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Improved Market Access and Smallholder Dairy Farmer Participation

for Sustainable Dairy Development

(CFC/FIGMDP/16FT)

LESSONS LEARNED STUDY

BANGLADESH:
smallholder milk producers
nutrition, incomes, jobs

By

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Chapter 1: Background

Bangladesh has a population of 140 million people of which over 80 percent are rural. There are more than 15 million rural households with over two thirds estimated to keep livestock. Though population growth is slowing, there are still almost 1,000 people per sq. km, the highest density of any country in the world, excluding small island-nations and city-states. The dwindling per capita land resource is one of the causes of persisting poverty in the county according to contemporary UNDP Human Development Reports: more than half the of people own less than 0.5 acres; the bottom 40 percent possess just 3 percent of the land; 48 percent live below the poverty line; and 30 percent consume less than 1,900 calories per day against the minimum desired level of 2,300 calories.

Agriculture generates two thirds of total employment, contributes a quarter of total export earnings and provides food security to the increasing population. Crop production and animal husbandry are interdependent in the mixed farming systems of the country. Livestock are very important to the economy and perform multiple functions including provision of food, nutrition, income, savings, draft power, manure, transport and other social and cultural functions. Livestock allow the poor and landless to exploit common property resources, such as roadsides, open grazing areas and water bodies. Cattle are by far the most important farm animals, the majority being kept by smallholders and directly linked to family income, nutrition and welfare. While livestock keeping is a part of mixed farming, the system of production is not well integrated and the maximum value is not always gained from all the inputs and outputs. There is scope for basic improvements leading to greater integration and productivity.

In 2006 the livestock sector contributed 2.95 percent of GDP, or about 17.5 percent of agricultural GDP[1]. When the indirect benefits of draught power and manure for fuel and fertiliser are added to the direct economic output of meat, milk, and hides, the value added of the livestock sub-sector almost doubles to about six percent of GDP. Livestock also provide a critical cash reserve and steady cash income for many marginal farmers who grow crops essentially for subsistence, or who have little or no land at all. The national herd comprises: 22.80 million cattle, 1.16 million buffaloes, 19.94 goats and 2.57 million sheep. Milk production was 2.27 million metric tonnes (mt) in 2006, mainly produced by cows yielding, on average, 200 to 300 litres per 160/180 day lactation. In the few specialised areas where cross breeding has taken place, yields range from 1,000 to 3,000 litres over a 210/300 day lactation[2]. Until quite recently milk was a by-product of cattle, used largely for making traditional sweets and in tea. Per capita milk availability currently ranges from 40 to 50 g/day (14 to 18 kg/year). The gap between supply and demand is largely met by milk powder imports of about 20,000 mt annually valued at some USD 70 million[3]. Imports represent 0.16 million mt of liquid milk equivalent annually, some 6 to 7 percent of total consumption, or 55 percent of the formal dairy market. While there is no specific nutritional target in the country for milk consumption, the figure of 250 g/day (90 kg/year) is often quoted in national plans, implying an annual milk requirement of 12.8 million mt, more than five times current production[4].

The first dairy plant was set up in 1946 by the National Nutrients Company of the-then Indian sub-continent at Lahirmonhanpur, now in Sirajganj District. Following the partition of India in 1947 the Eastern Milk Products Company took over through exchange of properties. Milk and dairy products marketing eventually started in 1952 under the brand name *Milk Vita* in the then East Pakistan. The cooperative accumulated huge losses as did the only other dairy venture, Asto dairy in Dhaka, started in the 1960s. By 1970 both dairies had virtually ceased trading.

[1, 2] Directorate of Livestock Services, Bangladesh, 2006 – 07.
[3] Bangladesh Bank – Annual Report, 2006.
[4] Kbd. Syed Altaf Hossain, Paper presented at Annual Conference (2003): Bangladesh Animal Husbandry Association

Acute scarcity of milk following independence from Pakistan in 1971 prompted the Government to commission two dairy studies with support from UN/FAO (United Nations Food and Agriculture Organisation) and DANIDA (Danish International Development Agency). The studies recommended the establishment of a sustainable cooperative dairy development programme based on buying surplus milk from smallholder producers and combining the businesses of Asto and Milk Vita into the Eastern Milk Producers' Cooperative Union Limited, which became Bangladesh Milk Producers Cooperative Limited (BMPCUL) in 1980. During the period 1973 to 1978 the Milk Vita Co-operative Dairy Complex was established under the auspices of the Ministry of Local Government, Rural Development and Cooperatives (MLGRDC), with support from DANIDA, FAO and UNDP. The cooperative model was largely adapted from the successful Anand pattern dairy cooperative in India. Two dairy plants and three milk collecting centres were built and milk collection started in 1976. During the mid-1970s the Government also established a small dairy at Savar close to Dhaka to provide processed milk from its Central Cattle Breeding Station for Government employees.

At Milk Vita the gap between milk supply and demand was originally met recombining butter oil and skimmed milk powder provided by DANIDA/EEC into liquid milk. By the end of the 1970s, annual milk collection from some 36,000 smallholders had rapidly built up to 15 million litres as more and more village-level co-operatives were established. But, by the mid-1980s, Milk Vita had virtually collapsed, with less than three million litres of milk collected annually as a direct result of unfair competition from imports flooding in from subsidised over-production in Europe. At that time whole milk powder was retailing at less than 20 percent of cost price in Europe and one third of the cost of milk production in Bangladesh. By the beginning of the 1990s the adverse impact of subsidised imports was recognised and import taxes were imposed. Also at this time, following the recommendations of the UN/FAO technical assistance team, the Government withdrew from day-to-day management, and professional managers took over. The Milk Vita business was turned around and it became profitable.

