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BENEFITS OF MILK PRODUCERS' CO-OPERATIVE SYSTEM IN DAIRY PRODUCTION - BANGLADESH EXPERIENCE

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ABSTRACT

Co-operative system is being recognized as an effective and proven way to dairy development in Bangladesh by generating rural employment and income. Development of primary milk producers' co-operative first began through a private dairy farm at Pabna district in 1947 as Eastern Milk societies. These primary societies have taken under government co-operative scheme in 1965 and renamed as Bangladesh Milk Producer's Co-operatives Union Limited. The trade name is MILK VITA which began marketing of milk and milk products besides the cattle development program. The results of the impact studies done by Bangladesh Livestock Research Institute (BLRI), to understand the benefits of co-operative systems, in dairy development in Bangladesh are discussed here. MILK VITA is an organization, which make the linkage between the producers and consumers. This linkage ensures the technical and marketing facilities to both the groups in different ways. The benefits obtained: (i) dairy cattle development; through improved breeding program, ensure cattle feed, community forage production and introduce high yielding forage, (ii) health care and management; low cost and easy available service through routine mobile veterinary clinic headed by Veterinary Professional, (iii) getting ensure market of their products which prevents the exploitation of middlemen. Furthermore, the co-operative linkages offer the problems associated with dairy development in grass-root levels, which permits an interrelation between the producers-researchers and extension workers involving in dairying of Bangladesh.

Key words: Milk producer, Co-operatives, Dairy development

INTRODUCTION

Bangladesh Milk Producer's Co-operative Union ltd. (BAMPCUL) is the first organization that established co-operative dairy farming in Bangladesh. The trade name of BAMPCUL is MILK VITA. There are four different milk-shed areas in Bangladesh where co-operative systems are being practiced. Pabna milk-shed area (PMSA) is the best milk producing area in Bangladesh, where unlike other parts of the country, milk is the cash crop for farmers. The largest milk processing plant of Bangladesh is stationed here. At PMSA, the farmers were having a long experience in small and large scale dairying. They have developed a more specialised dairy type cattle, known as the Pabna Milking Cows (PMC) which is originated from crossing local cattle with Shahiwal, Haryana and Red Shindhi bulls (Udo, *et al.*, 1992 and Vaughan and Islam, 1980). Those cattle produce more milk than local cows. There are about 125 registered PMS and more than 60000 developed milking cows at PMSA. The average number of cattle/farm was 7.17 (Islam *et al.*, 1995). The PMSA is a flood basin, which remain under water during monsoon (July-September). Natural forages together with legumes (*vigna mungo* and *Lathyrus sativus*) are cultivated at zero' tillage method when the floodwater recedes in October. This area is called as "Bathan". Bathan feeding system that is completely based on the fodder from November to March. The benefits of milk producer's co-operatives in dairying at PMSA are discussed in this article. This study covered 200 households from 10 villages of PMSA. The purpose was to understand the impact of co-operatives in

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Table 1. Information on Bangladesh Milk Producer's Co-operative Union Ltd. at Pabna milk-shed area (1989-1997)

Item	Year			
	1989	1990	1991	1992
No. of primary societies	95	96	96	99
Milk productions (100 l)	2949	3499	3926	4868
No of milk producing farmers	7873	8176	8201	8311
No. of animal treated	13146	19537	14424	16381
No. of vaccine given	11583	8250	8065	7608
No of AI calves	417	821	2811	5357
Cattle development fund (0.2tk/l milk) x1000	5426	6150	8131	7883

Source: MILK VITA, 1995.

dairying with the production system.

Primary milk producer's societies (PMS)

A farmer having milking cows and produce milk for selling is a primary milk producer (PMP). A group of the PMP in a village or a locality covered two or three villages constitute a primary milk producers society (PMS). The MILK VITA regulates these PMS according to the Bangladesh Government Co-operative rules and regulation. Number of primary milk producer, number of primary societies and milk production are shown in Table 1. The increasing trend of the primary milk producers number was reported. The number of PMP increased during the years, consequently the number primary societies also increased. Increased milk production has reported during that period.

