**CHAPTER- I**

**INTRODUCTION**

**1.1 : Background of the Study**

In excess of 80% of rustic individuals kept nearby farms in Bangladesh. The local cattle is one of the prestigious assortments of steers animals on the planet. It is Known as possible kind or assortment for its own recognized morphometric attributes with actual wellness and prevalence in regard of profitable and conceptive exhibitions. Presently, RCC has been distinguished as one of the improved and promising assortment of homegrown creature hereditary asset mostly limited in the southern areas of Bangladesh.

The Red Chittagong Cattle (RCC) is a significant Native cow-like hereditary asset of Bangladesh with numerous ascribes better compared to other accessible native sorts. These cows are promptly recognizable from others because of its unmistakable phenotypic highlights (Alamet., at 2007).

The positive highlights of RCC lie on its capacity to withstand outrageous heat and humidities and to make due on inferior quality feed during times of feed lack. Besides, they are rumored to conceive an offspring consistently, lower calf mortality can conceive an offspring of 8-10 calves in life time, accomplish sexual development prior, appropriate for culturing activity and footing, quick in their development, dedicated in hot, muggy and precipitation condition are viewed as remarkable qualities of RCC (Jabbaret.,1982 ; Habibet.,at 2003). Development is quite possibly the main attributes of steers and has been examined for a long time (Blasco and Gomes et.,at 1993; Bathaei and Leroy et.,at 1998). Changes in live weight with age are significant parts of hamburger creation from steers. Development reads are vital for domesticated animals creation since development is the establishment on which different types of creation like milk, meat and work rest and it gives extension to early determination of creature. This investigation was performed to assess the body loads of RCC at a few ages both on-station and on-field and to analyze their development bends in the said the executives frameworks.

Farming produces 66% of all out business contributes a fourth of all out trade profit and gives food security to the expanding populace. Harvest creation and animal cultivation are related in the nation's blended cultivating framework, with animals playing out different capacities, including the arrangement of food, sustenance, pay, investment funds, draft power, compost, transport and other social and social capacities. With animals, individuals who are poor and landless can in any case get to basic property assets, like side of the road, open brushing regions and water bodies. Steers are by a long shot the main livestock; smallholders have most of them, and they are straightforwardly connected to family pay, nourishment and government assistance. While animal cultivation is a piece of blended cultivating, the arrangement of creation isn't all around incorporated, and most extreme worth isn't constantly acquired from the information sources and yields. There is extension for fundamental enhancements that can prompt more noteworthy incorporation and profitability.

In 2006, the domesticated animals area contributed 3% of GDP (Gross domestic product), or around 18% of rural Gross domestic product. At the point when the roundabout advantages of draft force and compost for fuel and manure are added to the direct monetary yield of meat, milk and covers up, the worth added of the domesticated animals subsector nearly copies, to around 6% of Gross domestic product. Domesticated animals likewise give a basic money hold and consistent money pay for some peripheral ranchers who develop crops basically for means or who have next to zero land by any stretch of the imagination. The public crowd contains: 23 million steers, 1.2 million wild ox, 20 goats and very nearly 3 million sheep. By and large, it was estimated per cow milk yield 200–300 liters per 160/180 lactation days (DLS, Bangladesh-2006).

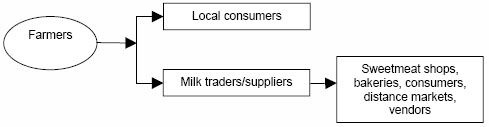
In the couple of specific territories where cross-rearing has occurred, yields range from 1000 to 3000 liters over a 210/300-day lactation. Until as of late, milk was a side-effect of dairy cattle, utilized generally for making conventional desserts and in tea. Per capita milk accessibility presently goes from 40 to 50 g each day (14–18 kg each year). The hole among market interest is to a great extent met by milk powder imports of around 20 000 tons yearly, esteemed at some US$70 million (BB, Yearly Report, 2006). Imports address 0.16 million tons of fluid milk comparable every year, taking care of some 6–7 percent of complete utilization and representing an expected 55 percent of the proper dairy market. In spite of the fact that there is no particular wholesome objective in the country for milk utilization, the figure of 250 g each day (90 kg each year) frequently shows up in public plans, suggesting a yearly milk necessity of 12.8 million tons–in excess of multiple times current creation (Altaf H.- 2003).

The Public authority's Public System of Sped up Destitution Decrease (NSAPR, 2005) sets out available resources for accomplishing two of the thousand years Improvement Objectives (MDGs): dividing neediness and splitting under-nourishment by 2015. The system report expresses that while the domesticated animal’s area in general grew 3% during the 1990s, poultry has shown the most great development rate, at around 10% per annum since the mid 1970s. Development in milk creation for the most part has reflected the overall pattern in the animal’s area, with low profitability a significant constraint to area improvement since creation remains essentially for means and is exceptionally scattered. With quick urbanization and pay expands the interest for domesticated animals items, like meat, milk and eggs, will keep on rising. The methodology targets nearby milk creation to supplant imports, which as of now range somewhere in the range of 10 and 20 percent of yearly utilization. The system advances local area based associations of creation, handling and showcasing to conquer the limitations. Smallholder milk makers accordingly are required to assume a critical part in assisting with accomplishing the objective and, in this manner, assisting Bangladesh with accomplishing the MDGs identifying with neediness and sustenance.

Smallholder milk makers assume a critical part in dairy markets in Bangladesh. They supply all the homegrown milk for the casual conventional market and 3 to 4 of the formal prepared market Milk Vita and Grameen–CLDDP institutionally advance the strengthening of smallholder dairy ranchers, the two people, in the worth chain and business proprietorship/the executives interaction, which empowers their cooperation

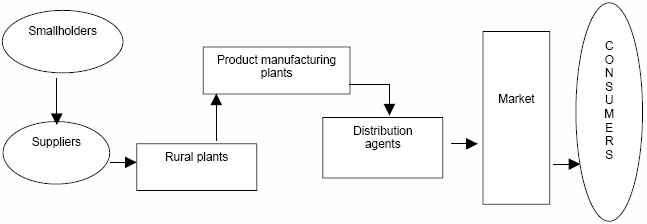
**(a) Informal traditional markets model**

Smallholder milk makers sell milk straightforwardly to shoppers or milk provider/go betweens at nearby business sectors. The brokers take into account the interest of sweetmeat shops, pastry kitchens, customers, more removed business sectors and merchants. They pay makers up to 50 percent less for their milk than different models, like those depicted in the accompanying segments. By and large, the brokers furnish credits to smallholders with financing costs of up to 20 percent each month.



**(b) Private business visionary model:**

Private dairies, some claimed by non-government associations (NGOs, for example, the Bangladesh Rustic Progression Panel (BRAC), generally work through milk provider/brokers (known as ghoshes or dudhwalas) instead of provincial gatherings or cooperatives. They gather milk for a particular dairy, nonetheless, smallholders engaged with the framework don't get any worth added advantage – just the essential cost for their milk.



Dairying in Bangladesh is becoming quicker yet it likewise faces part of issues of high info and low yield costs. The condition prompts lower benefit in dairy cultivating. Infections, alongside non-accessibility of feed assets and nourishment are the main requirements to drain creation. Be that as it may, with the smallholders creation frameworks, the circumstance is more genuine in light of deficient financial markets like expense and benefit, research on this angle is extremely restricted and disputable (Khan, 2007). In Bangladesh, the public authority, cooperatives, the private areas and a couple of non-administrative associations (NGOs) offer veterinary types of assistance and planned impregnation offices to the dairy ranchers. Anyway it is notable that the nature of the veterinary administrations given by open area foundation is poor and those establishments offering these types of assistance are exceptionally inadequate. Thus, there is a need to rebuild and reorient the domesticated animals wellbeing and reproducing administrations and expansion administrations giving foundations.

The expansion of popular for dairy items will squeeze dairy creation frameworks. Manageable dairy cultivating is preposterous with customary varieties and taking care of works on inferable from their less beneficial presentation. For these reason the idea of serious dairy cultivating with high yielding crossbreds, escalation of creation, creature medical problems and a more prominent dependence of feeds and focuses are required. The dairy cultivating in this nation is subject to trim buildups, common assets and open touching framework as a wellspring of feeds. Notwithstanding, the customary wellsprings of feeds and foods to help the dairy creation is improbable as accessible brushing regions and other regular property assets are contracting and as of now corrupted. Consequently on the off chance that milk creation is to build, slow down taking care of framework need to follow. For these reason a decent number of little and medium estimated dairy ranches with the primary targets to deliver milk have been grow for the most part in metropolitan and semi-metropolitan milk pockt zones like Pabna, Sirajganj, Manikganj, Munshiganj, Faridpur, Madaripur, Koshorganj, Rangpur and kushtia region (Rahman, 1998).

The benefit of a dairy ranch relies undeniably upon beneficial and conceptive execution of the animals. For this explanation, the current examination was thusly attempted to explore the beneficial and conceptive exhibitions of crossbreds and native dairy cows of limited scope dairy ranches in country and peri-metropolitan territories in Shahjadpur and Belkuchi upozilla of Sirajganj area and suggest ranchers that are reasonable in existing biological and financial condition.

Dairying assumes a significant part in the miniature economy of Bangladesh (15.1% of complete animal’s Gross domestic product) (FAOSTAT, 2005). Various dairy creation frameworks are by and by which offers more than 90% of all out yearly new milk creation (Mitra, 2005). Other than the conventional provincial resource blended cultivating (1-<5 cows/family), peri-metropolitan Smallholder (5-20 cows) and helpful or society possessed cultivating (10-50 cows/society) has arisen since 1980s (Shamsuddin et al 1995). Of late exclusive ranches (>10-100 cows/ranch) participated in the stream as a huge scope business dairy ventures in Bangladesh.

Under both government and non-government support, the quantity of private possessed market situated dairy ranches has developed from 2,490 of every 1990-91 to 60,600 out of 2005-06, coming about an addition in fluid milk creation from 1.39 to 2.27 million metric ton (DLS, 2008). Regardless of this rise, the current pace of creation is as yet a long ways behind to overcome any issues and ready to get together just 20% of the public yearly interest. Additionally, milk utilization per capita has been expanded to 45 ml in 2005-2006 contrasted with a day and a half in 2000-01 with a yearly height of 2% (DLS, 2008). Utilization of milk with the extended interest in some Asian nations including Bangladesh is developing by 3.5% per annum and the interest for milk will increment by 4.2% because of the expected populace development pace of 1.6% by 2020 (CPD, 2008). In any case, If dairy creation is to stay up with the projected interest, expanding ranch size and boosting normal creation per ranch is basic.

Beneficial milk creation notwithstanding vigorously depends upon ideal conceptive execution alongside a cautious, productive and financially savvy the board of dairy crowds (Griswold et al., 2006). Poor regenerative efficiencies and a wide scope of variety in Productivity of market situated dairying in Bangladesh Rahman et al. the executives rehearses has been accounted for to be the normal 56 element of dairying in Bangladesh. Drawn out spans between calving to origination (Alam and Ghosh 1988), ventilation and waste administration (Miah et al. 2004), heat recognition and frozen semen taking care of (Shamsuddin et al 1995), quality and changeability of feed fixings (concentrates), irregularity and deficiency of green scavenge supplementation (Mondal et al 2005) has been demonstrated to be a portion of the key factors and difficulties for the dairy ranchers to guarantee beneficial dairy creation in Bangladesh.

Like other significant dairy zone of the country, south eastern port city, Chittagong additionally encounters regular productivity difficulties and request in fluid milk production against its quickly developing urbanization. Purchaser review in Chittagong demonstrated a day by day normal deficiency of 10000 liter fluid milk past the reinforcement supply of 80,000 liters from business parcel milk fabricating organizations of the country (BSS 2007). It has been understood that the nearby business dairying presently had the option to contribute just 10-15% of the all out aggregate neighborhood need of fluid milk contrasted with their normal potential to serve. Explicit exploration and activities are looked for consequently, to create proper methodology for focused increment of normal milk creation per ranch. An assessment on the current status of business dairying practices and ID of the spaces of the board that requires mediation are an essential to guarantee powerful anticipating beneficial dairy cultivates around Chattogram division.

The present study has therefore been undertaken with the objectives to evaluate and categorize farms on current level of profitability, describe and compare the socio-economic and existing farm management practices in relation to farm profitability with a view to analysis this study was under taken entitled as **“A socio-economic analysis of commercially operated Cross-bred dairy enterprises at some selected Upazilas in Chattogram Division”** for partial fulfillment of the requirement of MS degree in the field of Agricultural Economics**.**

1. **Objectives of the study:**

The general targets of the study were to analyze the comparative socio-economic profiles of the farm owners and examined the profitability of local and cross–bred dairy rearing system and distinguished obliges to make future approach proposals for development of the dairy endeavors in the study areas.

**The specific targets of the current examination are as follows:**

1. To analyze the socio-economic profiles of local and commercially reared cross-bred dairy endeavor proprietors;
2. To investigate the production, management and feeding system of local and commercially reared cross-bred dairy cows;
3. To assess the cost and returns of local and commercially reared cross-bred dairy cows;
4. To identify the problems faced by the dairy farmer and make recommendations for policy guideline for improvement of the dairy industry..

**CHAPTER-II**

**REVIEW OF LITERATURE**

**2.1: Introduction**

It shows up from the accompanying conversation that reviews directed so far for the most part centered on cost and returns, sometimes with profitability, re-efficiency and some administration parts of raising dairy cows as a valuable undertaking in the family. Business dairy cultivating is generally not another territory in Bangladesh and explores managing execution of such cultivating are restricted in number. Nonetheless, a portion of the investigations, which are more applicable to the current examination, are given beneath:

Ali (1996) showed that the expense of milk per liter was 0.95 rupee for crossbred cows. The absolute milk yields per lactation were 2.077 for cross variety cows. They likewise saw that the net gets back from crossbred cows were higher.