Chapter 2: Situation Analysis

2.1 Recent developments

Fortuitously, the turn-around at Milk Vita coincided with a growing market for processed milk as urbanisation accelerated. This encouraged other investors to adopt parts of the Milk Vita smallholder dairying model. There are now a good number of enterprises involved in the sector as indicated in the table below. In 1990 processors collected just one percent of total milk production of 1.5 million mt (30,000 litres per day); by 2006 this had increased to seven percent of 2.27 million mt (384,000 lpd).

Table: Milk Processing Capacity in 2007

	Dairy (Establishment Year)	**Average Milk Collection (litres/day)**	**Smallholder milk suppliers**
1.	Milk Vita (1973)	200,000	150,000
2.	Amomilk (1996)	10,000	5,000
3.	Tulip Dairy(1998)	3,000	2,000
4	Arong – BRAC Dairy (1998)	80,000	70,000
5.	Bikrampur Dairy (1998)	10,000	6,000
6.	Ultra-Shelaidah Dairy (1998)	10,000	4,000
7.	Aftab (1998)	8,000	4,000
8.	Pran (2001)	40,000	30,000
9.	Grameen /CLDDP (1999)	7,000	6000
10.	Rangpur Dairy (2007)	8,000	7000
11.	Akij Group (2007)	4,000	500
12.	Grameen-Danone (2007)	1,000	From CLDDP
13.	Savar Dairy (1974)	3,000	From own farm
14.	Army	Self consumption	From own farm
	Total	**384,000**	**284,500**

Other development since the 1990s include:

- Government-sponsored investment incentives for a few medium and larger-scale farmers to purchase improved dairy animals. This initiative largely failed as the farmers were not well integrated into the dairy input supply and value chains and were unable to repay their loans.
- Cheap sweetened condensed milk (SCM) produced from imported powder milk, sugar and vegetable oil by four large companies, viz. *Danish, Star ship, Goaliny,* and *Quality.* SCM has captured the lion's share of the tea drinking market, though it is not strictly speaking a dairy product as it contains vegetable oil. The business model of these companies is based on the continued availability of cheap (subsidized) milk powder from developed countries. These enterprises have been hugely profitable as they were

able to take advantage of low international commodity prices. It will be interesting to see how they are able adapt their business models to cope with the recent significant increases in the price of these commodities.

- Foreign investors such as *DANO* (Arla Foods, Denmark) and *Anchor* (New Zealand Dairy Board) also import milk powder in bulk for repacking.

2.2 Dairy sector policy and strategy

Following the establishment of Milk Vita, two major dairy development studies were undertaken in the 1980s aimed at scaling-up co-operative dairying to other parts of the country. Both were sponsored by Government and UNDP/FAO. The first in 1984 prepared a *National Co-operative Dairy Development Plan*. The second in 1987, led by the Chairman of the Indian National Dairy Development Board, expanded the plan into *A Strategy for Dairy Development in Bangladesh.*' The strategy proposed a regional approach, based on setting up four regional dairy co-operatives, to collect milk from smallholder village cooperatives and process and market it safely and affordably to lower income urban groups. The regional dairy co-operatives would be federated in to a national level dairy federation or dairy development board. Detailed implementation programmes were prepared but have been shelved for more than two decades.

Current Government policy for agriculture aims to provide an enabling environment and supportive role in moving from predominantly subsistence to a more diversified commercial agriculture which is environmentally sustainable. The strategic framework targets non-crop agriculture, i.e. fishery, poultry, livestock for accelerated investment.

Led by the Directorate of Livestock Services (DLS) and Ministry of Fisheries and Livestock (MOFL), and following an intensive stakeholder consultation process, the National Livestock Policy was drafted in 2005 and finalised in 2006 under component B of the recently completed Grameen Bank/UNDP/FAO Community Livestock and Dairy Development Project (CLDDP). The policy was adopted by DLS and MOFL but has not yet been submitted to Cabinet for approval, due largely to the succession of interim Governments and prevailing civil unrest since it was prepared.

The key challenges in implementing the policy are identified as follows:

- implementing the policy recommendations
- introducing the institutional reforms
- establishing regulatory frameworks and a legal body
- enforcing laws and regulations
- ensuring quality control
- collaborating with the private sector for providing veterinary services and simple diagnostic facilities.

While there is no separate dairy component in the policy, the Milk Vita and Grameen/CLDDP dairying models are promoted as “models for early adoption” (see chapter 3).

The National Strategy of Accelerated Poverty Reduction (NSAPR) was published by the Government in October 2005 and sets out, *inter alia*, ways and means for achieving the MDG goals of halving poverty and under-nutrition by 2015. The strategy document states that while the livestock sector as a whole grew 2.6 percent during the 1990s, poultry and milk production have demonstrated an impressive growth rate of around 10 percent per annum since the mid-1970s. With rapid urbanisation and income increase the demand for livestock products, e.g. meat, milk, eggs, will continue to rise. However a major limitation is stated to be low productivity as production is mainly subsistence and highly dispersed. Milk is targeted to replace imports, which currently ranging between 10 and 20 percent of annual consumption. The strategy is to promote community-based organisations of production, processing and marketing to overcome these constraints. Smallholder milk producers are expected to play a key role in helping to achieve this target and, in so-doing, helping Bangladesh to achieve it Millennium Development Goals of halving under-nutrition and poverty by the year 2015.

The NSAPR includes a strategy to promote a School Lunch Programme to improve attendance, reduce incidence of mal-nutrition as well as generating demand for local produce and catering services through backward and forward linkages. Community participation is to be a key driver. There is a small school milk programme in Bangladesh, funded by the US Department of Agriculture and implemented by the US Land O'Lakes Corporation. It is understood that the milk for the programme is imported and recombined from donated milk powder.

