



INTERNATIONAL FOOD
POLICY RESEARCH INSTITUTE
sustainable solutions for ending hunger and poverty

EVALUATING THE DAIRY VALUE CHAIN PROJECT IN BANGLADESH: MIDTERM REPORT

Asma Alam

In collaboration with
Akhter U. Ahmed and Agnes R. Quisumbing
International Food Policy Research Institute
and
Zahidul Hassan and Mohammad Zobair
Data Analysis and Technical Assistance Limited

Submitted to:

**CARE
Dhaka, Bangladesh**

Submitted by:

**International Food Policy Research Institute
2033 K Street, N.W., Washington, D.C. 20006, U.S.A.**

June 16, 2011

This study was commissioned by CARE, with financial support from the Bill and Melinda Gates Foundation. The views and opinions contained in the report are those of IFPRI and the team that undertook the study and are not necessarily shared by CARE or the Gates Foundation.

CONTENTS

ACRONYMS & ABBREVIATIONS.....	III
EXECUTIVE SUMMARY	IV
I. INTRODUCTION	1
II. METHODOLOGY	2
III. SDVC PROJECT APPROACH.....	7
IV. PRODUCTIVITY AND INCOME.....	12
V. ACCESS TO INPUT SERVICES AND RESOURCES	22
VI. ACCESS TO MARKETS	28
VII. ACCESS TO INFORMATION	31
VIII. GENDER AND WOMEN’S EMPOWERMENT	32
IX. TRAINING AND CAPACITY BUILDING.....	36
X. RELATIONSHIPS AND OVERALL VALUE CHAIN INTERACTIONS.....	39
XI. INVOLVEMENT OF RESEARCH ORGANIZATIONS AND PRIVATE SECTOR	42
XII. GOVERNMENT - VALUE CHAIN INTERFACE	48
XIII. IMPACT, RELEVANCE, EFFECTIVENESS, SUSTAINABILITY, AND SCALE-UP.....	50
ANNEX 1: TERMS OF REFERENCE (ToR).....	56
ANNEX 2: MTE SURVEY PLAN IN THE FIELD	60
ANNEX 3: PROJECT AREAS	61
ANNEX 4: LIST OF FGDs WITH PROJECT PRODUCER GROUPS.....	63
ANNEX 5: DETAILS OF SDVCP PRODUCER GROUP CAPACITY	65
ANNEX 6: SURVEY CHECKLISTS.....	68

ACRONYMS & ABBREVIATIONS

AI	artificial insemination
BAU	Bangladesh Agriculture University
BDDDB	Bangladesh Dairy Development Board
BLRI	Bangladesh Livestock Research Institute
BQ	Black Quarter: is an infectious bacterial disease of sheep and cattle.
BRAC	Bangladesh Rural Advancement Committee, the largest NGO in Bangladesh
C1	Control 1
C2	Control 2
CB	Cross Breed
CDVF	Community-based Dairy Veterinary Foundation
DFID	Department for International Development
DLS	Department of Livestock Services
FGD	Focus Group Discussion
FMD	Foot and Mouth Disease: is an acute, highly contagious degenerative viral disease of cattle and other cloven-hoofed animals
HDSTU	Hajee Danesh Science and Technology University
HS	Hemorrhagic Septicemia: is a highly fatal bacterial disease seen mainly in cattle and water buffalo.
IFPRI	International Food Policy Research Institute
ISC	Information Service Centers
KII	Key Informant Interview
LB	Local Breed
LHW	Livestock Health Worker
MTE	Midterm Evaluation
PRAN	A major food processing company in Bangladesh
PTC	PRAN-Tetra Pak-Care
RAKUB	Rajshaki Krishi Unnayan Bank
RSP	Rural Sales Program
SDVCP	Strengthening Dairy Value Chain Project
TOR	Terms of Reference
UMB	Urea Molasses Block
VC	Value change
Anthrax	An infectious, bacterial and usually fatal disease of warm-blooded animals, especially of cattle and sheep. The disease can be transmitted to humans through contact with contaminated animal substances.
Union	Lowest level of government administration
<i>Upazila</i>	Subdistrict level of government administration
<i>Zila</i>	District level of government administration

EXECUTIVE SUMMARY

With the vision to enable landless and smallholding households to have a more sustainable livelihood, CARE Bangladesh started the Strengthening the Dairy Value Chain Project (SDVCP) in nine districts of Northwest Bangladesh. Over a period of four years, the project aims to double the dairy-related income of 35,000 targeted smallholder and landless milk producer households, and to create employment opportunities for extremely poor households—especially women—through various strategic interventions along the dairy value chain.

This report presents the Midterm evaluation (MTE), a qualitative study looking at the project processes contributing to the dairy value chain development in Northwest Bangladesh. This study not only looks at the progress of the project beneficiaries against the baseline but also looks at changes in value chain actors, value chain supporter relationships, and women's empowerment to assess the degree to which SDVCP may have contributed to any registered changes.

For this study, tools used include a secondary literature review, focus group discussion (FGD), a key-informant interview (KII) and observation. The three qualitative tools were used in tandem to check and validate information from one respondent against the other within project and control areas. Sampling methods used were mainly convenience sampling, judgmental sampling, and snowball sampling as appropriate.

The study covered 71 villages in 12 *upazilas* in six districts out of the nine SDVCP districts.¹ These include areas covered by the project; Control-1 areas and Control-2 areas. Control 1 are in unions where the SDVCP is operating; and Control 2 are in *upazilas* without any milk chilling plants in the nine project districts. A total of 14 FGDs with 153 project producers (134 women, 19 men); six FGDs with Control-1 producers (38 women and 6 men) and three FGDs with Control-2 producers (15 women and 1 man) were conducted. A total of 75 interviews with different value chain stakeholders were carried out.

Three districts were covered in each of the two program regions: Bogra Region (Bogra, Sirajgonj, and Joypurhat districts) and Rangpur Region (Rangpur, Nilphamari, and Kurigram districts), i.e., a total of six districts. Alongside project area visits, corresponding Control-1 areas were visited to assess whether there were any spillover effects. Control-2 areas were visited in three districts (Bogra, Joypurhat, and Rangpur) to define the non-project factors, if any, contributing to dairy value chain development in other areas.

Summary of progress toward project objectives:

Project objective	Progress toward objective
1. Improving milk collection systems in rural and remote areas	For project producers and the collectors engaged in the milk collection, the collection system has improved in quality, quantity, and the transport and handling of the milk.
2. Improving smallholder milk production	All project producers report an increase in milk production and incomes. However, production costs remain high, with increase in feed costs and the adoption of project recommended practices in dairy care.
3. Improving access to inputs, markets, and services by mobilizing groups of poor producers and input service providers	Access to inputs for producers and livestock health workers (LHWs) has significantly improved. Access to markets has also improved.
4. Improving the breeding/artificial	This remains a challenging area and unmet.

¹ The administrative structure of Bangladesh consists of divisions, districts, *upazilas*, and unions, in decreasing order by size. There are 6 divisions, 64 districts, 489 *upazilas* (of which 29 are in four city corporations), and 4,463 unions (all rural).

insemination (AI) network	
5. Improving the policy environment	Improvement in the policy environment is an essential factor for developing the national dairy sector. While SDVCP has laid down some groundwork for advocacy, i.e., establishing a forum (Dairy Net), networking, and communications with private sector and research institutions, these have lagged behind due to various political, contextual, and internal reasons.

Recommendations according to project objectives:

Objective 1: Improving milk collection systems in rural and remote areas

- ♦ Activity to sensitize and engage the milk collectors further in dairy development is needed. In the remote areas they are often the first external point of contact for poor dairy producers. This might be done through engaging them to discuss how they can improve their business: during producer group meetings or in a group of collectors and further business planning activities.

Objective 2: Improving smallholder milk production

- ♦ To ensure that all producers groups are getting optimum benefit of project recommended feed practices, experience-sharing meetings of farmer leaders from within the same *upazila* (subdistrict) may be organized. Through sharing experiences and listening to successful and stronger farmer leaders or group members, the weaker farmer leaders will find it easier to comprehend their gaps from within the same resources and environment. This is not the same as exposure visits from district to district. This is an activity that will require separate budgeting.
- ♦ Despite the project's effort to increase availability and affordability of feed and fodder, producers still find it a limiting problem in increasing milk production. The project needs to step up plantation of grass cuttings and motivate producers to find ways and plots to grow green grass in the project areas that have a shortage of green grass. Availability of Urea Molasses Block (UMB) can be increased by establishing this as a home industry in project communities and market the product beyond project area. Silage has been introduced by project to be made by the households individually. In areas where green grass and corn growth is abundant, the project can facilitate this too as another home-based industry that may be taken up by both producers and nonproducers as an income generating activity.
- ♦ For SDVCP to build capacities of the weak producer groups in order to ensure that the prescribed dairy practices are uniformly followed. This may be done by:
 - Including more literate and socially responsible people in the group—persons who are motivators in the community and can push the group development forward in absence of SDVCP staff.
 - Developing alternate leaders in the weak groups—to complement the present farmer leaders and ensure continuity of leadership.
 - Increasing frequency of group meetings—for low-literate people, particularly women, the more frequent conversations are held around group activities; group goal and dairy development will contribute to continuous motivation to remain involved.
- ♦ Field staff to spend more time in group meetings giving more intensive support to the group and individuals—required to implement the above three recommendations effectively.
- ♦ The project's strategies that have been developed to overcome barriers to women's development need to be updated from time to time and cases well documented for future reference and action.
- ♦ Including male family members and guardians in observing project activities and participating in discussions is a good way to sensitize men toward the women in their family.
- ♦ The project group approach to capacity building has proven to be useful to building confidence of poor rural women and should be continued.

Objective 3: Improving access to inputs, markets, and services by mobilizing groups of poor producers and input service providers

- ♦ Procurement of feed in bulk by groups should be encouraged as this will help to bring down the input costs per member household.

