Chapter I:

INTRODUCTION

Bangladesh is a densely populated developing country and its economy mostly depends on agriculture. Agriculture contributes about 18.70 percent in Gross Domestic Product (GDP) (Economic Review 2013). About 47.33% of total human power of Bangladesh relates in agriculture (Economic Review 2013). Livestock is the prominent sector of agriculture and the contribution of this sector in GDP is 3.49% (Economic Review 2013). In Bangladesh cattle are reared by the rural households' not on truly commercial basis but as a component of the mixed farming.

Cattle are the large domesticated bovid having a compound stomach, divided hoof which are raised for meat, milk, hides or for draft purpose.eg (cows, bulls or steer that are kept on a farm or ranch for meat or milk). Among these the beef and dairy breeds are more prominent. Beef cattle include-Angus, Hereford, Shorthorn and dairy cattle include- Jersey, holstein Frisian, Sindhi, Shahiwal, Red Chittagong etc (Alam J, 1995). Cattle feed primarily by grazing on pasture but in modern farming their diet is ordinarily supplemented with prepared animal feeds (Islam,2005).

The majority of rural households have one or two cows which are usually used for draught and milk purpose. But these cattle are of cross breed cows which are genetically larger in size, fast growers and very good milk producers (Islam,2005).

The livestock sector offers important employment and livelihood opportunities particularly for the rural poor, including the functionally landless, many of whom regard livestock as a main livelihood option. About 75 percent people rely on livestock to some extent for their livelihood, which clearly indicates that the poverty reduction potential of the livestock sub-sector is high. According to Bangladesh Economic Review, (2006) the growth rate in GDP in 2004-05 for livestock was the highest of any sub-sector at 7.23%, compared to 0.15% for crops, and 3.65% for fisheries sub-sector. These changes have been prompted by a rapid growth in demand for livestock products due to increase in income, rising population, and urban growth (BBS, 2006). Despite steady progress towards

industrialization, agriculture remains the most important sector in Bangladesh. About 18.70% of Gross Domestic Product (GDP) of the country comes from agriculture sector. Besides, it has indirect contribution to the overall growth of GDP. Many sectors included in broad service sector such as wholesale and retail trade, hotel and restaurants, transport and communication are strongly supported by the agriculture sector. This sector also provides employment for around 47.50% of the total labor force and seems to have managed to feed around 15.36 million people of the country. The development of agriculture sector is very much urgent for poverty reduction, food security and sustainable development of our country (BBS, 2007). Household cross breed rearing provides employment for the poorer segments of the population. The availability of this form of traditional self-employment to rural dwellers, particularly women, is important where there is scarcity of alternative income generating opportunities. Household cross breed rearing thus widen the scope for the poor with limited access to land to enhance their income (Shahinur, 2009). Dairy animals can play a crucial role in household food security, through improved income and nutrition of the low-income groups. Around 3.5 million cattle are slaughtered annually in the country of which 40 percent are imported through cross-border trade. Around 15 million goats are slaughtered annually mostly of local origin. Of the total slaughter of cattle and goats, around 40 percent is performed during Eid-ul-Azha. Increased demand for quality meat, beef production has become an important income generating activity for small farmers, and a potentially important tool for reducing poverty (BBS, 2009).

Total contribution of Agricultural sector in GDP is about 18.70% in (Economic Review of 2013) 2013 of which livestock sub sector contributes 2.49%. Livestock has been an integral part of the mixed farming system in Bangladesh. The crop sector in agriculture has largely been dependent on livestock, since in addition to draft power and leather, it provides manure, meat and milk to the vast majority of the people. The dairy cows play a significant role in maintaining a strong Agricultural economy of Bangladesh. It can play a leading role to reduce malnutrition of the country's people, mostly the children. Livestock sector also play a crucial role in GDP.

Livestock sub sector generates a significant amount of foreign exchange through

the export of hides and skins, leather products, bones, horns, hooves, meat, edible offal and live animals among different export items of livestock origin. Cattle and goats are the major skin and hide producing species followed by buffalo and sheep. Leather and leather products have the most important position in the total export earnings of the country. Hides and skins are mainly used as raw materials in different industries (Paul T K, 1995).

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Objectives of the Study

The specific objectives of the study are:

1. To identify the major socio-economic characteristics of cross breed cow rearers.
2. To estimate cost, return and profitability of cross breed cow rearing.
3. To determine the contribution of factors affecting cross breed cow rearing;

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Chapter II

Methodology

2.1 Selection of Study Area

According to Yang (1965) "The area in which a farm business survey is to be carried out depends on the particular purpose of the survey and the possible co-operation from the farmers".

Sitakunda upazila in Chittagong district was selected for collecting necessary information for the study.