Asaduzzaman (2003) considered the qualities of various cross-reproduced cows of Savar dairy ranch from July, 1982 to June, 1983. He tracked down that the age at adolescence, the milk creation. The length of calving stretch and lactation periods, the every day weight acquire, the mortality and illnesses rates were higher for crossbred cows. Hosain and Routledge (1982) in their investigation tracked down that the complete milk creation of Pabna draining cows and local cows remained at 803 +/ - 209 and 213+/ - 88 liters individually and their separate length of lactation periods were 286 +/ - 67 and 240 +/ - 63 days . They additionally saw that the length of dry period and calving span were 222 +/ - 134 and 485 =/ - 87 days for Pabna draining cows and 275 +/ - 36 and 536+/ - 110 days for local cows separately.

Zaman(1999) led an investigation to know the predominant circumstance of ladies' association is milch cow raising in two towns of Comilla region. They tracked down that 42% of absolute number of cows possessed by the whole family was milch cow of which just 14% was of improved kind. Normal amount of milk yield per milch cow was 2.77 kilograms. The normal yearly expense of feed, treatment and planned impregnation per cows Tk. 3972 of which feed cost established around 98%. The yearly gross return per milch cow from milk, cow excrement and furrowing was Tk. 6674 while the net return was assessed at Tk. 2763. The investigation noticed a negative connection between ladies' proficiency level or families and possession and their cooperation in milch cow raising exercises which demonstrates that ladies of the little homestead families will be more receptive to milch cow raising contrasted with ladies of medium and huge ranch families. From the discoveries of the examination, it is presumed that rustic destitute individuals can improve their financial condition by raising milch cow.

**2.2: Profitability and regenerative exhibitions:**

Post pregnancy heat period is a vital financial regenerative quality in a dairy group. As the post pregnancy heat period is short, the cow is impregnated before and the calf crop is likewise coming prior. Hafez (1993) recommended the post pregnancy reproducing ought to be deferred up to 60-90 days after parturition, when the estrous goes through recuperation and groundwork for the following pregnancy. For accomplishing most extreme number of parturition in lifetime, the cows ought to be cycle inside 60-80 days post pregnancy (Alam, 1988). The current investigation showed a mean reach from 133.76 to 158.68 days. This might be because of wasteful or off base recognition of estrous as detailed by Bird of prey (1979). The time frame continuously diminished with an expanded in equality. This might be because of the cows brought from neighborhood markets having poor dietary status and continuously with the combined impact of nourishment in ranch condition escalated and longer the warmth period with expanded equality and hence it is simpler to recognize warmth to inseminate on schedule. Dobson and Alam (1987) additionally expressed that degree of nourishment straightforwardly influence the development of ovarian follicles and steroid discharge. No distinctions among times of calving to origination in various equalities might be because of some unacceptable season of insemination corresponding to real warmth. Kiddy (1979) revealed that as 20% of cows announced for insemination are not actually in estrous. He likewise announced that cautious perception of cows by learned faculty is fundamental for an effective reproducing program.

The post pregnancy heat period and the time of calving to origination were nearer to the discoveries of Nahar et al. (1995) and Khan et al. (1999). The mean growth period was nearer to the discoveries of Nahar et al. (1995), Ghose et al. (1977) and Khan et al. (1999). The calving span is connected with the time of calving to origination and the more extended the time of calving to origination longer the calving stretch. Falcon (1979) additionally detailed that the calving stretch can be abbreviated with the precise identification of estrous. It is likewise essential to take note of that the ideal calving span is around 360 days and deviations from this diminish the potential pay per cow (Britt, 1975). The current investigation showed longer calving stretch than ideal, it very well might be because of the board factors. The mean calving span was nearer to the discoveries of Nahar et al. (1995) and Khan et al. (1999). Numerous laborers (Payne, 1970; Jarpa, 1979, Nahar et al. 1995, Khan et al. 1998 and Khan et al. 1999) announced assistance per origination to be gone from 1.20 to 1.81. The noticed assistance per origination of this investigation fall inside the scope of mean qualities to what different laborers noticed.

In the current investigation it could be presumed that more drawn out post pregnancy heat period, calving to origination, calving stretch and more limited lactation length, each day milk yield and birth weight of calves. What's more the cows were Zebu type and the managemental issue related with off base warmth location, ecological components, and so forth The exhibition in regard to creation and multiplication of native neighborhood cows are practically comparable outcomes among the various equalities

**2.3: Comparative Economic Performances of cross bred and with indigenous cattle:**

Rahman (1998) conducted a study on economic analysis of dairy enterprise in four selected villages of Mymensingh district in Bangladesh. They observed that small farmers were generally the owners of high yielding cows or buffaloes in all the study areas. The findings showed that farmers in Bhabakhali, Mymensingh town and Birampur areas gained substantially by keeping milch animals. Feed cost was higher in the urban and milk pocket areas than in the rural and semi-urban areas. In buffalo area (Ahmed Bari) feed cost was highest. The gross returns per animal were positive for all types of cows. Net returns were also positive and higher for the high yielding cows and buffaloes. The study identified some crucial problems such as high feed cost; sow yield for indigenous breed, lack of livestock credit and insurance for dairy development.

**2.4: Cost and returns of the Cross-bred dairying:**

Alam et al. (1992) directed an expansive based financial study in Bangladesh and tracked down that the extent of cross reproduced cows was 11.69 percent. The aftereffects of the investigation showed that the dissemination of steers holding were less inconsistent than land possessions. Consequently the examination guaranteed that interest in domesticated animals advancement would assist with improving the dissemination of pay in country regions. The profits were higher by 91% for cross - reared cows. Return over cash cost per lactation for cross - reared cows were 158% higher than for nearby ones. Notwithstanding, the net returns were negative for both neighborhood and cross - reared cows. A few issues identified with dairy raising were I) shortage of feeds and grain ii) absence of credit and protection program iii) low cost of milk and so forth The examination likewise unequivocally suggested for dairy raising. The proposals were: I) extension of credit and protection program ii) development of veterinary administrations and medication iii) Supply of feeds iv) expanded cost of milk and v) improving limitations on milk imports.

Rahman (1993) led an examination at Kalihati and Takerhat regions under Tangail and Madaripur regions to evaluate the expense and returns, to investigate the inter¬relationship of variables influencing yield and to look at the rustic work and pay age possibilities of dairy endeavor. The normal milk yields per cow each day in lactation were 2.33 and 2.43 liters at kalihati and Takerhat separately. The gross expenses per cow each day were Tk. 20.22 at kalihati and Tk. 29.34 and 4.91 at Takerhat zones. The normal necessities of human work per cow each day were discovered to be 2.33 and 2.39 hours at Kalihati and Takerhat regions separately. The relations among the elements ranches size, level of schooling, pay minor exemption in the two territories. It was likewise apparent from the discoveries that the dairy cow proprietors in the two zones were neglected to designate their assets proficiently. The examination additionally recognized some significant issues in dairy raising and made a bunch of ideas for dairy advancement

An examination was done on financial matters of milk creation in the bathan spaces of Bangladesh by Rahman and Akterzzaman (1994) to discover the dispersion of bathan land, crowd size, cost and return of milk creation and limitations identified with milk creation in the two bathan spaces of Pabna and Sirajganj locale. The enormous crowd sizes cover huge number of proprietors and huge size of bathan land yet the land region per dairy cattle was discovered most noteworthy in the medium group size. The milk yield per creature ' each day in little, medium and huge group size were 3.87, 3.37 and 2.38 liters individually while the expense of creation per liter added up to Tk. 8.70,9.22 and 12.33 individually. The net returns per cow each day were Tk. 8.07 and Tk. 4.65 separately for little and medium crowd size and the total deficit was assessed at Tk. 3.14 if there should arise an occurrence of huge group size.

Alam et al. (1995) directed an investigation entitled " financial matters of little dairy ranches in chosen spaces of Bangladesh" to assess the financial matters of dairy cultivating utilizing information gathered information from an aggregate of 20 haphazardly chose ranches, 10 each from Savar and Manikgong thana in Dhaka locale. The chose ranches were arranged by group size into three classes, viz, little homestead (1-5 cows), medium ranch (6-10 dairy cattle) and enormous homestead (11-20 cows). The aftereffects of the investigation showed that cross-reproduced cows per ranch were more in number (2.55) than of neighborhood cows (0.65). The quantity of cross-reproduced cows expanded as the homestead size expanded. The creation of milk per cross-reproduced cows was higher (5.66 liters) than nearby ones (2.23 - liters). Most noteworthy (5.74 liters) milk yield per cross-reared cows was recorded for the enormous homesteads. The normal lactation period for cross-reproduced cows were 304 days while the comparing figure for nearby reared cows were 210 days. The utilized of feed was low in light of the fact that the fanners were less keen on developing grain crop creation. Concentrates took the most elevated offer (35%) trailed by work charges (24%) underway expense of homesteads. Creation cost and returns for scaled down dairy ranches were higher in huge homesteads contrasted with medium, which show that little dairy cultivating is monetarily beneficial.

**2.5: Examination of relative productivity:**

Ashrafuzzaman (1995) led an examination to research the financial attributes of native and cross-reproduced dairy cow proprietors to dissect the general benefit of those dairy cows. The examination covered two towns under Shazadpur thana of Sirajganj locale. It was uncovered from the investigation that 38 and 62 percent of cows were native and cross-reproduced dairy type separately in the examination region. The each day complete expense of raising a cross-reared cow (Tk. 35.05) was a little higher over a native cow 6,65 liters for a cross-reproduced cow which was about twofold the normal milk yield each day of 3.62 liters 15.64 and Tk. 45.83 for and native and cross¬bred dairy cow individually demonstrating around multiple times higher net get back from a get reproduced dairy over native cows. The accessibility of paddy straw, green grass, concentrate, work and capital were decidedly related with milk yield with minor exemptions. Despite the fact that it was noticed both kind of dairy ranchers didn't proficiently utilize that assets. The cross-reproduced dairy cow proprietors end up being more judicious in distributing assets. At long last the investigation distinguished a few issues and imperatives like absence of appropriate treatment and medication, shortage of feed and feed, absence of legitimate treatment and dangers, absence of credit and low cost of milk. The investigation saw that the little and minimal ranchers by keeping 3-4 cross-reproduced dairy cows rather than native dairy cows could make money by receiving family dairy cultivating or scaled down dairy cultivating as a calling.

Pursley (2007) directed an examination to investigate the monetary presentation of sponsored dairy cultivates in Tangail locale. The dairy ranchers were found to have tolerably expanded the group size subsequent to accepting sponsorship. The net returns per farm were Tk. 14,463, Tk. 21,773 and Tk. 58,173 every year for neighborhood and cross and cross¬bred cultivates separately. The speculation per taka return was of Tk. 1.19, Tk.1.27 and Tk. 1.37 separately for neighborhood, and cross and cross-reproduced ranches. In general execution of cross-reared dairy cows was nearly better compared to that of neighborhood reproduced cows. Milk creation just as milk utilization in all classifications of homesteads expanded altogether after presentation of the public authority appropriation program. Feed zones in neighborhood and nearby and crossbred ranches were accounted for to be expanded considerably after the mediation. Work business, especially female work from family and youngster work from employed sources altogether expanded because of the presentation of the appropriation conspire. The example dairy ranchers of the examination region additionally distinguished non¬-accessibility of touching area, shortage of feed, exorbitant costs of concentrate feed, lacking veterinary administrations, exorbitant costs of prescriptions, non-accessibility of cross¬bred animals as the significant imperatives to dairy improvement. For sound dairy advancement, they recommended for rent of government khas land for grain creation, foundation of feed factories, arrangement of sufficient veterinary administrations, and supply of drugs at sensible costs and government offer of crossbred creatures.

A study concerned with economics of commercial dairy fanning is relatively a new area in Bangladesh. Moreover to evaluate the economic profitability and marketing systems with current status of dairy farming practices at different categories of commercial farms in some selected milk pocket areas in Bangladesh an attempt was made by the study entitled as "Asocio-economic study on local and commercially reared cross-bred Dairy enterprises at some selected Upazilas in Chattogram Division".

**CHAPTER–III**

**METHODOLOGY OF THE STUDY**

**3.1: Introduction:**

In this section the different advances, which were embraced by the specialist for leading this investigation, have been clarified. In this examination the scientist evaluates the financial profiles, analyze the taking care of, lodging, the executives, milk promoting channels, monetary benefit and issue a conflict of limited scope business dairy endeavours at some chose peri-metropolitan regions in country Bangladesh by utilizing appropriate strategies and methods dependent on the recorded information yield information during the investigation time frame.

**3.2:** **Selection of study areas:**

A two-stage defined inspecting methods were applied for determination of test ranchers to direct handle base trial. In the main stage 2 regions were chosen purposively from milk pocket regions in Bangladesh. In this manner three Upazilas were chosen from one locale and two upazilas were chosen from another region. The purposively chosen peri urban Upazilas were banshkhali and lohagara for Chittagong area, Cox's Sadar, kutubdia, and Chakaria upazilas from Cox's bazaar region

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**Fig-1: Study location Maps**

**3.3: Sample Procedures:**

It is not possible to make a survey covering all the farms of the study areas. For this reason, sampling was done to select representative small scale dairy farms to minimize time and cost of the study. Out of the representative farms some should therefore, be chosen which could represent a reasonably true picture of the region in a sample survey with required information from the selected dairy farms only.