- ♦ Project may conduct price negotiations and product development for commercial cattle feed with the input companies supplying stock to project entrepreneurs. It may be realistic to approach feed companies already working through the Rural Sales Program Pilot with SDVCP. RSP is in the position to push for product development by input companies supplying feed and benefiting from the grassroots coverage.
- ♦ Advocate to reducing tariffs on imported cattle feed ingredients—this would contribute to bringing the price of cattle feed down.
- ♦ In order to continue to meet the vaccine requirements in the project area and beyond project period, the project LHWs will have to take forward the experience of the vaccination campaigns and capitalize on the relationship with the Department of Livestock Services (DLS). Meanwhile, depending on the cost and effectiveness of vaccines produced by private pharmaceuticals, project LHWs should be introduced to procure these.
- ♦ Step up distribution of grass cuttings, which may be channeled through the processors.
- ♦ In order to give incentive to input companies to support the information service centers (ISCs) and even expand this activity to similar other entrepreneurs, a guarantee fund needs to be in place. CARE may source other regional microcredit and finance research schemes such as that of PKSF (Bangladesh's apex funding organization of microcredit programs) and/or the DFID-funded innovation funds and char programs in place to set a guarantee fund based on the success of the ISCs, and at the same time bringing into this collaboration the input companies after making ISCs a successful business case to their top management. This may be tried out as a pilot within the project period.
- ♦ The Health Card system has proven useful and successful by producers, LHWs, and vets and this can be potentially upgraded as initially proposed in the project proposal to carry an identification or registration number as is used for the livestock registration systems in European countries. Ideally it should be a system in place with the government DLS; however, since the government resources are limited, this may be piloted through a formal milk processing company. The system may thereby be scaled-up to be taken over by the government.
- ♦ For smallholders interested in expanding dairy activities and buying CB cows, linkage to affordable and easy credit facilities is required—this is a requirement for the overall dairy industry.
- ♦ In order to motivate producers to sell milk more to the chilling plants, trust needs to be established—which requires transparency and accountability of the chilling plant staff to their suppliers.
- ♦ Popularizing the milk bar in other areas will not only offer a channel for smallholder milk producers to sell milk but also motivate people to improve the milk-drinking habit.
- ♦ In order for pro-poor credit packages for poor dairy farmers interested in expanding dairy activities, the project will need to include this in its advocacy actions with the Bangladesh Bank and to the Rajshahi Krishi Unnayan Bank (RAKUB) to review the bank loans for dairy development and mechanisms for the poor to access these loans.
- ♦ The training curriculum and trainings developed and facilitated by the project have been well received by the project beneficiaries. However, the general producer members, who are usually low literate, need additional teaching material to help them recall discussion and lessons in dairy management and classes.
 - Develop and distribute to all producers an abridged version of the training sessions conducted by farmers leaders
 - In order that LHWs do not fall back into a chasm of lack of updated technical know-how, depending only on linkages with government vets, institutionalized training should be regularly available for them to avail of from the DLS. This may be
 - LHW forums capacitated to organize own trainings for a fee engaging veterinarians from DLS, BAU, and HDSTU.
 - Pursue with HDSTU and BAU for the establishment of a training wing that will offer services for a fee.
 - Advocate with DLS to include field-based refresher trainings at *upazila* and *zila* levels for LHWs on livestock diseases and management in the annual budget.
 - LHW training curriculum needs to be standardized and a monitoring system in place to ensure the quality of LHW service rendered.
- ♦ Project should map the services established according to geographical locations and existing

services before either developing new job opportunities or scaling up.

- ♦ SDVCP can demonstrate and advocate the ISC-input company business case to top management of the input companies, and to satisfy company requirements and support the ISC entrepreneurship research SDVCP can explore ways to establish a guarantee fund that will support both parties.
- ♦ While the project is already pursuing pilots working with processors offering support for the producers, special effort will be required to ensure that transparency and accountability is instilled in chilling plant operations so that producers are encouraged to supply to the chilling plants. To improve responsiveness of collectors, further business-planning and matchmaking workshops and meetings with producers are required.
- ♦ The SDVCP pilots have successfully engaged private-sector and research organizations and researched innovative approaches and through its experiences are scaling up the potential aspects.
- ♦ In addition, another approach may be tested around the struggle to ensure continued buy-in by the input companies to support ISC entrepreneurs at grassroots. This may be in establishment of a guarantee fund by social regional microcredit and finance research schemes such as that of PKSf and other innovation funds motivating the input companies and tapping their CSR at the same time to continue business transactions and support for the grassroots entrepreneurs.
- ♦ The government could potentially also help **formal-sector processors** to expand their processing capacity so they could buy more milk from farmers and meet unmet demand for milk and milk products in urban markets.
- ♦ Introduction of digital fat testing meters will **potentially** motivate smallholder farmers to engage in milk production if they can tangibly feel the income and profit made through producing quality milk.

Objective 4: Improving the breeding/artificial insemination (AI) network

- ♦ AI services should be improved in quality and cost so that producers with LB can get superior progeny cows—this is a problem-ridden sector that requires a well-thought-out approach.
- ♦ Conduct a full assessment of the AI services with respect to AI technician training, semen quality and genetics, problems in preserving, carrying and applying AI, in order to plan how the problems in this sector can be minimized and AI services improved.
- ♦ Advocate with the government that it should develop **an evidenced-based artificial insemination and animal genetics program** for the country to improve dairy productivity. This may be the single most beneficial thing the government could do to benefit smallholders in the long term.

Objective 5: Improving the policy environment

The project has been set back in its advocacy component by external problems. Government interaction has been more with the DLS at the field level, which needs to be scaled-up to the central level. Specific changes at policy level will make it feasible to effect growth and development in the first four project objectives. Considering the project experience, the lessons learned and challenges faced, it has to take a major step in advocacy activities and dialogue. For this it is recommended that a **position for Advocacy Manager/Coordinator** be created to take forward the advocacy target of the project.

Looking at the previous objectives that the project is trying to achieve to strengthen the dairy value chain and deliver benefits particularly to the poor smallholders, there is an underlying policy problem in every aspect:

- ♦ **Easy and accessible Pro-poor Credit packages** tailored for dairy development—NGOs provide about 50% of rural credit for livestock activities but only a small share for dairy. Krishi Bank provides about 6-9% of its loan for livestock activities and half of that goes for dairy activities. With such poor financial support and investment in the dairy sector, growth would normally be expected to be low.
- ♦ **Tax and tariff policy** requires review, particularly around import of cattle feed and powder milk.
- ♦ **Officially certifying the training of LHWs** – in order to augment the limitations of the DLS extension service, the LHWs have demonstrated they can play a considerable role. However, LHW training curriculum needs to be standardized, a monitoring system in place to ensure the quality of LHW service rendered.
- ♦ **Milk to be officially measured by digital fat testing meters**—Introduction of digital fat testing meters will **potentially** motivate smallholder farmers to engage in milk production if they can

tangibly feel the income and profit made through producing quality milk.

- ♦ **Government should offer incentives to help formal sector processors** expand their processing capacity so they could buy more milk from farmers and meet unmet demand for milk and milk products in urban markets.
- ♦ A single most important action the government could take to benefit smallholders is in developing **an evidenced-based artificial insemination and animal genetics program** for the country to improve dairy productivity.

The Dairy Net has the potential to be the advocacy platform for the dairy sector and needs to be reactivated if the project and other development partners want to realize policy changes in the dairy sector. It needs to be restructured with inclusion of private-sector companies, think-tank organizations, research institutions, and key persons with influence in the country's economy.

Of all the recommendations made, the ones for Objective 5 require priority attention. For the dairy sector development, the advocacy approach should be fundamental and innovative in the Bangladesh context and not the customary NGO approach looking at series of project documentations and meetings. The sector requires a strong campaign approach similar to that of policy campaigns in the more developed countries.

Conclusion: The project has made momentous strides in improving the access of producers and LHWs to inputs. Milk production has increased. Milk collection systems in which project actors are engaged has improved in quality and quantity. Financial transactions from producer to processor operate smoothly. The project has to set its focus on improving profits from milk sales, to effectively improve the AI service and, most important, advocate for pro-dairy policies and practices. With a pro-dairy policy in place, the persistent weaknesses in the dairy chain can be overcome.

I. INTRODUCTION

With the vision to enable landless and smallholding households to have a more sustainable livelihood, CARE Bangladesh has implemented the Strengthening the Dairy Value Chain Project (SDVCP) in nine districts of Northwest Bangladesh. Over a period of four years, the project aims to double the dairy-related income of 35,000 targeted smallholder and landless milk producer households, and to create employment opportunities for extremely poor households—especially women—through various strategic interventions along the dairy value chain. The project design incorporates a market-based system that would bring sustainability. The project has the potential for improving the efficiency of the dairy value chain, while increasing income of the landless and smallholder dairy farmers across Bangladesh.

The International Food Policy Research Institute (IFPRI) entered an agreement with CARE Bangladesh to conduct SDVCP's baseline, midterm, and final evaluation, and this study is a part of that agreement. The Midterm evaluation is a qualitative study looking at the project processes contributing to the dairy chain development in Northwest Bangladesh. This study not only looks at the progress of the project beneficiaries against the baseline, but also looks at changes in value chain actors, value chain supporter relationships, and women's empowerment to assess the degree to which the SDVCP may have contributed to any registered changes.

According to the Midterm terms of reference (TOR), 17 research questions were identified and discussed in 11 sections following this introduction and the methodology sections. The 11 sections are

3. SDVC project approach (targeting, participation, accountability)
4. Productivity and income
5. Access to inputs
6. Access to markets
7. Access to information
8. Gender and women's empowerment
9. Training and capacity building
10. Relationships and overall value chain interactions
11. Involvement of research organizations and private sector
12. Government - value chain interface
13. Impact, relevance, effectiveness, sustainability and scale-up

The last section, 13, summarizes the main findings and provides conclusions and recommendations.

II. METHODOLOGY

The Midterm Evaluation study was conducted by a qualitative research consultant, with assistance of a team of six field surveyors from the Data Analysis and Technical Assistance Limited (DATA), and supported by two senior IFPRI researchers. The CARE Field Program staff in Bogra and Rangpur provided support to efficiently conduct fieldwork and CARE's Management and M&E staff similarly assisted in supply of relevant project and dairy-related documents and appointments with higher level stakeholders.

In the study plan proposed by IFPRI for SDVCP, there are three qualitative studies in the project lifetime. The first one was carried out during baseline (2008) to complement the quantitative findings, the midterm evaluation to look at the context and experience of the project beneficiaries in project process and progress, and a final one at the end of the project to complement the quantitative end-line survey. According to the CARE-IFPRI agreement, the qualitative midterm evaluation is to understand and clarify the contributing "human" factors to the SDVCP progress and evolution in terms of behavior, belief, opinion, emotion, and relationship among the different stakeholders in the dairy value chain.

