

# CHAPTER-I

## INTRODUCTION

### 1.1: Background of the Study:

Bangladesh is a densely populated developing country lies in the Northeastern part of South Asia where most of the rural people are dependent for their livelihood mainly on cropping and non-cropping agricultural sector like livestock. Livestock are important assets for vulnerable communities. Globally, around 500 million pastoralists rely on livestock herding for food, income, and as a store of wealth, collateral or safety net in times of need,(Feb 22, 2022) .It plays an important role in the agricultural production sphere. Statistics show that about 2.9% of national GDP is covered by the livestock sector, and its annual rate of growth is 5.5%. About 20% of the population of Bangladesh earns their livelihood through work associated with raising cattle and poultry, (Jun 18, 2021).

Bangladesh has a population of 140 million people; more than 80 percent of them, or approximately 15 million households, are located in rural areas. An estimated two-thirds of those households own livestock. Agriculture generates two-thirds of total employment, contributes a quarter of total export earnings and provides food security to the increasing population. Crop production and animal husbandry are interdependent in the country's mixed-farming system, with livestock performing multiple functions, including the provision of food, nutrition, income, savings, draught power, manure, transport and other social and cultural functions. With livestock, people who are poor and landless can still access common property resources, such as roadsides, open grazing areas and water bodies. Cattle are by far the most important farm animals; smallholders possess the majority of them, and they are directly linked to family income, nutrition and welfare. While animal husbandry is a part of mixed farming, the system of production is not well integrated, and maximum value is not always gained from the inputs and outputs. There is scope for basic improvements that can lead to greater integration and productivity. Livestock also provide a critical cash reserve and steady cash income for many marginal farmers who grow crops essentially for subsistence or who have little or no land at all. The national herd comprises: 23 million cattle, 1.2 million buffalo, 20 goats and almost 3 million sheep. Milk production was 2.27 million tonnes in 2006, mainly produced by cows yielding, on average, 200–300

litres per 160/180-day lactation (DLS, Bangladesh-2006). Smallholder milk producers play a key role in dairy markets in Bangladesh. They supply all the domestic milk for the informal traditional market and three quarters of the formal processed market Milk Vita and Grameen - CLDDP institutionally promote the empowerment of smallholder dairy farmers, both men and women, in the value chain and business ownership/management process, which encourages their participation.

This study was undertaken to know the profitability of small scale dairy property in the rural areas where only rice straw , green grass and limited concentrated are available. Housing system , feeding , management are not properly maintained. So performance of dairy cow are low than the capability of producing milk. Also high cost of feed and diseases influence the cost and return of the farm.

### **1.2: Objectives of the study**

The overall objectives are to examine the economic performances of small scale dairy enterprises and identified few major limitations and recommendations for sustainable dairying in the study area. The specific objectives of the study are as follows:

- (i) To describe the socio-economic characteristics of small scale dairy farm owners;
- (ii) To estimate and find out the cost, return and profitability of rearing of dairy cows (per year per cow basis);
- (iii) To identify the problems of rearing dairy cows and recommendations for improving small scale dairy enterprises in Bangladesh.

## CHAPTER-II

### REVIEW OF LITERATURE

It mainly appears the discussion of the studies that conducted to focus on productivity, cost and return and management aspects of the dairy property. Some of the studies that are relevant to present study , given below:

**Rajapurehit (1979)** showed that the cost of milk per liter was 0.95 rupee for crossbred cows. The total milk yields per lactation were 2.077for cross breed cows. They also observed that the net returns from crossbred cows were higher.

**Kashem (1997)** conducted a study to know the prevalent situation of women's involvement is milch cow rearing in two villages of Comilla district. They found that 42 % of total number of cattle owned by the entire household was milch cow of which only 14 % was of improved type. Average quantity of milk yield per milch cow was 2.77 kilograms. The average annual cost of feed, treatment and artificial insemination per cows Tk. 3972 of which feed cost constituted about 98 %. The annual gross return per milch cow from milk, cow dung and ploughing was Tk. 6674 while the net return was estimated at Tk. 2763.