The reasons for selecting these areas for the present study are given below:

i. Availability of household cattle;
ii. The area was well communicated which helped involvement and data collection easier for the researcher;
iii. It was expected that co-operation from the farmers in this area would be high so that reliable data could be obtained.

2.4 Period of Data Collection

Data were collected by the researcher herself during the month of October 2016. During the period of data collection, the researcher stayed at the village, so that the cross breed cattle owners could give information at the time of their own conveniences.

2.5 Methods of Data Collection

Data were collected from the selected farmers by face to face interview, with `a set of interview schedules designed for this study. Before actual interview, a brief introduction regarding the nature and purpose of the study was made to sample farmers (Rahman M M & Rahman M H, 1991). When they were convinced about the purpose of the study that was simply an academic exercise, they tried to co-operate with the researches. Question was asked systematically and explanation was made whenever it was necessary. The information supplied by the respondents was recorded directly on the interview schedules.

2.6 Processing of Data

After collection of data, they were classified, edited and coded for analysis. These

data were verified to eliminate possible errors and inconsistencies. All the collected data were summarized carefully. It might be observed here that data were collected initially in local units and after checking the collected data, they were converted into standard international units. Finally relevant tables were prepared in accordance with the set objectives of the study.

2.7 Analytical Technique

The following techniques were used for analyzing data.

i) Tabular technique, and

ii) Project appraisal technique; BCR (Benefit cost ratio)

2.7.1 Tabular technique

Tabular technique is the technique that is commonly followed to find out the crude association between variables.. In this study tabular technique was followed to illustrate the whole picture of analysis the sum, mean, gross return etc., were the simple statistical measures to show milk production of dairy cows (BER, 2013).

2.7.2 BCR

The BCR is obtained when the present worth of the benefit streams is divided by the present worth of costs streams. When BCR is greater than 1, then the project is accepted and when BCR is lesser than 1, than the project is rejected (BER, 2013).

Chapter III

RESULTS AND DISCUSSION

3.1 Literacy Level of the Cross breeds Rearers

Literacy has an important impact on decision making processes of agricultural production. It helps a person to make right decision regarding his farm business and to obtain new information of various production processes. It makes a man more capable to manage scare resources and hence to earn maximum profit (Goni M D miah A G, 2001). It is evident from Table 1.2 that 16.0 percent of the selected dairy farmers were illiterate. This implies that the majority of the cross breed cattle rears were literate. Educational status of selected cattle rearers are also shown in Table 1.2 respectively.

2.8 Estimation of costs and returns

The objective of this chapter is to assess the cost, returns and profitability of cross breed cow rearing. In this study cost items included feeds, labor, housing, veterinary, miscellaneous, capital cost and interest on operating capital. Return items included returns from milk, cow dung and net inventory change.

2.8.1 Investment cost

a. Cost of Cross breed Cattle Rearing

The total cost per cow per day was estimated at Tk 196. The major costs were estimated item wise which are discussed below. Table 1.1 shows the total costs per cow

b. Housing cost

In the study area, there were straw made and open houses for cross breed dairy cows. The cost of housing was calculated by taking into account the deprecation cost, repairing cost and interest on the average value of housing shed and on repairs, respectively (Hasan T, 1995). Depreciation was measured by dividing the original value of the house during the time of construction by its total life in years.

The housing cost comprised about 0.76 percent of total cost amounting to Tk 1.50 per cow per day (Table 1.1).

c. Labor cost

Labor cost is an important cost in dairy raising and it has implication on income and employment generation. In order of importance, the labor cost came next to feed cost. It appeared from that total labor costs per day were estimated at Tk 20 for a cow and their respective share of total cost was 25.64 percent (Table 1.1)

2.8.2 Production cost

a. Feed cost

Feed cost was one of the major cost items of cross breed cattle rearing. An attempt was made to estimate feed cost for the cattle in the research (Islam, 2005). Cost of feed included expenses on paddy straw, green grass, oilcake, wheat bran and salt etc.

Feed costs shared 84.43 percent of the total cost for cattle rearing. The total feed cost per day per cow was estimated at Tk 165.5 (Table 6.1). Among various feed items paddy straw green grass, oilcake and wheat bran were the most important. For cattle the shares were 20.40, 40.81, 7.65, 15.30, and 0.25 percent for paddy straw, green grass, oilcake, rice bran and salt (Table 6.1).

b. Veterinary cost

Veterinary cost was calculated by taking into account the actual cost incurred by the farmers doctors fees and medicine were two major components of the total veterinary cost. The total veterinary cost per day per dairy cow amounted to Tk 1.00 and comprising 0.51 percent of total cost (Table 6.1).