**3.4: Selection of sample farms for the study:**

The selected commercially operated cross-bred small scale dairy farms were chosen from the study areas under three categories farms purposively. Selected commercial dairy ranches were ordered as Small size (milch cow under 5), medium size (milch cow fluctuates 5 to 10) and large size (milch cow in excess of 10 cows) under five different location in Chattogram division of Bangladesh. An essential visit was done at 5 areas DLS office for choosing test for ins and out investigation according to their ideas and populace thickness of dairy ranches. In total 12 small sizes, 8 medium sizes and 4 large sizes commercial dairy ranches were chosen purposively from each location for in depth study. Altogether, 60 small sizes, 40 medium sizes and 20 large sizes commercially operated dairy farms ranch were chosen from the selected five locations.

**3.5: Study type and information assortment:**

An analytical cross sectional study with a comprehensive survey protocol was designed. Structured questionnaire consisted of a combination of closed, semi-open; open-ended questions were used to collect information through directed interviews of farm owner, manager and or farm employees. The questionnaire was prepared in conformity with the study objectives and intended to collect information on major areas like farmers regarding socio economics, farm resources, management practices, production and farm profitability.

**3.6: Technique for information assortment, time and dependability of information:**

The important information identified with the set goals of the examination were gathered by the named field agents under oversight by private investigator from the particular ranch proprietors all the while by straightforwardly visiting the example ranches on broad homestead attributes profiles, creation, the executives, showcasing and monetary perspective during the trial time frame before June 2020 in each area. The gathered information were cross confirmed to the gathered information for their consistency and the information were altered and coded by the other specialist and myself in CVASU for final data collection.

**3.7: Method of Data Collection:**

Reliable data are directly related the success and validity of the study. The author himself collected all data for this study. The author visited double time in each study area for obtaining reasonable and accurate data. Before during data collection, the objectives of the data collection were clearly explained to the respondents so that they could respond freely. The respondents were interviewed during their leisure time, so that they could respond easily. The data for the study were collected from both primary and secondary sources. The secondary data were collected from various published book, reports, journals, thesis, bulletin, BBS and Government official records from respective DLS office.

**3.8: Period of Data Collection:**

The data were collected through the questionnaire directly during the time period from June-2020 to December 2020 by the researcher himself from the farm owners and/or farm managers. The secondary data were collected from January 2020 to June 2021.

3**.9: Data Collection, Analytical Technique and Estimation of Economic profitability:**

Data were collected from altogether 120 dairy farms where 60 no. of Small farmers, 40 no. of medium farms and 20 no. were large farms. All information handling included field and office altering, coding and arrangement. Data were presented in the tabular form after analyzing by using the statistical program basically in Excel. The information passage format was planned in Microsoft Dominate. Consistency cross checks and keystroke blunders were likewise recognized and adjusted as needs be before additional handling. The homestead business scientific strategies were utilized for assurance of per cow each year net benefit in this investigation. Information were additionally broke down utilizing distinct measurements like mean, rate, proportions, and positioning.

**3.10: Measures used to record farm data:**

**3.10.1: Qualitative measures:**

Subjective measures depended on talked with reactions, emotional evaluation on visual investigation or its blend any place material. Rancher's financial status were surveyed on their instructive capability, normal month to month pay, family size and number of dependant(s), ownership of fixed homestead asset(s) and animal assets. Subjective evaluation on lodging the executives were significantly founded on lodging type, floor type, waste framework, ventilation status, recurrence of cleaning, manure the board.

Additionally taking care of the executives rehearses were generally evaluated on kind of feed offered, recurrence and season of food offer, source and occasional accessibility of feed stuff, wellspring of water supply, drinking recurrence. Reproducing the executives and its practices were assessed on nature of rearing, signs utilized for distinguishing estrus cows, time period following warmth, decision of genotype (semen), getting dry, udder wellbeing the board. Wellbeing and preventive consideration rehearses were surveyed on kind of vet administrations, inclusion of vet and warning administrations, de-worming, vaccination

**3.10.2: Quantitative Measures**

Complete homestead region and shed size (length X width) was estimated on nearby land estimating units (shotak) and later changed over into standard unit (sqm). The size of each shed was isolated by the quantity of creatures kept in that to figure relative floor space and loading thickness. Number of window and passage into shed, admittance to daylight and air were utilized to moderately survey ventilation status of lodging. The day by day supply measure of roughage per creature was estimated in a roundabout way from the quantity of thumb full volume of every day supply or by estimating the filled in volume of the trough. Complete load of own defined concentrate combination of a ranch was partitioned by the all out number of animals offered that add up to in a roundabout way figure the normal measure of concentrate supply per animal each day. Readymade concentrate supply sum was evaluated by estimating the volume of supply pot and its recurrence of their utilization to supply per creature.

**3.11: Measures of farm profitability**

**3.11.1: Annual farm income**

Income from annual farming operations was acquired by summarizing the profits/receipts from yearly offer of animal items (milk deals), yearly offer of live animals including youthful (animal deals), saleable yearly ranch by items (fertilizer, bio-fuel, bio-gas), incidental pay from occasional yield and vegetables developed on ranch land (ranch by155 items and different deals) and expansion in worth of stock toward the finish of year (change in upsides of stock).

**3.11.2: Annual farm cost/expenses**

The complete yearly expense of farm activity depended on both yearly factor costs and fixed or overhead expenses. The segments used to ascertain yearly factor cost incorporates creature substitution cost, feed cost, cost of recruited/contract/every day work 142 and credited family work, remedial and preventive consideration cost, yearly rearing expense and yearly vehicle cost. Yearly overhead or fixed expense computation contained, wages and recompenses of perpetual ranch workers, yearly upkeep and running expense of homestead utilities, vehicles and constructions, yearly homestead activity cost (utility-power, water, gas) and incidental yearly costs of doing business like phone, voyaging, ranch consultancy charges, ranch improvement activities and extra or startling expenses in farm activity.

**3.11.3: Annual farm operating profit**

Annual farm operating profit was calculated as per method described by Makeham and Malcom (1995) using the formula as follows: a) Total annual income (BDT)/receipts –total annual variable costs= Gross Margin. b) Gross margin – total annual overhead/fixed cost = Farm annual operating profit.

**3.11.4: Annual operating profit/cow:**

Annual operating profit/cow was calculated by dividing the annual farm operating profit (in BDT) by average number of cows at farm (number of cows at farm 12 months preceding the time of survey plus number of cows remained in farm at the end of survey divided by two).

**CHAPTER IV**

**RESULTS AND DISCUSSIONS**

**4.0: Introduction**

The point and targets of this part is to portray the noticed outcomes and discoveries of the examination. The discoveries with respect to socio financial matters status, creation, the executives, promoting and productivity of limited scope dairy ranches in the examination regions are talked about at the same time as under part of this section.

**4.1: General profiles of dairying in various dairy farms**

In this section briefly discussed the current status of dairy farming practices under different categories of dairy farms regarding social characteristics profiles dairy farm owners and their farms as under:

**4.1.1: Socio-economic profiles of Small-Scale Dairying Farm Owners**

General profiles in regards socio-economic status of limited scope business dairy farm proprietors corresponding to various degrees of homestead sizes are summed up in Table-1. The noticed most elevated number ranch proprietors (36.67%) age limits lies in scope of 30-45 years and second most elevated (41.67%%) lies in under 30 years and (21.66 %) ranch proprietors age lies in over 45 years old level.

**Fig-2: Age Distribution of farm owners’**

Lion's share of dairy proprietors enrolled to be similarly proficient with higher essential was 58.33%, essential to optional was recorded as 30.83% and up to graduation to post graduation was discovered 10.83%. Dairying viewed as the principal kinds of revenue to just 25.83 % of income while most of proprietors had dairying and harvest culture was discovered 46.67% and dairying with side business was discovered 18.33 % and 9.17 % income was found as dairying with service types of revenue holders. The distinction in instructive status, principle calling and reason for cultivating of the proprietors was anyway not huge relationship with ranch sizes. Practically 30.83 % of the noticed farm owners yearly normal pay level lies between Tk. 5 to 10 lakh, 51.67 % beneath Tk. 5 lakh and 17.50 % lies in above Tk. 10 lakh pay level.

The most extreme farm proprietor's (25.00 %) occupation was discovered dairying with trimming. A large portion of the ranch proprietors (70.83%) accepting the dairying as an extra types of revenue. Length of cultivating experience of proprietor was discovered most elevated (44.17 %) between 5-10 years and under 5 years about 45.00 % farm owners. Most noteworthy quantities of homestead proprietors about 43.33% detailed that the ranch possession has a place with own self and 11.66% proprietors worked their homestead business related with imparted to different companions and family members as an organization business. A large portion of the homestead proprietors (33.33 %) worked the ranch business financed independently (Table-1).

**Fig-3: Farming as a profession**

**4.1.2:** **Oversight and the executive practices of for Small Scale Dairying:**

Farm supervision level and resource management features is presented in Table 2. Despite the fact that farm proprietor answered to be engaged with in general homestead oversight in lion's share of ranch (39.23%) yet just 44.62 % of proprietor really engaged with normal dynamic while 28.46 % of proprietors were partaken with their utilized farm manager time to time as leader and 21.67 % not under any condition engaged with ranch activity dynamic exercises.

**Table-1: Socio-economic profiles of commercially operated cross-bred dairy farm owners.**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Particulars of Variables** | **Number of Farms under different Farm Categories** | | | | | | | | |
| **Small Sizes Farm**  **(<5 Cows)**  **N = 60** | **Medium Sizes Farm**  **(5 to 10 Cows)**  **N=40** | | **Large Sizes Farm**  **(>10 Cows)**  **N=20** | | | **ALL Farm (N=120)** | | |
| **Age of Farm Owner:** | | | |  | | |  | | |
| Below 30 Yrs | 25 (41.67) | 9(22.50) | | 10(50.00) | | | 44 (36..67) | | |
| 30- 45 Yrs | 22 (36.67) | 20(50) | | 8(40.00) | | | 50(41.67) | | |
| Above 45 Yrs. | 13 (21.66) | 11(27.50) | | 2 (10.00) | | | 26 (21.66) | | |
| **Educational status:** |  |  | |  | | |  | | |
| Primary to Secondary | 35 (58.33) | 25 (62.50) | | 10(50.00) | | | 70 (58.33) | | |
| Higher Secondary | 20 (33.33) | 9(22.50) | | 8 (40.00) | | | 37 (30.83) | | |
| Graduate and above | 5(8.33) | 6(15.00) | | 2(10.00) | | | 13 (10.83) | | |
| **Sources of income of Farm Owner** | |  | |  | | |  | | |
| Dairying only | 14 (23.33) | 12 (30.00) | | 5 (25.00) | | | 31(25.83) | | |
| Both Dairying &  Cropping | 30 (50.00) | 18 (45.00) | | 8 (40.00) | | | 56 (46.67) | | |
| Both Dairying & other  Business | 10 (16.67) | 8( 20.00) | | 4(20.00) | | | 22 (18.33) | | |
| Dairying & Services | 6(10.00) | 2 (5.00) | | 3(15.00) | | | 11(9.17) | | |
| **Income level of the Farm Owner** | |  | |  | | |  | | |
| Below Tk. 500,000 | 33 (55.00) | 22 (55.00) | | 7 (35.00) | | | 62 (51.67) | | |
| Tk. 500,001-Tk.10,00,000 | 15(25.00) | 12(30.00) | | 10 (50.00) | | | 37 (30.83) | | |
| Above Tk.10,00,000 | 12 (20.00) | 6 (15.00) | | 3 (15.00) | | | 21 (17.50) | | |
| **Occupational Status:** |  |  | | |  | | |
| Dairying only | 10(16.67) | 14(35.00) | 2 (10.00) | | | 26 (21.67) | | |
| Dairying & cropping  Cultivation | 15 (25.00) | 10(25.00) | 5 (25.00) | | | 30 (25.00) | | |
| Dairying & other  Business | 20 (33.33) | 10(25.00) | 8 (40.00) | | | 38 (31.67) | | |
| Dairying & other  Services | 15(25.00) | 6(15.00) | 5 (25.00) | | | 26 (21.66) | | |
| **Type of Farming:** |  |  |  | | |  | | |
| Farming as a main business (Commercial) | 20 (33.33) | 10 (25.00) | 5 (25.00) | | | 35(29.17) | | |
| Extra income (Semi Commercial) | 40 (66.67) | 30 (75.00) | 15 (75.00) | | | 85 (70.83) | | |
| **Year of Farming:** |  |  |  | | |  | | |
| ‘Below 5 Yrs | 30 (50.00) | 13(32.50) | 11 (55.00) | | | 54 (45.00) | | |
| 5 - 10 Yrs | 25 (41.67) | 20(50.00) | 8 (40.00) | | | 53 (44.17) | | |
| Above 10 Yrs | 5 (8.33) | 7(17.50) | 1 (5.00) | | | 13 (10.83) | | |
| **Ownership of Farm:** |  |  |  | | |  | | |
| Owned | 40 (66.67) | 25 (62.50) | 8 (40.00) | | | 73(60.83) | | |
| Rented in | 15 (25.00) | 10 (25.00) | 10 (50.00) | | | 35 (29.17) | | |
| Shared in | 5 (8.33) | 5(12.12) | 2 (10.00) | | | 12 (10.00) | | |
| **Nature of Financing for operation:** | |  |  | | |  | | |
| Fully Own Financed | 30 (50.00) | 20 (50.00) | 2 (10.00) | | | 52 (43.33) | | |
| Both own and Bank Financed | 20 (33.33) | 10(25.0) | 10 (50.00) | | | 40 (33.33) | | |
| Fully Bank Financed | 2 (3.33) | 6 (15.00) | 6 (30.00) | | | 14 (11.67) | | |
| Borrowed from Relatives etc. | 8 (13.33) | 4 (10.00) | 2 (10.00) | | | 14 (11.66) | | |