**Alam et al. (1992)** conducted a broad based socio-economic survey in Bangladesh and found that the proportion of cross bred cattle was 11.69 %.The return were higher by 91% for cross breed. Return over cash cost per lactation for breed cows were 158% higher than local ones.

**Ashrafuzzaman (1995)** conducted a study to investigate the socio-economic characteristics of indigenous and cross-bred dairy cow owners to analyze the relative profitability. The per day total cost of raising a crossbreed cow was a little higher over an indigenous cow.

**Kabir (1995)** conducted a study to analyze the economic performance of subsidized dairy farms in Tangail district . The net returns per farm were Tk. 14,463, Tk. 21,773 and Tk. 58,173 annually for local and cross and crossbred farms respectively. The investment per taka return was of Tk. 1.19, Tk.1.27 and Tk. 1.37 respectively for local, and cross and cross-bred farms. Overall performance of cross-bred dairy cows was comparatively better than that of local bred cows.

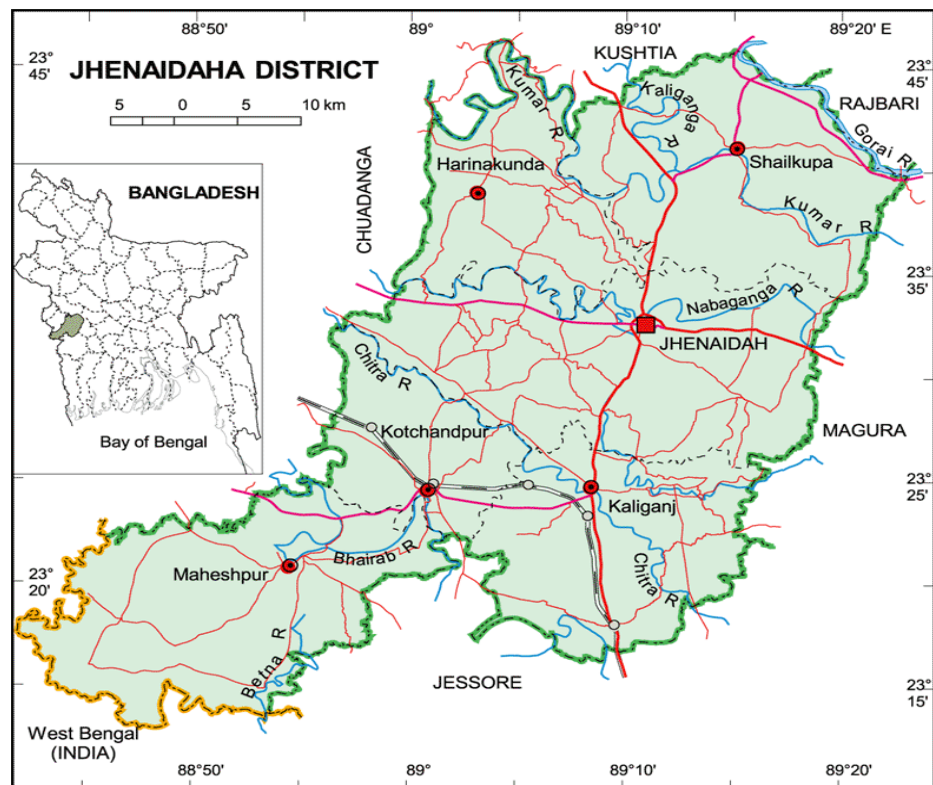
So, to evaluate the economics of the some areas of dairy enterprises at the selected rural area in Jhenaidah district was under taken for this study entitled as “**ECONOMIC PERFORMANCES OF SMALL SCALE DAIRY ENTERPRISES AT SOME SELECTED AREAS IN JHENAIDAH DISTRICT**” to fulfill the partial requirement of the degree of DVM as an intern report under Faculty of Veterinary Medicine in CVASU.

