

ECONOMICS OF COMMUNITY DAIRY FARMING IN SATKHIRA DISTRICT

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Abstract

The survey was carried out in villages of two upazilas under Satkhira district covering 100 members and 50 non-members of field fertility clinics (FFC) during January to March 2009. Evidence showed that socioeconomic characteristics were more or less same in both farms. The study revealed that annual average milk production per farm for two categories of farmers were 7215.87 litres and 5206.52 litres respectively. Annual milk production per farm of member farmers was higher by 1973.21 litres over that of non-member farmers. Net returns per farm were Tk. 175670.30 and Tk. 67611.51 for member and non-member farmers respectively. Benefit cost ratio for community member farmers were 1.80, for non-members were 1.62 and for all categories of farmers were 1.74 indicating that dairy farming was profitable. However, member farmers made more profit than non-member farmers through dairy farming. The study concluded that proper steps could be taken to make the dairy farming as a viable commercial enterprise. Therefore, the FFC should extend more services, which will encourage expansion of dairy farming and thereby, will contribute to increase of milk production in the area and in the country as a whole.

Key words: Dairy farming, Gross margin, Net return, Benefit cost ratio

Introduction

Bangladesh is an agricultural country of which livestock sector is the prominent sector. The contribution of livestock sector to overcome malnutrition and poverty in developing countries is widely recognized. The contribution of livestock sector in GDP was 2.79 percent and growth rate was 2.41 percent in the year of 2007-2008 (ERB, 2008). About 48.1 percent of the total labour forces are engaged in agriculture sector.

Livestock plays an important role in the economic development of Bangladesh, particularly in the dairy development sector. The private entrepreneurs and several NGOs mainly operate the dairy sector in Bangladesh. There are some milk pocket areas and these areas are located in the districts of Pabna, Sirajgonj, Munshigonj, Manikgonj,

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Faridpur, Rangpur, Tangail, Kishoregonj, Khulna, Satkhira and Chittagong. In these areas farmers keep dairy cows mainly for milk production. However, current milk production is inadequate to meet the demand. To meet the shortage of milk, the country has been importing huge quantity of milk and milk product from different countries every year. Bangladesh has to spend about 83 million US\$ in the year of 2006-07 for importing milk and milk products (Bangladesh Bank, 2007). In spite of having national importance of livestock particularly the dairy cows, a few research works on dairy have so far been done in Bangladesh (Talukder and Tajuddin, 2000; Shamsuddin *et al.*, 2004; Choudhury, 2005). The developments of dairy can be considered as an important strategy for poverty alleviation in rural areas in Bangladesh.

Veterinary services in Bangladesh are not adequate to maintain the growth of livestock. Considering this issue, in collaboration with Department of Livestock Services (DLS), Field Fertility Clinic (FFC) has been established in 2001 in some milk pocket areas to strengthen the veterinary services to the small holder farmers. The FFC is a newly introduced system that gives veterinary service through farmer's cooperatives. FFC is expected to increase milk production and lactation length and to decrease age to first calving. FFC is also expected to improve the productivity and fertility in their herds. It is thus expected that the present study would be helpful to the individual dairy farmers, policy makers, extension workers and researchers with a view to taking further plan for dairy development as well as for carrying out further research. Hence the study was conducted to analyze the socio-economic conditions of the community member and non-member dairy owners of FFC and to determine and compare the profitability of dairy raising by the members and non-members of FFC.

Methodology

The study areas were purposively selected from two upazilas of Satkhira district. The selected upazilas were Satkhira sadar and Assasuni upazila. Four adjacent villages namely, Sultanpur, Dohakhula, Dolihor and Brahmarazpur under sadar upazila and another four villages namely Khulla, Zordia, Kochua and Chadpur under Assasuni upazila were considered as the study area. A total of 150 sample households were selected randomly, of which 100 households belonged to Field Fertility Clinic (FFC) and the rest 50 households were non-member farms in the area with an intention to determine and compare the economic return between member and non-member dairy farms.

Data were collected through personal interview with the individual member and non-member farmers of FFC during February to March 2009. A pre-designed survey schedule was used for this purpose. Data were entered in computer Excel sheet. Simple statistical tools such as means, ratios, percentage were applied to convert the data into meaningful form. In this study cost and return analysis was done. Both variable and fixed costs are considered for calculation of total cost. Profitability of member and non-

member farmers of Field Fertility Clinic were measured in terms of total return, gross margin, net return and benefit cost ratio (undiscounted). The total return was determined by adding the return earned from the value of sold milk, return from cow-dung, return from bonus and return from inventory change. The gross margin analysis was done to know the return over variable costs; gross margin calculation was done to have an estimate of the difference between total return and variable costs. Net return was calculated by deducting all costs (variable and fixed) from total return. Finally, the Benefit Cost Ratio (BCR) is a relative measure, which is used to compare benefits per unit of cost. In the present study the undiscounted BCR was calculated.

Results and Discussion

Profile of the respondents

It appears from Table 1 that 98 percent of the member and 84 percent non-member farmers belonged to 19 to 57 years. The average family size of member farmers was 4.90 while non-member farmers were 4.52. Thus the average family size of member farmers was higher than that of non-member farmers. Data in table 1 also indicated that 91 percent member farmers were educated compared to 86 percent non-member group.

