Effects of Covid-19 on the Economy of Dairy Farming of Banskhali Upazila, Chattogram,Bangladesh.

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A Report Submitted as Per Approved Style and Content

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Abstract

Covid-19 is a global pandemic and it has severely affected the global economy. Like other countries, Livestock sectors of Bangladesh has also faced the drastic affliction of covid-19 pandemic. This study has been conducted to evaluate the effects of COVID 19 on the dairy sector ofBanskhali Upazila, Chattogram. For this prospects 11 different dairy farms have been selected from the Upazilla. In this 11 selected farms, the number of the dairy cows were 109, 97, 82 before covid-19, during Covid-19 and after the end of Covid-19, respectively. Cost of feed (Tk/kg) was 45tk which had increased during the pandemic period to 59tk and after the end of the Covid-19. The selling price of the milk (Tk/L) was 55, 44.27, 46.54 Tk (BDT) at before, during and after the end of Covid-19, respectively. Milk production also decreased to 61.45 L from 80 L. The average cost of medicine (monthly) was 21181.8, 21636.36, 21636.36 Tk (BDT) at before, during and after the end of Covid-19, respectively. In the conclusion it can be said that, COVID 19 pandemic hamper the economic condition of the farmers in a drastic manner. So, to minimize such scenario in future, government could develop long term project and sustainable strategies involving multi-sectors to ensure further capacity building of farmers and ensure the skill development of the farmers by arranging training programme.

Keyword: Covid-19, Economy, Dairy sector, Price, Milk.

Chapter 1

Introduction

Coronavirus disease 2019 (**Covid-19)** is a contagious disease which was first identified in Wuhan, China in December 2019 (COVID-19 - Wikipedia, 2021). It belongs to the species of Severe Acute Respiratory Syndrome related CoVs (SARS-rCoV) within the genus Betacoronavirus which is a pneumonia like illness. 221 countries and territories around the world have been reported a total of 244,111,962 confirmed cases of coronavirus Covid-19 (Countries where Coronavirus has spread - Worldometer, 2021). To combat with this situation, countries have been taking necessary public health measures for safeguarding. In Bangladesh the first case was identified on March 8, 2020. From 1,567,417 cases 27,814 death have been confirmed (Worldometer, 2021).

Boosting the immunity is essential to fight with Covid-19. Animal protein intake has been given great emphasis for this purpose (Kumari.D). Livestock plays an important role that serves as source of high value animal protein for the large majority of the world's population. Milk retains the positive value of increasing homeostasis in the respiratory tract of humans. Therefore attention should be given to the livestock sector to continue the production and safe distribution of products to the consumers. Dairy is one of the most promising sectors of Bangladesh, with 0.3 million dairy farms and 10.2 million people depend on dairy farming (Express, 2021).

The government of Bangladesh has imposed lockdown nationwide from March 26, 2020. Due to countrywide lockdown, everyday 12 to 15 million liters of milk remain unsold in across the country which caused Tk 570 million losses to the marginal dairy farmers according to Bangladesh Dairy Farmers' Association. Restriction of movement and social distancing had lead to shortage of labour. The banning of transportation causes shortage supply of feed and limitation of veterinary service. Therefore price of animal feed along with other things had been increased unexpectedly. The lack of transportation facilities and absence of middle men or supply chain have hampered the distribution that lead to deterioration of farm products and unexpected price down of milk. (Rahman and Das, 2021) Farmers have had to throw away their farm milk at some

villages as they lack of buyer. As a result Covid-19 has become a great threat to food security of the country and it lead to the economic crisis. In these circumstances this study were designed to evaluate the effect of COVID 19 on dairy farmers of Banskhali Upazila by setting following goals,

Obectives of the study:

I. To estimate the economic loss of the dairy farmers at the Banskhali Upazila, Chattogram due to Covid-19 situation.

II. To identify the obstacles at the village area in case of selling the milk during pandemic.

III. To identify the cause of the wastage of milk.

Chapter-2

Materials and Methods

2.1 Study area:

The study was conducteddata, at Jaldi, Kalipur, Bailchari, Banigram,Puichari, Baharchara region of Banskhali Upazila, Chattogram.

