CLP Market Assessment

Market system for milk and dairy products – Bogra / Sirajgonj chars

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1. Introduction

1.1 Objective of this study

To examine opportunities for market development in the milk and dairy products market system, that are important for CLP participants in Bogra / Sirajgonj. Identify the main market development opportunities, outline support needs, and identify actors and resources needed to realize more reliable income and employment opportunities.

To produce an exemplary market-system report that demonstrates market-system mapping and illustrates the kind of results, findings and recommendations that can be expected to emerge from using a market development approach in design of future interventions.

To orientate key staff in the CLP market development unit to the market-system mapping approach – through their active participation in the fieldwork planning, data collection and interpretation of results.

1.2 Rationale for selection of milk / dairy market-system

Milk, and dairy products – such as cream, curds, sweet-meats, tea – make up probably the most significant output market system for CLP participant households, simply because dairy cattle have been such a large part of the asset transfer programme. By end of CLP 1, approximately 9,000 households were selling milk, making approximately Tk 1,000 per month on average (annual value to CLP households approx Tk 110 million).

Demand for milk, and dairy products in Bangladesh is strong – especially in urban areas, and the country is a net importer of milk. Competition from imported milk powder is a factor, but prices remain strong and future demand trends are likely to keep prices buoyant for producers.

Backyard livestock rearing for milk or beef production is an important income generating activity to poor who have relatively less access to land. They consider the advantage of lower cost of production, limited or no opportunity cost and prospect for using family labour and therefore prefer smallholder dairy activities. All most all households in char areas of Sariakandi and Kazipur rely on raising livestock. It provides them an opportunity to generate income, create employment and improve nutrition; all of which contribute to livelihoods. However, constrained by remoteness and low incomes, they have difficulties in accessing inputs, service and markets. As demand for milk is increasing rapidly in the country, char people can get benefit out of it.

2. Location and methodology

2.1 Locations of assessment

The assessment was conducted in Sariakandi Upazila, Bogra and Kazipur Upazila, Sirajgonj: two areas where CLP 1 provided dairy cattle and promoted milk-marketing, but from which CLP has now withdrawn. CLP developed a large number of para-veterinary service providers called livestock service providers (LSP) to support the core beneficiary and other farming households living in the chars. The locations were chosen to see competitiveness of milk value chains, sustainability issues related to role and impacts of livestock raising. One objective was to understand what happens after CLP exits an area.