Activities of primary milk producers societies

Primary milk producer's society is headed by a manager and governed by an elected governing body. The important activities of the PMS are:

- to buy the produced milk daily from the primary milk producers.
- to test the milk samples for price fixing
- to send the collected milk to the processing plant
- to make the payment
- to render veterinary treatment and artificial insemination (AI) services
- to supply concentrate feed
- to act as a middleman, to undertake other activities for the development of dairying as instructed by the MILK VITA.
- to arrange short training program for PMP concerning proper care, milk preservatives and preservation system, improved cattle feed preparation

Besides the above activities the primary milk societies at Pabna have to manage the bathan' feeding. At PMSA, the feed resources are very seasonal (Islam, 1993 and Islam *et al.*, 1995a). Just after emerging the bathan, the PMS constitute different groups of PMP is called bathan group' to utilize the forage and allocate the land for green forage cultivation. Public and private both type of land are used to cultivate *lathyrus sativus* and *vigna mungo*. This is called bathan forage that is available during the month of November to April is known as bathan feeding system. They make temporary shed near the riverside where their dairy herd is sheltered. They follow the pasture rotation system. Before making allotment to a bathan group, the PMS fix the forage cost based on the production cost of the year. The bathan feeding has long been established.

It was reported that at PMSA there are two distinct feeding system based on the forage availability (Islam *et al.*, 1995b). One is farm feeding and the other one is bathan feeding. Table 2 shows the feed, feeding and management system of bathan and farm feeding season. It was stated that during the bathan season average milk production/ cow was higher compared to farm feeding (Islam

and Huque, 1995). Based on the forage availability controlled breeding system was observed at PMSA and about 75% calves are having during the bathan period. The primary producers take the advantages of good quality bathan forage to rear their calves and dams.

Activities of the MILK VITA:

- *Milk collection*: The PMS collects the daily milk from the PMP and transported it to the milk processing plant that is centered at Baghabarighat.
- *Artificial Breeding*: MILK VITA provides artificial breeding facilities through the trained personnel to upgrade the local cattle and maintain the developed cattle breeding system.
- *Animal health*: The MILK VITA ensured veterinary services to the PMP in two ways. Routine mobile veterinary clinic (RMVC) is provided once a week to each PMS. The mobile clinic is headed by a Veterinary Doctor and two veterinary Health Assistants. The other one is Emergency Veterinary Service (EVS) which is provided when the PMP needs.
- *Supply of concentrate feed*: Primary milk producers generally feed their cattle with concentrate prepared by MILK VITA. An animal nutritionist is engaged to prepare the concentrate. The concentrate is almost balance and comparatively low cost.
- *Promote green fodder cultivation*: The livestock extension department promotes the green fodder production and introduce new and high yielding forage species besides their cattle development program.

Credit: The credit facilities also provided by the MILK VITA to the PMP.

Table 2. Feeds, feeding and management practices used of Dairy herd at different time of the day at Pabna Milk-Shed Area

Item		Bathan feeding (September-March)	Farm feeding (April- August)
Feeds		*Lathyrus sativus, vigna mungo,* mixed pasture and rice straw and mixed concentrate	Rice straw and mixed concentrate (Copra meal, pulses bran, wheat bran, rice polish)
Feeding milking cows			
Time of days	Hours		
01.00-04.00	03.00	Grazing on mixed pasture	Night shelter cattle shed
04.00-05.30	01.30	Preparation for milking	Preparation for milking
05.30-07.30	02.00	Milking and concentrate feeding	Concentrate feeding and milking
07.30-10.00	02.30	Free exercise, drinking water and veterinary operation	Drinking water and straw feeding
10.30-13.30	03.30	Grazing on mixed pasture	Straw feeding
13.30-14.00	00.30	Drinking water	Straw feeding
14.00-16.30	02.30	Grazing on pasture	Straw feeding
16.30-17.00	00.30	Preparation for milking	Preparation for milking
17.00-18.00	01.00	Milking	Milking
18.00-19.00	01.00	Concentrate feeding	Concentrate feeding
19.00-01.00	06.00	Night shelter at open air	Night shelter at cattle shed
Housing			
Dairy cows		Open	Cattle shed
Calves		Temporary shed	Calf shed
Bullocks and dry cows		Open	Cattle shed