Table 1.1 Total Cost and Return of Raising a Cross Breed Dairy Cow per Day

Particular	Unit	Quantity	Price/unit Tk	Total Tk/cow/day	Percentage of total
Costs					
Feed cost				165.5	84.43
Paddy straw	kg	5.0	8.0	40	20.40
Green grass	kg	10.0	8.0	80	40.81
Oil cake	gm	500	30	15	7.65
Wheat bran	kg	1.5	20	30	15.30
Salt	gm	50	10	0.50	0.25
Labour cost	man/day	0.10	200	20	10.20
Housing cost	-	-	-	1.50	0.76
Veterinary cost	-	-	-	1	0.51
Capital cost	-	-	-	7	3.57
Miscellaneous Cost	-	-	-	1	0.51
Total cost				196	100
Returns					
Milk	Lit.	8	50	400	93.79
Cow dung	kg	1.5	5	7.5	1.75
Inventory Change		-	-	19	4.46
Total return				426.5	100
Net return				230.5	
BCR				2.18	

2.9 Returns from Dairy Cows

The purpose of this section was to determine total returns and net returns from cattle rearing over total costs. The returns from cattle included returns from milk sale or consumed, cow dung, and calf. The returns from milk were calculated on the basis of the average quantities of milk yield per cow and average price received per liter of milk (Akteruzzaman M,1993).

Table 1.2 Literacy levels of the Sample Farmers

Literacy level	Sample Farmers	
	No.	Percent
Illiterate	4	16.00
Primary	10	40.00
Secondary	4	16.00
Higher secondary	6	24.00
Above	1	4.00
Total	25	100

Source: Field survey (2016)

3.1 Occupational Status of the cross breeds Cattle Rearers;

The work in which a man engaged throughout the year is known as his main occupation of that person. In the study area farming was the main occupation of 48.00 percent of total farm owners in Table 1.3. Along with crop production the selected farmers were engaged in cattle farming. In contrast business and service was the main occupation of 24.0 and 28.00 percent of the sample farmers respectively, which is shown in Table 1.

Table 1.3 Occupational Statuses of the Sample Farmers

Name of the occupation	Main		Subsidiary	
	No.	Percent	No.	Percent
Farmer	12	48.00		
Business	6	24.00		
Service	7	28.00		
Total	25	100		

Source: Field survey (2016).

Table 1.5 per year per cross breed cow raising cost.

Particular	Unit	Quantity	Price/unit Tk	Total cost (Tk/year)
Costs: Feed cost				60407.5
Paddy straw	kg	1825	8	14600
Green grass	kg	3650	8	29200
Oil cake	kg	182.5	30	5475
Wheat Bran	kg	547.5	20	10950
Salt	kg	18.25	10	182.5
Labour cost	man/day	35	200	7000
Housing cost	-	-	-	547.5
Veterinary cost	-	-	-	365
Capital cost	-		-	2555
Miscellaneous Cost	-		-	365
Total cost				71240

Source: Field survey (2016).

Table 1.6 per year per cross breed cow raising returns

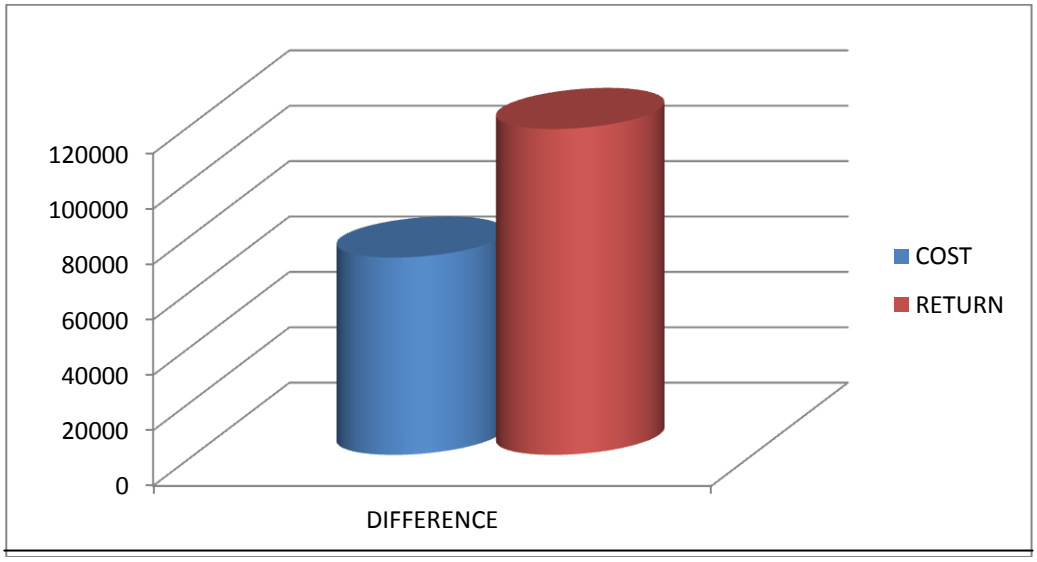
Returns	Unit	Quantity	Price/unit Tk	Total returns (Tk/year)
Milk	litre	2160	50	108000
Cow dung	kg	547.5	5	2737.5
Inventory Change	-	-	-	6935
Total return				117672.5
Net return				46432.5

Table 1.7 Yearly income level of farmers.