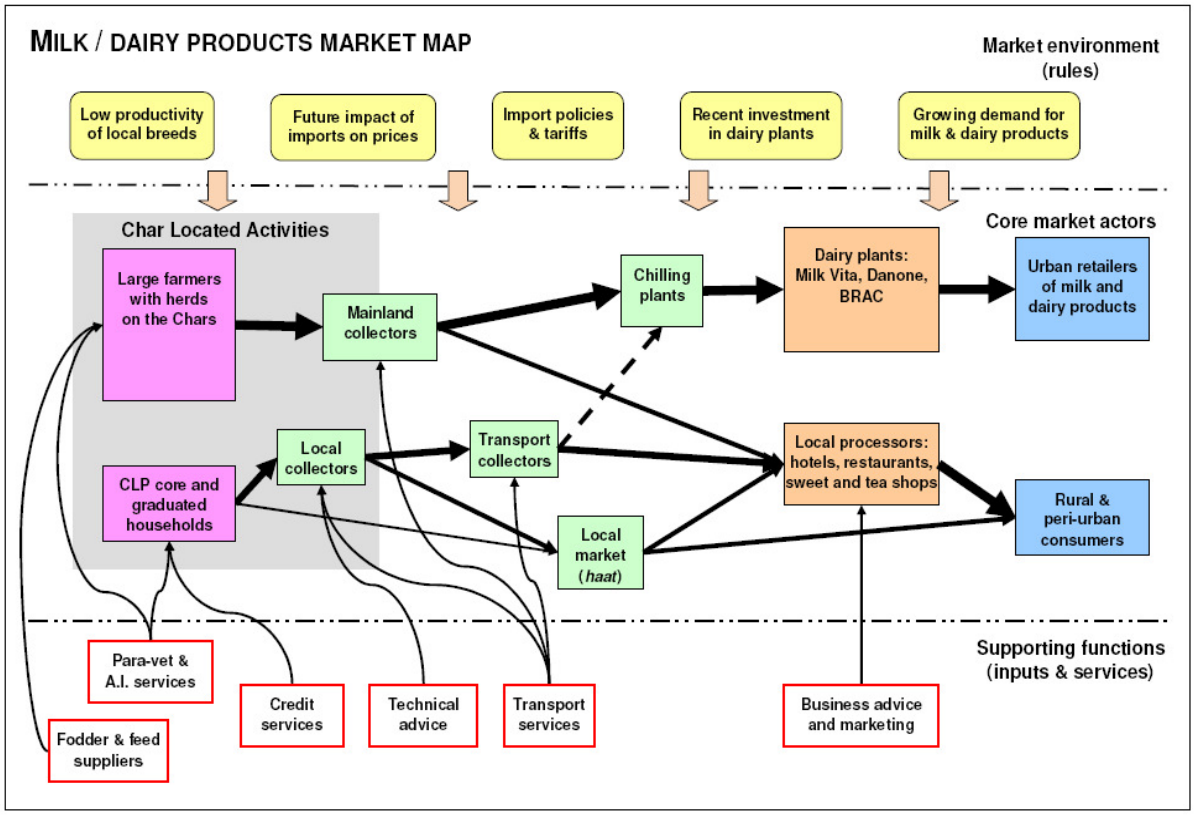
2.2 Methodology

A 6 member team (comprised of CLP staff and staff of its implementing organization) was formed and led by a senior staff from CLP market development unit. The team attended a 3day orientation on market

assessment. Desk information review; primary data collection through in-depth interview; focus group discussion; PRA exercise on seasonal calendar; participatory market mapping workshops with market actors and stakeholders were the main methodology of the study. Study tools were developed for collecting information from the following market actors and stakeholders in Sariakandi and Kazipur Upazila:

- 20 farmers
- 4 milk collectors
- 4 Livestock Service Providers (LSPs)
- 4 AI service providers
- 8 Local processors
- 5 Feed sellers
- 8 veterinary medicine shops
- 4 Agro-vet companies,
- 3 Banks and MFIs
- 1 District Livestock Officer (DLO) and
- 2 Upazila Livestock Officers (ULOs)

3. Milk Market System



3.1 Core Market-chain Functions

Milk Production

Milk producers are mostly women (over 70%) of the marginal and small farm and non-farm families. CLP core and graduated household own 1 or 2 cattle head raised or purchased from nearby market of Kazipur and Sariakandi with the assistance of *dalal* (middleman). About 95 % of these cattle head are local breed produce 200-300 litres (1 litre/day on average) of milk per cow per lactation period of 180-240 days a year. Though local breed produce less milk, can withstand heat, cold, humidity, parasites

compared cross breed. Three to five percent cross breed cattle seen in the area include Pabna breed, Jersey, Holstein, Friesian and Shahiwal.

Generally cattle sheds in char areas are made by the dry rice straw and bamboo near the kitchen or dwelling place. Sometimes a part of farmers' house is converted as cow sheds or shared with cattle for preventing theft/stealing. The unhygienic housing for cattle increases diseases infestation resulting low production of milk and higher frequency of mortality rate. Farmers are also prone to some diseases like anthrax transmitting from animals. Most of the farmers lack systematic training on animal health management.

Total raw milk production in the two Upazila is roughly 60,000 litres per day, 10% to 15% of which is consumed by farmers. In urban milk market, about 30% of milk is supplied from char, mostly by large farmers' animals grazing on chars. According to one senior officer of Milk Vita in Sariakandi, milk production in Kazipur and Saria Kandi satisfies only 45 percent of the local demand for milk.

Collection and marketing

Individual collectors or *goyalas* are the bridge between the production and marketing system. In the study area, they perform the door-to-door milking and collection and carrying milk in can or container from the char to main land.

Farmers sell their surplus milk to the local *goyalas* (collectors) at Tk18-.20/L who sell to different types of consumers in urban area, such as, individual consumers at market, contact households, tea stalls, hotels or restaurants and sweet shops at Tk. 25-32/L. In this marketing channel, price is always uncertain both for farmers as well as for *Goyalas.* There is an inadequate / opaque system of quality control (e.g. milk-fat content) at this collection and supply level. The collectors operate without self-regulating and sometimes adulterate milk by adding water to increase volumes or chemicals to prevent the milk from turning sour. Sometimes milk is clotted because of unclean can used for collection, storage and transportation.