2.2 Study period:

Data were collected from March 2021 to May 2021.

2.3 Selection of farm:

The study was covered in Banskhali Upazila, Chattogram taking 11 dairy farmers randomly.

2.4 Data collection:

Farm visit had been done to collect the necessary information from dairy farm owners. Data were collected on number of dairy cows, average cost of feed, cost of medicine, fees of employees, average milk production per day per liter, selling price of milk etc. A questionnaire has been prepared to ease the data collection focusing on number of animals, milk production per day, ways of earning via farm, cost of feed, selling price of milk per liter during and after the end of Covid-19.

2.5 Analytical technique:

After collection, the data were put on MS EXCEL spreadsheet 2007 were arranged in a tubular form. Formulas that had been applied as follows:

Increase/decrease of Feed cost %(During covid-19)= [{(Average cost of feed before)-(average cost of feed during covid 19)}× 100] ÷ Average cost of feed before Covid-19

Change in milk production% (During Covid-19) = [{(Milk production before Covid-19)- (Milk production during Covid-19)}×100]÷ Milk production production before Covid-19

Decrease of the selling price of milk %= [{(Before Covid-19 selling price of milk)-(Selling price of milk during Covid-19)}×100]÷ Selling price of milk before Covid-19

Figure 1: Dairy farm visit and data collection for the study.

Chapter-3

Results

3.1 Overall scenario of the selected farms

The selected farms (N=11) for the study were medium to small scale farms. Al of these farms survived the COVID pandemic although farm owners faced difficulties at the fluctuation of the cost of feed before and during Covid-19 period.

In this 11 selected farms, the number of the dairy cows were 109, 97, 82 before covid-19, during Covid-19 and after the end of Covid-19, respectively. The average cost of feed (Tk/kg) was 45tk which had increased during the pandemic period to 59tk and after the end of the Covid-19 the price was found unchanged at 60tk. The selling price of the milk (Tk/L) was 55, 44.27, 46.54 Tk (BDT) at before, during and after the end of Covid-19, respectively. The average amount of milk production (Liter) was 80 L before Covid-19 which had decreased to 40L during Covid-19 and 61.45 L after the end of the lockdown. During pandemic, milk was unsold at some villages. (Table-1)

The average cost of medicine (monthly) was 21181.8, 21636.36, 21636.36 Tk (BDT) at before, during and after the end of Covid-19, respectively. This showed medicine cost increased up to 2.14%during pandemic period. The average wages of the employees were 8454.5, 8636.36, 8545.45 Tk (BDT) at before, during and after the end of Covid-19, respectively. The vaccination was found difficult during lockdown period due to countrywide strict lockdown.

Table1: Overall scenario of the selected dairy farms during pandemic

Parameters	**Before COVID-19(December 19-February 20)**	**During COVID - 19(March 20 - October 20)**	**After COVID - 19(November 20-)**
No of total dairy cow	109	97	82
Average cost of feed(Tk/ kg)	45	59	60
Average selling price of milk(Tk/kg)	55	44.27	46.54
Average amount of milk production(L)	80	40	61.45
Unsold milk	No	Yes	No
Average cost of medicine(Monthly)	21181.8	21636.36	21636.36
Increase of medicinal cost(%)	-	2.14%	-
Average fees of the employees(monthly)	8454.5	8636.36	8545.45
Availability of veterinarian	Available	Available	Available
Condition of vaccination	Available	Difficult to manage	Available

3.2 Overview of feed cost

The average cost of feed (Tk/kg) during Covid 19 was 59tk (BDT) which had increased up to 45 tk in comparison to before Covid-19. The cost of feed had increased 31.1% during the lockdown period. After the end of the lockdown the cost of feed became 60 Tk (BDT) and the percent increase of the price after lockdown was 1.69% (Table: 2)