# CHAPTER-III

## MATERIALS AND METHODS

### 3.1 Study Area and selected Farms:

The present study was conducted at Harinakundu Upazila under Jhenaidah district of Bangladesh. Harinakunda Upazila with an area of 227.19 sqkm, is bounded by Kushtia sadar upazila on the north, Jhenaidah sadar upazila on the south, Shaikupa upazila on the east, Alamdanga and Chuadanga sadar upazilas on the west. The location of Harinakunda town is 23.651921 1N 89.0448823E. The then Harinakunda thana now an upazila, was established in 1863. The upazila consists of eight union parishads, 77 mouzas and 129 villages. The data was collected from the farmers of these elected three(03) villages named as Parbortipur, Boithapara, Pultadanga, Fhulbaria and Nowlamari during the period of March month 2022. Majority of households in the village depends on subsistence farming besides crop production. These villages were selected based on the availability of dairy cattle farming and easy of communication. In total Twenty five (25) household dairy farms/enterprises were selected for the study containing 5 in each village.



Location Map

### **3.2 Data Collection:**

Reliable data are directly related to the success and validity of the study. A semi-structured questionnaire was used for collection of all information related to dairy farming. Constraints were identified by surveyed. To obtain the reasonable and accurate data researcher visit several times in the study area during internship placement. Data were collected by personal interview with the 25 farm owner through farm visit during internship placement time 16.02.22 to 28.03.22. During data collection the objectives were explained to the farm owners so that they could respond it freely.

### **3.3 Statistical analysis**

After ending the interview schedule, required data were collected randomly as convenience basis and collected data were scrutinized, summarized and tabulated through Excel program and presented as Tabular and graphical form in the report against the set objectives.

# CHAPTER-IV

## RESULTS AND DISCUSSIONS

### **4.1: Socio-economic condition of the small scale dairy owners:**

The information regarding personal characteristics of the respondents such as age, experience in dairy farming, education and other socioeconomic characteristics help to understand the actual situation related to social setup of the dairy owners and potential contribution to the milk yield.

**4.1.1 Age:** Members of the whole family were classified into 3 groups of less than 20 years, 20-30 years, above 30 years. Table 1 showed that, maximum male and female members belong in above 30 years age groups and lowest number of farm family members lies in 20-30 years age group.

**4.1.2: Literacy level:** Literacy level classified into 5 groups. Maximum 40% lies in secondary level and lowest in-illiterate.

**4.1.3: Occupational status:** Occupational status classified into 6 groups, which was showed in the table1. It was showed that .highest 46.7% farmers involved in crop farming and dairying and lowest 6.7% involved in dairy farming only and others.

**4.1.4: Income level of farm owners:** Yearly income level of farm owners were shown in the Table1. The maximum 46.67% of the farmers income below 100000 and lowest 16.7% of the farmers

**4.1.5: Land ownership pattern of farm owners:** According to the size of land holdings, the farm owners were classified into 5 groups. The highest 36.67% of the farmers were small and 10% farm large-sized.

**4.1.5: Sources of financing of farmers:** According to the financial sources,, the farm owners were classified into 5 groups. The highest 43.33% of the farmers were borrowing from the bank and 6.7% farm owners were both own fund and borrowing outsiders and others.