A one-day field test was conducted on 24th November to test the survey checklists² with a producer group, a livestock health worker, and a milk collector. The field study was conducted from 28th November to 15th December. Since the information from the field test was considerable, it has been included with the main findings.

Data collection methods and tools

For this study, tools used include secondary literature review, focus group discussion (FGD), key-informant interview (KII) and observation. The three qualitative tools were used in tandem to check and validate information from one respondent against the other within project and control areas.

In order to understand this project and its approach, review of project documents, i.e., the proposal, annual reports, documents on project pilots, policy papers and briefs, other assessments and monitoring records previously conducted by the project, were reviewed. Based on these information, the TOR, and consultations with the project management, the study defined the main research questions of this study and details of the data collection material. The research questions are

I. SDVC project approach

- ♦ SDVCP's approach to addressing the constraints in milk production and marketing (*Has SDVCP's concept and approach to address the constraints in milk production and marketing in Bangladesh contributed to designing interventions agreeable for the project participants?*)
- ♦ SDVCP' project targeting (*Has the project reached its intended beneficiaries in the project area? Has the targeting been appropriate?*)
- ♦ Process of feedback with project beneficiaries (*Has the project taken into account suggestions/recommendations/concerns made by the project's beneficiaries?*)

II. Productivity and income

- ♦ Milk production and income of producers (*Has CARE brought about improvements in milk production and income?*)
- ♦ Capability of producer groups as self-sufficient establishments (*To what extent have the producer groups developed into capable of driving their milk production business and negotiating with their buyers and input service providers?*)
- ♦ Incomes of producers (from perspective of processors), collectors, and LHWs (*Has CARE been able to make progress in terms of milk production and incomes of producers [from perspective of processors], collectors, and LHWs?*)

² Checklists given in Annex 5.

III. Access to inputs

- ♦ Quality, availability, and access to input services and resources (*Are the quality, availability, and access to input services [LHW, vets, and AI] and resources [feed, medicine, and credit] sufficient for the producers? How are these availed and what are the convenient channels to access these?*)
- ♦ Backward linkage in input services (*Have backward linkages in input services been established, e.g., technical advice and training by the collector or processor for their producers?*)

IV. Access to markets

- ♦ Business operations, transactions, and linkages for project beneficiaries (*Are the producers, milk collectors, chilling plants, and processors satisfied with the business operations, transactions, and linkages developed and established by CARE?*)

V. Access to information

- ♦ *Is the project designed to provide information on milk production and marketing to project participants effectively? Do the project participants have sufficient access to information on technologies, inputs, and services to address these constraints?*

VI. Gender and women's empowerment

- ♦ *Have the project's women participants, i.e., the producers, collectors, LHW, reported any change in their social status within HOUSEHOLD and community with regards to decisionmaking, mobility, leadership, confidence, awareness, and position as point of reference on dairy-related issues?*

VII. Training and capacity building

- ♦ *Has the project training for the producers, collectors, and LHW been useful in increasing milk production, improving veterinary health services, animal husbandry, collection and transport of milk, and business operations and linkages for the VC actors?*

VIII. Relationships and overall value chain interactions

- ♦ *Has the project been able to establish robust business relationships among the key dairy value chain actors: producers, collectors, LHWs/AI, chilling plants, and processors?*

IX. Involvement of research organizations and private sector

- ♦ Contributions by research organizations (*Have the research organizations engaged by CARE contributed to developing innovative interventions to improve the dairy value chain?*)
- ♦ Private-sector engagement (*Has CARE been able to attract the private sector to collaborate and share cost in project interventions and research?*)

X. Government - Value chain interface

- ♦ *Has CARE engaged the government in project activities and what has been the role of the government in supporting the dairy sector in national development plans?*

XI. Impact, relevance, effectiveness, sustainability, and scale-up

- ♦ *How effectively has the project progressed in meeting its objectives and demonstrating continuity?*

FGDs were conducted with the project producers and non-project producers. Individual interviews were also taken of producers from among the project producer groups. With all the other value chain stakeholders, KIIs were conducted as most were available individually. These include LHWs, AIs, milk collectors, informal and formal processors, and veterinarians.

For insight into the project pilots, interviews were conducted with the relevant technical partners, which included private-sector, research, and government people. FGDs and KIIs conducted in the

field were complemented with observations of the stakeholders in their own context, taking note of their surroundings and behavior.

List of FGDs and interviews are given in Annex 4.

Sampling methods used were mainly convenience sampling, judgmental sampling, and snowball sampling as appropriate. Convenience sampling was based mainly on areas and stakeholders covered previously in the baseline. The MTE respondents and areas were selected based on baseline coverage for project producers from Year 1, Control 1 and 2 areas and on project records for producers from Years 2 and 3. Producers from Years 2 and 3 were also from within the areas covered in the baseline.

Of the other value chain stakeholders in the project area (LHWs, AIs, Collectors, Processors,) interviewed, 30 out of 60 had been interviewed in the baseline. Of the 153 project producers interviewed through FGDs, 76 (about 50%) had been interviewed in quantitative part of the baseline—all from Year 1—2008.

Snowball sampling (also known as chain referral sampling) was used mainly in the control areas where dairy farmers gave indication of the other associated value chain stakeholders in the area. The control areas were selected according to baseline coverage, but since the respondents might or might not be present or found in these areas, the survey team first sought out the dairy producers and then from their information about the local LHWs and Collectors, sought these respondents out.

Producers from the control area were not the same producers interviewed in the baseline—these persons could not be found; however, nine LHWs interviewed in the baseline were also interviewed in this study.

Judgmental sampling was used to select respondents most fit to inform on specific project interventions such as the project pilots. Due to time limitations, project documents were reviewed and based on these interviews conducted with the key partners of the pilot interventions.

Note: The project has an emphasis on increasing productivity and income of project beneficiaries (dairy producers, collectors, LHWs, feed and medicine sellers), as well as looking at the strength of the producers groups to function as independent entities. To gauge these, the FGD and KII questionnaires include proxy questions regarding income and production only as a check against the information given by the respondents.

Study area and respondents

The study covered 71 villages, 12 *upazilas* in 6 districts out of the 9 SDVCP districts. These include areas covered by the project; Control-1 areas and Control-2 areas. Control 1 are in unions where the SDVCP is operating; and Control 2 are in *upazilas* without any milk chilling plants in the nine project districts.³

A total of 14 FGDs with 153 project producers (134 women, 19 men); 6 FGDs with Control-1 producers (38 women and 6 men); and 3 FGDs with Control-2 producers (15 women and 1 man was conducted). A total of 75 interviews with different value chain stakeholders were conducted. (List of KIIs is given in Annex 4.)

Three districts were covered in each of the two program regions: Bogra Region (Bogra, Sirajgonj, and Joypurhat districts) and Rangpur Region (Rangpur, Nilphamari, and Kurigram districts), i.e., a total of six districts. Alongside project area visits, corresponding Control 1 areas were visited to assess whether there were any spillover effects. Control 2 areas were visited in three districts (Bogra,

³ The administrative structure of Bangladesh consists of divisions, districts, *upazilas*, and unions, in decreasing order by size. There are 7 divisions, 64 districts, 489 *upazilas* (of which 29 are in four city corporations), and 4,463 unions (all rural).

Joypurhat, and Rangpur) to define the non-project factors, if any are contributing to dairy value chain development in other areas.

Table 1: Number of villages visited according to project and control areas

SDVCP regions	District	Project	Control 1	Control 2
Bogra	Bogra	7	1	5
	Sirajgonj	7	3	-
	Joypurhat	9	2	1
Rangpur	Rangpur	11	2	2
	Nilphamari	6	1	-
	Kurigram	11	4	-
	Total	51	13	8

Table 2: Number of FGDs with producers

	Bogra	Sirajgonj	Joypurhat	Rangpur	Nilphamari	Kuirgram	Total
Project	3	2	2	3	2	2	14
Control 1	1	1	1	1	1	1	6
Control 2	1	-	1	-	-	1	3
							23

Table 3: Number of Individual interview respondents

Single/ multiple roles	Profession	Project total	Control 1	Control 2
Single	Producer	8	0	0
Single	Collector	11	5	3
Single	Collection Point	2	0	0
Single	LHW	4	4	1
Single	AI Facilitator	5	2	0
Single	Medicine Seller	1	0	0
Single	Feed Seller	1	0	0
Single	Government Vet	3	0	0
Single	Chilling Company Vet	1	0	0
Single	Informal processor	8	0	1
Single	Milk Bars	3	0	0
Single	Chilling Plant Staff	6	0	0
Multiple	LHW/Medicine shop	1	0	1
Multiple	LHW + ISC	2	0	0
Multiple	LHW + AI + ISC	2	0	0
Multiple	LHW + AI	1	1	2
Multiple	Feed-seller + ISC	1	0	0

Other stakeholders: Interviews were held with other stakeholders who are involved in the project's pilot interventions and these include

- ♦ *Input companies:* ACI-Godrej, Popular, and Navana—To understand their role and buy-in around information service centers
- ♦ *Formal processors:* BRAC and PRAN—Looking at their role in pilots promoting backward linkage support of inputs for the producers
- ♦ *Research institutions:* Community-based Dairy Veterinary Foundation, Bangladesh Agriculture University, and York University—Looking at project's research initiatives and documentation
- ♦ *NGO market linkage project:* Rural Sales Program under CARE-Bangladesh—Looking at the pilot promoting input sales and reach at the grassroots

Problems faced in fieldwork

At the time the study was conducted in December, the farming households were busy harvesting paddy and planting potatoes in all the six districts visited. Getting the producers to sit through an intensive discussion was difficult, even though the project staff helped in arranging the meetings with the project producer groups. During the FGDs, at least eight people were present at a time, and one group leader was present at all times. Since the number of producers attending the FGDs was not constant, the responses could not be numerically counted. In the control areas, the team faced the same problem of arranging meetings with the dairy producers and so the number of farmers interviewed from control areas is comparatively less than that of project area.

By not being able to specifically count responses to queries, the evaluator is thus unable to give specific numerical values of the responses. However, the majority of the responses were noted and these have been presented alongside any other variations expressed by the producers.

The only pilot project area and beneficiaries the evaluator visited was that of PRAN-Tetra Pak-CARE (PTC) pilot in a previous assessment, which has been taken into account in this report. The remaining discussions on pilot interventions is based mainly on discussions with SDVCP's partners involved in the pilots and project documents, not field visits. It therefore needs to be taken into account that the discussions here reflect mainly the partner's and project's point of view and not that of the project beneficiaries.