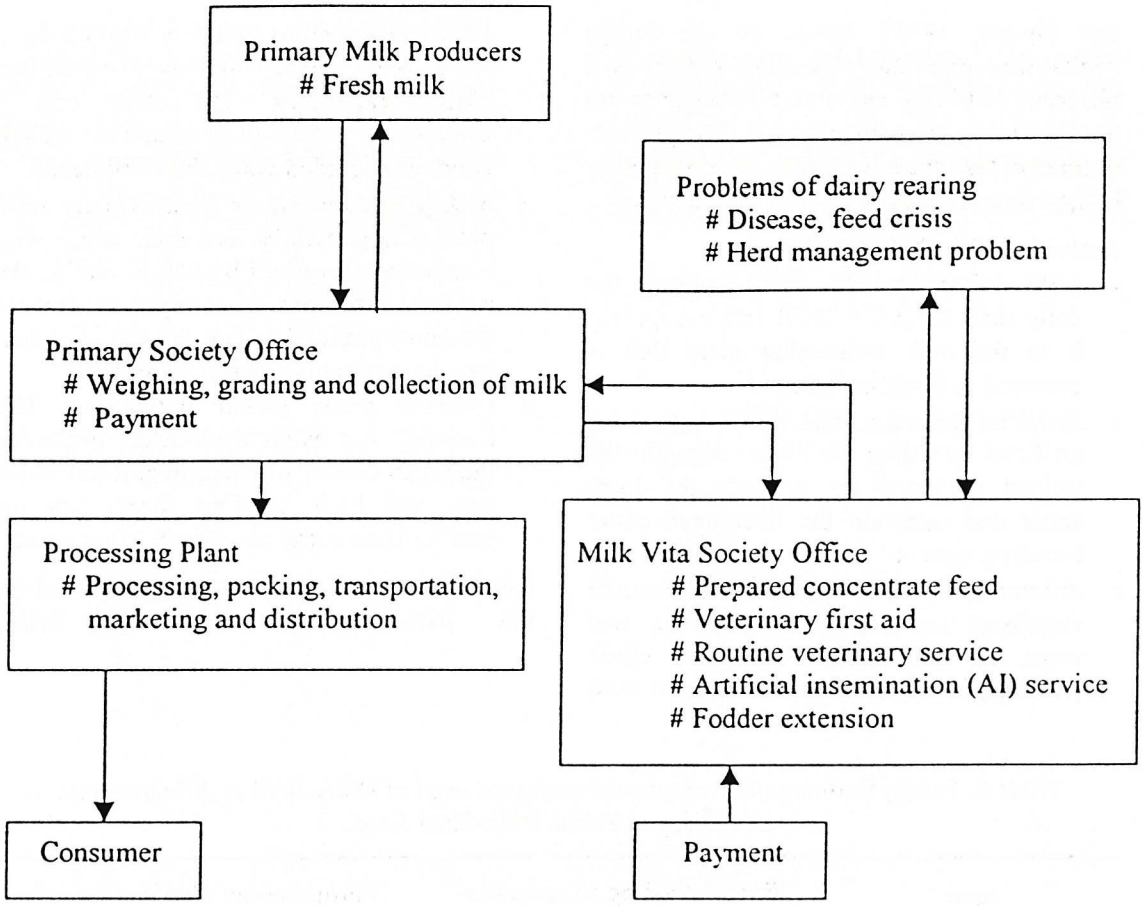

Figure 1. A schematic representation of the operation of primary dairy of co-operative system at Pabna Milk-shed area