**Table-1: Socio-economic Characteristics of the studied farm owners and farm families:**

Farmer's Socio-economic Characteristics	Categories	Number	Percentage
Age of the Farm Owners	< 20 Years	7	23.3%
	20 -30 Years	5	16.7%
	>30 Years	18	60%
Literacy Level of Farm Owners	Illiterate	3	10%
	Primary	7	23.8%
	Secondary	12	40%
	Higher Secondary	5	16.7%
	Above	3	10%
Occupational Status of Farm Owners	Dairy Farming only	3	10%
	Crop farming	2	6.7%
	Crop farming and dairying	14	46.7%
	Small business and Dairying	5	16.6%
	Service and dairying	4	13.3%
	Others	2	6.7%
Income level of Farm Owners	< Tk. 100000	14	46.67%
	Tk. 100000 -200000	11	36.63%
	>Tk.2000000	5	16.7%
Land Ownership Pattern of Farm Owners	Land with farmers	5	16.3%
	Landless farmers	6	20%
	Small	11	36.67%
	Medium	5	16.7%
	Large	3	10%
Sources of Financing of Farm Owners	Own Fund	4	13.3%
	Borrowing from NGO	9	30%
	Borrowing from Bank	13	43.33%
	Both own fund and Borrowing outsiders	2	6.7%
	Others	2	6.7%

Source: Field Survey, 2022

#### 4.2: Assessing cost, return and farm profitability:

This section's goal is to evaluate the expenses, profits, and farm viability of small-scale commercial dairying operations on various types of farms. Feeds, labor, veterinary services, housing, capital investment, and operating capital were the cost items taken into consideration in this study. Cash and non-cash costs were divided up into the total costs per cow per lactation. The costs that the owners of dairy cows had to pay out of their own pockets in order to purchase the inputs were known as cash costs. In contrast, estimates of

non-cash costs were made for family labor, family-provided meals, interest on the value of a dairy cow, interest on the value of a home, interest on operating capital, and depreciation of housing costs, among other things. Gross returns was estimated sum up the selling value of main product raw milk and market value of family consumed milk as well as by-products like as calves, cow dung and other farm logistics etc. market price, the net returns was estimated as the difference between Total Return (TR) and Total Costs (TC) and net returns are the returns categories.

#### **4.2.1: Assessing Rearing cost of Dairy Cows (Per cow per lactation year basis):**

Cost may be classified as cash cost where direct cash were calculated from daily records and non-cash costs were fixed cost. The return and cost were estimated from the collected data 5 villages under Horinakundu Upazila under Jhenaidah district. Major costs items were recorded as cash & home supplied feed cost, labour cost, Medicine & Veterinary caring costs, A.I cost and other costs.



**Table-2: Estimation of average rearing costs per dairy cow per lactation year (242 days) LS**

**Basis:**

Particulars	Villages wise per cow per lactation year rearing costs						
	Parbortipur (n=5)	Boithapara (n=5)	Pultadanga (n=5)	Fhulbaria (n=5)	Nowlamari (n=5)	All (N=25)	
	Tk.	Tk.	Tk.	Tk.	Tk.	Tk.	%
<b>A. CASH COSTS:</b>							
<b>i) Feed Cost:</b>							
Straw	1025	1025	1175	1150	1275	1130	<b>4.74</b>
Green grass	3050	3500	3125	4000	4230	3581	<b>15.02</b>
Concentrates	4750	5250	5125	5375	5250	5150	<b>21.60</b>
Feed additives	4000	3875	4500	3500	3750	3925	<b>16.46</b>
Vitamin Minerals etc.	2500	2750	2625	3000	2875	2750	<b>11.53</b>
<b>Sub-total (i)</b>	<b>15325</b>	<b>16400</b>	<b>16550</b>	<b>17025</b>	<b>17380</b>	<b>16536</b>	<b>69.35</b>
<b>ii) Hired Labour cost</b>	1525	1750	2250	2000	1875	1880	<b>7.88</b>
<b>iii) Vet. Care</b>	1250	1375	1625	1000	1875	1425	<b>5.98</b>
<b>iv) AI cost</b>	500	625	650	625	500	580	<b>2.43</b>
<b>v) Others</b>	1750	1250	1125	1875	1500	1500	<b>6.29</b>
<b>Sub-Total (A)</b>	<b>20350</b>	<b>21400</b>	<b>22200</b>	<b>22525</b>	<b>23130</b>	<b>21921</b>	<b>91.93</b>
<b>B. NON-CASH COSTS:</b>							
• Home supplied straw, rice bran and green grasses etc.	<b>875</b>	<b>750</b>	<b>625</b>	<b>500</b>	<b>870</b>	<b>724</b>	<b>3.04</b>
• Family supplied labour	<b>375</b>	<b>262.5</b>	<b>500</b>	<b>812.5</b>	<b>915</b>	<b>573</b>	<b>2.40</b>
• Home supplied other materials etc.	<b>587.5</b>	<b>650</b>	<b>212.5</b>	<b>462.5</b>	<b>725</b>	<b>527.5</b>	<b>2.21</b>
• Interest on operating capital (LS)	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>0.42</b>
<b>Sub-Total (B)</b>	<b>1937.5</b>	<b>1762.5</b>	<b>1437.5</b>	<b>1875</b>	<b>2610</b>	<b>1924.5</b>	<b>8.07</b>
<b>Total Costs(TC) [A+B]</b>	<b>22287.5</b>	<b>23162.5</b>	<b>23637.5</b>	<b>24400</b>	<b>25740</b>	<b>23845.5</b>	<b>100.00</b>