III. SDVC PROJECT APPROACH

1. SDVCP's approach to addressing the constraints in milk production and marketing

Project Producers: 153 (134 women and 19 men) project producers were interviewed through FGDs.

- ♦ All the producers expressed satisfaction with the project activities in training, capacity building, and linkage development, which have contributed to improving milk production and marketing. With regards to their opinion of CARE's interventions, all project producer groups and their members mention that by participating in the SDVC project, they have learned of new ways to feed and care for their cows, which has improved the health of cow and increased milk production.
- ♦ Producers and LHWs both report the common problem in milk production is the high price of feed concentrate. Poor farmers are not able to afford this feed (at all or only partly), which helps increase milk production better. While the project's work to introduce new feed and fodder has increased food availability, it is still a limiting factor impeding increase in milk productivity.
- ♦ Dairy farmers, particularly from Bogra and Joypurhat, report that linkage with dairy-friendly credit facilities to develop and expand dairy is much needed. The credit would be used either to buy cattle feed in reserve, or a cross-breed milking cow, or build or repair a cowshed.
- ♦ As a result of CARE's support in developing linkages through match-making interventions, producers in all districts except Joypurhat and Kurigram (the differences in group performance is discussed later) have developed firmer linkages with milk collectors, chilling plant, as well as with informal processors and express that this has been good for them as they have a more regular and consistent channel to sell the milk. Linkages for the Kurigram Year 1 (established in 2008) and Year 2 (2009) producers with collectors are weak, while that of Year 3 (2010) is better in that the producers are making active use of the linkages, even though these producers were established later.
- ♦ While the producers say they have a regular channel of sale, the milk price is too low for them to make a profit. Although the project management claims that the producers are getting a better price and income, as in consistent sales and price for milk, the producers are not satisfied. The producers feel that with the increasing cost of cow feed, milk prices are comparatively low and even though milk production per cow might have increased, profit margins are low.
- ♦ The qualitative study has also observed that the retention of knowledge of the project producers and farmer leaders is not uniform. The literate members are better off remembering the project's instructions, while the low-literate are slower. The pictorial training flipcharts have proven very useful. However, the evaluator feels it would also be good if all the members also had an abridged version of the flipchart as a booklet. This helps in recalling meeting discussions and a more uniform adoption of the recommended dairy practices.

Livestock Health Workers:

From project area, 10 LHWs (8 men and 2 women) were interviewed, of which four practiced this as a single profession, and as multiple profession, one LHW also offered AI services, two LHWs had ISCs, two LHWs had both ISCs and worked as AI, and one LHW had a medicine shop.

- ♦ The project-trained LHWs report that the training arranged by CARE has enabled them to improve their quality of service, which has contributed to an increasing number of clients and subsequently their income. Also, since the dairy producers are more aware of cattle health problems, they now seek health advice and treatment more frequently than they did before.

Collectors: From project area, 6 collectors and 2 collection point managers were interviewed.

- ♦ All project collectors interviewed are satisfied with the CARE's approach in capacity building, and introduction to producers. Four collectors already engaged in this profession had good relationships with the formal processor prior to the project and those that have joined as a result of the project also have an amicable relationship. By adopting sanitary milk handling as is per SDVCP's recommended practice, the incidence of milk spoilage is much less, which has made their income better and minimized losses.
- ♦ Out of the six collectors and two collection points interviewed, only one collector did not report that the number of producers from whom they collect milk increased. According to the collector, this is due to a decrease in the number of milking cows in the area since producers are unable to meet the cost of cattle feed, have sold their cows, or producers tend to sell milk directly to market.

Other observations and discussion

Project participants in general understand the project approach to improve their knowledge and skills. However, the very poor and new **producers** have expectations of receiving a cash grant or cow at some stage of the project.

LHWs trained by the project realize that by ensuring quality and honest services at an affordable price will gain them trust by the producers, enhance their reputation, and increase their coverage and clients through recommendations of their current clients. SDVCP has supported the project LHWs in realizing this profoundly and through their increase in personal interactions with producers.

While a project collector from Shariakandi, Bogra, reported experiencing a decrease in the number of dairy households from where he collects milk, this may be due to an increase in the number of collectors in the area (who are in direct competition with him). According to the Grameen-Danone chilling plant where this collector supplies milk, milk supply has increased since the number of households producing milk has also increased.

Although the **collectors** understand that a reliable and timely supply of milk established with producers has enabled them to improve their own income, they do not see their role as being supportive and accountable toward their individual suppliers, the dairy producers. The collectors could potentially be a source of information or advice, such as linking with LHWs. However, the collectors who collect from groups do not use the lactometer regularly, and take advantage of the group collection to give an average price, which is not satisfactory to most of the producers, who would prefer that collectors use the individual lactometer readings to set milk prices. The lactometer is used only when they suspect the milk might be diluted. Relationships would be stronger and trusting if the collectors paid the milk price based on milk quality, i.e., fat-content readings to each farmer individually, instead of taking the advantage of the average price in group collection.

The reason for collectors to be noncommittal in their support and transparency toward the farmers may be due to either being very busy as a result of increased business or they collect only from project producers and see no reason to offer advice, since the producers are already linked with LHWs. Also by assessing milk individually and thus giving the price to the producer is time-consuming and increases transactions costs on part of the collector. Of the six collectors interviewed, only one was supportive toward the dairy producers, mainly because he knew the producers personally prior to becoming a milk collector and he too owns dairy cows.

On the other hand most of the producers are just satisfied that they have a regular sales channel through the collectors—most of the producers do not seem to understand that as suppliers of milk, they can bargain the milk price from the collectors and processors. Only the Rangpur and Nilphamari

Year-2 groups bargained with milk collectors for higher prices. Producers in general do not expect collectors to be a source of advice on dairy management. For this they look to the LHW and ISCs.

Challenges

If the project beneficiaries do not acknowledge the benefit of developing a two-way relationship between their source of input and point of sale of either service or goods, then the value chain at that point will remain stunted. This seems to be the case for collectors. The collectors, particularly those who have been in this profession for a long time and through increased coverage have the potential to reach remote dairy households, can be a source of advice and information on some aspects of dairy care, such as feeding and the everyday care. Furthermore, if they demonstrate that they buy milk based on its quality (such as by using the lactometer regularly), farmers will be encouraged when they can feel that they are getting a fair price.

The milk collector is an important actor for the project to progress in its attempt to enable the poor and smallholder dairy producers in remote areas to improve their productivity with better access to information, inputs, and markets.

Recommendation

Activity to sensitize and engage the collector further in dairy development is needed. Further training in business development can show them ways to improve their business and client coverage while establishing a good relationship with their suppliers and clients alike. In the remote areas (such as in the *char* areas), they are often the first external contact that poor dairy producers have to access information on dairy-related matters. This might be through engaging them to discuss how they can improve their business: during producer group meetings or in a group of collectors, encouraging them to use the lactometer inasmuch as possible and making them realize the business benefit in adopting these methods. Furthermore, since the project has engaged formal processors (through different pilots to be discussed later) to be more interactive with dairy producers, these formal processors could at the same time be used as good motivators for collectors in explaining the value chain and the collector's role, since the collector's look toward the processors as the channel of milk sales. Four out of the six project collectors interviewed have expressed that they are interested in further training from the project, even though this may be difficult for them to avail, considering their busy schedule. For collectors to offer the embedded service of advice and support to remotely-located producers will be an extra cost and, therefore, for them to maximize their profits, they will need to build considerable area coverage getting them high supplies of milk to overcome this extra cost.

2. SDVCP' project targeting

Table 4: Data as of Aug 2010 about project beneficiaries (SDVCP Annual Report)

Beneficiaries	Total	Female	Male	Mixed
Number of Producer Groups	883	323	13	547
Producers	27,068	21,463 (79%)	5,605 (21%)	N/A
LHW	168	42 (25%)	126 (75%)	N/A
Collector	207	14 (7%)	193 (93%)	N/A
Milk Bar	15	0	15	N/A
Information Service Centers	69			N/A

- ♦ With regards to target numbers, SDVCP has achieved the target well with women producers—now about 79% of the project producers are women. With regards to women LHWs and

collectors, it has been less; only 25% LHW are women versus the target of 50%—this challenge is driven by the fact that engaging women in this profession is not traditional in the rural context.

- ♦ All producer groups claim members were selected in a participatory manner facilitated by CARE staff. The community people themselves led the selection and the potential participants were selected according to criteria announced by the CARE field staff. Group members were selected on the basis that they would have 1-3 cows. The project proposal focus was on smallholder farmers who have 1-3 cows, are landless, and earn USD 20-30 a month. The survey found that most members had 1-3 cows in the Bogra region districts. However, in the Rangpur region districts, the farmer leaders of the groups are from large landowner/farmer families with some education. According to project management, a few well-off and literate farmers who were well accepted and mobile in the community were included, as it would be beneficial for a producer group and accelerate the capacity building of the group. These farmers were likely to have more than 3 cows. This was a common strategy for the overall project area.⁴ The main anomaly found by the survey is the single farmer leader of the Kurigram Year-2 group who has 32 cows.
- ♦ The SDVCP has carried out a participatory well being analysis in the project area, which was found useful to identify the poorest and marginal farmers. However, since the ownership and maintenance of a cow requires considerable capital, even smallholder dairy farmers are not among the poorest in the society.⁵ Therefore, the project has not been able to strictly target very poor landless or marginal farmers in either region. In Joypurhat, almost all the respondents interviewed were landowners or sharecroppers with considerable incomes from paddy and potatoes. Since this was only found in the two groups interviewed in Joypurhat, the evaluation cannot conclude that this is true all over Joypurhat.
- ♦ In Kurigram, the farmer leaders are well-off and elite members of the community, i.e., teacher, LHW, businessman, with more than 3 cows and one farmer leader with up to 32 cows. It is not clear why this anomaly in selection occurred here. The farmer leader who had 32 cows was of a dictatorial disposition and the group members seemed to be just obeying his orders more than thinking as a group with a common focus for dairy production. As mentioned previously, this is probably a one-off case—but needs to be looked into for the group mechanics to be successful.
- ♦ CARE has trained 168 LHWs of which 42 are women. The MTE survey found the selection of LHWs to be according to the project's given criteria, which are: LHW has to be a permanent resident of the area, be able to serve 600-800 households, with some experience handling livestock and physically fit for the livestock services, within 18-35 years (flexible only for experienced and women), and secondary school educated (flexible for women).
- ♦ Collector selection was based on proximity of business route to location of producers. Collectors selected and trained by the project were already engaged in this profession or freshly trained by project to serve producers of a specific group and/area. The collectors already in this profession were more efficient in business transactions and coverage compared to the new collectors. The new collectors established may have increased the number of collectors in the project area. In Rangpur, the locally selected collector had a good relationship with the producers, but in Joypurhat, the producers did not trust the locally selected collector. Although it is expected that a locally based collector would be a better option for producer, it depends on the attitude of the individual being selected as a collector.