While milk production by smallholders is now generally recognised in Government development strategy, the absence of a comprehensive national dairy policy is thought to have limited growth of the dairy sector. What has been achieved so far mainly relates to the impact of milk collection systems introduced by dairies with a fair producer price system. Affordable and readily available cattle treatment and other development support provided by Milk Vita and Grameen-CLDDP have encouraged milk producers. Initially Milk Vita's prices were set by its then parent Government ministry (LGRDC). Since the 1990s Milk Vita has set its own producer and consumer prices, which have to be competitive with other more recently started dairies as well as imports.

Chapter 3: Smallholder Milk Producers

3.1 Characteristics

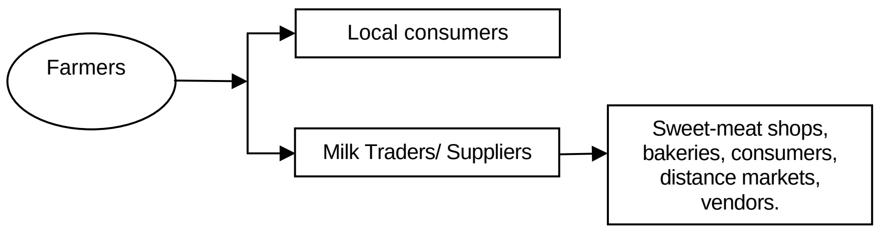
Smallholder milk producers play a key role in dairy markets in Bangladesh. They supply all the domestic milk for the informal or traditional market and three quarters for the formal or processed market. A more detailed description of the characteristics of smallholder milk producers is given in annex I. Milk Vita and Grameen/CLDDP institutionally practice empowerment of smallholder dairy farmers, both men and women, in the value chain and business ownership / management process, which encourages buy in to the sector. Other processing dairies tend to focus on milk collection only.

3.2 Milk Marketing Models

3.2.1 Informal traditional model

Smallholder milk producers sell milk directly to consumers or milk supplier-middlemen at local markets. The middlemen cater to the demand of sweet-meat shops, bakeries, consumers, more distant markets and vendors. They pay producers up to 50 percent less for their milk than other models. In many cases, the middlemen provide loans to smallholders at interest rates of up to 20 percent per month.

Figure 1: Traditional Milk Trader Model



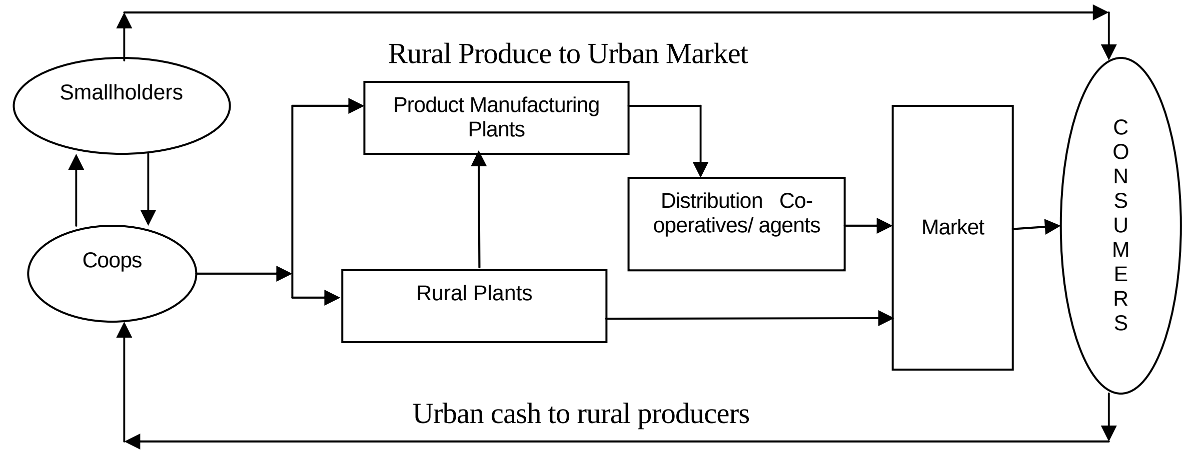
3.2.2 Milk Vita dairy co-operative model

The Milk Vita co-operative dairying model was adapted from the world-renowned Anand pattern model in India. From a modest start in the mid-1970s that involved providing 4,300 very poor, often landless, households in remote rural areas with a complete package of milk production enhancing technologies, village level organizational skills and a milk collection-processing-marketing system, the two-tier Milk Vita dairy cooperative model has grown into a successful commercial dairy enterprise. Today, milk is collected from over 100,000 smallholder members organised into 1,200 primary village co-operatives, then processed and distributed to all the major cities in the country. In 2006, smallholder milk producers sold 75 million litres of milk surplus to their household requirements. They also earned patronage dividends from Milk Vita's profits. The resultant increase in milking cow numbers and savings generated also serves as a cushion against the devastating effects of severe flooding that regularly afflict the country.

A novel aspect of the Milk Vita operation is its urban distributor co-operatives. These use locally fabricated *milkshaws* - an insulated box mounted on a traditional three-wheeled cycle rickshaw chassis - to deliver affordable pasteurized milk and dairy products to urban shops and consumers.

The Milk Vita model creates many jobs, reduces collection and distribution costs and has improved milk quality by cutting delivery times, especially in congested city areas. One off-farm job has been created for each 35 litres of milk collected, processed and marketed. More than half the jobs are in rural areas. Democratically elected milk producer and distributor co-operative members are now in the majority on the Milk Vita Board of Directors. This encouraged the Government to withdraw from day-to-day management enabling the Board to hire professional managers, which led to improved performance and created a platform for further expansion to bring more poor people in to the dairy value chain. Since the late 1990s Milk Vita has invested more than USD10 million in expanding its milk collection, processing and marketing network and now delivers safe and affordable milk and dairy products to some five million low-income urban dwellers.