The milk collectors from mainland collect the milk of large farmers' grazing animals on char. Under this system large farmers bring their cattle in the char for grazing for couple of months. The collectors previously working with these farmers also come to char to collect the milk during this time.

Overall, the milk marketing system is not organised. There are no *gowala* in some chars. As a result, most of the farmers in these chars sell their pregnant cow to get higher price. The Key challenges in milk marketing are low price, lack of transportation, distance to markets and lack of buyers.

Processing

Processors are the last group of market actors at the far end of the value chain playing significant role in value addition to milk and sustain the emerging system. They buy milk from both producers and *Goyalas* and process various types of sweets, butter oils and yogurts almost daily basis. They do not have suitable storage system.

Nearly 70 percent of the raw milk supplied to market is used by local milk processors like sweet sops, tea stall, restaurant and individual household consumers. The remaining milk is pasteurized and processed by BRAC, Milk vita and DANONE. Three cold chain plants of these formal processors consume 15000 to 2000 litres of milk per day.

Both formal and informal processors control price of milk. The informal processors offer higher price when demand for milk is high because of various social, cultural and religious festival. The formal

processors offer fixed price depending on fat content of milk. They do not consider the market demand factor with an understanding that they offer stable price than the informal processors.

Milk plants (in cold-chain) are not managing supply relationships well, and processors businesses (in warm-chain) lack dynamism. Coordination and communication along the milk chains in general is poor.

3.2 Rules / Business environment

Low productivity of local breed

Farmers lack skills and knowledge needed for production of milk and breeding cows. Systematic work with AI service providers and increasing availability of fodder and feed are essential to overcome this challenge of market development.

Milk import policies and tariff

Current tax and tariff policies encourage import of powdered milk which undermines the local fresh milk production and distribution. The government has imposed only a 32.8 percent tariff on powdered milk imports but much higher tariffs on milk packaging materials (53.5 percent) and cattle feed. Although CLP core beneficiaries and small holder farmers do not use imported cattle feed or packaging materials for milk marketing, it has effect on their business as cold chain plants tend buy milk from the farmers at lower price to maximize profit under high tariff regime. Besides, it may subdue milk price in future.

Recent investment in Dairy plants

Bothe, Milk Vita and BRAC have three (one each) chilling plants in the area that are underutilised due to low productivity and low supply of milk. A well coordinated milk collection system put in place in char is therefore very important. Besides, production near the chilling plant can also be increased for better utilisation.

3.3 Supporting Functions

Veterinary Services

The core market chain functions of livestock services include treatment of diseased animals, vaccination for avoiding outbreak of diseases, provision of drugs and artificial insemination.

Treatment: In the mainland, Upazila level livestock officer and veterinary surgeon treat cattle and other animals at their office premises. Farmers bring their animal for treatment. Most common diseases treated in this centre are malnutrition, anthrax, foot and mouth. Generally char dwellers are not getting this service due to remoteness. They are dependent on local *kabiraj* or traditional healer and livestock service providers trained by CLP and other NGOs. The LSPs charge TK. 50- Tk. 100 per visit/household depending on the condition of diseased animal. They also advise farmers on cattle breeding and feeding.

Vaccination: Vaccination programme includes geographic region, type of cattle operation, frequency of introducing new stock and post vaccination problem. Taking these into consideration, the local livestock office supply vaccines to prevent anthrax, HS, BQ and foot and mouth disease. The Veterinary Field Assistant (VFAs) of livestock office is responsible for implementation of vaccination programme. But LSPs also vaccinate cattle with the assistance of livestock office. They played a vital role during recent outbreak of anthrax in the country. Many char farmers, however, are not aware of vaccine and therefore do not vaccinate their cattle until they experience a loss. They approach to *kabiraj* or LSPs when their cattle are seriously ill.

Supply of medicine: There are about 100 local drug store selling medicine for both human and animal. Veterinary medicine manufactured by and supplied by ACME, ACI, RENETA and Techno pharmaceutical companies are very popular in the area. Representatives of these companies regularly visit the drug store and supply medicine as required on cash or monthly cash payment basis. Apart from drug store, 15 -20 LSPs in 2 Upazilas are also selling medicine along with treatment.