Recommendations

The Project should document reasons for targeting drift in order to understand the factors that dictate the project to divert from its target.

⁴ The evaluator was informed of this strategy after presenting findings from the survey. This was not documented in the project reports. Based on this strategy, the selection therefore has been somewhat acceptable.

⁵ Farmers owning 1-3 cows, landless, and earning USD 20-30 a month.

3. Process of feedback with project beneficiaries

- ♦ All project beneficiaries, namely producers, LHWs, and ISCs, are satisfied with responsiveness of the CARE field staff in day-to-day matters. Even outside the project's scheduled visits, CARE staff receive phone calls from project participants and respond.

Discussion: The responsiveness of CARE's field staff toward the project participants is impressive and considerable in contributing to project progress. The commitment of the staff has been key to catalyzing improvements in relationships and linkages among the dairy value chain stakeholders.

IV. PRODUCTIVITY AND INCOME

4. Milk production and income of producers

In order to check the producers' information on milk production and dairy management, the checklists included numerical questions on production and income and tried to assess whether the producers could explain their profit or lack of profit as well as try to capture trends in expenses and practices. This information is partially presented in Table 5 and **cannot** be used to represent the project contribution to milk productivity, income, and profit of the producers in quantitative and absolute terms. Calculating milk productivity, income, and profit of the producers is complex and needs consideration of many variables, which can only be gathered and analyzed through a quantitative study. This will be done by IFPRI in the end-line survey.

Interestingly, the producer groups in the six districts differed from each other in the increase in milk production, input costs (mainly feed), and incomes they report. Depending on context, some groups fared better than others. The findings have therefore been presented according to district. Project area producer information has been compared to that of the control areas and against baseline cases.

Common findings for all Project Producer Groups

Through the FGDs with producers, the knowledge and application of the dairy management practice as recommended was queried. The common findings for all groups were:

- ♦ All project producers report that the **milk production** by both LB and CB cows has increased since they have adopted project-recommended practices in feed and care for the dairy cows. The project producers attribute the increase in milk production to the quantity and type of feed they now give to the cows. (*Milk production as reported by the project producers is further discussed comparatively with that of the control producers later in this section*).
- ♦ Project producers in general report that the **feed** given to cows includes green grass (Napier), oilcake, broken rice, straw, molasses, feed concentrate, up to at least 5 kg of food per cow per day. Previously, feed consisted of mainly straw and wheat/rice bran. Other feeds given, as introduced by the project and mentioned by the producers, are Urea Molasses Block (UMB) in Sirajgonj and Rangpur. Fodders popularly given are napier grass, which has been introduced by project through the distribution of grass cuttings. The project encourages producers to grow the napier grass on the road sides in order not to take up cropping land.
- ♦ In winter, green grass is not as available and therefore straw is fed. Compared to the baseline findings, the feed given to cows by project producers additionally includes higher amounts of grass (Napier) and feed concentrate, and in winter, UMB is fed to ensure milk production. These have contributed to enhancing quality and quantity of milk produced. Feed for local breed cows used to be subsistence, with by-products of crop cultivation, e.g., of paddy and foraging grass from around homestead and nearby pastures. More effort was taken to feed cross-breed cows, since they produced more milk. Now the project producers strive to also give the LB cows more feed, grass, and feed concentrate.
- ♦ Through participation in project activities, producer's care of cows has improved. Main **dairy care** practices adopted in general by the producers are keeping the cowshed clean and airy, cleaning feeding pots, bathing cow every day in hot weather, keeping cows in the shade, application of preventive medicine (vaccinations, de-worming, and vitamins). Previously, not all producers cared for cows in this manner and most were not aware of how important vaccinations and anti-helminthics were to maintain the overall health of the cows.
- ♦ At the time of milking, special care is taken. The cow is usually milked in the same location and the udder is cleaned well before milking. In winter, gunny sacks are thrown over the cow to keep them warm. By reducing the stress of the cow in this manner, the producers say it helps to get

better milk production. These are improvements since the baseline. Such care was prioritized only for the cross breed (CB) cows and now producers care alike for both LB and CB cows.

- ♦ **Medicine:** Every three months, project producers give medicine for intestinal worms. Besides, vaccination is given for Anthrax (once a year), Black Quarter (BQ) (twice a year), Hemorrhagic Septicemia (HS) (once a year), and Foot and Mouth Disease (FMD) (twice a year). According to the baseline cases of project producers, the practice of preventive medication, i.e., vaccination and deworming, was limited and then only when the cattle were observed to be irregular in feeding. The project producers report that since the application of these medications, the health of cattle has improved, and that mortality is less when there is an epidemic, such as in the case of the anthrax scare in 2009.⁶

Compared to the baseline, most of the project producers have consistently improved the care for the cows. Most of the producers strive to provide a comfortable environment for their cows, i.e., clean and aerated cowshed, mosquito coils or nets, and in as much as they can afford, the deworming medication and yearly vaccination for four diseases.

These are the basic similarities. The differences lie in milk production, the input cost—particularly feed cost, marketing preference, and milk price (*the latter two are discussed under Section IV*). These differ from district to district and are therefore presented according to district, producer group, and in comparison to the control areas.

Milk production

Table 5: Milk Production liter/cow/day and input cost tk./day for local breed and cross breed cows as reported by producers

Local Breed		Yr 1 - 2008	Yr 2 2009	Yr 3 2010	C1	C2	COMMENTS
Bogra	milk prodn liter/cow/day	-	1-3↑	1-3↑	2-5↑	1-4 (=)	
	input cost tk./cow/ day	-	100	75	100	100	
Sirajgonj	milk prodn liter/cow/day	2-3↑	3-5↑		2-5 (=)		
	input cost tk./cow/ day	33	100		105		
Joypurhat	milk prodn liter/cow/day	1-2.5↑	1-2.5↑		1-3↑	2-3(=)	
	input cost tk./cow/ day	17-67	18		27	62	
Rangpur	milk prodn liter/cow/day	1-1.5↑	1-1.5↑		1-4↑	↓	
	input cost tk./cow/ day	66	49		103	62	
Nilphamari	milk prodn liter/cow/day	1-2↑	1-2↑		0.5-2 (=)		
	input cost tk./cow/ day	33	27		42		
Kurigram	milk prodn liter/cow/day	1-5↑	1-3↑	0.5-2↑	2 (=)		
	input cost tk./cow/ day	52-53	52-53	52-53	58		
Cross Breed		Yr 1	Yr 2	Yr 3	C1	C2	COMMENTS
Bogra	milk prodn liter/cow/day	0.5 -8↑	5-12↑	4-15↑	4-15↑	8-15 (=)	
	input cost tk./cow/ day	10-40	202	150	150	200	
Sirajgonj	milk prodn liter/cow/day	-	7↑		12 (=)		
	input cost tk./cow/ day	-	200		180		
Kurigram	milk prodn liter/cow/day	-	10 *	4*	9↑		
	input cost tk./cow/ day	-	126	113	226		

* milk production for the first time and therefore cannot say whether increased or not over the last 2-3 years.

↑ means increase in milk production over the last 2-3 years.

↓ means decrease in milk production over the last 2-3 years.

(=) means the same, i.e., no change in milk production over the last 2-3 years.

⁶ <http://www.thedailystar.net/newDesign/news-details.php?nid=156313> (The Daily Star dated 29 September 2009).

All the project producer groups report an increase in the rate of milk production for both LB and CB cows since the starting project recommended practices. While not numerically comparable since there are many factors that determine milk production such as age of cow, calf, breed, etc., the rates of milk production reported by producers in the control area do not differ much from those mentioned by the project producers. However, control producers who report better milk production rates than most of the project producers may be errant in their observation or probably the cow breeds they own are of a better quality than they think. First-generation cross breeds may be erroneously identified as local breeds by local people (Ref: discussion with project management).

Producers from **Control 1** in Bogra, Joypurhat, and Rangpur report an increase in milk production over the last 2-3 years. Kurigram Control 1 producers also report a similar increase in milk production for CB cows only.

- ♦ *Bogra Control 1:* Bogra Control-1 producers attribute the increase in milk production to an increased amount of feed given and improvements in animal care. The manner of feed and care is quite similar to that of the project producers and the Control-1 producers acknowledge that they have learnt from their neighbors and other producers in the area. However, they are unaware of the project activities. They say that they have also learnt from watching TV programs on dairy management.
- ♦ *Joypurhat Control 1:* Joypurhat Control 1 located in the same *upazila* as project producer groups and they report that the milk production has increased over the last 2-3 years. They attribute this to improved feed, daily care, and healthcare. They report to have learned these from the local veterinarians (vets) that serve them. The project LHW offers vet services to these Control-1 producer households, thus indicating that there may be a transfer of knowledge from project to non-project areas. The Control-1 producers also mention that government vets are approached when required.

The SDVC project has intensively trained the project LHWs to extend services in cattle healthcare and build their service to reach to non-project farmers. Also in Kalai *Upazila*, SDVCP is implementing a pilot with the Community-based Dairy Veterinary Foundation (CDVF) to deliver vet services and training in cattle rearing for dairy producers in an attempt to increase milk production and supply to the BRAC Chilling Plant and sustain these support services for the producers by taking a commission on the milk supplied. The Control -1 producers could not say clearly whether the vets that served them and informed them of improved dairy practices were trained by the SDVC project or belonged to CDVF. It seems likely that it was one or the other. This indicates that there is some spillover that is positive; however, for producers not being able to say from where they get their service reflects negatively on CDVF's image, i.e., not being recognized for their service and therefore not well-promoted.