Figure 2: Milk Vita Model



The key benefits of the Milk Vita model may be summarised as follows:

- it is a holistic, cow to consumer model;
- it increases milk production and productivity;
- it improves household nutrition and increases incomes;
- it empowers communities through participation by the poor in organised co-operatives and through accountability of the Milk Vita board and management to member-milk producers;
- it increases the quantity and improves the quality of affordable, safe processed milk and dairy products for urban consumers;
- it creates substantial off-farm employment.

Milk Vita continues to be a flourishing concern and has many recent imitators who have set up similar milk processing enterprises to process and market 70 million litres of milk annually.

However these enterprises do not provide cattle development/productivity enhancement support and technologies to milk producers.

Box 1

Mrs. Sandhya Rani Bala, a devoted village milk cooperative society member

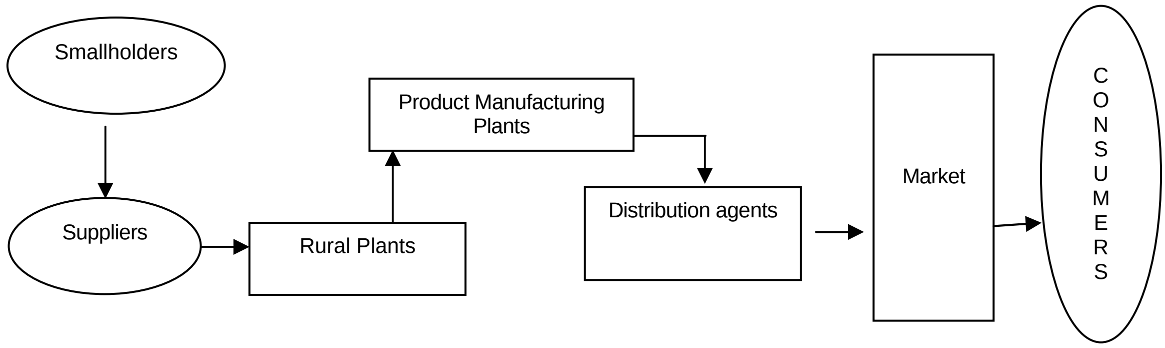
Mrs. Sandhya Rani Bala lives with her family in the very poor village of Takerhat in Faridpur District, a distance of more than 200 km from Dhaka. Born in 1965, she married in 1980. Later, with the help of her husband, she bought her first cow and started to sell her spare milk to Milk Vita to supplement her family income. Encouraged by the support she received in the form of a fair milk price as well as patronage bonuses and animal husbandry support services, she helped to form a village milk cooperative society exclusively for women. Now over 200 women belong to, and own shares in the society. From the sale of milk Mrs. Bala initially earned BDT 7,000 (US$ 100) per month. During the past two decades she has sold four cattle for which she earned approximately BDT 200,000 (US$ 2,857) in addition to her regular milk sales and bonuses. She has also purchased one acre of land for BDT 360,000(US$ 5,150) for growing crops and fodder.

In 1995 Mrs. Bala was elected a member of Milk Vita's national board of directors, known as the Managing Committee, for two consecutive terms six-year terms. She says milk and cattle keeping have changed her life, and the lives of her family, educating her two sons, one an engineer, the other in his final year studying medicine. Her husband has been very sick over the past four years and part of his expensive treatment is financed from milk sales. Mrs. Bala now owns eight cows valued at about BDT 400,000 (US$ 5,700) and sells 10,000 litres milk annually, worth about BDT 195,000.00 (US$ 2,800).

3.2.3 Private entrepreneur model

Private dairies, some owned by NGOs such as BRAC (Bangladesh Rural Advancement Committee), usually operate through milk supplier-middlemen (*Ghoshes or Dudhwalas)* in place of rural groups or cooperatives. They collect milk for the assigned dairy and smallholders involved in the system do not receive any value-addition benefit, just the basic price for their milk.

Figure 3: Private Entrepreneur Model

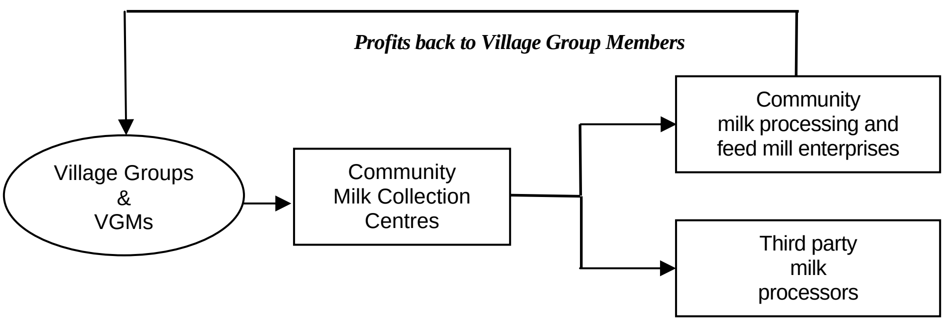


3.2.4 Grameen/CLDDP Model

This is a profitable, integrated, community-owned crops-livestock-fish farming system, which operates in one of thee poorest areas of the country and includes a dairy chain module. Established in 2000, the model was pioneered under component A of the above-mentioned recently completed Grameen Bank/UNDP/FAO CLDDP project. Very poor landless families are organised in five person groups. The Village Group Members (VGMs) can access commercial loans for livestock and other income generating activities. Eighty percent opt for dairy cows. The loans include compulsory animal feed and insurance components. VGMs have access, at full cost, to all the inputs needed to produce and market milk. They supply milk surplus to household requirements to community-owned milk collection centres for primary processing at community-owned dairy enterprises. Pre-processed milk is marketed to established dairies like Milk Vita, Bikrampur Dairy and Grameen-Danone Foods (see below) for further processing and marketing. Some processed milk is also marked locally. The VGM-smallholder milk producers own 70 percent of the community feed mill and dairy enterprises (Grameen owns the other 30 percent) and thus share the profits of the enterprise. While in some ways it is a social dairying model, it is commercial in operation.