**Source: Field survey 2020** (Figures in the parentheses indicates percentage)

**Table-2: Supervision and Management practices of commercially operated cross-bred dairy farms**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Particulars of Variables** | **Number of Farms under different Farm Categories** | | | |
| **Small Sizes Farm**  **(<5 Cows)**  **N = 60** | **Medium Sizes Farm**  **(5 to 10 Cows)**  **N=40** | **Large Sizes Farm**  **(>10 Cows)**  **N=20** | **ALL Farm (N=120)** |
| **Overall supervision and farm management activities:** | | |  |  |
| Farm owner himself | 45 ( 42.50) | 24 (36.92) | 10 (40.00) | 76 (39.23) |
| Salaried Farm manager | 2 (27.50) | 1 (26.15) | 2 (36.00) | 5 (28.46) |
| Farm causal staffs | 5 (12.50) | 12 (20.00) | 2 (16.00) | 19 (16.92) |
| Family members | 7 (17.50) | 3 (16.92) | 6 (8.00) | 19 (15.38) |
| **Level of power in making decision in farm operation:** | | |  |  |
| Mostly decided by  farm owner himself | 38 (63.33) | 25 (62.50) | 12 (60.00) | 75 (62.50) |
| Partly being briefed  by farm manager | 8 (13.33) | 5 (12.50) | 6 (30.00) | 19 (15.83) |
| Not at all | 14 (23.33) | 10 (25.00) | 2 (10.00) | 26 (21.67) |
| **Total hard size in farm:** | | |  |  |
| Up to 15 | 55 (91.67) | 35 (87.5) | 10 (50.00) | 100 (83.33) |
| 15 to20 | 3 (5.00) | 3 (7.50) | 5 (25.00) | 11 (19.17) |
| Above 20 | 2 (3.33) | 2(5.00) | 5 (25.00) | 9 (7.50) |
| **Number of cow managed per Labour in farm:** | | |  |  |
| Below 4 cows | 55 (91.67) | 30 (75.00) | 3 (15.00) | 87 (72.50) |
| 4 to 6 cows | 3 (5.00) | 5 (12.50) | 15 (75.00) | 23 (19.17) |
| Above 8 cows | 2 (3.33) | 5 (12.50) | 2 (10.00) | 9 (7.50) |
| **Areas of farm structure and homestead (Sqm)** | | |  |  |
| Up to 1000 Sqm | 58 (96.67) | 35 (58.33) | 12 (60.00) | 105 (87.50) |
| 1000 to 2500 Sqm | 1 (1.67) | 3 (12.5) | 4 (20.00) | 8 (6.67) |
| Above 2500 Sqm | 1 (1.66) | 2 (5.00) | 4 (20.00) | 7 (5.83) |

**Source: Field survey, 2020** (Figures in the parentheses indicates percentage)

The distinction of contribution level of ranch proprietors in routine dynamic interaction were emphatically connected with ranch sizes. The herd sizes of the majority farm owners about 72.50 % lies in below 4 cows. About 19.17 % ranch proprietors revealed that, normal 4-6 cows are overseen by a work in their homestead working framework. The most elevated number about 87.50 % of homestead organized regions was discovered around 1000 Sqm (Table-2).

**Fig-4: Overall supervision and management system**

**4.1.3: Housing Practices of in dairying:**

The summary of housing management practices relative to farm sizes of small scale commercial dairying is analyzed in Table-3. Most of the dairy farm houses about 43.33 % was found made of Shawn’s house and about more than half (50.00%) of the farms provided separate housing near to farm owner main house which was set up for specific age and production groups. Majority of housing system had sufficient and rough floor (stocking density) allowed for individual cows about 60.00 %. The ventilation status of most of the farm housing observed to be found good with either one or both sided window about 39.17%. Most of the farms about 64.17 % are facilitated additional artificial flow of air by electric fan with natural air access in the farm houses. The disposal of animal wastage was also recorded and found that the farm waste disposal management practice with some either dip in a pit and drain them away to major sewerage outlet about 29.17 % and 35.00%, respectively. Some are used or sold the animal waste as fertilizer or as a cheap fuel or to generate bio gas about 15.00 % reported by farm owners (Table-3).

**Table-3: Housing practices of commercially operated cross-bred dairy farms.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Particulars of Variables** | **Number of Farms under different Farm Categories** | | | |
| **Small Sizes Farm(< 5 Cows)**  **N = 60** | **Medium Sizes Farm**  **(5 to 10 Cows)**  **N=40** | **Large Sizes Farm**  **(>10 Cows)**  **N=20** | **ALL Farm (N=120)** |
| **Nature of Farm House:** |  |  |  |  |
| Shawn’s House | 35 (58.33) | 15(37.50) | 2(10.00) | 52(43.33) |
| Semi Pucca Tin shed | 20(33.33) | 15(37.50) | 8(40.00) | 43(35.83) |
| Building | 5(8.33) | 10 (25.00) | 10(50.00) | 25(2.83) |
| **Location of Cow shed:** |  |  |  |  |
| Attached to Farm owner House | 46 (76.67) | 14 (35.00) | 2(10.00) | 62 (51.67) |
| Near to Farm owner House | 12(20.00) | 13 (32.50) | 10(50.00) | 35 (29.17) |
| Far from Farm owner House | 2(3.33) | 13 (32.50) | 8(40.00) | 23 (19.17) |
| **Space per Cow** |  |  |  |  |
| Congested and open floor | 15 (25.00) | 15 (37.50) | 8 (40.00) | 38 (31.67) |
| Sufficient & rough floor | 45 (75.00) | 25 (62.50) | 12 (60.00) | 82 (68.33) |
| **Ventilation Status**: |  |  |  |  |
| Good (window both side) | 15 (25.00) | 20 (50.00) | 12 (60.00) | 47 (39.17) |
| Moderate(window only one side) | 15 (25.00) | 12 (30.00) | 4 (20.00) | 31 (25.83) |
| Poor ( No window) | 30 (50.00) | 8(20.00) | 4 (20.00) | 42 (35.00) |
| **Flow of Air in house:** |  |  |  |  |
| Both (natural and  Electric fan) | 25 (77.50) | 35 (87.50) | 17 (85) | 77(64.17) |
| Natural only | 35 (22.50) | 5 (12.50) | 3 (15.00) | 43 (35.83) |
| **Disposal of Animal wastage:** | |  |  |  |  |
| Dip in a Pit | 10 (16.67) | 15 (37.50) | 10 (50.00) | 35 (29.17) |
| Drain out | 30 (50.00) | 10 (25.00) | 2 (10.00) | 42 (35.00) |
| Sold | 10 (16.67) | 10 (25.00) | 5 (25.00) | 25 (20.83) |
| Used for Fuel /Fertilizer / Biogas etc. | 10 (16.66) | 5 (12.50) | 3 (15.00) | 18 (15.00) |

**Source: Field survey, 2020** (Figures in the parentheses indicates percentage)

**Fig-5: Nature of Farm House**

**4.1.4: Feeds and Feeding systems of dairy rearing practices**

The information in regards to feeds and feeding practices have scope dairying practices to various homestead classifications is appeared in Table 4. A huge affiliation was found with regular example of feed supply at farms and farm catagories were obvious. Recorded farms with the regular act of mostly home provided and in part bought green grasses and dry roughage alongside cash bought concentrates about 41.67 % of the farm owners.

**Table-4: Feeds and Feeding practices of commercially operated cross-bred dairy farms.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Particulars of Variables** | **Number of Farms under different Farm Categories** | | | |
| **Small Sizes Farm (< 5 Cows)**  **N = 60** | **Medium Sizes Farm (5 to 10 Cows)**  **N=40** | **Large Sizes Farm (>10 Cows)**  **N=20** | **ALL Farm (N=120)** |
| **Types & Sources of Feeds:** |  |  |  |  |
| Concentrates with own supplied dry roughages and green grasses regularly | 15 (25.00) | 10 (25.00) | 7 (35.00) | 32 (26.67) |
| Concentrates with partly supplied dry roughages and green grasses regularly | 25 (41.67) | 15 (37.50) | 10 (50.00) | 50 (41.67) |
| Concentrates with fully purchased dry roughages and green grasses regularly | 20 (33.33) | 15 (37.50) | 3 (15.00) | 38 (31.66) |
| **Types of supplied Green Roughages** |  |  |  |  |
| Traditional and local grass only | 40 (66.67) | 15 (37.50) | 5 (25.00) | 60 (50.00) |
| Hybrid green fodder only | 15 (25.00) | 20 (50.00) | 10(50.00) | 45 (37.50) |
| Both Local and Hybrid Fodder | 5 (8.33) | 5 (12.50) | 5 (25.00) | 15 (12.50) |
| **Types of supplied concentrates** |  |  |  |  |
| Own formulated and mixed | 55 (91.67) | 35 (87.50) | 12 (60.00) | 102(85.00) |
| Readymade concentrates | 5 (8.33) | 5 (12.50) | 8 (40.00) | 18 (15.00) |
| **Nature of water drinking** |  |  |  |  |
| Concentrates mix poured in water | 35 (58.33) | 25 (62.50) | 10 (50.00) | 70 (58.33) |
| Salt and water mixed only | 16 (26.67) | 12 (30.00) | 7 (35.00) | 35 (29.17) |
| Clean water only | 9 (15.00) | 3 (7.50) | 3 (15.00) | 15 (12.50) |

**Source: Field survey, 2020 (Figures in the parentheses indicates percentage)**

The farms offered the green fodder along with deshi or local green grass to their cows is fed on was found about 50.00 %, hybrid fodder 37.50 % and both local and hybrid about 12.50 % farms. The most of the farm owners about 85.00 % used to feeding practices by own formulated -mixed feeds and about 15.00 % farm used readymade concentrates feeds to their cows. About 58.33 % of the farms reported that concentrates mix poured in water and cows’ drinks water with concentrates feeds (Table-4).

**Fig-6: Types of supplied green Grasses**

**4.1.5: Production potentials of dairying system:**

The feed consumption possibilities of observed cows are portrayed in Table -5. The creation possibilities is investigated by looking at the variable viewing creation like extent of milch cows, dry cows in pregnant, get dry administration practices and status of calving of the noticed cows of the considered farms. About 52.50 % ranches announced that there have in excess of 70% cows under draining among the all out dairy group size. The most of the farm owners (34.17%) revealed that the pregnant cow lies between goes from 25 % to 35 % of their dairy group sizes.

**Table-5: Comparative production potentials of commercially operated cross-bred dairy farm at different categories of dairying system.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Particulars of Variables** | **Number of Farms under different Farm Categories** | | | |
| **Small Sizes Farm**  **(< 5 Cows)**  **N = 60** | **Medium Sizes Farm**  **(5 to 10 Cows)**  **N=40** | **Large Sizes Farm**  **(>10 Cows)**  **N=20** | **ALL Farm (N=120)** |
| **Proportion of farm cows in milk** | | | |  |
| Up to 70 % | 35 (58.33) | 20 (50.00) | 8 (40.00) | 63 (52.50) |
| > 70 % to 80 % | 20 (33.33) | 12 (30.00) | 10 (50.00) | 42 (35.00) |
| > 80 % | 5 (83.33) | 8 (20.00) | 2 (10.00) | 15 (12.50) |
| **Proportion of pregnant cows** | |  |  |  |
| Up to 25 % | 25 (41.67) | 10 (25.00) | 8 (40.00) | 43 (35.83) |
| 25 % to 35 % | 14 (23.33) | 20 (50.00) | 7 (35.00) | 41 (34.17) |
| Above 35 % | 21 (35.00) | 10 (25.00) | 5 (25.00) | 36 (30.00) |
| **Proportion of Dry cows in pregnant** | |  |  |  |
| Up to 15 % | 24 (40.00) | 25 (62.50) | 8 (40.00) | 57 (47.50) |
| 15 % to 25 % | 22 (36.67) | 8 (20.00) | 10 (50.00) | 40 (33.33) |
| Above 25 % | 14 (23.33) | 7 (17.50) | 2 (10.00) | 23 (19.17) |
| **Adopted dry off policy for pregnant** | |  |  |  |
| Milking continues up to next calving as available | 15 (25.00) | 7 (17.50) | 3 (15.00) | 25(20.83) |
| Milking up to standard length of pregnancy (6-7) month | 45 (75.00) | 33 (82.50) | 17 (85.00) | 95 (79.17) |
| **Calving status of milch cows** | | | |  |
| Up to 3 calving | 43 (71.67) | 23 (57.50) | 5 (25.00) | 71 (59.17) |
| 4 to 5 caving | 12 (20.0) | 12 (20.00) | 11 (55.00) | 35 (29.17) |
| Above 5 calving | 5 (8.33) | 5 (12.50) | 4 (20.00) | 14 (11.66) |

**Source: Field survey, 2020 (Figures in the parentheses indicates percentage)**

About 47.50 % of farm owners announced that, about 15.00 % of complete pregnant cows are being treated as completely dry cows in the contemplated ranches. About 79.17 % ranch proprietors embraced evaporate off approach with draining to 6-7 months length in pregnancy and about 20.83% farm owners reported used in milking continues up to next calving as availabl. The majority of the farm owners about 59.17% announced that the milch cows of their farms are lies up to 3 calving (Table-5).

**Fig-7: Adopted dry off policy for Pregnant Cows**

**4.1.6: Disease occurrences in small scale dairying**

The recurrence of illnesses of the cows of the separate dairy farms are recorded and examined according to events of basic sorts sicknesses in various classes of homesteads is summed up in Table-6. The instances of illnesses like weakness, mastitis, uterine contamination, FMD and metabolic inadequacy infections are found in the examined dairy farms. About 70.83 % farms reported that up to 4 lameness cases were found in their farm during immediate last years of farming.