Income level	Number of fermars
Less than Tk. 50,000	1
Tk. 50,000-1,00,000	10
Tk. 1,00,000-1,50,000	8
Tk. Above 1,50,000	6
Total	25

Table 1.8 Profitability of rearing cross breed cow.

Particulars (Tk)	Sitakunda upazila (n=25)
Total gross cost	71,240.00
Total gross return	1,17,672.5
Return over cost	46,432.5
BCR	1.66



Graph-1: Graphical representation of cost and return of cross breed rearing in sitakunda,Chittagong.

In sitakunda: The TGC, TGR and BCR were Tk. 71240.00, Tk. 117672.5 and 1.66 respectively. The value of BCR was greater than 1. So cross breed rearing in sitakunda was also profitable.

3.2 Limitation of the study

The present study contains few limitations which are as follows:

1. There was a limitation of time. To get a satisfactory and reliable data sufficient time was needed. But data were collected and analyzed by the researcher within very short time.

2. The study covered only 25 samples. This sample size was not sufficient for the study. If the study could cover more areas and more samples the results and conclusions of the study might be more meaningful and more useful.
3. The findings of the study are based on the data from a specific area (Sitakunda Upazila at Chittagong District) of Bangladesh. These findings should therefore be interpreted cautiously, if any greater generalizations are sought for different regions with distinct geophysical conditions of Banglades.

Chapter IV

CONCLUTION

The study revealed that profitable cross breed cattle rearing were constrained by some problems. If proper remedial measures could be taken, household cross breed cattle rearing could be a viable commercial enterprise which in turn would play a vital role to overcome the problems of low income, unemployment, under nutrition and unfavorable balance of payment situation of the country. The study also revealed that household cross breed cattle rearing were more profitable. The policy makers should, therefore, extend more policy support which will encourage expansion of household cross breed cattle rearing and thereby will contribute to increase milk production in the area and in the country as a whole.

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APPENDIX

Questionnaire for to know the Socio-economic status of Backyard farming at Sitakund, Chittagong.

Farmer's Details

1. Name of the farmer: _____.
2. Address of the farmer: _____
   _____.
3. Sex: ☐ Male ☐ Female
4. Education:
   ☐ Illiterate ☐ Primary ☐ Secondary ☐ Higher Secondary
   ☐ Bachelor ☐ Masters
5. Primary Occupation:
   ☐ Service Holder ☐ Business ☐ Farmer
6. Family Member (In Number): _____.

Household Farming Related Data or Farm Details:

1. Number of Animals:
   ☐ Cattle (_____) ☐ Goat (_____) ☐ Poultry (_____)
2. Number of Cross Bred Cattle:
   ☐ Bull (_____) ☐ Cow (_____) ☐ Calf (_____) ☐ Heifer (_____)

Housing Details:

1. Types of Housing:
   ☐ Building ☐ Semi Building ☐ Open Housing
2. Floor Type:
   ☐ Concrete ☐ Bricked ☐ Muddy or Soil
3. Drainage System Condition:
   ☐ Good ☐ Bad

Feeding Details:

1. Type of Feed Supplied:
   - ☐ Concentrate
   - ☐ Green Grass
   - ☐ Straw
   - ☐ Green Grass + Concentrate
   - ☐ Green Grass + Straw

□ Concentrate + Straw

2. Source of Water: □ Tube-well □ Pond □ River

Milk Production Details:

1. Per day milk production: _____ (Liters)
2. Milk Price/Kg of Milk: _____ (BDT)
3. Milk Quality:
   ☐ Very Good ☐ Good ☐ Low

Cost Details:

1. Labor cost: _____ (BDT/Month)
2. Feed Cost: _____ (BDT/Month)
3. Veterinary Cost: _____ (BDT/Month)
4. Electricity Cost: _____ (BDT/Month)
5. Water Cost: _____ (BDT/Month)
6. Others: _____ (BDT/Month)

Income Details:

1. Milk: _____ (BDT/Month)
2. Cowdung_____ (BDT/Month)
3. Others: _____ (BDT/Month)

Profit:

- Monthly profit: _____ (BDT/Month)

(Signature of Interviewer) **(Signature of Farmer)**

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