The feed mill enterprises provide quality dairy rations, compounded from locally available agro by-products, for the VGM-owners who either have insufficient land or no land at all to grow their own feed and fodder. Once smallholders have four or five cattle, they have enough dung to take out a loan for a bio-digester to produce gas for cooking and lighting. The spent slurry from the bio-digester is then use to fertilise and increase the productivity of fish ponds. Every two or three years the ponds are emptied, the slurry dried and used as crop fertiliser. In this way smallholder dairying has become an important component of an integrated and environmentally sustainable poor peoples' farming system.

Figure 4: Grameen/CLDDP Model



Some of the benefits for smallholders include[1]:

- Household nutrition: e.g. pre-project no households consumed milk, now all 6,000 households with cows consume up to one litre daily.
- Household earnings: e.g. average daily earnings from fish and milk increased from 19 to 125 US cents, enabling purchase of other essential foods, schooling etc.

[1] Draft Terminal Report. Grameen Bank/UNDP/FAO Community Livestock and Dairy Development Project (BGD/98/009), 2007.

- Household accumulation of physical assets: up 145 percent and included tube wells for safe water, bio-digesters for clean cooking and lighting, sanitary latrines etc.

So far these benefits have resulted in the graduation of over 3,000 smallholder households out of poverty and the model is being scaled up across the country. For example:

- The new Grameen-Danone Foods Bogra Dairy started up in 2007 and produces low-cost bio-yoghurts for the poor (see below).
- In five very poor districts in the north-west 10,000 smallholder families will be covered under a BGD 10 crore (USD 15 million) programme up to 2010 funded and managed by NGO PKSF (Palli Karma-Sahayak Foundation).

Mrs. Laily Begum: The life of a struggling women of CLDDP

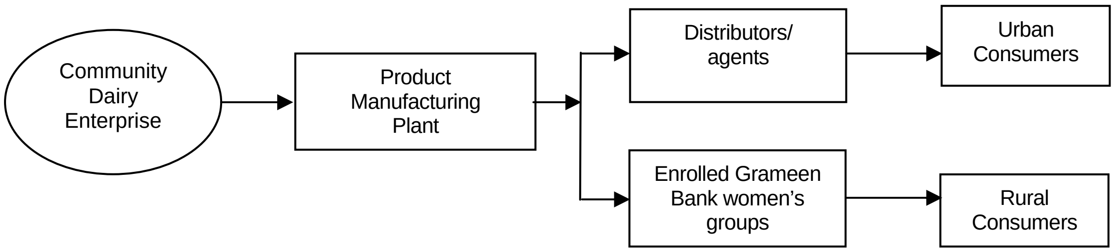
Mrs. Lily Begum wife of Mr. Mohamed Noyan Uddin lives in Jokar Char village in Tangail district. She was born in 1957 and married in 1972 at the age of 15. She had three sons, but her family was landless and destitute. At the time of building the Jamuna Bridge approach road in the mid-1990s, what little land her family had (one fifth of an acre) was appropriated for excavation to raise the road above flood level. Her family situation further worsened. In 1998 the Jamuna Bridge Authority and GFLF made an agreement to use the excavated land (known as borrow-pits) for fish farming. In partnership with GMPF, the Jokar Char Landless Women's Fish Centre was set up to manage some of the fish ponds constructed in the borrow pit areas. Mrs. Laily became a member. At that time she and her family lived in a kutcha (bamboo) house, with a few pieces of kutcha furniture. After joining she started earning some money from fish (about BDT 4,800 or US$ 70 a year). When the CLDDP started she took a loan from the new Grameen Bank Community Credit Scheme for BDT 24,000 (US$ 378) for a milk cow.

From 2000 up to August 2007 she has sold 13,500 litres of milk and earned BDT 245,000(US$ 3,550). From her livestock activities she has earned a net profit of BDT 162,000 (US$ 2,350), equivalent to BDT 27,000 (US$ 390) per year. Currently she has two milk cows and three calves, worth about BDT 100,000 (US$ 1,450). From her earnings from milk and selling her stocks she has established a rural engineering business for her elder son, built two new tin houses with concrete floors, built a bio-gas plant, purchased other household items such as a refrigerator, a TV, furniture, installed a tube-well to provide clean water for her family as well as her neighbours. Her family is now independent. Sadly she lost of two of her grown up sons who died suddenly. Laily says livestock and milk and the CLDDP have transformed her life, and that of her family.

3.2.5 Grameen-Danone model

Grameen-Danone Foods Limited was set up in 2006 and is in an innovative joint social venture between the Grameen Bank and Danone, a large French multi-national dairy corporation renowned for its functional bio-yoghurts. Danone recently established a new division named Danone.Communities and gained approval from its shareholders to set up a Euro 50 million (USD 70 million) mutual fund to channel investment into not-for-profit social ventures in developing countries. Ninety percent of the fund is to be invested in low risk securities, the remaining ten percent in higher risk social ventures. The first social venture is Grameen-Danone Foods, which produces low-cost, fortified yoghurt for sale in rural communities. A pilot dairy enterprise has been set up in Bogra. The longer-term plan is to set up a further ten rural enterprises in other disadvantaged areas of Bangladesh. The Bogra enterprise started up in February this year and currently purchases about 300 to 400 litres of milk daily from the Grameen/CLDDP Joysagar Dairy enterprise at Nimgatchi, about 50 km away.

Figure 5: Grameen-Danone Model



Chapter 4: Lessons Learned

A SWOT analysis for the smallholder dairy sector is attached as annex IV. Some of the developments and lessons that have shaped smallholder milk production over the period since organised dairying started in the latter half of the twentieth century are summarised below.