The farm owners reported that more than 5 cases were found as affected by 21.67 % by Mastitis, 40.00 % by uterine infections, 18.33% by FMD and 23.33 % by metabolic deficiency diseases (Table-6).

**Table-6: Common Disease occurrence of the cows of commercially operated cross-bred Dairy farms.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Particulars of Variables** | **Number of Farms under different Farm Categories** | | | |
| **Small Sizes Farm**  **(< 5 Cows)**  **N = 60** | **Medium Sizes Farm**  **(5 to 10 Cows)**  **N=40** | **Large Sizes Farm**  **(>10 Cows)**  **N=20** | **ALL Farm (N=120)** |
| **Frequency of Lameness cases in last year** | | |  |  |
| Up to 4 cases | 45 (75.0) | 28 (70.00) | 12 (60.00) | 85 (70.83) |
| Above 4 cases | 15 (25.00) | 12 (30.00) | 8 (40.00) | 35 (29.17) |
| **Frequency of mastitis cases in last year** | | |  |  |
| Up to 5 cases | 48 (80.00) | *32 (80.00)* | 14 (70.00) | 94 (78.33) |
| Above 5 cases | 12 (20.00) | 8 (20.00) | 6 (30.00) | 26 (21.67) |
| **Frequency of uterine infection cases in last year** | | |  |  |
| Up to 5 cases | 35 (58.33) | 25 (62.50) | 12 (60.00) | 72 (60.00) |
| Above 5 cases | 25 (41.67) | 15 (37.50) | 8 (40.00) | 48 (40.00) |
| **Frequency of FMD cases in last year** | | |  |  |
| Up to 5 cases | 45 (75.00) | 35 (87.50) | 18(90.00) | 98 (81.67) |
| Above 5 cases | 15 (25.00) | 5 (12.50) | 2 (10.00) | 22 (18.33) |
| **Frequency of metabolic cases in last year** | | |  |  |
| Up to 5 cases | 44 (73.33) | 37 (92.50) | 11 (55.00) | 92 (76.67) |
| Above 5 cases | 16 (26.67) | 3 (7.50) | 9 (45.00) | 28 (23.33) |

**Source: Field survey, 2020 (Figures in the parentheses indicates percentage)**

**Fig-8: Frequency of FMD cases of last years**

**4.1.7: Productive and Reproductive traits of commercial dairy cows:**

The beneficial and regenerative attributes of the noticed dairy cows in regards to financial profiles are examined for clear thoughts regarding the cultivating status of limited scope dairying rehearses in Table-7.

**Table-07: Productive and Reproductive traits of commercially operated cross-bred dairy farms**.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Particulars of Variables** | **Number of Farms under different Farm Categories** | | | |
| **Small Sizes Farm**  **(< 5 Cows)**  **N = 60** | **Medium Sizes Farm**  **(5 to 10 Cows)**  **N=40** | **Large Sizes Farm**  **(>10 Cows)**  **N=20** | **ALL Farm (N=120)** |
| **Ave. lactation length of cows:** | |  |  |  |
| Up to 220- 240 days | 15 (12.50) | 5 (15.38) | 3 (16.00) | 23 (14.62) |
| 241 to 260 days | 35(62.50) | 30 (58.46) | 12 (52.00) | 77 (58.46) |
| 260 to 280 days | 10 (25.00) | 5 (26.15) | 5 (32.00) | 20 (26.92) |
| **Ave. Milk yield per cow per day:** | |  |  |  |
| Up to 4-7 liters | 40(35.00) | 12 (35.38) | 5 (24.00) | 57 (33.08) |
| 7 to 10 liters | 12(40.00) | 18(38.46) | 9 (48.00) | 39 (33.08) |
| 10 - 13 liters | 8 (25.00) | 10(26.15) | 6 (28.00) | 24(25.38) |
| **Ave. Length of calving interval :** | |  |  |  |
| Up to 275 days | 42 (22.50) | 14 (24.62) | 3 (20.00) | 59 (23.08) |
| 276 to 290 days | 10 (60.00) | 16 (53.85) | 15 (68.00) | 41 (58.46) |
| Above 290 days | 8 (17.50) | 10 (21.54) | 2 (12.00) | 20 (18.46) |
| **Ave. age of puberty** | |  |  |  |
| Below 2 yrs | 10 (17.50) | 10 (26.15) | 2 (16.00) | 22 (21.54) |
| 2 to 2.5 yrs | 42 (62.50) | 22 (60.00) | 14 (72.00) | 78 (63.08) |
| Above 2.5 yrs | 8 (20.00) | 8 (13.85) | 4 (12.00) | 20 (15.38) |
| **Ave. dry period of cows:** | |  |  |  |
| Up to 215 days | 25 (17.50) | 7 (7.69) | 1 (12.00) | 33 (11.54) |
| 215 to 230 days | 26 (52.50) | 20 (69.23) | 16 (72.00) | 62 (64.62) |
| Above 230 days | 9 (30.00) | 13 (23.08) | 3 (16.00) | 25 (23.85) |
| **Ave. Conception rate of Cows:** | |  |  |  |
| Single time | 40 (62.50) | 20 (69.23) | 8 (60.00) | 68 (65.38) |
| 2 to 3 times | 15 (30.00) | 14 (18.46) | 8 (28.00) | 37 (23.85) |
| Above 3 times | 5 (7.50) | 6 (12.31) | 4 (12.00) | 15 (10.77) |
| **Ave. Calf mortality rate of Cows** | |  |  |  |
| No mortality | 32 (47.50) | 19 (60) | 12 (64.00) | 63 (56.92) |
| Up to 10 to 30 % | 18 (35.00) | 11 (29.23) | 6 (32.00) | 35 (31.54) |
| Above 30 % | 10 (17.50) | 10 (10.77) | 2 (4.00) | 22 (11.54) |

**Source: Field survey, 2020 (Figures in the parentheses indicates percentage)**

Results from above table it was tracked down the greater part of the farms (58.46%) announced that, the normal length of lactation of the noticed cows under various classifications of dairy farms, was found under 241 t0 260 days level. The normal milk yield each day per cow was found under 7-10 liters and it was accounted for most elevated number homesteads (33.08 %) and afterward medium farms (38.46%). According to revealed by farm owners (58.46%) the normal length of calving stretch was discovered 276 to 290 days level considering all homesteads and the dry time of cows was discovered most elevated according to detailed by farm owners (64.62%) under 215 to 230 days.

**Fig-9: Average Conception rate of Cows**

The conception rate was found highest as single time about 65.38 percent farm’s cows where medium size farms was highest in percentage (69.23). The 56.92 % farms reported that, there has no mortality in calves in their farms but in this regard large farm owner responded was found highest is about 64% (table-7).

**4.1.8: Distribution herd sizes of studied dairy farms:**

The distribution of herd sizes of the studied farms of the observed small scale commercial dairy farms which constitutes of milch cows, dry cows, heifer, calf, bull and bullock etc. in the studied farms and it was presented in Table 8.

**Table- 8: Distribution herd size of commercially operated cross-bred dairy farms.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Particulars of Variables** | **Total Number of Farms under different Farm Categories** | | | |
| **Small Sizes Farm**  **(< 5 Cows)**  **N = 60** | **Medium Sizes Farm**  **(5 to 10 Cows)**  **N=40** | **Large Sizes Farm**  **(>10 Cows)**  **N=20** | **ALL Farm (N=120)** |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Milch Cow:** |  |  |  |  |
| Below 5 Years. | 45 (6.22) | 120 (6.58) | 112(8.03) | 277 (7.03) |
| 5 to 7 Years. | 65(8.98) | 255 (13.97) | 250 (17.93) | 570 (14.46) |
| Above 7 Years. | 75 (10.36) | 165 (9.04) | 85 (6.10) | 325 (8.240 |
| **Dry Cow:** |  |  |  |  |
| Below 5 Yrs | 35(4.83) | 45 (2.47) | 35 (2.51) | 115 (2.92) |
| 5 to 7 Yrs | 45(6.22) | 120 (6.58) | 110 (7.89) | 275 (6.97) |
| Above 7 Yrs. | 55(7.60) | 65 (3.56) | 49 (3.52) | 169 (4.29) |
| **Heifer** |  |  |  |  |
| Below 12 months | 25(3.45) | 110 (6.030 | 29 (2.08) | 164 (4.16) |
| 12 to 20 months | 42(5.80) | 165 (9.04) | 75 (5.38) | 282 (7.15) |
| Above 20 months | 45(6.22) | 55 (3.01) | 110 (7.89) | 210 (5.33) |
| **Calf:** |  |  |  |  |
| Below 6 months | 135(18.65) | 355 (19.45) | 250 (17.93) | 740 (18.77) |
| 6 to 12 months | 55(7.60) | 165 (9.04) | 115 (8.25) | 335 (8.50) |
| Above 12 months | 25(3.45) | 25 (1.37) | 85 (6.10) | 135 (3.42) |
| **Bull:** |  |  |  |  |
| Below 3 Years | 15(2.07) | 21 (1.15) | 11 (0.79) | 47 (1.19) |
| 3 to 5 Years | 25(3.45) | 45(2.47) | 27 (1.94) | 97 (2.46) |
| Above 5 Yrs. | 10(1.38) | 56 (3.07) | 17 (1.22) | 83 (2.10) |
| **Bullock** |  |  |  |  |
| Below 5 Years | 10(1.38) | 15 (0.82) | 7 (0.50) | 32 (0.81) |
| 5 to 7 Years | 12(1.66) | 32 (1.75) | 16 (1.15) | 60 (1.52) |
| Above 7 Years. | 5(0.69) | 11 (0.60) | 11 (0.79) | 27 (0.68) |
| **ALL** | 724 (100.00) | 725 (100.00) | 1394 (100.00) | 3943(100.00) |

**Source: Field Survey, 2020 (Figures in the parentheses indicates percentage)**

**Fig-10: Distribution of Herd sizes in the farm.**

It was found that, the highest number of farm animals was found calves (31 %), 2nd highest was found milch cows is about 30%, 3rd highest is found heifer are about 16 % is heifer and lowest one is bullocks is about 3 % in the studied farms (Table-8).

**4.2: Assessment of Cost, Returns and profitability of dairying system:**

The motivation behind this segment is to evaluate the expenses, returns and ranch productivity of limited scope business dairying rehearses under various classifications of farms. The things of costs remembered for this investigation were takes care of, work, veterinary, lodging, capital contributed and working capital, The all out costs per cow per lactation were grouped into cash and non-cash costs. Money costs were those expense which the dairy cow proprietors needed to pay out of their pocket to procure the data sources. then again, non-cash costs were assessed for home provided takes care of, family work, interests on the worth of a dairy cows, premium on lodging esteem, premium on working capital and devaluations of hosing beds and so on the profits side, net returns, net returns above absolute expenses and net returns above cash costs were resolved and examined in this examination.

**4.2.1: Costs of dairying at different categories of farms**

The necessary expenses per cow each year in business dairying are introduced in table-9. The absolute expenses per cow each year were assessed at Tk. 80112.40, Tk.84667.20 and Tk. 85.809.75 for Small, medium and large homesteads, individually. It was tracked down that the money costs shared the significant piece of the absolute expenses and represented Tk. 52864.90, Tk.55911.90 and Tk. 46975.50 and partaken in individual absolute expense are 65.99, 66.04 and 54.74 percent for Small, Medium and Large classes of dairy farms separately. The non-cash costs each lactation year per cow remained at Tk. 27247.50, Tk. 28755.30, and Tk. 38834.25 for little, medium and enormous homesteads, separately which is represented 34.01, 33.96 and 45.26 percent of their particular all out costs. The thing savvy expenses of rearing per dairy cows each year were assessed and dissected as beneath:

**4.2.1.1: Feed Cost of Rearing Dairy Cows:**

Feed Cost was one of the significant expense thing of raising dairy cows, expenses of feed remembered costs for paddy straw, green grasses, concentrates salt and so on The bought takes care of were esteemed by the provided takes care of were really paid by the dairy ranch proprietors. Home and own homestead provided takes care of were additionally charged by the normal costs winning on the lookout. Feed cost covered Tk.47432.95, Tk. 46251.75 and Tk.49217.00 which was represented 59.20, 54.63 and 57.36 percent of the particular all out cost per cow each year for little, medium and huge classifications of dairy sizes ranches, separately (table-9). In this way, the complete feed costs were discovered practically same both in small and large scale-dairy farms and 4.00 percent lower if there should be an occurrence of medium scale dairy farms. The distinctions in the money costs on takes care of were discovered additionally same for all order of dairy ranches. The money costs for feed per cow each year small, medium and large sizes ranches were discovered Tk.38,744.2 Tk.40,293.00 and Tk.36.921.50 individually and discovered it was evaluated higher for medium size of dairy farms. The required non-cash costs per lactation per cow were represented in Tk. 8688.75, Tk. 5958.75 and Tk. 12295.5 individually which represented 31.89, 20.72 and 31.66 percent of total feed costs (tables–9) which was evaluated higher in enormous scope of dairy farms and high feed prices. Among the different feed things, paddy straw, green grasses and thinks including salts were the main expense things. It was accounted per cow each year were ascribed to paddy straw 10. 58percent, green grasses 11.03 percent and 35.12 percent to concentrates to the complete expenses considering all classifications of dairy ranches.

**4.2.1.2: Labour cost of rearing dairy cows:**

In order of importance, the labour cost came next to feed cost in Tables 9. It showed that the total labour costs per lactation year per cow were estimated at Tk.12,747.50, Tk.12,033.55 and Tk. 12,825.00 and which shared in respective total to total cost were found , 15.91,14.21 and 14.95 percent for small, medium and large sizes of dairy farms, respectively. The labour required for providing services for housing, grazing, feeding and management of cows of farm’s cows.