Table 2: Cost of feed

3.3 Overview of milk production

Parameters	**Before COVID-19(December 19-February 20)**	**During COVID - 19 lockdown (March 20 - October 20**	**After COVID – 19 lockdown (November 20 to….)**
Average cost of feed(Tk/kg)	45	59	60
Increased/decreased during lockdown (%)	-	31.1%	-
Increased/decreased after lockdown (%)	-	-	1.69%

From these 11 farms, the average amount of milk production (Liter) was 80L, 40L, 61.45L at before, during and after the end of the pandemic, respectively. During the lockdown period, milk production had been decreased upto 50% and after the end of Covid-19 the production of milk further increased at 53.62%.. (Table:3)

Table 3: Average milk production and selling price of milk

Parameters	Before COVID-19(December 19-February 20)	During COVID - 19 lockdown (March 20 - October 20	After COVID – 19 lockdown (November 20 to….)
Average amount of milk production (Liter)	80	40	61.45
Change in milk production during & After lockdown (%)	-	50% decreased	53.62% increased
Average Selling price of milk(Tk Per kg).	55	44.27	46.54
Change in selling price of milk (%)	-	19.51% decreased	5.13% increased

The average selling price of milk (tk/L) were 55, 44.27, 46.54 Tk (BDT) that indicated19.51% decrease of the price during Covid-19 and further 5.13% increase after the end of Covid-19. During the lockdown period, some milk remained unsold at some farms. Others sold the milk in nearby tea-stall, sweet shops (Fulkali, Mishtimukh etc) and local customers. (Table:3)

3.4 Overview of income

The source of income of the selected farms were milk, milk along with animal and milk with fodder. Milk is the only source of income to no of 8 (72.7%) farms out of 11 which became decreased during Covid -19 at 7 (63.63%) and after the end of the lockdown the no of farm became 9(81.8%) which had improved. Out of 11, one of them earn through milk & fodder production which was zero during Covid-19 and became 9.09% after the lockdown. Among them 2 of the farms sold milk along with animal. To cope up with the loss, some farmer sold their dairy cow during pandemic (N=4, 36.4%) and it decreased to 1(9.01%) after the end of lockdown.

Table 4: Sources of earning from the farm

Ways of earning via Farm	**Before Covid-19**		**During Covid-19**		**After Covid-19**	
	No of farm(n) %		N %		N %	
Milk	8	72.7%	7	63.63%	9	81.8%
Milk+Animal(Cow/Calf/Bull)	2	18.2%	4	36.4%	1	9.09%
Milk+ Fodder	1	9.1%	0	-	1	9.09%

3.5 Overall impact on farmers

Most of the farmers mentioned that due to Covid-19 the farm had gone through high damage in case of 9 farmers and 2 farmers mentioned about moderate damage out of 11 farmers.(Table:5)

Table 5: Rate of damage due to Covid-19 to the dairy farm

Damaging effects of Covid-19 pandemic to the farms			
Highly damaging	Moderate damaging	Less damaging	Not damaging
9	2	None	None

Chapter 4

Discussion

Covid-19 situation had an adverse effect at all sectors of life and livelihood. The dairy farmers found it difficult to cope up with the high increase of feed cost in comparison to decrease selling price of farm products. At this study, the 11 farms were belong to medium scale of dairy farming where the number of dairy cows were less than 20. The number of animals were decreased up to 11% during pandemic situation. After COVID pandemic situation decrease level was 15%. This lowering number was might be due to,farmers were facing maintenance problem of previously existing herd and to minimize the further loss they sold their few animals.(Lockdown; Tribune, 2021)

The farmers had hinted that the price of feed was higher during the Covid-19 period due to lower supply of feed at the upazila as the strict lockdown brought halt to transportation. The cost of feed was 59 tk per kg compared to Tk 45 per kg a few months ago. The feed cost had been increased up to 31.1% which was higher and it had been complained by the farmers that the price hike status was still same although the lockdown was over. The hike was common in several ingredients like maize, wheat bran, soy meal etc. These prices were increased from last September and have not gone down since. Mohiuddin, (2021) stated in favor of the present findings of this study.