It has been observed that farmers spend Tk. 328 to Tk.1000 for medicine, de-worming tablets, vaccines and service fee per year depending on the farmers' ability and availability of services.

Artificial insemination

Artificial insemination is popular method used to breed cattle with the semen collected from bull, extended with nitrogen diluents and prepared for storage and use. AI service provider uses instrument to deposit semen into a cow in estrus.

CLP did not train any LSPs to work as AI service provider considering different factors like quality of AI materials, poor health of local cattle and limited success rate. However, it supported some beneficiaries to inseminate their cattle. Department of Livestock Service (DLS), BRAC and Milk Vita supply AI materials in the area. At the moment, there are only 4 Veterinary Field Assistant (VFS), working in Sariakandi and Kazipur though DLS planned to provide one Veterinary Field Assistant in each union. These VFS attend 10 to 12 AI points along the bank of Jamuna river. Besides, there are 15 local AI service providers in 2 Upazilas. Sometimes AI service providers from Jamalpur come to these areas to inseminate cattle.

According the Upazila Livestock officer, the success rate of AI is about 50-60 percent. Farmers think the success rate is even lower than that but they are very interested in breed improvement. They pay Tk. 50 to 100 to AI providers for liquid semen and Tk. 200-300 for frozen semen. Sometimes farmers inseminate their cows on credit but do not pay the total fees if the insemination is not successful. Overall, access and effectiveness of AI materials are limited because of various reasons including lack of AI facilities and poor management of AI. Inadequate or unaffordable AI service resulted in only 2 to 3 percent cattle of improved breed in the area.

Fodder and feed supply

Fodder*:* Main fodders used in the area are grass, dry rice straw and rice bran. Fodder crisis goes to pick during season when farmers have to spend even whole for collection of grass from different places. Large farmers in the mainland bring their cattle for grazing on char.

Feed: Supplementary feed such as oilcake, molasses, and wheat bran to a limited scale during milking period. In rainy season chars go under water for long time and therefore farmers are bound to purchase rice straw from the main land. Feed and fodder crisis seriously affects cattle health and milk production as well as increases disease infestation.

Napier grass: CLP has introduced Napier grass in char and some farmers feed this grass to their cows. But the core beneficiaries could not take it as an option for feeding their cow due to their landlessness.

Manufactured feed*:* Feed shops in the main land informed that commercial dairy farmers and cattle traders buy company manufactured feed from them.

Credit services

There are 10 to 12 major NGOs operate credit programme in the Upazilas including char. Most of the farmers interviewed know about these credit organisations and have access to credit. Milk Vita provides some credits to its group members. It seems that credit is not an issue to the milk producer. But

availability of credit for buying improved breed cow is not readily available. The terms and conditions are not also favourable for the farmers. Therefore, they refrain from borrowing money for buying cows.

Technical advice

Farmers have limited knowledge about animal management including hygiene. There are confusions among farmers about appropriate cross breed producing more milk.

Business and marketing advice

Farmers need to understand business prospect and market opportunities. For example, the informal processors are really getting formalised and their demand for milk yet unmet in the in Sirajgonj and Bogra districts. Both of the districts are closed to Sariakandi and Kazipur. Business and marketing advice can create a dynamic value chain in the area.

Transportation services

As mentioned earlier key challenge in selling milk is transporting milk from char. Depending on season, 6 to 7 hours are needed for collecting and transporting milk from char.

3.4 Value-chain analysis

Although the research team could not be ascertained about exact cost and income at different actor levels, it tried to understand a rough estimate for value chain analysis. It shows that at char farmers' level, cost per one litre of milk is about Tk.15 and the selling price is Tk 20. Farmers generally sell one or two litre of milk individually. Without proper skills and knowledge they struggle for milk production. Transportation cost at collector level is Tk.1 – 2/litre due to distance from the char and the selling price is Tk.28 They make higher profit per one litre of milk mainly to cover wage income from small quantity of milk. Processing per one litre of milk at chilling plants stands Tk.2- 2.50 including transportation. Selling price at this stage varies from Tk.45 - Tk.50. Sweet shops add value of Tk. 30- Tk 80 into one litre of milk processed with sugar, wheat flour, oil labour, and packaging materials to make curd and sweets which they sell at the price of Tk. 50 to Tk.180. Their profit ranges from Tk. 20 to TK.100 according to the products made.