**Table-9: Assessment of per cow per lactation/annual costs of commercially operated cross-bred dairy farms.**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Particulars of items** | **Per cow annual Cost under categories of Farm(in BDT)** | | | | | | | | | | | | **% in Total Cost** |
| **Small Sizes Farm**  **(< 5 Cows) N = 60** | | | **Medium Sizes Farm**  **(5 to 10 Cows) N=40** | | | **Large Sizes Farm**  **(>10 Cows) N=20** | | | **ALL Farm Average**  **(N=120)** | | |
| **Non cash** | **Cash** | **Total** | **Non-cash** | **Cash** | **Total** | **Non cash** | **Cash** | **Total** | **Non-cash** | **Cash** | **Total** |
| Paddy Straw | 2625.00 | 5021.50 | 7646.50 | 2205.00 | 5720.00 | 7925.00 | 5250.00 | 5632.00 | 10882.00 | 3360.00 | 5305.66 | 8665.66 | 10.57 |
| Green Grass | 3360.00 | 6195.20 | 9555.20 | 2310.00 | 6798.00 | 9108.00 | 3360.00 | 5632.00 | 8992.00 | 3010.01 | 6020.66 | 9030.67 | 11.02 |
| Concentrates including salt | 2703.75 | 27527.50 | 30231.25 | 1443.75 | 27775.00 | 29218.75 | 3685.50 | 25657.50 | 29343.00 | 2611.01 | 26152.50 | 28763.50 | 35.11 |
| Labour | 4882.50 | 7865.00 | 12747.50 | 4883.55 | 7150.00 | 12033.55 | 7875.00 | 4950.00 | 12825.00 | 5880.00 | 6416.66 | 12296.67 | 15.01 |
| Veterinary care and Treatment | - | 3025.00 | 3025.00 | 3150.00 | 4950.00 | 8100.00 | 3937.50 | 2530.00 | 6467.50 | 2362.50 | 3410.00 | 5772.50 | 7.05 |
| Cost of Housing | 4383.75 | - | 4383.75 | 5365.50 | - | 5365.50 | 4305.00 | - | 4305.00 | 4684.75 | - | 4684.75 | 5.72 |
| Artificial insemination charges | - | 387.20 | 387.20 | - | 385.00 | 385.00 | - | 341.00 | 341.00 | - | 359.34 | 359.34 | 0.44 |
| Interest on operating cost | - | 2843.50 | 2843.50 | - | 3133.90 | 3133.90 | - | 2233.00 | 2233.00 | - | 2650.64 | 2650.64 | 3.24 |
| Interest on Ave. value of dairy cows | 7875.00 | - | 7875.00 | 7875.00 | - | 7875.00 | 8793.75 | - | 8793.75 | 8181.25 | - | 8181.25 | 9.99 |
| Others (Rent, Tax etc.) | 1417.50 | - | 1417.50 | 1522.50 | - | 1522.50 | 1627.50 | - | 1627.50 | 1522.50 | - | 1522.50 | 1.86 |
| **All** | **27247.50** | **52864.90** | **80112.40** | **28755.30** | **55911.90** | **84667.20** | **38834.25** | **46975.50** | **85809.75** | **31612.01** | **50315.46** | **81927.48** | **100.00** |

**Source: Field Survey, 2020**

**4.2.1.3: Veterinary and medicine charges of rearing dairy cows**

The costs of veterinary charges were calculated by taking into account the actual cost, incurred by the farm owners for a milch cow per lactation year. Doctor’s fees and medicines were the two major components of the total veterinary charges. The total veterinary charges per lactation per cow was accounted to Tk. 3025.00, Tk.8100.00 and Tk.6467.50 for small, medium and large sizes of dairy farms, respectively. The veterinary charges is covered about, 3.78, 9.57 and 7.54 Percent of the total costs per lactation year per cow for small, medium and large sizes of dairy farms, respectively (Table-9).

**4.2.1.4: Housing Cost of Rearing Dairy Cows**

The costs of housing were calculated by taking into account the depreciation cost, repairing costs and interest on the average value of housing shed. Depreciation cost was measured by dividing the original value of housing by its total probable length of life (present age plus remaining life) of house. Interest rate was assumed to be 12.50 percent per annum. The amount of housing cost per cow per lactation year per cow stood at nearly Tk.4383.75, Tk. 5365.50 and Tk. 4305.00, respectively and the housing costs covered about 5.45, 6.34 and 5.02 percent of the total costs per location year per cow for small, medium and large sizes of dairy farms, respectively (Table-9). It was also found that the interest on the housing value shared the major portion of housing costs.

**4.2.1.5: Cost of capital of Rearing Dairy Cows:**

The costs of capital included in the present study were the interest on the average value of dairy cows and the interest on the operating capital. The interest on average value of cow was calculated by the following formula: **Interest = (Begin value + End value) × rate of interest/2.** The average cost of capital for small, medium and large farms were accounted Tk.7,875.50, Tk. 7875.00 and Tk. 8793.75, respectively. The interest on the operating capital was also charged at the approx. opportunity cost @ Tk. 10.50 percent per annum. Interest on operating capital was computed by the following formula: **Interest = Operating Cost × rate of interest/2. Thus** The average costs of operation capital per year per cow were estimated Tk. 2843.50, Tk.3133.90 and Tk.2233.00 for small, medium and large farms, respectively.

**4.2.1.6: Artificial Insemination charge of Rearing Dairy Cows:**

The greater part of the business dairy farms utilized Planned impregnation methods for origination of their raised dairy cows through excellent frozen semen from improved bull given by DLS or BRAC A.I. experts. Some on gave the administrations for origination of cows normally by their own bulls. The normal managed impregnation cost per cow was discovered Tk.387.20, Tk.385.00 and Tk.341.00 for little, medium and enormous ranches, separately. In this way, the above assessed results demonstrated that, the all out costs per cow each lactation year was discovered higher if there should be an occurrence of little and huge dairy homesteads and lower for medium scale business dairy farms.

**4.2.3 :Assessment of commercially operated cross-bred dairy farms**

The reason for this part is to decide the gross and net returns of limited scope business dairying practices of various classifications of homesteads per cow each year over assessed money and absolute expenses. The profits from dairy cows comprised of selling of milk and milk items, worth of burned-through milk and milk items, normal worth of created calf of cow, selling of cow excrement, esteem utilized cow fertilizer as fuel and compost of grub land, selling others materials packs and so on.

**Table-10:Estimation per cow per lactation year of returns of commercially operated cross-bred dairy farms.**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Particulars of Item** | **Per cow per lactation year returns under categories of farms (in BDT)** | | | |  |
| **Small Sizes Farm**  **(< 5 Cows)**  **N = 60** | **Medium Sizes Farm**  **(5 to 10 Cows)**  **N=40** | **Large Sizes Farm**  **(>10 Cows)**  **N=20** | **ALL Average**  **(N=120)** | **% in**  **Gross Return** |
| Selling of fluid milk | 95491.00  (73.11) | 97500.00  (71.54) | 90750.00  (69.06) | 94580.33 | 71.24 |
| Value of consumed milk | 6250.00  (4.79) | 5890.00  (4.32) | 4950.00  (3.77) | 5696.67 | 4.29 |
| Market value of calves of cows | 24000.00  (18.38) | 27000.00  (9.81) | 30000.00  (22.83) | 27000.00 | 20.34 |
| Selling of cow dung | 3200.00  (2.45) | 3750.00  (2.75) | 3500.00  (2.66) | 3483.33 | 2.62 |
| Value of used cow dung as fuel and manure | 1050.00  (0.80) | 1500.00  (1.10) | 1650.00  (1.26) | 1400.00 | 1.05 |
| Selling of logistic materials (Bags, salvage utensils etc.) | 615.00  (0.47) | 650.00  (0.48) | 560.00  0.43) | 608.33 | 0.46 |
| Return over cash cost  (in BDT) | 130606.00 | 136290.00 | 131410.00 | 132768.67 | 100.00 |
| Gross Margin (in BDT) | 77741.10 | 80378.15 | 92575.75 | 83564.98 | - |
| Net Return (in BDT) | 50493.60 | 51622.80 | 45600.25 | 49238.88 | - |
| Net Return (in USD) | 608.36 | 621.96 | 549.40 | 593.24 | - |
| BCR (un-discounted) | 1.63 | 1.61 | 1.53 | 1.59 | - |

|  |
| --- |
| **Source: Field Survey, 2020 (Figures in the parentheses indicates percentage of GR)** |

The normal deal continues of milk were determined based on the normal lactation period, normal amount of milk created each day per cow and the normal cost got by farm owners per liter of milk straightforwardly and worth of burned-through milk. It was accepted that the calves of dairy cows were sold out soon after lactation period. The worth of calf was assessed based on the respondent's assumption. The normal upsides of cow compost and selling other material per cow are determined by taking respondent's assessment on this sort of pay as singular amount premise. Table-10 showed that, the gross return each lactation year per cow remained at Tk.130,606.00, Tk.136,290.00 and Tk.131,410.00 for Small, Medium and Largedairy farms, separately. The normal gets back from selling of milk and milk items per cow each lactation year were discovered Tk. 95,491.00, Tk. 97,500.00 and Tk. 90,750.00 separately which was represented 73.11 percent, 71.54 percent and 69.06 percent of individual gross returns for small, medium and large scale dairy farms. The normal returns of delivered calf were discovered Tk. 20,000.00 for all classes of homesteads. The profits of selling of cow excrement and selling others materials like as cowdung and so on were discovered Tk. 3200, Tk.3750, Tk.3500 and Tk.615, Tk.650, Tk. 560 for small, medium and large farms, separately. The Gross margin per cow each lactation year over cash were assessed at Tk.77,741.10, Tk.80,378.15, Tk.92,,575.75 and net return over absolute expenses were likewise assessed in Tk.50,493.60, Tk.51,622.80,Tk.45,600.25, separately for small, medium and large scale dairy farms. The Advantage Cost Proportion (BCR) were represented 1.63:1, 1.61:1 and 1.53:1 individually for little, medium and huge scope business dairy ranches.

The portion of Gross Margin (GM) were discovered 59.52 percent, 61.17 percent and 69.73 percent for small, medium and large farms individually and particular NR to net return was additionally discovered 38.66 percent, 39.28 percent and 34.35 percent, separately.

**Fig-11: Per Cow per lactation Year Profitability**

The outcomes in regards to returns of limited scope business dairying rehearses are shown that, the net benefit per cow each lactation year came about higher if there should arise an occurrence of enormous sizes ranches than that of different classes of homesteads introduced in table-10 and Fig-2 in the investigation zones.

**4.2.3: Available marketing channels of dairy farm product (Milk)**

The milk promoting directs in Bangladesh are not coordinated. In some cases, dairy ranchers sell their milk straightforwardly to the nearby market, neighbors; tea slows down and nearby eateries. The vast majority of the occasions they sell their milk through various kinds of agents like Gowala, Aratdar and retailer. These middle people working at various degree of milk showcasing procure edges that influence essential milk makers straightforwardly or in a roundabout way. The extents of milk selling by the ranchers through various channels contrast from one spot to another. The regular milk promoting channels are depicted beneath:

**4.2.3. 1:****Traditional milk marketing channel**

Milk producers sell their milk straightforwardly to nearby market, neighbors and tea stalls. But the vast majority of the occasions, they offer their excess milk to the Gowala. In the customary milk promoting channel, Gowalas gather milk from the makers, now and again blend water or milk powder for more benefit, and sell this in the metropolitan market. In the country region Gowala play out the house to house milk assortment from milk makers and convey the milk to customers (Rahma et al. 2002). A portion of the Gowalas are milk makers themselves, offering provincially gathered milk notwithstanding their own produce. They offer this milk to various kinds of purchasers around there, for example, singular buyers at market, contact families, tea slows down and lodgings or cafés. Cost is consistently questionable both for essential makers just as for Gowala in this kind of promoting channel. On occasion, there are not many other agents, for example, Aratdar and retailers in this promoting channel. Aratdar is a commission specialist and intercedes among makers and Gowlas/retailers, customers just as lodgings and cafés. Aratdars charge a fixed measure of commission type of money related worth or milk from makers. Retailer incorporates the milk broker who purchases milk from the Aratdar, Gowala or gathering or individual makers on the lookout and supplies this milk to the city customers.

The mediators are playing out a part of promoting the country milk to metropolitan spots, yet the cost of milk isn't fixed and the go betweens don't pay ranchers consistently. Cost differs all around and from season-to-prepare. Gowala likewise can't guarantee the new milk for the buyers as they begin gathering milk from the rustic territory promptly toward the beginning of the day and offer this to the metropolitan region until the evening with no additive measures. Blending water and milk powder in the new milk is exceptionally basic practices among the Gowalas in this promoting channel.

Thinking about the above various sorts of showcasing framework in better places, field study was directed in five distinctive Upazilas to comprehend the diverse milk advertising diverts in detail study regions are Chittagong, and Cox'sbazar. The general advertising channels of milk under limited scope dairying rehearses were inspected altogether and distinguished diverts are portrayed in table-11.The recognized generally members were distinguished as the homestead proprietors, shoppers at ranch entryway/family level, buyers at nearby market, purchasers at peri-metropolitan market, neighborhood Gosh, sweetmeat shops, nearby Bepari, Milk cooperatives and milk processors (Table-11).