Benefits of co-operatives

The major benefits that get the PMP at Pabna through co-operatives are:

- It improves the socio-economic condition of landless, small and middle class farmers.
- It prevents the exploitation of middleman in selling milk and buying feed.
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- It studies the community dairy problems at the grass root levels to seek appropriate remedies.
- It uplifts the socio-economic of the village people.
- It achieves marketing and purchasing services at lower cost.
- It corrects the unsatisfactory parameter such as faulty weights, measures, adulteration
- It encourages the farmers to develop their own capital by thrift deposit and to encourage them to invest them saving.
- It helps in utilizing community forage land.

The agro-climates of PMSA

As a center of PMSA, the climate of Baghabarighat and the other possible areas in Bangladesh are shown in Table 3. Four seasons can be distinguished (Herman *et al.*, 1989); pre monsoon in March to April (hot and dry); monsoon is May to July (hot and wet) post monsoon in August to October (hot and wet) and winter in November to February (dry and cool). The temperature of PMSA varied from 19.1 to 32.1 ^{0}C with a mean of 26.7 ^{0}C. Average rainfall is 120.8 mm (6.1-533.5mm) but most rain occurs in the moth of June to September. The mean humidity is

Table 3. Agro-climatic data of possible milk production potential areas in Bangladesh

Centre	Area covered	Soil texture and type	Mean duration of rabi season (days)	mean duration of pre-kharif season (days)	Cool period (<22°C, days)	Hot period (>40C, days)
Chilmari	Rajibpur, Chilmari and Roumari thanas of Kurihram district, Sudarganj and Sadar thanas of Gaibandha district	Loamy, non-calcarious alluvium soil	115-135	40-50	90-110	0.5-5.0
Dewanganj	Fulchari of Gaibandha distict, Dewanganj and Bakshiganj of Jamalpur district	Loamy, non-calcarious alluvium soil	120-140	40-60	90-110	0.5-5.0
Goalanda	Pangsha, Baliakandi, Rajbari Sadar and Goalonda thanas of Rajbari district	Loamy, calcarious dark grey floodplain soil	120-140	40-50	80-90	0.5-5.0
Borguna	Patharghata, Haringhata, Laidia, Nidri, Shibbari and Amtoli thanas	Loamy, calcarious alluvium soil	120-145	50-60	80-90	0.5-5.0
Mohonganj	Haor area of Netrikona, Kishoregonj and Sunamganj district	Clayey, non-calcarious alluvium soil	120-140	40-50	70-80	0.5-5.0
Baghabari	Ullahpara, Shahjadpur of Sirajgonj district, Bera, Sathia and Faridpur thanas of Pabna district	Loamy, non-calcarious grey floodplain soil	120-140	40-50	70-80	0.5-5.0

81.3% with slight changes in different months. The PMSA is situated in active Bramhaputra and Jamuna flood basin. Most of the lands are loamy and sandy, non-calcarious with alluvium soil. The identified areas have the similar agro-ecological characters as in Pabna milk-shed area (Table 3).

CONCLUSION

In Bangladesh where the small scale dairying is common practice by the small and landless farmer. Milk producer's co-operative can play a vital role in uplifting their socio-economic conditions. The findings showed that co-operative systems help a lot to the small and landless dairy owners in generation cash. The ensured price of milk and supply of concentrate through co-operatives accelerates

the dairy development. Co-operatives could also helps in employment opportunities and it could contribute in the badly needed animal protein supply through the dairy development. The similar areas (Table 3) that are mostly riverine and usually flooded during monsoon, bathan forage can be produced after receding the floodwater. The similar milk producer's co-operatives system of PMSA could be followed for dairy development in those areas. The vast area of uncultivated land may be used to establish new milk pocket in Bangladesh, which exists in Baghabarighat, Takerhat, Manikgonj and Tangail.

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