4. Problems and opportunities

Low milk productivity: due to inadequate nutrition. Fodder and feed availability is still a significant seasonal constraint. Inadequate supply of veterinary services also contributes to low yield. Current productivity of milk in the area is more or less 1 litre/per cow/ day.

Lack of systematic on-going training on livestock care / health issues for farmers - Although household received an initial training, the lack of systematic refresher training on livestock care and health issues for farmers appears to be a problem.

Weak and fragmented milk collection system – Milk collection (including the actual milking of cows) relies on individual milk-collectors (*goala*) working alone. Group organisation is weak. Potential economies of scale, and time-saving opportunities in collecting and transporting milk are not being exploited. Overall effect is that farm-gate prices are lower than they could be.

Inadequate / opaque system of quality control (e.g. milk-fat content)- The lack of any quality control processes (e.g. for milk-fat content) means that all market actors from farmers through to dairy product processors are locked into a low input-low output mode of production. The *goyalas* do not disclose the processors manipulate the fact about the fat content mainly to give lower price to farmers or processors.

Problems of quality control also exist in livestock products, drugs, vaccines, feeds, and breeding materials.

Demand and prices in warm-milk chain are unpredictable. The cold-milk chain may offer more reliable demand / prices, but *goyalas* face obstacles linking char production into this chain due to lack of contact, distance, quality and timing.

Mistrust, weak relationship and lack of coordination: Milk plants (in cold-chain) are not managing supply relationships well, and processors businesses (in warm-chain) lack dynamism. Coordination and communication along the milk chains in general is poor. The seasonal price fluctuation in marketing is one of the major concerns for the small dairy farmer. But chilling plants give fix price depending on the fat contain. It creates lot of confusion and mistrust among farmers, collectors and processors. The local processors take advantage of price fluctuation and do not take any active role to support collectors of farmers. Because of weak relationship the milk market unorganized uncoordinated and not well functioning.

5. Vision for a better market system

5.1 Vision of sustainable outcomes

Livestock service providers (individually and through LSP association activities) play a greater role in organising and educating milk producing households about animal care and nutrition. This would increase milk productivity, and lead (indirectly) to greater demand for the LSP's services.

Relationships along the milk value-chains are better, so coordination improves. Processors and *goyalas* would play a more constructive role in the 'governance' of the milk chain (for example: through appropriate quality control that leads to better prices for farmers who produce higher-quality milk).

5.2 Plausible intervention strategies

Facilitate dairy farmers to form informal milk-marketing groups: specifically focus on their own needs. A strong milk-marketing group linking the rural farmers with urban consumers directly through would enable the milk producers to get more a stable consumer's price of their milk. These groups would function as an instrument of change in livestock management, sustainable source of milk production and supply and establish a viable market system that benefit the poor farmers. In order to facilitate access to LSPs this group is also necessary.

Facilitate strong linkages between the envisaged dairy groups and LSP associations,: In order to create opportunities for economies of scale in service delivery and farmer training, collaboration between farmers and livestock service providers is crucial in cattle management and milk production. For example, the LSPs can help farmers in improving cattle management, and milk quality through conducting learning session as embedded service.. The learning sessions can also help them in creating demand for their services.

Facilitate dialogue with milk collectors and processors. In order to enhance understanding respective needs, identify constraints and opportunities in the milk value-chain participatory market analysis, regular dialogue could be a very effective mechanism for milk market development.

6. Conclusion

Small-scale livestock farmers in the study area benefited from increased access to livestock service of LSPs trained by CLP and other NGOs. It was possible because the farmers were the main producer of milk, supporting them with livestock service was necessary to close gap in value chain growth. However,

due to low productivity, lack of knowledge and skills related to cattle management; unorganized milk market system, lack of quality control, mistrust and coordination the farmers are unable to get full benefit from current the milk market.

Farmers' informal group in collaboration with LSP association can overcome production and quality related constraints. They also need to engage themselves in market analysis and dialogue with collector and processors for building a viable milk marketing system that addresses the issue of fragmented collection, quality control and price. A successful model developed through this process is scaled up to benefit more and more poor who are living in geographically and environmentally fragile locations but have high value livestock resources.