**Table 11: Marketing system of farm products of commercially operated Cross-bred dairy cows.**

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Particulars of Item** | | | **Shares of Channels in milk and milk products under different categories of dairy farms** | | | | | | | | |
| **Small Sizes Farm**  **(< 5 Cows)**  **N = 60** | | | **Medium Sizes Farm**  **(5 to 10 Cows)**  **N=40** | | **Large Sizes Farm**  **(>10 Cows)**  **N=20** | | **ALL Farms**  **(N=120)** | |
| Consumers at farm gate/households | | | | | 8 (13.33) | | 3 (7.50) | 1 (5.00) | | 12 (10.00) | |
| Consumers at local market | | | | | 9 (15.00) | | 3 (7.50) | 3 (15.00) | | 15 (12.50) | |
| Consumers at peri- urban market | | | | | 11 (18.33) | | 8 (20.00) | 2 (10.00) | | 21 (17.50) | |
| Local Gosh | | | | | 10 (16.67) | | 7 (17.50) | 4 (25.00) | | 21 (17.50) | |
| Sweetmeat shop | | | | | 7 (11.67) | | 9 (22.50) | 2 (10.00) | | 18 (15.00) | |
| Local Bepari | | | | | 5 (8.33) | | 5 (12.50) | 2 (10.00) | | 12 (10.00) | |
| Milk cooperatives | | | | | 8 (13.33) | | 3 (7.50) | 3(15.00) | | 14 (11.67) | |
| Milk processors | | | | | 2 (3.33) | | 2 (5.00) | 3 (15.00) | | 7 (5.83) | |
| **All** | 60 (100.00) | | | 40 (100.00) | | | 20 (100.00) | | 120 (100.00) | |

**Source: Field Survey, 2020 (Figures in the parentheses indicates percentage)**

In table 11 it appeared overall about 17.50..00 percent of homestead proprietors announced that they deal milk at ranch door just as neighborhood and peri-metropolitan business sectors to the customers straightforwardly where little sizes ranch proprietors detailed that they deal about 10.00 percent milk and milk items which was higher than that of different classifications of homesteads. About 17.50 percent of dairy cow proprietors detailed as they deal their milk and milk items to the neighborhood Gosh and 15.00 percent dairy cow proprietors deal to sweetmeat, 10.00 percent deal to nearby Bepari at reasonable local price.

The dairy cow owners reported that about 12.31 percent sale to milk cooperatives and about 4.62 percent sale milk and milk products to milk processors (table-11 & figure 4).

**Fig-12: Overall marketing Channels of Milk**

**CHAPTER-V**

**PROBLEMS AND RECOMMENDATIONS**

**5.1: Introduction:**

Dangers and vulnerability are very normal realities in dairy cultivating business. Aside from these, dairy cultivating rehearses have been confronting various wonderful issues. The chose ranch proprietors in the investigation territories have encountered in dairying since critical years and were standing up to numerous genuine creation and showcasing focused issues. An endeavor have been made in this section to recognize the significant imperatives and issues looked by the ranchers in dairying rehearses and to examine the potential arrangements of these issues with the goal that the ranchers can acquire better financial get back from goat cultivating business. To distinguish different issues of raising cows and their answers, questions were asked to the concerned homestead proprietors/chiefs and likely discoveries are examined in this segment.

## 5.2: Problems faced by the dairy farmers:

The issues of dairying rehearses under various classes of limited scope business dairy ranches as detailed by the homestead proprietors are introduced in Table 12. Brief depiction of the announced issues by various classifications of limited scope dairy ranch proprietors in regards to drain creation and showcasing of milk by the dairy are referenced as under:

**5.2.1 High prices of feeds and fodder**

The touching offices or field land are exceptionally restricted particularly during trimming season, stormy season and dry period in peri-metropolitan regions in Bangladesh. Quite a long time ago, there were bountiful brushing lands around estate in the investigation territory. Presently a day, the touching area (field place that is known for) the investigation regions has been diminishing of the most recent long term because of presentation of vegetables, banana and boro rice development just as other fundamental framework advancement exercises. The vast majority of the necessity of feeds and grain particularly focuses was kept up by buying straightforwardly from neighborhood market yet several years the costs of feeds and feed are rising relating milk costs. Considering the present situation more than 93.08 percent of the chose dairy ranch proprietors revealed against this issue. This issue was higher in the event of little classifications ranches than other one gatherings as there revealed 100% of the homestead proprietors (table-12).

**Table-12: Identified Problems of commercially operated cross-bred dairy farm owners under different categories of dairy farming system.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Particulars of problems** | **Categories of dairy Farms** | | | |
| **Small -Sizes Farm**  **(< 5 Cows)**  **N = 60** | **Medium Sizes Farm**  **(5 to 10 Cows)**  **N=40** | **Large Sizes Farm**  **(>10 Cows)**  **N=20** | **ALL Farm (N=120)** |
| High prices of feeds & fodder | 60 (100.00) | 36(87.69) | 18 (96.00) | 104 (93.08) |
| Low prices of milk. | 55 (92.50) | 26 (69.23) | 18 (92.00) | 99 (80.77) |
| Scarcity of quality feeds & Fodders | 41 (72.50) | 31 (81.54) | 16 (84.00) | 88 (79.23) |
| Conception failure | 28 (37.50) | 8(18.46) | 9(44.00) | 45 (29.23) |
| Variation in market demand of produced milk and inputs | 36(35.00) | 28 (53.85) | 15 (72.00) | 79 (60.00) |
| Insufficient Vet. Care & services | 35 (57.50) | 19(44.62) | 11(36.00) | 65 (46.92) |
| Occurrences of diseases | 38 (60.00) | 31(76.92) | 8(76.00) | 77 (67.69) |
| Distance of A.I. point | 27(40.00) | 16(36.92) | 9 (44.00) | 52 (39.23) |
| Lack of training & extension work | 33(52.50) | 32(75.38) | 10(48.00) | 75 (63.08) |
| Fraudulent practice by milk traders and daily labors | 29(35.00) | 18(33.85) | 6(32.00) | 53 (33.85) |
| Non availability of good bull / semen | 26(32.50) | 24(23.08) | 6(48.00) | 56 (30.77) |
| Lack of credit facilities | 51(62.50) | 28(66.15) | 12(68.00) | 91 (65.38) |
| Feed poising and mineral deficiency | 15(17.50) | 17(10.77) | 01(8.00) | 33 (12.31) |

**Source: Field survey, 2020 (Figures in the parentheses indicates percentage)**

## 5.2.2: Low prices of milk

The costs of milk were similarly low since not many mediators are engaged with promoting framework in the examination territory. Accordingly the milk maker gets low milk value identifying with high feed costs as the limited scale dairying are dispersed in nature in peri-metropolitan zones in Bangladesh. The normal cost of milk per litter in the examination territory was assessed at Taka 40.00 at creation point, which was lower than the costs won in numerous different spaces of Bangladesh . The issue of low value milk was accounted for by the dairy ranch proprietors overall about 80.77 percent of the homestead proprietors. The degree of this issue for medium ranch proprietors was discovered lower (69.23 percent) than other two classifications of homestead proprietors in the investigation regions (table-12).

**5.2.3 Scarcity of quality feeds and fodders**

Creature wellbeing and creation of milk rely upon quality feeds, legitimate apportioning and normal standard taking care of practices convenient. However, in our nation wherever grown up creature feed industry and feed shop with helpless administration and quality affirmation offices. There have no legitimate public position to check the nature of creature feed stuffs to apply their power to keep up quality consistently. Not many cases the Govt. law upholding office apply their force if there should be an occurrence of human food delivering businesses and shops yet in animals field it was poor for quite a while in Bangladesh. It is a significant limitation of limited scope business dairying rehearses in Bangladesh. About 79.23 percent of dairy ranch proprietors referenced such kind of issues. The degree of this issue for little sizes ranch proprietors was discovered lower (72.50 percent) than other two classifications of homestead proprietors (Table-12).

**5.2.4 Conception failure of dairy cows**

The conception failure is a common problem of small scale dairy farming practices is another important constraint of dairying. Some time AI practiced more than one time for a single conception of a cow which leads to be delayed in calving in farming system. About 29.23 percent of small scale dairy farm owners reported this problem where in case of large farm owners it was found higher about 44 percent than that of other categories of farms (Table-12).

**5.2.5: Variation in market demand of produced milk and fluctuated of input prices:**

The productivity rely upon better and standard market cost of delivered milk and cost of information sources of practices in dairying. In our country there have not many coordinated milk promoting framework created all through the country. Periodically the milk cost grow up and the ranch benefit additionally came to in better position yet all year the milk cost particularly the data sources costs over vacillated with short notification of time. It was accounted for by the limited scale dairy ranch proprietors seeing this issues overall is around 35% where huge scope rancher's have higher (72%) announced this issue and lower (35%) in little classes of homesteads (table-12).

**5.2.6: Occurrences of diseases**

Diseases incidence especially FMD, Mastitis, uterine contaminations and metabolic infections are influenced the raising of dairy cows in the examination zones. Infections influence the milk yield and diminished the crowd efficiency which prompts financial misfortunes of the dairy ranches. It is a significant imperative of raising of cows and about 67.69 percent of dairy ranch proprietors in general investigated events of infections as an issue and furthermore found that it was lower if there should be an occurrence of little sizes ranches than that of different classes of homesteads due to better administration and management of ranch cows (Table-12)

**5.2.7: Deficient vet. care and administrations:**

It was the significant issue of bringing dairy cows up in the examination region. The greater part of the dairy cow proprietors felt that the accessibility of the Govt. veterinary consideration and administrations was deficient in the space however the majority of the dairy ranches are enlisted under DLS. According to nature this association the expansion administrations can be managed by the DLS staff to the livestock for such administrations. However, really Govt. faculty not yet give customary better administrations for the advancement dairy industry in Bangladesh as there was just a single veterinary specialist at the Thana level. Besides supply of medication and immunizations to the Thana office was very deficient. About on normal 46.92 percent of homestead proprietors referenced this issue. Yet, if there should arise an occurrence of limited scope of dairy ranches it was higher about 57.50 percent than that of other two classes of homesteads (table-12).

**5.2.8: Distant of AI point:**

The computer based intelligence administrations are given by the Public authority association likes as DLS and few NGO particularly by BRAC all through the Bangladesh by computer based intelligence habitats and sub focuses up to association level in Bangladesh. It is one of the techniques utilized for the improvement of dairy breeds and better exhibitions of dairy cows. It was tracked down that about 39.23 percent of dairy ranch proprietors dealt with the issues of distance of man-made intelligence community which was higher around 44% if there should be an occurrence of enormous homestead proprietors (table-12).

**5.2.9: Lack of training & extension work:**

The computer based intelligence administrations are given by the Public authority association likes as DLS and few NGO particularly by BRAC all through the Bangladesh by computer based intelligence habitats and sub focuses up to association level in Bangladesh. It is one of the techniques utilized for the improvement of dairy breeds and better exhibitions of dairy cows. It was tracked down that about 39.23 percent of dairy ranch proprietors dealt with the issues of distance of man-made intelligence community which was higher around 44% if there should be an occurrence of enormous homestead proprietors (table-12).

**5.2.10: Fraudulent practice by milk traders and daily labours:**

False practice by milk dealers and every day works is another issue detailed by the dairy ranch proprietors. The everyday exercises of the vast majority of the ranches were kept up by day works and the works at some point robbery the homestead information sources and materials. In the other hand the vast majority of the ranch proprietors' deal their items to the go betweens in kind and here and there the milk brokers didn't give the real milk cost to the ranchers by taking up false practices. In the investigation territory it was tracked down that most of the dairy ranch proprietors used to offer milk at home to Goala. About 33.85 percent dairy ranch proprietors announced that they were cheated by the milk merchants using false loads and measures and provocation of day works in the cultivating practice and it was higher if there should be an occurrence of little homestead proprietor (table-12).

**5.2.11: Non availability of good Bull and quality Semen:**

ost of the dairy farm owners used frozen semen for breeding through using AI techniques by DLS. Someone use their own produced bull in their farm areas also but their quality is very low than that of imported bull and milk yield of cows with quality calves depend on the genetic characteristics of parents. So quality bull or good quality frozen semen makes a farm economically profitable and extension of farm sustainability. About 30.77 percent of farm owners felt this problem as a whole and it was found higher in case of large farms about 48.00 percent (Table-12)

**5.2.12: Lack of credit facilities:**

**T**he lack of credit facilities was one of the constraints for the development dairy enterprises. Most of the farms operate their business by lending credit from bank and NGO with high interest rate and few farms cannot access in institutional loan system for lack their illiteracy and political backup . About 65.38 percent dairy farm owners reported this problem and it was found higher in case of large farm owners (table-12).

**5.2.13: Feed poising and mineral deficiency:**

Feed balancing and mineral inadequacy is discovered another issue of raising cows financially under little holder cultivating framework. This issue is made for absence of value dairy feed and mineral lack in feed and water. Once in a while it made animal wellbeing rough in the ranch level and diminished efficiency of cows. Around 16% dairy ranch proprietors detailed this issue and it was discovered higher if there should be an occurrence of little sizes ranch proprietors (table-12).

**5.3: Suggested measures to tackle the Problems**

In order to overcome the problems of small scale commercial dairying practices at peri-urban areas and making the such dairying practices more profitable, the dairy farm owners of the study area were asked to suggest how to overcome the identified problems. Following suggestions were put forward by the dairy farm owners for overall development of small scale dairying practices as a sustainable level by the different sizes of dairy farm according to herd sizes. Table 15 showed the solutions as conceived the dairy farm owners.

**5.3.1 Reduced the Prices of feeds & fodder**

Normal accessible green grasses and grain creation be diminished because of the individual land went under development and implicit lodging frameworks quickly in Bangladesh. The trimming force of land additionally expanded for satisfy up extending need of food stuffs of individuals in our country. So for presenting supportable and business dairy cultivating rehearses by domesticated animals business people HYV grain creation ought to be stretched out all through the nation by giving innovative information on the dairy ranch proprietors in individual land and expressway and nearby street sides. Necessary measures should be taken to increase their knowledge in the long run to accept and adopt better practices regarding commercial dairy farming. Special attention should be given for motivating the farmers to cultivate more fodder crops like Para, Napier, maize, Jamboo, German grasses at fellow land and road sides nearby their house to meet up the requirement of feeds and fodder of the dairy cows of small scale commercial dairy farms. About 91.67 percent farm owners reported these suggestive measures to overcome this problem (Table-13).