**Source: Field survey, 2022**

Total estimated full cost of rearing dairy cows per lactation year (242 days) at Parbortipur ,Boithapara , Pultadanga , Fhulbaria, Nowlamari and all average from five villages were found Tk.22287.5, Tk.23162.5, Tk.23637.5, Tk.24400, 25740 and Tk. 23845.5 respectively. The study revealed that, maximum costs involved for feed costs and it stood at about 69.35 percent of total costs then labour and Veterinary caring costs involved about 8 percent and 6 percent. Almost 92 percent involved in cash cost for rearing small scale commercial dairy enterprises in the study areas.

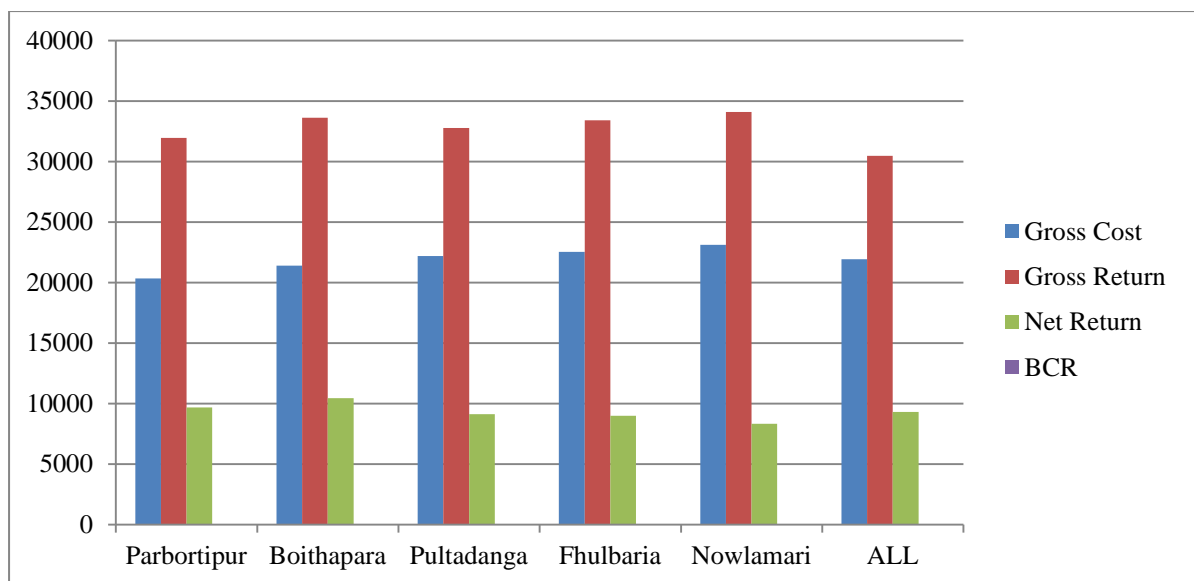
**Table-3: Assessed average returns of rearing per Dairy Cow per lactation period (242 days) LS Basis:**