Yamano, et al., (2020) stated that, the Covid-19 did not affect the availability of the labour so much in Punjab which disagree the findings of the study, in the study it had been found that the reduced the availability of labour as during pandemic situation the labour asked for high salary than previous time. The average fees of the employee (Monthly) was Tk 8636.36 where as the fees was Tk 8454.5. (Malek, Sonobe and Truong, 2021)

The average milk production during pandemic was 40 L where as the average milk production was 80L before lockdown period, that idicated50% milk production had been decreased as the demand was lower than any other time and due to lower level of nutrition provided to the dairy cow . Along with closure of the hotel, restaurants, cafe

and a nationwide lockdown to prevent the spresd of corona virus (Jha, 2021). The milk had been sold to local teas stall, sweet shops, local villagers. At some areas the farmers had to throw away the unsold milk that caused a huge lose to them. The cause of wastage of milk was the farmers did't have any cream separator machine and hadn't been trained to make dairy products like ghee, cheese, butter etc that could slightly prevent the wastage of the milk in such way.

The selling price of milk was a matter of great dissatisfaction to the farmers. Due to Covid-19 the price of the feed cost had been increased at 31.1% (Table:1) but the selling price of milk had decreased 19.51% (Table:3). Before Covid-19 the selling price of the milk was Tk 54 and during the Covid-19 the price was 44.27. Reason behind this was the consumption of the milk decreased during the pandemic situation. The companies and other region buyers had also sqeezed their purchase following the drop of the demand. The supply chain and transportation were stopped to prevent the spread of the virus. (Wardad, 2021)

Due to strict lockdown the transport facility was not available. It was difficult to maintain the continuous supply of the medicine and vaccines in the Upazila. During the pandemic situation, it was difficult to reach at farm to farm at due time for vaccination, sometimes scarcity problem had made the vaccination time at delay. At table:1, the medicinal cost had increased at 2.14% during the Covid-19 period due to unavailability or shortage of supply of medicine at Upazila region.

All selected farmers had agreed that the Covid-19 was highly damaging period to their farms. All of them had faced huge loss, couldnot reach to the profit. 9 of them addressed the high damage and 2 of them mentioned about the moderate damage. At these 2 of them, one farmer's ways of earning from the farm was milk and fodder cultivation. It had been hinted that though he faced the same trouble of high feed cost, he could manage to supply roughage (Napier plant) for some period of time. At one point all were agreed that there was no profit but loss at the corona period whether it is moderate or high.

Chapter 5

Limitation

There are more than 70 dairy farms in Banskhali Upazila but the study had been conducted on 11 dairy farms therefore the sample size was small. So the actual scenario might be different from present findings. Some villages of Banskhali Upazila had not been covered due to inadequate transport facilities during lockdown.Although the study had covered only the medium and small scale farmers of the dairy farms that means it has covered the marginal farmers, the large scale farm had not come to the study. The temporarily or permanently closed farms had not been found during the study. Due to lockdown , the data had to be collected by phone calls as it was difficult to go to the farm to farm which was might require to collect some other data for the analysis of the adverse effect Covid-19 on the farms.

Chapter: 6

Conclusion

The study has been conducted to learn about the change of the economic loss of the dairy farms at the rural area, Banskhali Upazila during the adverse situation of Covid-19. It was difficult for the farmers to run the farms at this pandemic situation that had lead to the huge loss both for farmers and the national economy. The study has helped to understand how it is essential to support farmers to continue the production cycle, flourish the market demand and use alternative supply chains in order to compensate and tackle the threats that had been met by the farmers at the lockdown period. The study will help to understand the possible obstacles during a pandemic period and new policies can be developed as per requirement to prevent further economic losses in future.

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