(1) The country has a strong tradition of dairying dominated by trader-middlemen and traditional indigenous milk products, which are still very important. The sector is governed by the informal milk market (93 percent). The formal market (7 percent) has a small but important and growing market share.

(2) Nearly all local milk is produced by smallholders.

(3) Long-term support from the government and development partners/projects kick-started the involvement of smallholders in formal dairy value chains; but schemes to promote larger more intensive dairy farms have been largely unsuccessful due to poor services and market access. Government support is now very limited and has shifted to creating an enabling environment with development efforts left to NGOs and the private sector.

(4) Dairying can play an important role for poor rural families, especially for regular nutrition, incomes and jobs and in integrating farming systems (crop-fish-livestock) to optimise use of available resources, including feed/fodder, land, water etc.

(5) Livestock and dairying enhance the capacity of poor rural people to cope with the annual monsoon floods (floods wash crops and fish away – livestock are kept at home and continue to produce food for home consumption and cash sale).

(6) Successful models where smallholder benefits from the complete dairy value chain include the Milk Vita Cooperative and Grameen Bank CLDDP models. The Grameen/CLDDP model has been adapted for use in Nepal and the local Grameen-Danone Foods social venture. The models provide assured markets for surplus milk, plus the added value of ownership dividends, and are reducing exploitation by middlemen-money lenders.

(7) The success of the Milk Vita cooperative model prompted substantial investment by others; currently 14 dairy companies buy milk from nearly 300,000 smallholders. Private entrepreneur dairy models currently provide limited value addition for smallholders.

(8) The dairy cow insurance scheme and feed mill enterprises play vital roles in the Grameen/ CLDDP model - since smallholder dairy producers are prone to higher financial risk.

(9) Condensed milk is produced from imported commodities, which, until very recently, were cheaper than fresh milk or locally produced condensed milk. Milk Vita is trying to compete with a product produced from fresh milk but has quality problems. BRAC and Milk Vita compete successfully with imported milk powder.

(10) Domestic milk prices are no longer controlled. The recent substantial increase in the prices of internationally traded dairy commodities is creating opportunities for import substitution. There is strong interest in investing in the dairy sector; a favourable investment climate and high import tariffs (45 percent) is fostering foreign investment.

(11) Modern, appropriate milk processing technologies are now available at plant level in about 20 districts (of 64), supported by local production of small-scale equipment.

(12) School milk feeding schemes based on imported pre-packed milk are seen as counter-productive to sustainable smallholder dairy development.

(13) There is an increasing awareness by Government, NGOs and the private sector about the significant economic and environmental benefits of sustainable and profitable social dairying in rural areas.

Chapter 5: Conclusion and Strategy Prospects

Tens of thousands of very poor rural households have graduated out of poverty as a result of the successful introduction of the holistic Milk Vita and Grameen-CLDDP smallholder dairying models. Many families now own up to 20 cows and have intensified and commercialised milk production. The two models embrace a complete cow to consumer package of input and output services, and their on-going scaling-up, has helped put the dairy sub-sector in Bangladesh in a unique position to take advantage of the recent huge increases in the cost of imported dairy products, especially milk power, by substituting imports with domestically produced milk. The policies proposed in the draft National Livestock Policy (2006) and the National Strategy of Accelerated Poverty Reduction (2005) recognise that milk produced at the community level by smallholder households can play a significant role in improving nutrition, incomes and jobs.

What is now needed is a more detailed, longer-term dairy development strategy to translate these policies into an actionable national dairy programme, which clearly focuses on smallholder milk producers. Such a strategy might include the following components:

(1) A clear vision/mission statement for enhanced smallholder participation in dairying in Bangladesh: e.g. to promote smallholder dairying under the National Livestock Policy as one of the strategies to help Bangladesh to achieve its Millennium Development Goals of halving poverty and under-nutrition by the year 2015.

(2) Three overarching strategic objectives: e.g.

a. to raise awareness among policy makers and consumers about the nutritional benefits of local milk and dairy products

b. to increase the number of smallholders involved in profitable milk production and dairy value chains through diversification and better integration of their household/farm businesses

c. to encourage processors to set up smallholder milk procurement systems to substitute imports and enhance national food security.

(3) An inventory of appropriate dairy chain models, including their:

a. competitiveness

b. investment costs

c. associated risks

(4) An inventory of strategic public and private sector stakeholders.

a. An indicative investment programme with a focussed, time-bound national action plan containing realistic and measurable targets, *e.g. to raise milk and dairy products consumption from 18 to 25 kg. by 2015.*

Government and dairy stakeholders should jointly develop the strategy, which should clearly identify the areas best addressed by the public sector and those best addressed by the private sector. The strategy would serve as a guide to inform policy makers and industry stakeholders about opportunities for future investments in smallholder-oriented dairy development.

Annex I

KEY DEFINITIONS

Smallholder Milk Producer: person or household, often landless or assetless, engaged in milk production for economic return with surplus milk, usually owning up to three cows.

Smallholder Dairy Farmer: milk producers linked to milk processors through cooperatives or associations, or individually by milk traders-middlemen. Initially they start with one animal but have potential to grow. Many household have graduated out of poverty and now have twenty of more milk animals.

Informal Market: markets near to producer locations where producers directly, or through traders collecting milk from farmers' homesteads, sell milk to consumers or middlemen suppliers of sweet-meat shops, bakeries or against other trading contracts.