Table 1. Socioeconomic characteristics of the farmers

Characters	Member	Non-member
Age (19-57 years)	98%	84%
Family size (mean)	4.90	4.50
Educational status (literate)	91%	86%
Occupation (dairy farming)	16%	16%
Land holdings (small to medium farmers)	82%	90%
Cross breed (mean)	5.15	3.06

In the study area, agriculture was the main occupation. Sixteen percent members and non-members were engaged in dairy farming. Other occupations were business, services, house wife, student, gher, teacher, rickshaw pullers and day labourers. It is evident from table 1 that 82 percent member farmers possessed small to medium farm land (0.1 to 7.49 acre) as compared to 90 percent of non-member farmers. The FFC member farmers had 5.15 cross breed animals per household as compared to 3.06 of non-members. The farmers owned lactating cow, dry cow, heifer, steer, bull and calf. The higher number of animals in the members of FFC may have positive influence on higher income of those farms.

Comparative economic performances

In Table 2 it is found that annual absolute difference in feed cost, labour costs, veterinary cost, dairy supplies cost, housing cost, capital cost and total cost per farm were Tk. 47063.93, 29068.07, 820.00, 2650.80, 7581.10, 5360.00 and 117637.10 and

the respective percentage differences were about 43.81, 56.43, 10.03, 63.32, 58.26, 35.88 and 47.47. Feed cost of raising dairy cows by member farmers were higher than that of non-member farmers because the community member farmers used to feed their animals relatively more concentrate feed and green grass. The other costs of member farms also showed higher than that of non-member farms because member farms were fully devoted in dairy production and they are more rely on dairy farm business.

Table 2. Comparative annual costs and returns per dairy farm by the members and non-members of FFC

Contents	Unit	Member farmers	Non-Member farmers	Difference	
				Absolute	%
Cost					
Feed cost	Tk.	107430.76	60366.83	47063.93	43.81
Labour cost	Tk.	51508.07	22440.00	29068.07	56.43
Housing cost	Tk.	13011.79	5430.69	7581.10	58.26
Dairy supplies cost	Tk.	4186.20	1335.40	2650.80	63.32
Veterinary cost	Tk.	8172.00	7352.00	820.00	10.03
Capital cost	Tk.	14940.00	9580.00	5360.00	35.88
Total cost per farm	Tk.	247829.20	130192.10	117637.10	47.47
Return					
Milk production per farm	Litre	7331.40	5358.19	1973.21	26.91
Return from milk per farm	Tk.	194323.38	125060.61	69262.77	35.64
Return from cowdung	Tk.	9102.60	5447.00	3655.60	40.16
Return from inventory change	Tk.	185550.00	45367.00	140183.00	75.55
Total return per farm	Tk.	396191.00	1758740.00	220317.24	55.61
Net return per farm	Tk.	175670.30	67611.51	108058.79	61.51

Annual milk production per farm of member farmers was higher by 1973.21 litres over that of non-member farmers. Annual returns from milk per farm of member farmers were higher by Tk. 69262.77 in absolute term and 35.64 in terms of percentage. Returns from cowdung per farm of member farmers were higher by Tk. 3655.6 in absolute term and 40.16 in terms of percentage. Returns from inventory change by member farmers were higher than that of non-member farmers by Tk. 140183 representing 75.55 percent difference. Annual net returns per farm of member farmers were higher than that of non-member farmers by Tk. 108058.79 representing 61.51 percent deference.

Profitability of dairy farming

The purpose of this section is to determine total return, gross margin, net return and benefit cost ratio. Total return was determined by adding the return earned from the value of sold milk, return from cowdung, return from bonus and return from inventory

change. Table 3 indicates that total return was Tk. 396191.85, Tk. 175874.61 and Tk. 286033.23 for member and non-member and all categories of farmers respectively. Gross margin was calculated by deducting variable costs from total return. The average gross margin per farm for community member, non-member and all categories of farmers were Tk. 203622.09, Tk. 82622.20 and Tk. 143122.15 respectively. Net return was calculated by deducting total cost from total return. Net return per farm was Tk. 175670.30 for community member farmers, Tk. 67611.51 for non-member and Tk. 121640.75 for both categories of farmers.

Table 3. Profitability of dairy farming of the members and non-members of the FFC

Items	Member	Non-member	Overall
Total return	396,191.85	175,874.61	286,033.23
Total variable cost	192,569.76	93,252.41	142,911.09
Total fixed cost	27,951.79	15,010.69	21,481.24
Total cost	220,521.55	108,263.10	164,392.33
Gross margin	203,622.09	82,622.20	143,122.15
Net return	175,670.30	67,611.20	121,640.75
Benefit cost ratio	1.80	1.62	1.71

Benefit cost ratio (undiscounted) was calculated by dividing the total return by the total cost. It is a relative measure, used to compare benefit per unit of cost. Benefit cost ratio for community member farmers were 1.80, for non-members were 1.62 and for all categories of farmers were 1.71 indicating that dairy farming was profitable.

Conclusion

It may be concluded that dairy farming in the study area by member and non-member farmers was profitable. However, member farmers made more profit than non-member farmers through dairy farming. After the services of Field Fertility Clinic, total milk production, total return and net return per farm have been increased. This indicated the positive impact for dairy development in the study area. FFC intervention is found to be a positive effect on total return from milk production. Dairy farming could be a more viable commercial enterprise which in turn could play a vital role to overcome the problems of low income, unemployment, under nutrition and unfavorable balance of payments situation of the country.

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