**Table 13: Suggested possible measures to minimize the major problems of commercially Operated cross-bred dairy farm owners.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Particulars of problems** | **Categories of dairy Farms** | | | |
| **Small Sizes Farm**  **(< 5 Cows)**  **N = 60** | **Medium Sizes Farm**  **(5 to 10 Cows)**  **N=40** | **Large Sizes Farm**  **(>10 Cows)**  **N=20** | **ALL Farm (N=120)** |
| Reduced Prices of feeds & fodder | 60 (100.00) | 36 (90.00) | 16 (80.00) | 112(93.33) |
| Reducing variation in demand of milk and milk products. | 50(83.33) | 25 (62.50) | 14 (70.00) | 76 (63.33) |
| Ensure regular supply of quality feeds & fodders | 53 (88.33) | 36 (90.00) | 12 (60.00) | 101 (84.17) |
| Make availability of quality semen and trained AI personnel. | 35 (58.33) | 22 (55.00) | 8 (40.00) | 65 (54.17) |
| Ensuring adequate Veterinary services and health care Facilities | 35 (58.33) | 18 (45.00) | 11 (55.00) | 64 (53.33) |
| Proper feeding, housing and management practices | 27(45.00) | 20 (50.00) | 10 (50.00) | 57 (47.50) |
| Expansion of AI facilities at reasonable distance | 35 (58.33) | 14 (35.00) | 14 (70.00) | 63 (52.50) |
| Providing regular training & Vet. Extension services | 26 (43.33) | 17 (35.00) | 7 (35.00) | 50 (41.67) |
| Controlling of fraudulent practices | 22 (36.67) | 19 (47.50) | 5 (25.00) | 46 (38.33) |
| Make available credit facilities | 56 (93.33) | 35 (87.50) | 19 (95.00) | 110 (91.67) |

**Source: Field survey, 2020 (Figures in the parentheses indicates percentage)**

**5.3.2: Minimized variation in demand of milk and milk products**

In Bangladesh there have some degree of varieties sought after and supply of milk and milk items rely upon occasional and infrequent issues essentially Sacred Ramadan, EIDs and Puza and so on It additionally relies upon pay of the buyers and market worth of milk and other related results of the business sectors in Bangladesh. The limited scale dairy cow proprietors financially influenced because of variety popular and supply of milk and milk items in this manner the particular division and dairy affiliation whenever limited the variety of cost and request at that point limited scope dairy ranches will be supported in Bangladesh. About 63.50 percent ranch proprietors announced these intriguing measures to beat this issue (Table-13).

**5.3.3: Ensure regular supply of quality feeds & fodders**

Most of the small scale dairy farm owners buy the feeds and feed ingredients from local areas market/shop. But sometimes, the supply of feeds and feed ingredients could not available in the shop. As a result dairy farm owners faced a major problems regarding nutrient feeding of cows in their farms. Thus if ensured regular supply of quality feeds and feed invariants in the study areas by promoting market facilities and training about feed technological knowledge to the local feed enterprise owners and increasing Govt. controlling systems for maintaining quality of feeds and feeds ingredients of dairy cows . About 84.17 percent of dairy farm owners suggested ensuring regular supply of quality feeds & fodders in the study areas (Table-13)

**5.3.4: Make availability of quality semen and trained AI personnel**

Quality bull and semen will give birth of healthy calves of the conceived cows under different categories of commercial dairy farms. But the AI facilities not yet developed adjacent of the studied farms even there have not enough quality semen in the available points. As a result most of the calves were found under weight, weak and the AI personnel were not found enough trained. Thus to make a profitable farm business the respective departments and farm communities should supply quality semen and give training to AI personnel to achieve higher rate in conception rate. About 54.17 percent of dairy cow owners reported to make available in quality semen and trained AI personnel in the study areas (Table-13).

**5.3.5: Ensuring adequate Veterinary services and health care Facilities**

All most all the studied small scale dairy farms have no regular Veterinary Doctor, they call doctor or compounder when necessary for curing of diseases of their cows. Diseases hardly affect the herd productivity of the dairy farms and reduced the economic profitability of the farms. Thus to make sustainable the opportunities of veterinary services and health care facilities should be available by Govt. and private level simultaneously. About 53.33 percent of dairy cow owners reported to ensure adequate Veterinary services and health care Facilities by DLS and related NGOs who gives respective services in the study areas (Table-13).

**5.3.6: Proper feeding, housing and management practices**

Herd productivity under the farms depends on proper feeding, housing and management practices of the dairy cows under farms. Thus scientific feeding, housing and management practices should be introduced for getting maximum yield of the dairy cows. About 47.50 percent of dairy cow owners reported to ensure proper feeding, housing and management practices for making sustainable and profitable dairy farm business in Bangladesh (Table-13).

**5.3.7: Expansion of AI facilities at reasonable distance**

Due to lack of quality bull in the study areas most of the farms adopt AI techniques for breeding their cows under Govt. and NGO management limited AI points in the study areas for quality calves for next generation. Farm owners sometimes felt problems to bring their cows to far distant AI points and needed more allowances to AI technicians for AI services in the farms. About 52.50 percent of dairy cow owners reported to expansion of AI point and services at reasonable distant for making regular AI facilities in the study areas for development of small scale dairy industries in Bangladesh (Table-13).

**5.3.8: Providing regular training & Vet. Extension services**

Training makes a man perfect and increased their work based real knowledge to apply in the fields. DLS and some NGOs has served to deliver the veterinary extension services in Bangladesh but their scope is very limited to serve farm to farm basis. Thus, necessary Training and Vet. Extension services to be developed to trained farm people for development of knowledge and skills for smooth running of the farms. About 41.67 percent of dairy cow owners reported to provide regular training and veterinary extension services to develop knowledge regarding operation of farm business in Bangladesh (Table-13).

**5.3.9: Controlling of fraudulent practices**

Fraudulent practices now treats like a disease in our daily farm business as farm owners in most cases depend on hired farm employees and other personnel. As a result cash flow of the farms disrupted for fraudulent practices in dairy farm activities in the study areas. About 38.33 percent of dairy cow owners reported to control the fraudulent practices in different stages by the farm personnel and input traders which hampered the smooth running of dairy farm business in Bangladesh (Table-13).

**5.3.10: Make available credit facilities**

All most all the dairy farm owners were found young, in some cases few women were found the entrepreneur of the farms. There have no enough fund of the farm owners to expand or run their farms and they were always in shortage of fund which hampered smooth running of the farm business. About 91.67 percent of dairy cow owners gave their opinion to make available credit facilities by Govt. and NGOs to farm owners for making sustainable and profitable dairy farm operation in the study areas in Bangladesh (Table-13).

**CHAPTER-VI**

**SUMMARY AND RECOMMENDATIONS**

This section is to make summery and finishes of the current investigation and furthermore give a few suggestions to future intending to build up the limited scale business dairying in Bangladesh. Prior to introducing the summery substance of various parts are examined to sum things up underneath.

**6.1: Summary of the study**

The agrarian and generally resource economy like Bangladesh, the limited scale business dairying as a piece of domesticated animals which assumes a critical part for utilized youthful enthusiastic and hazard taking business visionary in Bangladesh. Dairy is one of the significant wellspring of animal protein and money pay of the ranch individuals. Also, dairying essentially add to add up to Gross domestic product through creation of meat, milk and skin addressing about 27.00, 23.00 and 28.00 percent separately to add up to creation from domesticated animals area (FAO,1997). It contributes significantly to the destitution stricken country and peri-metropolitan homestead individuals particularly to little, negligible ranchers and un utilized youth gathering of individuals for making of independently employed and reasonable pay and vocation advancement in Bangladesh. Das (1996) tracked down that the little ranchers in rustic zones are to be exceptionally profited in dairying. This investigation uncovered that, dairying sets out business open doors over time for ranch relatives just as other uneducated staff effectively than that of harvests venture. The current investigation noticed the comparative Financial examination by analyzing the socio-economic and advertising channels of limited scope dairying and tracked down that the expense of dairying changed marginally among the three group measures yet BCR both money and full expense premise were higher in crowd size 1 containing ranch up to 5 cows. It was reasoned that the group size containing up to 5 grouping cows were discovered generally beneficial and supportable monetarily in light of the fact that they effectively deal with their ranches by their own accessible exertion and time.

Dairying can contribute altogether to family pay without meddling with the primary control of poor people and negligible country individuals. Administration of Bangladesh put accentuation on destitution mitigation through extension dairying works on presenting an undertaking named as "One House-one Ranch" which is currently " Amar bari, Amar Khamar' to make the least fortunate individuals of Bangladesh confident and to enable them to add to the public economy. Banks, NGO and other monetary foundations are additionally coming up to help ranchers setting up of dairy ranches through credit supply and giving vital preparing.

The current examination has been attempted with the targets to assess and classify ranches on current status of benefit, portray and analyze the financial and existing homestead the executives rehearses corresponding to cultivate productivity with a view to investigation of **“A socio-economic analysis of commercially operated cross-bred dairy Enterprises at some selected Upazilas at Chattogram Division.”**

The examination was completed in peri-metropolitan regions under 5 Upazilas, for example, banshkhali and Lohagara under Chittagong locale and Coxsbazar sadar, Kutubdai and Chakaria upazila under Coxsbazar area. The example dairy ranches were chosen from three classifications limited scope business dairy cultivates purposively. They chose business dairy ranches were classified as little size (milch cow not exactly or equivalents to 5), medium size (milch cow fluctuates 6 to 10) and huge size (milch cow in excess of 10 cows) under two areas in Bangladesh. An essential visit was done at 2 areas head quarter DLS office for choosing test for inside and out investigation according to their ideas and populace thickness of dairy ranches. Principally all out of 12 little sizes, 8 medium sizes and 4 enormous sizes business dairy ranches were chosen purposively from each region for study. At long last, in complete 120 dairy ranches (60 little sizes, 40 medium sizes and 20 huge homesteads) were chosen from the chose four examination zones. The investigation time of the examination was June to December 2020.

In regard to financial qualities of three sort of dairy cultivates the discoveries of the examination uncover that the financial status of the dairy ranch proprietors practically same in all regard. The aftereffect of the monetary investigation showed that every one of these dairy ranches were appealing to independently thinking about the genuine circumstance of the examination region. It is additionally obvious from the examination that the ranches having more milch cows will bring a lower benefit than that of group having fewer cows.

In this investigation completed the financial profiles, creation and the executive’s frameworks with illness events of limited scope dairy ranches under various classifications of homesteads. This examination was likewise analyzed the expenses, returns, ranch benefit and promoting channels of various classifications of homesteads. The Gross margin per cow each lactation year over cash were assessed at Tk.77,741.10, Tk.80,378.15, Tk.92,575.75 and net return over absolute expenses were additionally assessed in Tk.50,493.60, Tk.51622.80,Tk.45,600.25, individually for little, medium and huge homesteads. The Advantage Cost Proportion (BCR) was represented 1.63, 1.61 and 1.53 individually for little, medium and enormous scope business dairy ranches.

It may be seen from this investigation that, excessive costs of feeds and feed, low costs of milk, shortage of value takes care of and foods, origination disappointment, variety in market interest of created milk and information sources, inadequate Vet. Care and administrations, events of sicknesses distance of A.I. point, absence of preparing and augmentation work, false practice by milk merchants and every day works , non accessibility of good bull/semen, absence of credit offices and feed balancing and mineral lack were the principle issues forsmall scale dairy ranch proprietors. In the event that those issues could be diminished limited scope dairy ranch proprietors and youth gathering of individuals would be keen on dairying rehearses economically. In this manner, limited scope dairying would give a chance to create business freedom to the peri-urban/metropolitan jobless individuals and would have the option to bring in more money pay an outcome it can assume a significant part in youth strengthening and neediness easing.

**6.2: Policy recommendations:**

A few proposals were given for better dairying rehearses by submitted dairy business visionary in private administration framework by diminishing the costs of feeds and feed, limiting the variety popular of milk and milk items, guaranteeing ordinary stockpile of value takes care of and grains, making accessibility of value semen, via prepared man-made intelligence staff, guaranteeing satisfactory veterinary administrations and medical care offices, presenting appropriate taking care of and the board rehearses, extension of simulated intelligence offices at sensible distance, giving standard preparing and Veteterinary augmentation administrations, controlling of fake works on, making accessible credit offices and so forth for economical improvement of limited scope business dairy ranches in Bangladesh.

**6.3: Limitation of Research Work**

The field Collaborator, however prepared appropriately, yet here and there couldn't approach and persuade the dairy ranch proprietors acceptably to advice and gather the necessary data appropriately. Dairy ranch proprietors and the utilized administrators were discovered not to be similarly helpful and well disposed. The real pictures with respect to data on creation and pay didn't feasible to gather from the ranch proprietors because of the shroud the pay situated established truths. The dispensed expense and time was likewise a limitation to run the undertaking.

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# **BRIEF BIOGRAPHY**

**MOHAMMAD NAJIR HOSAIN** obtained his Doctor of Veterinary Medicine Degree in 2017 (held in 2018) from Chattogram (previously Chittagong) Veterinary and Animal Sciences University (CVASU) securing a CGPA 3.44 (in the scale of 4.00). Now he is a candidate for the degree of MS in Agricutual Economics under the Department of Agricultural Economics and Social Sciences, Faculty of Veterinary Medicine, CVASU. He is interested in Building an excellent carrier in veterinary profession in future.