation in the lack conceivable time. It likewise gives monetary advantage. In this way, oven cultivating is one of the most significant arising agro-based ventures in the country.

**CHAPTER-V**I

**CONCLUSIONS AND RECOMMENDATIONS**

**Conclusions**

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. 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 very risky farm business then other industrial sector. The present study was carried out to make socio-economic analysis of Broiler farming enterprises at Birampur upazilla under Dinajpur district. In total 45 broiler farms came under study for detail examining socio-economic parameters under three different flock sizes. The result showed that the overall broiler farming practices in Birampur Upazilla is profitable and it was found higher in the farms under flock size-2. The average feed intake was almost same and found in average 3.27 kg. The average FCR was found 1.65 where it was found highest 1.67 in flock-1 whereas it was lowest 1.63 in flock-2 that indicates flock-2 is found better than'-other two flocks. The average mortality and livability rate was found 2.81% and 97.19% whereas Broiler performance efficiency factor and Broiler Farm Economy Index were found 120.45 and 3.34 respectively. The accounted BCR of all flock almost same though flock-2 is more profitable than others and it stood at 1.59, 1.66 and 1.63 respective flock sizes which are significant rate of return. But farmers of these farm business face in various problems and facing environmental hazard in rural areas. Poultry sector is really helpful for income generation, women empowerment and nutritional improvement for the family.

**Recommendations**

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

1. Government should screen the sensible cost of poultry feed and day old chicks.
2. Facilities of the institutional advance to the proprietors of poultry homesteads ought to be made with the goal that they can get the credit on simple terms.
3. Hatcheries should build the stock of day old chicks.
4. For legitimate lodging, sustenance, infectious prevention, promoting and the board DLS ought to give transient preparing to the proprietors of the poultry ranches.
5. The normal stockpile of power ought to be guaranteed.
6. Small and Medium Enterprise ranchers should have essentially least information for poultry farming practices. Non prepared ranchers ought not be enlisted for cultivating.
7. Training of sellers and specialists need be taken for keeping up with the nature of sources of info.
8. Efficient summer the board of grills is the important to battle intense warmth stress in oven creation. Distinctive taking care of procedures; diurnal taking care of examples, decision taking care of from various feed fixings (wealthy in protein or in energy), wet taking care of and so forth might be applied to diminish the impacts of warmth stress.
9. A strategy ought to be created by the public authority to eliminate unforeseen development advertisers and antimicrobials if there should arise an occurrence of poultry creation. Mindfulness ought to be created against the utilization of such Antibiotics or Antibiotics development advertisers.
10. Intensive preventive management practices should be adopted by the farmers to get-rid of farm marketing of broiler due to disease infestation.
11. Steps should be taken to ensure the supply of medicine and vaccine at the right time and at reasonable prices. The government should give incentive to the private pharmaceutical industries to come forward to supply necessary medicines and vaccines.
12. Government should provide loans on easy terms and conditions in poultry sector. The support of financial institutions will help broiler farm owners to purchase modern tools and equipment as well as making better housing facilities for the broilers.
13. Availability of quality day-old-chicks at the right time is a major problem in continuing broiler business. Therefore, the breeder farms should make necessary arrangement for timely availability of day-old-chicks at door steps of the broiler farms at reasonable year round stable price.
14. For efficient management of broiler farming, smooth/regular supply of electricity should be ensured.
15. Well-Developed low cost Transportation System should be ensured by the traders. Transportation problem affected traders adversely in broiler marketing. In the study areas, the selected traders demand a suitable and well-developed transportation system for carrying broiler birds. They also suggested reducing transportation cost for broiler transportation.
16. Reasonable Price of Feed: To overcome the feed problem, most of the sample traders suggested that the government and non-government organizations should play a significant role in making provision for adequate broiler feed in the country, that the traders could purchase feed at reasonable price. They also suggested for establishing sufficient feed factory in the study area.

Though all farmers faced many problems in the raising and marketing of Broiler birds under unorganized farming system but it could be concluded that raising and marketing of broiler is a profitable business. The demand for broiler is increasing day by day .As a result, large number of people are coming under contact production and marketing of broiler farming system. Proper and adequate steps should be taken to develop this enterprise. Only the private sector is not enough to develop this enterprise without the government support and its necessary intervention in the development of infrastructural facilities and market for broiler.

## CHAPTER-VI

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**BIOGRAPHY**

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## APPENDIX

**Title: Study on Commercial Broiler farming in Birampur 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 & education.............................

F. Farmer’s economic condition..............................

1. **Husbandry practice:**
   1. Housing: a. Brooder house b. Grower cum finisher house
   2. Feeding:
      * Collection of feed...........................................
      * Storage of feed …..........................................
      * Types of feed...................................................
      * How many times feed supplied daily.............
   3. Watering:
      * Source of water
      * Frequency of water supply

D. Litter materials...................................................

E. Ventilation

a. Sufficient .b. Insufficient

F. Lighting schedule………………………………

G. Bio-security.......................................................

H. Foot bath: ……………………………………...

**3. Number of sheds....................................................**

1. **Incidence of diseases……………………………..**
2. **Management of disease condition:**
   1. Self management
   2. Quack
   3. Veterinary doctor

6 .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....................................