- ♦ *Rangpur Control 1:* The Rangpur Control-1 producers are located in the same *upazila* as the Year-1 project producers and they report a higher increase in milk production. They attribute this to improved feed, daily care, and healthcare of the cows. Unlike the Control 1 in Bogra and Joypurhat, where producers also report an increase in milk production, which might be a project spillover through the transfer of knowledge whether by neighbors or LHW, in Rangpur the Control 1 producers have learnt improved dairy management from the locally based chilling plant—Milk Vita. Historically and even in the present time, Milk Vita has been subject to a lot of criticism for not delivering services to their producers properly; however, in the Control 1 area of Rangpur, the Milk Vita staff seem to be active in delivering some basic vet support and advice in dairy development. What makes this particular for the Milk Vita chilling plant, a more pro-producer establishment can be probed and considered as an option for project to capitalize in its scale-up.
- ♦ *Kurigram Control 1:* The Kurigram Control-1 area is located in the same union as the project producers and they report that there has been an increase in milk production only for the CB cows. They attribute this to proper care and feed given to the CB cows, which is not given to the

LB cows. The producers have learnt the improved care methods from a neighboring dairy farm. Although these producers are located in the same *upazila* as project producers, they have not heard of the project and have very limited access to information, depending on the government vet and neighbors.

The Nilphamari Control-1 area is located in the same union as the project producers and they report no increase in milk production. They attribute this to their poverty, i.e., the inability to buy sufficient feed for the cows. Although these producers are located in the same union as project producers, they have not heard of the project or any project and have very limited access to information. Sirajgonj Control-1 producers, also located in the same *upazila* as the Year-2 project producers, also do not report an increase in milk production. They report that they are unable to increase milk production of their cows since the price of cattle feed is high and they cannot afford it.

None of the **Control-2** areas producers (in Bogra, Dhupchachia *Upazila*; Joypurhat, Sadar *Upazila*; and Rangpur, Gongachhora *Upazila*) report an increase in milk production; and in Gongachhora *Upazila*, they even say that milk production has fallen over the last 2-3 years, since pastureland is now being used increasingly for crop cultivation. Control-2 producers have not made much difference in their care methods or preventive medicine for the cows. When cows are weak, as they perceive from poor feeding and health, they feed vitamins.

- ♦ Joypurhat and Bogra Control-2 producers report that they are unable to increase milk production of their cows since the price of cattle feed is high and they cannot afford it. Rangpur Control-2 producers report that the decrease in milk production has been because of the unavailability of green grass. There are very few fields left fallow where cows could graze. Throughout the year all the fields are used in some crop cultivation and the producers have to feed the cow straw instead of green grass. They infer that the lack of green grass in the cow's feed has resulted in less milk production than previous. If this were correct, then the producers here have been set back in comparison to the baseline.

Producers with LB cows have not perceived the same increase in milk production as have producers with CB cows. Milk production from LB cows is considerably less than a CB cow and as a result the production cost is high, leaving only a slim profit margin and sometimes none at all. Across all the project producers interviewed, LB cows produce 1-3 liters/cow/day, sometimes, up to 5 liters. The milk production by CB cows as reported by the project producers differs from group to group.

Looking at producers' responses, it may be inferred that the project producers do not practice uniform type of feed combinations; the poorer producers struggle to find the least cost for optimal cattle feed combinations, maximizing use of household/farming by-products. As such the project producers have not experienced a uniform increase in milk production. This is more so in case of CB cows that require good quality feed (green grass and concentrate) which poor smallholders are hard-pressed to buy the optimum daily amount. The producers from the Control-1 areas also report similar problems especially with regards to feeding CB cows. In general the control producers do not pay as much attention to care of LB cows as do the project producers.

Input costs: All project and control producers report that the cost of rearing cows has become higher over the last 2-3 years. Project producers report it is because of increase in feed cost, the additional application of preventive medicine, use of mosquito coil and mosquito net. Control producers attribute it to high feed prices. The input expenses per cow per day as mentioned by the producers are not uniform or even within same range (Table 5). The costs for medicine and other care such coil, disinfectants are the same, with main variation in the feed costs. Input expenses thus found range from Tk. 17 to Tk100 for LB cows. For the CB cows producers calculated input expenses from below Tk. 40 to over Tk. 200. This is because the all producer groups have not uniformly followed the project recommended practices true to the instructions either because they did not understand the instructions properly or since they did not perceive benefit of the recommended feeding in the short term, adapted the feeding combination as they saw fit. This indicates some weakness on part of farmer leader to impart instruction to the group members as well as weakness

on part of project in coaching the farmer leaders. Review of FL's performance is required and it might help if producers had additional training material (discussed under training). The control producers also report varying input costs, spending comparatively less on medicine and most for feed. Feed input include by-products from the homestead, e.g., straw, rice bran etc, and sometimes oilcake when the cow is milking. All farmers take extra care of cross breed cows. Feed concentrate is fed to the cross breed cows and green grass is minimal usually limited to pasture grass except in case of the Control-1 producer areas where there increase in milk production has been reported.

Milk consumption

The project producers report that amount of milk consumption at household level has increased. The control producers also reporting increase in milk production have also increased milk consumption at home. Control producers who have not experienced any increase say that sometimes they cannot afford to keep milk for household consumption – this situation is the same as found in the baseline.

Income

Producers from the project area report that, since milk production has increased, the income from milk sales has also increased. The other factor they attribute is the increase in milk price. According to both control and project producers, they now sell milk at a higher price, i.e., by Tk. 7-14/liter more than it was 2-3 years ago—prior to project period. However, according to project monitoring records which calculates average milk price sale from household level of **all** producer groups, the price increase from March 2009 to January 2011 is not much (Table 6) except in Joypurhat and Kurigram. The project producer groups visited by the MTE survey report higher increases in milk prices since project started.

Taking into consideration differences in the denominators used for the project and MTE calculation, i.e., number of producer groups and the time period – it may be presumed that the producer groups visited by the MTE have either been fortunate to experience higher increase in milk prices in their project area probably because the milk prices in these areas were low prior to project activities or they erred in their recount of prices previous to project activities. Either way there is some increase in milk prices at household level which seems more in the Bogra Region districts and less in the Rangpur region districts. So with increase in milk prices, however slight it may be, coupled with increase in milk production, the producers thus have increased incomes. Most of the project producers with local breed cows (constituting majority of the project producers interviewed) report that the care and feed expenses have increased leaving little or no profit after milk sales. Producers from the control areas also report similar increase in milk prices, which they attribute to increase in prices of cattle feed. Both project producers and control producers who own cross breed cows perceive some gain from the increase in income from milk sales.

(This is discussed further in the Access to Markets section.)

Table 6: Comparison of MTE findings with project records on increase of milk prices (taka/Liter) as experienced at household level

District	Milk price GPF Jan 2011) *	Increase in milk price (GPF March2009 to GPF Jan 2011)	MTE findings: Current milk price Dec 2010 (14 producer groups)	MTE findings : Increase in milk (approx) 2008-09 to Dec 2010**
Bogra	24.24	3.8	24.7	14.20
Joypurhat	23.88	8.2	33.0	10.00
Sirajganj	22.11	4.6	26.0	14.00
Rangpur	25.17	4.4	26.5	8.50
Nilphamari	21.76	1.6	20.0	7.00
Kurigram	26.30	6.2	32.0	8.50

GPF: group progress format – average numbers of all SDVCP producer groups.

*SDVCP Monitoring records.

** Average increase reported from 2-3 Project producer groups per district with reference to 2008/2009.

All producers say an additional income of dairy is from cow dung sales, which is either used on the producer's own land as fertilizer or sold. One producer made a pair of gold ear-rings from the sales of dried cow-dung sold as fuel. A sack of dried cow-dung sells for BDT 60-80. The yearly income from cow dung is approximately BDT 1200-1500 per cow sometimes even more depending on area-wise demand. Also, the cow remains an asset which can be sold off in time of need.

In order to get a better income from milk, the producers say the price of feed needs to be reduced so that they can feed the cows properly and get higher milk production. The project has made significant progress in motivating farmers to adopt improved care and preventive medicine for the cattle thus improving health of cow. Project producers report, that since application of vaccination has become regular, the fear of mortal diseases such as anthrax, BQ, HS and FMD has gone down.

Use of income from milk sales: With the income gained from milk sales the producers first buy cattle-feed. Some of the money is used to meet the educational expenses of children, land cultivation or to repay loans. The main profit is from sale of calf every other year with which the dairy producers invest in land or other agricultural purposes. It is more profitable to rear CB cows for milk than LB cows. LB cows still seem to produce low volumes of milk despite the improvements in care and feed introduced by the project.

Challenges regarding feed and milk production: Various reviews and assessment of the dairy sector including those by SDVCP⁷ have found that the main impediment to milk production is in the inappropriate feed type and amount fed to cows by dairy producers. The project thus has undertaken studies⁸ and pilots⁹ to identify, introduce and increase improved feed and fodder combinations to smallholder producers. While there has been observed vast improvements in the feeding practice by the project producers, feed cost and availability still remains a major issue for smallholders to contend with. It remains the main limiting factor to increasing milk production especially with regards to local breed cows, which characteristically produce low volumes of milk. Poor smallholder producers relate that it is difficult for them to afford the recommended types and amount of feed for their cattle for both LB and CB cows. Producer groups in Rangpur recount that they have sold off some of their cows since they are unable to afford the costs for feed and care particularly for LB cows. They require credit to buy cattle feed or to sell the LB cow and buy a CB cow from which they will get higher volumes of milk.

The project needs to make further efforts to increase the availability of green grass as under the PRAN-Tetrapak-CARE pilot which seems to have revolutionized the growth of Napier grass in parts of Rangpur, utilizing roadsides and homestead plots leaving crop land mostly free. Where grass cannot be grown as widely, other feeds should be promoted. Extremely poor households who cannot afford to engage in dairy may be introduced to the UMB /silage-making home industry by enabling their access to low cost feed materials. Alongside creating income opportunities, these locally made feeds will be affordable for the smallholders, reducing feed costs.

The dairy producers traditionally utilize by-products of farming activities to feed cows and it is a way for them to minimize feed costs by substituting feeds, thus reducing costs. So though the project has instilled in the producers the knowledge of ideal feed combinations, since the smallholders cannot always afford it, they have adapted as they best can.