Particulars of Return	Villages wise per cow per lactation year returns (in Taka)						
	Parbortipur (n=5)	Boithapara (n=5)	Pultadanga (n=5)	Fhulbaria (n=5)	Nowlamari (n=5)	All Average (N=25)	
						Amount	%
1. Return from direct selling Milk:	15025	16147.5	14800	15290	15780	15608.5	50.58
2. Value of Calf at the end of lactation:	14606	15032.5	15145	15267.5	15390	4988.2	40.67
3. Value of consumed milk	1225	1176	1200.5	1298.5	1347.5	1249.5	4.10
4. Value of cow dung & manures:	490	612.5	857.5	808.5	882	730.1	2.40
5. Value of other by products (Feed bags, farm surpluses etc.):	612.5	637	759.5	735	686	686	2.25
<b>Gross Return (GR)</b>	<b>31958.5</b>	<b>33605.5</b>	<b>32762.5</b>	<b>33399.5</b>	<b>34085.5</b>	<b>30462.3</b>	<b>100.00</b>
Return over Cash Costs	11608.5	12205.5	10562.5	10874.5	10955.5	8541.3	-
Return over Full Costs basis (in BDT)	9671	10443	9125	8999.5	8345.5	9316.8	-
Return over Full Costs (in USD) (@ Tk. 95.5 per USD)	101.27	109.35	95.55	94.24	87.39	97.56	-
Benefit Cost Ratio (BCR)	1.43	1.45	1.38	1.37	1.32	1.28	-

**Source: Field survey, 2022**

The average sale proceeds of milk were calculated on the basis of the average lactation period (242 days), average quantity of milk produced per day per cow and the average price received by the farm owners per litre of milk directly and value of consumed milk. It was assumed that the calves of dairy cows were sold out just after lactation period. The value of calf was

estimated on the basis of the respondent's expectation. The average values of cow dung and selling other material per cow are calculated by taking respondent's opinion on this type of income as lump sum basis. Table 3 showed that, the gross return per lactation year per cow stood at Tk.31958.5, Tk. 33605.5, Tk.32762.5 Tk. 33399.5, Tk.34085.5 and considering all it stood at Tk. 30462.3 respectively. The average returns from selling of milk and milk products per cow per lactation year were found Tk. 15025, Tk. 16147.5, Tk. 14800, Tk. 15290, Tk. 15780 and considering all Tk. 15608.5 respectively which was accounted for about 55.00 percent and the returns came from selling values of respective cows amounted in Tk. 14606, Tk. 15032.5, Tk. 15145, Tk. 15267.5, Tk. 15390 and average Tk. 4988.2 which was found second highest income about at 41.0 percentage and others income was found insignificant amount and percentages. The Benefit Cost Ratio (BCR) were accounted for 1.43:1, 1.45 :1, 1.38 :1, 1.37 :1, 1.32:1 respective areas and on average it stood at 1.28:1 for small, medium and large scale commercial dairy farms.



**Fig-2: Graphical presentation of per cow profitability (Gross Cost, Gross return, Net return and BCR)**

The above figures and values indicated that small scale dairy farming in the study areas as commercial basis is a profitable farm business though sometimes farmer's faced few problems and they always tried to overcome these problems to make dairying as a sustainable farm business.

# CHAPTER-V

## IDENTIFIED PROBLEMS AND REMEDIAL MEASURES

Risks and uncertainty are quite common facts in dairy farming business. Apart from these, dairy farming practices have been facing a number of problems. In this section identified few major farming constraints and problems faced by the farmers in dairying practices. Also recommended measures against the identified problems in the study areas.