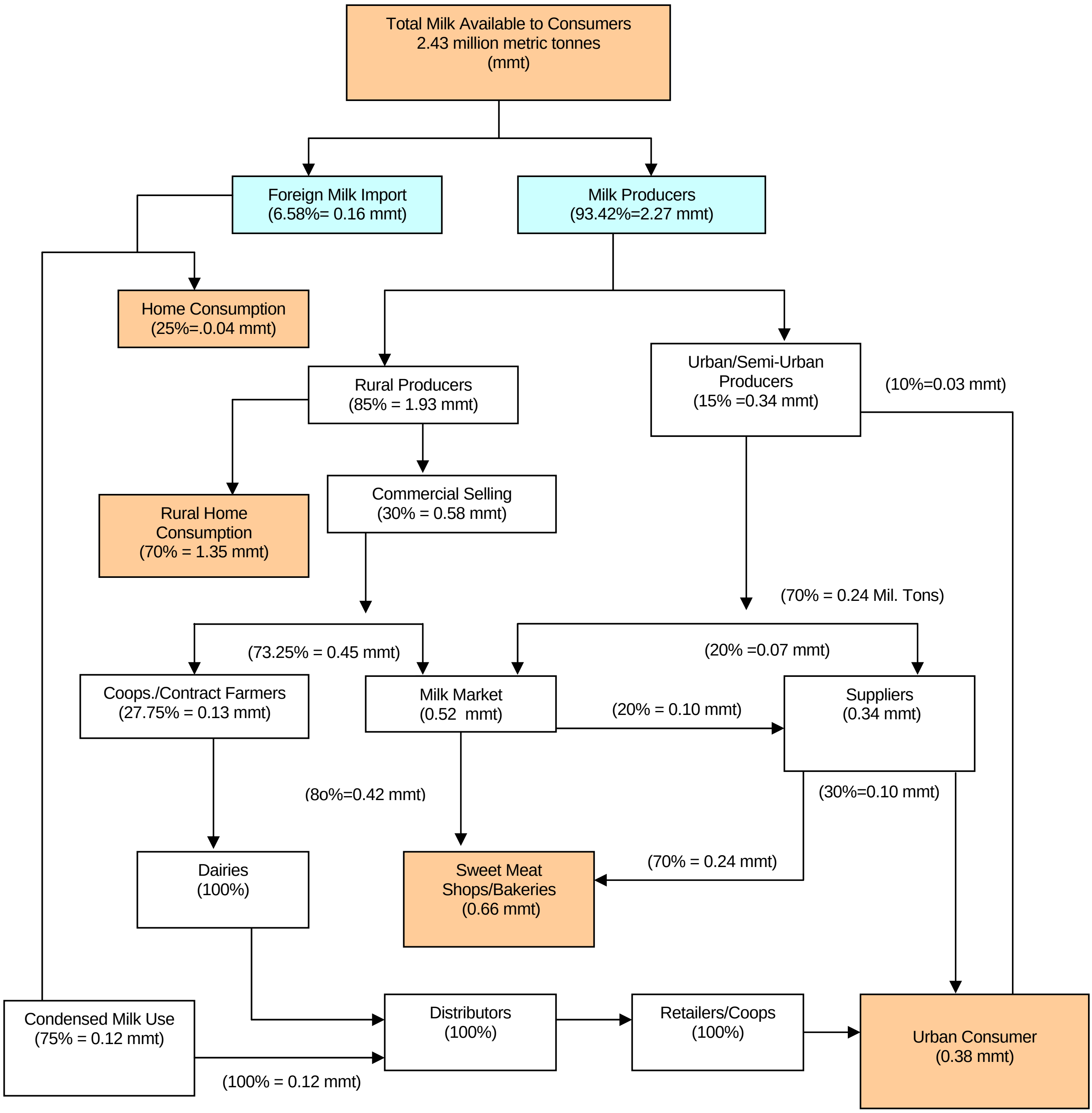
Formal Market: is the guaranteed market for smallholder milk producers where regular processed milk and milk dairy products supply take place to end-consumers, including institutional buyers such as hotels, restaurants, airline-kitchens, superstores etc.

Dairy Value Chain: the stages through which milk and dairy products are marketed from producer to consumer.

Milkshed Area: areas having surplus milk production or potential to produce surplus milk for sale for commercial selling through either for formal or informal markets.

Annex II

MILK FLOW CHART



Source:

~ Milk Production- Directorate of Livestock Services

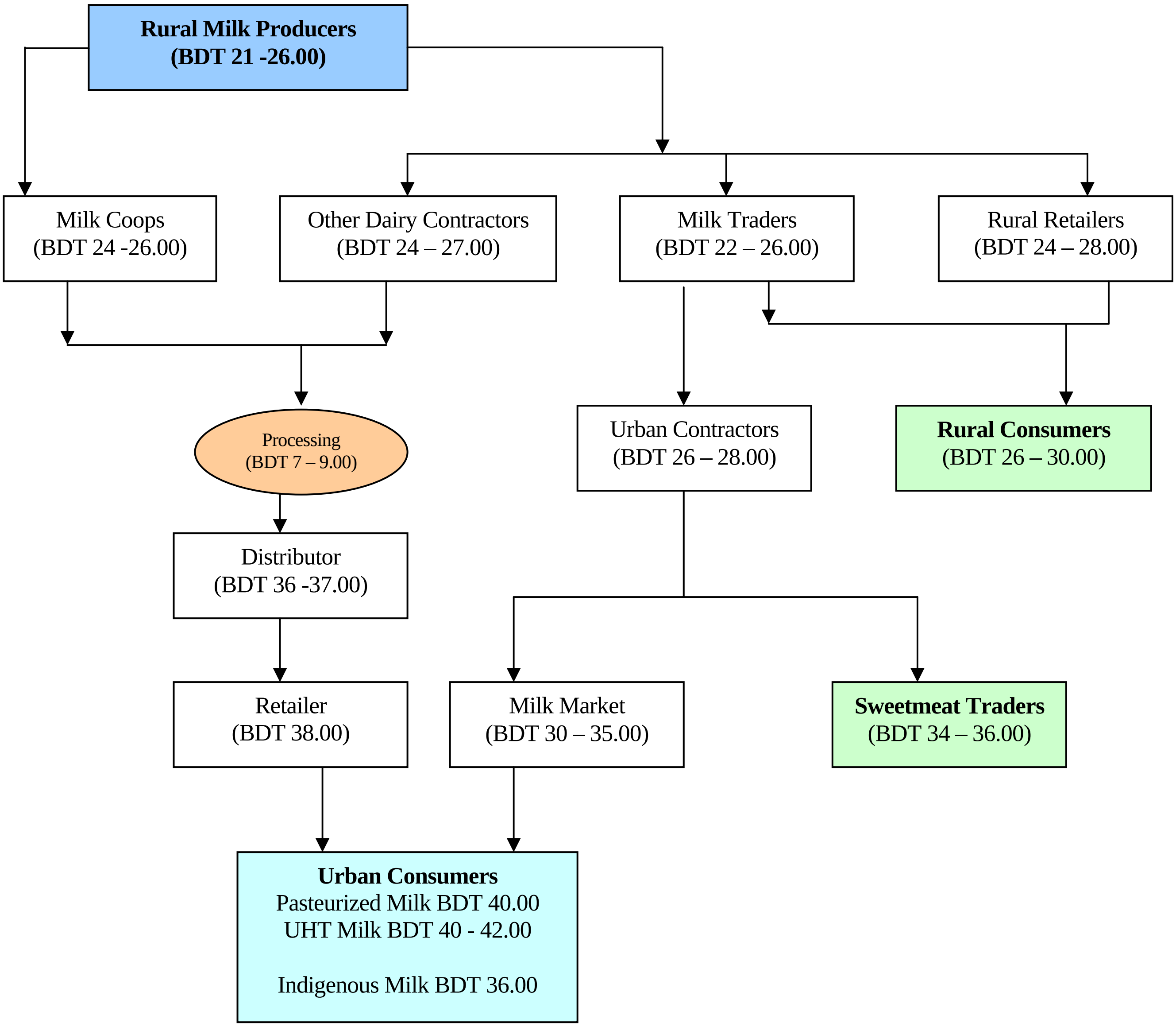
~ Processing – Dairy Plants

~ Flow data estimated from market operation / tendency.

Annex III

MILK PRICE CHART

(December 2007)



Conversion : BDT 70.00 = USD 1.00

Source:

Coop / Other dairies/ Market.

Annex IV

SMALL-HOLDER DAIRY FARMER – SWOT ANALYSIS

Strengths	How to build on them
Basis for milk production by the smallholder farmers ensuring access to sustainable market already established.	Extension of motivational approaches and investment incentives to further growth.
Availability of low cost labour force.	Family-members participation along with hired labour to result cost effective production.
Many of the remote milk shed areas, including offshore locations reserve potentiality of milk supply.	To ensure market access for larger group of smallholder farmers in the process of commercial milk production.
Availability of Cattle breed development activities	Replacing low-yielding local cattle through high productive cross breed for milk production increase.
Cattle grazing land is available at the government source.	Government to earmark fallow land strictly for cattle grazing and allow systematic use by the smallholder milk farmers.
Increased milk and milk products demand in the market	To diversify value added milk products and assure quality.

Weaknesses	How to correct them
Inadequate supply of balanced and nutritious cattle feed compelling increased milk production cost.	To establish cattle feed plant based on local raw materials to supplement cost effective production.
Insufficient preventive and curative treatment facilities for cattle in remote areas.	Intensification of cattle treatment activities by public and private endeavour.
Coping with the disaster like flood & erosion is difficult for the smallholder farmers.	To plan and implement planning to safeguard loss of cattle-lives.
Scope of benefit from the marketing value chain is limited.	To ensure inclusion of farmers in the process to foster encouragement.
Hazardous transportation system to frustrate milk carrying by the farmers.	National efforts towards infra-structural development to ease the problem.
Lack of strategic planning for sustainable dairy growth.	Tactical short & long range programmes under strategic planning to implement.

Absence of dairy policy in overall dairy development of the country safeguarding interest of smallholder dairy farmers.	To frame-out national dairy policy and create environment of its implementation.

Opportunities	How to exploit them
Extending job-facilities and creating livelihood means both at rural and urban areas.	To employ effective management practices of cattle keeping for milk production increase
Scope of cost-effective benefit from global milk price hike.	Increase milk production to earn additional household income.
New entrepreneurs creating further demand for milk to operate plants viably.	To safeguard producers' interest through competitive price offer.
Cattle purchase loan on easy terms by the dairies/financial institutions started flowing in.	Involvement of larger group of farmers to avail the support and contribute in income generation.
Technology available along with some locally produced dairy equipments	Using facilities of low cost investment for bigger milk collection area coverage.

Threats	How to avert them
Exploitation by the middlemen through cash investment packages on surplus milk.	Employ institutional efforts in collecting all milk and thereby eradicate middlemen.
Thought of with-drawl from the market by the entrepreneurs experiencing non-viability of dairy sector.	Undertake planned dairy development process in collaboration of all the players for their stay on.
Non availability of cattle epidemic control system.	Relevant government department to launch measures in avoidance death of dairy cattle.
Apprehension of harder taxation imposition system at farmers' level.	Considering nutritional and import substitute aspects tax system on smallholder farmers to be relaxed.
Loss of cattle during disasters like flood and cyclone.	To implement appropriate coping-up means and to provide compensation-packages including cattle insurance coverage.

Annex V

REFERENCE DOCUMENTS

Publications and articles on the dairy sub-sector are very limited in the country. Most of the available write ups are in the shape of project documents, souvenirs, seminar/symposium and study papers, of which some are listed below:

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