Also, to expect producers with LB cows to produce large volumes of milk and thus be commercially involved in milk production is actually unrealistic. Even after giving improved feed combinations and care, the increase in milk production is only by about 0.5 to 1.5 liters per day per LB cow, barely enough to meet the per day feed costs. Smallholders wanting to expand their dairies realize that cross breed cows are necessary, the poor smallholder does not have sufficient capital to purchase a

⁷ Pro-poor analysis of The Dairy Value Chain of Bangladesh. Strengthening Dairy Value Chain Project, Care Bangladesh, September 2008, the SDVCP Baseline report and SDVCP proposal.

⁸ Report on Suggested Individual Cow Rations for Bangladesh, Strengthening Dairy Value Chain Project, Care Bangladesh, June 2008.

⁹ PRAN-Tetra Pak-CARE (PTC) pilot, SDVCP – discussed under section IX.

CB cow, and needs credit support. The credit schemes available from MFIs and banks are not favorable for the poor smallholders (*discussed further under Section III*).

Summary:

All project producers report increase in milk production from both LB and CB cows and they attribute this mostly to the improved feeding, i.e., green grass (napier) and feed concentrate. With increased production, incomes have also increased. All project producers have adopted improved dairy care management and application of preventive medicine. However the input (particularly feed) cost and rates of milk production have not increased uniformly, most probably because the project producers have not adopted the project recommended practices wholly. Input cost has increased and so profits remain marginal, mostly for producers with LB cows. There are improvements in dairy management and feeding since baseline. Producers in four out of six of the Control-1 areas also report increase in milk production and of these, two may be as a result of project spillover effect. Producers of Control 2 are roughly in the same situation as in baseline. Impediments to improving milk production are identified by all producers as feed cost and availability.

Recommendations:

- ♦ To ensure that all the producers groups are getting optimum benefit of project recommended feed practices, experience-sharing meetings of farmer leaders from within the same *upazila* may be organized. Through sharing experiences and listening to successful and stronger farmer leaders or group members, the weaker farmer leaders will find it easier to comprehend their gaps from within the same resources and environment. This is not the same as exposure visits district to district.
- ♦ The project has identified the weaker groups and these groups need more focused field supervision and mentoring to improve their performance.
- ♦ Despite project's effort to increase availability and affordability of feed and fodder, producers still find it a limiting problem in increasing milk production. The project needs to step up plantation of grass cuttings and motivate producers to find ways and plots to grow green grass in the project areas that have a shortage of green grass.
- ♦ Availability of UMB can be increased by establishing this as a home industry in project communities and market the product beyond project area.
- ♦ Silage has been introduced by project to be made by the households individually. In areas where green grass and corn growth is abundant, the project can facilitate this too as another home-based industry which may be taken up by both producers and nonproducers as a
- ♦ AI services should be improved in quality and cost so that producers with LB can get superior progeny cows – this is a problem-ridden sector which requires a well-thought out approach (discussed in Access to inputs).
- ♦ For producers interested to expand dairy activities and buy CB cows, linkage to affordable and easy credit facilities is required – this a requirement for the overall dairy industry (Discussed in Access to Inputs).
- ♦ Procurement of feed in bulk by groups should be encouraged as this will help to bring down the input costs per household. This is already practiced by some groups (e.g., in Nilphamari) and the mechanism can thus be extended to other groups.

5. Capability of producer groups as self-sufficient establishments

- ♦ Through the FGDs, the responsiveness and capacity demonstrated by the groups differed according to context, district and group membership and not so much as the age of the group. To assess the groups as self-sufficient and independent establishment, the survey considered the following indicators:
 - Farmer Leader's leadership skills
 - Member's confidence on Farmer Leader
 - Group effort for common goal
 - Group participation in FGD
 - Knowledge gap
 - Group records/savings
 - Linkage with input and market

Out of the 14 producer groups interviewed¹⁰, four were particularly weak. These are the yr1 and yr2 groups in Joypurhat and Kurigram. Three factors seem to stand out that make the producer groups strong and active – the level of literacy of the producer group, the literacy and social sense of duty of the farmer leader toward the general group members, a regular savings system and business plan/common goal.

Above findings seem to match project findings where majority of groups are strong. According to SDVCP Annual report (2010), the project has ranked farmer groups into categories A, B, C and D (A=strong and D=weak) where 71% of the producer groups fall in A and B and the remaining in C and D. The project has a uniform training course for all project producer groups, which has been sufficient for the stronger groups but probably the weaker groups need a more tailored and extended period to grow the level of at least B.

The **challenge** is for SDVCP to build capacities of the weak producer groups to ensure that the prescribed dairy practices are uniformly followed.

Recommendations: Including more literate and socially responsible people in the group- persons who are motivators in the community and can push the group development forward in absence of SDVCP staff

- ♦ Developing alternate leaders in the weak groups– to complement the present farmer leaders and ensure continuity of leadership,
- ♦ Increasing frequency of group meetings – for low-literate people, particularly women, the more frequent conversations are held around group activities, group goal and dairy development will contribute to continuous motivation to remain involved.
- ♦ Field staff to spend more time in group meetings giving more intensive support to the group and individuals – required to implement the above three recommendations effectively.

This may not graduate all weak groups to become stronger but at least the best effort will have been given to support them.

6. Incomes of producers (from perspective of processors), collectors, and LHWs

- ♦ **Chilling plants** on local milk production and dairy producers: According to Grameen-Danone chilling plant staff, based in Fulbari, Shariakandi Upazila, Bogra, *'the local producers were not aware about how to properly rear cows. Since SDVCP activities in the area, awareness has increased and now the farmers feed grass, bran and different nutritious food to their cows. For this reason the quality of milk has been improved. When this company first started here two years ago, we used to get 24 lit/day and now get 1000-1200 lit/day'*.
- ♦ Of the other five chilling plant staff interviewed, four (all BRAC) say that milk supply has increased over the last 2-3 years. The Milk Vita chilling plant staff report that their supply has

¹⁰ Details of group capacity according to district given in Annex 5.

been the same from their cooperative society members about 10,000 lit/day for the last three years which they think is because many farmers now supply milk to other chilling plants of BRAC, PRAN, Rangpur Dairy where higher milk prices are offered. All chilling plants report that majority of the milk supply comes from the smallholder dairy producers.

- ♦ At the chilling plant level, it is difficult to discern which of the smallholder producers supplying milk are project producers and therefore difficult to estimate how successful SDVCP has been in increasing supply of milk to the formal sector. Only Grameen-Danone in Bogra attributes a majority of their supply to SDVCP's producers. According to five out of six collectors interviewed, SDVCP producers' supply of milk has improved both in volume and quality in comparison to the producers that are not under the project, attributing improvements to better feed and care.
- ♦ Eight **informal processors** – sweetshops, ghee-shops and tea-shops were visited. They all report as the demand of milk has increased so has the supply. Some processors say now they have to compete with other processors to get their required supply. The milk price in the informal market is therefore usually higher than the chilling plants since demand is high most of the year.
- ♦ **LHWs** trained by CARE have experienced a significant increase in clients and income since their technical skills have vastly improved. The survey interviewed ten LHWs, of which three also practice AI, four have established ISCs and one has a medicine shop. All the project-trained LHWs have established, partly with CARE's support, strong relationships with the government (Dept of Livestock Service-DLS) veterinarians. CARE has been successful in improving the linkage and relationships of both LHWs and selected AIs through matchmaking workshops and trainings, fairs, improved and established strong linkages with DLS and BAU teachers.
- ♦ With improved technical skills, they can serve the producers more efficiently, gaining their trust and increasing their client coverage and income through references from the producers. For example, Mainur, a LHW and AI who practiced as a LHW for 8 years before being selected and trained by the project reports his income has increased from Tk. 3,000 -4,000 per month (prior to being trained by SDVCP, to Tk. 12,000 to 15,000 per month.
- ♦ Mohammad Ali was trained as a LHW by project and started this occupation with capital of Tk. 1,000 which now stands at Tk. 40,000. Asmaul Hosna (a woman LHW) also trained by the project as a LHW also has an ISC and from her LHW service and ISC earns a monthly profit of Tk.15,000 to Tk. 16,000. In just a little over two years this is significant for a girl had no income at all. Four of the ten project LHWs interviewed have established Information Service Centers where producers and LHWs in general can avail of information in dairy issues along with feed and medicine.
- ♦ All **collectors** except the Grameen-Danone collector report an increase in milk collection through increasing coverage of dairy households. Nahid Rana, collector established by the project to collect milk from the CARE producer group in his village earns Tk. 3,000 to 5,000 per month, which is additional to his regular occupation as a farmer. Similarly, Ansar Ali in Rangpur started milk collection for producers in his village supplying to the Rangpur Dairy chilling plant and earns an additional income of about Tk.15,000/month. Motiar from Sirajgonj, was a collector for 12 years before being trained by SDVCP. Three years ago he collected milk from 30 households which is now over 65 households and collects around 400 liters of milk per day even in the lean season earning over Tk.300,000 per month.
- ♦ Milon, the Grameen-Danone (GD), the only collector reports a decline in milk supply in the seven villages he covers since project started. Previously he used to collect from 100 households per day while it is now 70-85. He attributes this to cows being sold off since producers did not get a profit from cow-rearing with high price of feed. However tallying his information to that of the GD chilling plant, it seems that he has to share the milk collection business with two other people, one who is a full-time staff of GD. So, it is likely that number of milk collectors have

increased with increase in the milk supply in this area. All the project collectors interviewed report that a major benefit has been in the reduction of milk spoilage because of adopting sanitary methods of milk collection as instructed by the project.

- ♦ **Control collectors** report that milk spoilage is a major issue and causes massive loss every year. Kazal Mia, milk collector in Nilphamari Control-1 area also reported that after he incurred loss from milk spoilage last year, the BRAC chilling plant staff gave him a colorless liquid to add to milk to prevent milk spoilage. This is similar to the recount by Rakhal Chandra Barman about BRAC in Kurigram given in the baseline. Most of the control collectors report that number of producers have not increased under their collection area, in Rangpur Control 1, it is said to be less since the producers cannot cope with low price of milk given by Milk Vita. Control-1 collector in Nilphamari report increase in producers selling milk but milk spoilage is big concern. The control collectors struggle with both issues of milk spoilage and low volumes of milk supply from the producers they cover.
- ♦ Since the baseline has been conducted, overall progress for project collectors has been increase in number of producer households, and increase in milk supply and income.

Discussion

According to the chilling plants and locally-based informal processors and collectors, milk production in general has increased and mainly from among the smallholder dairies. So while project producers complain that with high costs, milk sales gets them little profit, milk is a product in high demand and so with proper marketing channels in place, it will get sold. There is thus continuous and increasing demand for milk which is contributing to the increasing income from milk sales for producers. This has been quite a considerable increase since the project started (at baseline).