**5.1: Major problems:** The identified major problems are as follows:

**5.1.1: High prices of feed:** This is the important problem of rearing dairy cows. Maximum farm owners complained this problem.

**5.1.2: Low price of milk:** The price of milk is low. The problems of low price milk was reported by the farm owners.

**5.1.3: Scarcity of quality feeds and fodder:** Animal health and production of milk depend on quality feeds, proper rationing and regular standard feeding practices timely. But in our country everywhere grown up animal feed industry and feed shop with poor management and quality assurance facilities.

**5.1.4: Conception failure of dairy cows:** It's the common problem in small scale dairy farming practice Sometimes AI practiced more than one time for a single conception of a cow which leads to be delayed in calving in farming systems.

**5.1.5: Inadequate veterinary care and services:** It was the important problem of rearing dairy cows in the study area.

**5.1.6: Lack of credit:** It's one of the important constraints for improvement of dairy enterprises.

**5.1.7: Occurrences of diseases:** Diseases incidence especially FMD, Mastitis, uterine infections and metabolic diseases are affected the rearing of dairy cows in the study areas. Diseases affect the milk yield and reduced the herd productivity which leads to economic losses of the dairy farms. It is an important constraint of rearing of cows

**5.1.8: Feed poisoning and mineral deficiencies:** Feed poisoning and mineral deficiency is found another problem of rearing cows commercially under small holder farming system. This problem is created for lack of quality dairy feed and mineral deficiency in feed and water.

## **5.2: Probable suggested measures to be taken to solve the Problems**

To overcome the problems of small scale commercial dairying practices and making the such dairying practices more profitable. Following suggestions were put forward by the dairy farm owners for overall development of small scale dairying practices:

- Need more knowledge on improved technologies through training.
- Availability of reliable and continuous technical assistance.
- Availability and low price of concentrate feeds.
- Increased and timely provision of medicine and potent vaccine.
- AI facilities should be increased and provision of pure breed.
- Milk collection centers should be encouraged.
- Milk and meat marketing linkage through cooperatives.
- Organizing animal show /mela / competition / telecast.

# CHAPTER-VI

## CONCLUSION AND RECOMMENDATIONS

### 6.1: CONCLUSION

This chapter presents the conclusions of the present study and provides some important recommendations for the development of dairy industry in village level.

The small scale commercial dairying as a part of livestock which plays a significant role for employed young energetic and risk taking entrepreneur in Bangladesh. Dairy is one of the major source of animal protein and cash income of the farm people. It contributes greatly to the poverty stricken rural and peri-urban farm people especially to small, marginal farmers and unemployed youth group of people for creation of self - employed and sustainable income and livelihood development in Bangladesh. . This study revealed that, dairying creates employment opportunities throughout the year for farm family members as well as other illiterate personnel easily than that of crops enterprise. The present study observed the agribusiness analysis by examining the socioeconomic condition of the small scale owners of the dairy properties. The estimated returns to scale and elasticity of production parameters also reconfirmed that the use of production inputs was at partial optimal level owners of dairy proper ties.

The concentrate is the most important input affecting milk production indicating that the farmers can increase their milk output by feeding more concentrates to their dairy cow. Thus, an attempt should be taken for raising milk production by readjustment of feed inputs in all the seasons. More feed mills should be established by government and private entrepreneurs for supplying quality concentrate feeds with a reasonable price as well as feed marketing policy should be adopted and farmers should be motivated to use concentrates to

The one option might be that is necessary to take initiatives by the policy makers and development planners to intensify the dairy development. Government should take initiatives to reform the institutional arrangements by liberalizing input markets, developing basic

infrastructure and facilitating access to yield increasing technology in each of the production system which can ultimately reduce costs, thus improve on productivity.

## **6.2: RECOMMENDATIONS**

Based on the findings of better disease prevention strategy, establishing the reliable milk market, availability of drugs with convenient price, feeding, artificial insemination service, improved dairy animals supply and awareness, which will significantly increase milk production and animal performance.

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