The project has been successful in training LHWs and collectors to be efficient in their professions and increase coverage. The project has also created job and income opportunities through establishing new collectors and LHWs. The progress in income of the LHWs and collectors since baseline has been considerable.

Challenges

As the project continues to establish and train LHWs to meet their target, there might arise overlap in areas already being served by project-trained LHWs, this might push out well-qualified service providers. While competition might be good, the project needs to be cautious that it does not affect income of the LHWs to be pushed to give substandard services at minimum rates.

Recommendations

Project should map the services established according to geographical locations and existing services before either developing new job opportunities or scaling up.

V. ACCESS TO INPUT SERVICES AND RESOURCES

7. Quality, availability, and access to input services and resources

Producers from 12 out of 14 groups express high satisfaction with the service from the project LHWs. They contact the LHW by phone who advises immediately on what to do or the LHW pays a house call. Only the Kurigram Yr-1 and yr-2 producer groups have not expressed this, more because they have been weak in working as a group and have not utilized the linkages facilitated by the project (see Section II, Qn. 5) because the producers are still dependent on the project field staff for advice.

The skills of the **Livestock Health Worker (LHW)** has improved after receiving training from the project and in addition to giving good treatment, they also advice on dairy management. LHWs in Bogra, Sirajgonj, Rangpur and Nilphamari also attend group meetings to discuss cow diseases and how to care for them.

The project has made **AI services** more available and affordable for most of the project producers. As a result of increase in clientele and income, two LHWs of the 10 LHWs interviewed sought and attended AI training independent of project support and is providing AI services in their area for the last year. The fee for AI service is BDT 150-200 by the AIs selected by project. If the procedure has to be repeated then less is negotiated for repeat procedures. Sometimes, repeat procedure for AI is required if the AI technician is not skilled or the quality of semen is not good. Depending on the distance that the AI technician has to travel to deliver this service, the fee might be more. For poor smallholder producers, AI cost is expensive, and more so for repeated procedures. Now that the project producers are aware of AI services and how it might give rise to a better progeny breed, they are interested to avail of AI services but are limited by the cost.

The AI technicians buy semen from the government Dept of Livestock Services, BRAC and Ejab Alliance. The semen is not always available from all the companies and the success rate varies from time to time. LHWs trained by the project have expressed interest to also train in AI technology but find the instruments used for AI to be expensive. To expand quality AI services, training and kit support is required by the skilled and potential LHWs. LHWs recommend that the project arrange AI training and kit, then they will be able to serve their poor clients better. The project has concerns regarding the AI service in Bangladesh—these were confirmed by respondents and experts consulted for the MTE. The concerns include: limited range of appropriate semen available locally, the low skill level of AI technicians, poor heat detection by producers, the poor health of the cows, low conception rates and the lack of records on milk productivity of the offspring calves, and limited data on the population of local cattle breeds owned by producers. Therefore, the project stopped its target activity to train and establish AI technicians, since these concerns need to be resolved before developing this service further. The project has undertaken a detailed survey of the cattle breed population owned by target producers to identify the most appropriate range of semen so as to produce a progeny of cattle that would be higher-yielding and then undertake a more systematic AI campaign. The project intends to address the fundamental underlying issues with regard to AI, without which the growth and development of the smallholder dairies will remain a challenge. At present the project continues to encourage the producer to utilize the currently available semen, emphasizing utilization of quality AI services to meet short-term objectives of increased milk production and at the same time continue to pursue the medium- to longer-term objective of trying to address the fundamental problems with the overall AI system.

Vaccination is given to cows in group. The farmer leader contacts the LHW and sets a date and place for vaccination, after which it is duly carried out. Availing of vaccination in a group reduces the cost per cow. In Bogra, the producer groups also invite non-project households to use this service. In general, there is a shortage of available livestock vaccine in Bangladesh. Only about 10% of the country-wide demand for ruminant livestock vaccine is met (Care 2010—Policy Review of Dairy Sector). Ruminant vaccines (for anthrax, FMD, BQ and HS) are mainly produced by the Bangladesh

Livestock Research Institute (BLRI), some FMD vaccines are imported by Intervet and recently FnF Pharmaceuticals are producing it in-country.

Since the government's production is very short of the country-wide demand, vaccines are thus produced according need of specific areas, e.g., when the anthrax epidemic occurred in Sirajgonj, government stepped production of the anthrax vaccine to address this. FMD is the most prevalent disease all over Bangladesh, which is why its demand is high, thus government has permitted one private company to import and another to produce while the production of other vaccines are controlled by BLRI. The project has been fortunate that most producers have been able to get the four recommended vaccines for their cattle – this is because of the good relations developed between the LHW and field DLS. The project facilitated vaccination campaigns for cattle not only belonging to the producers but also the other non-project community dairy households around the producer groups. The LHWs communicated with the district level livestock office to procure the vaccine and assist the DLS to meet vaccination coverage.

While the government conducts vaccination drives according to area-based needs, the project has been able to introduce the four ruminant vaccines as a preventive diseases measure, the way vaccines should ideally be used. As the project continues to expand and include more dairy producers in the project, it will be more difficult to meet vaccination needs of the beneficiaries. Unless the government steps up vaccine production, this will continue to be a problem for all livestock farmers. In order to continue to meet the vaccine requirements in the project area and beyond the project period, the project LHWs will have to take forward the experience of the vaccination campaigns and capitalize on the relationship with DLS. Meanwhile, if the vaccines produced by private pharmaceutical companies are found to be effective, project LHWs may be encouraged to procure these.

The **Information Service Centers** based locally serve as focal points for advice on cow rearing, diseases, diagnosis and treatment as well as feed and medicine. The producers are satisfied with feed and **medicine** quality procured at the ISCs. Based locally, it helps them buy on credit from the ISCs and save time from going to the main *upazila* market. Goods on credit for producers from the ISC's have been found in all the ISCs visited and this has enabled producers to an alternative source of finance beyond the group savings which is contributing to their dairy activities. The countrywide cell phone system¹¹ has made the communication between producers and LHWs much easier and now are able to avail of services timely to address cow issues. Furthermore, they get good advice from company veterinarians who come on different weekdays to the Information Service Centers and help solve complicated cases.

Mainur in Bogra and Asma in Rangpur, both project-trained LHWs have feed and medicine shops which serves as ISCs located close to the producer households they provide LHW services. Asma's ISC within the local market and thus serves a larger section of non-project producers too. They receive clients in the morning and make house visits in the afternoon. Once a week, different pharmaceutical company vets sit in rotation at these ISC and give free advice and treatment for clients who come to the center. This is similar to other ISCs that the survey team visited. When the company vets visit, they too attend the clients and thus have the opportunity of hands-on coaching from a qualified vet. Being a locally-based LHW, poor producers sometime take feed and medicine on credit. The LHWs likewise take goods partly on credit from the input companies at company discount rates and pay in installments based on the sales from the ISCs.

The pharmaceutical companies gain by increased sales and coverage in areas beyond the *upazila* level. By engaging with three CARE established ISCs in Bogra region, one pharmaceutical company manager reported sales increased by approximately BDT 50,000-60,000/month. These input companies recognize that this is a profitable venture but have reservations regarding financial transactions. Being target-oriented in their sales, it is not profitable for them to give goods to LHWs on credit and to wait until they can make sales of the specific product. Therefore, even though it is

¹¹ In Bangladesh, there are seven cell phone operators covering most of Bangladesh.

profitable for them to expand and extend vet services through ISCs, it is questionable as whether this is an approach the input companies are prepared to take in the absence of CARE, or an intermediary organization guaranteeing payments for goods procured to accommodate the requirements of LHWs with low volume purchase.

Animal health card: Each project producer has an animal health card for each cow which the LHW or vet checks before he gives service and updates. The health card has details of disease, treatment, medicine and vaccination of the respective cows. This helps the LHW or vet to diagnose and prescribe treatment. The more literate group members easily understand the card and help fellow group members to understand theirs. Usually the LHW or vet treating the cow updates the card after treatment. Most of producers say the health card especially helps them to keep track of the deworming and vaccination given to the cows and thus call the LHW when required.

In comparison to pre-project period and the baseline, producers' access to veterinarians, LHWs and AIs was not easy. The project has developed locally-based LHWs and established linkages with qualified veterinarians with DLS and of pharmaceutical companies which has been of great benefit. The LHWs /AI have been introduced to producer groups, input companies and the government DLS through match-making meetings.

The producers from the control areas do not know of any health card system. They usually call on the local government vet or other private LHWs. In the Control-1 area in Rangpur, the producers report that the chilling plant vets have been a source of advice for better cattle care and health and likewise similarly in the Joypurhat, the control producers report that they get veterinary help from government livestock department staff. However in other places the vet service is mainly limited to only treatment of cattle.

Feed: While the feed is more readily available locally at the ISCs and project-selected feed shops, the producers are not happy with the price of feed stating that it is the costliest input item, reducing profits from milk sales. The feed is mostly bought individually and not in bulk. Only the Nilphamari project producers buy in bulk to minimize cost and time. The producers prefer to buy according to their day to day requirement. Not all producers are able to invest in the group to buy feed in bulk to keep in reserve. Taking lesson from Nilphamari producer groups, this can be introduced to other producer groups.

Fodder cultivation does not seem to have gained widespread popularity in the project area that it should have. This may have been because of dearth of unused land or roadsides. Even though most producers report that the feeding practice of fodder increases milk production. In Rangpur and Bogra, it was more evident in the project areas that it was popular however not so much in the other project areas. The project should expand on demonstration plots to show the benefits of fodder cultivation and increase distribution of grass cuttings to the project beneficiaries. The distribution of grass cuttings, at least for demonstration may be channeled through the processors as done in the PTC pilot. Where fodder cannot be grown due to insufficient land – other options (silage etc) need to be well-promoted.

Credit: All the producer groups, except those in Joypurhat, stated a preference for NGO credit since it was easier for them to access compared to banks where the formalities are long and daunting. All producers report that they are conversant with availing NGO credit. However for dairy development, which yields a high-risk produce, the producers state that low-interest or interest-free loans would be helpful. The NGO credit is generally no more than Tk. 10,000 at a time, usually at 12% and loan repayments start within a week. This kind of credit may be useful to buy reserve food while the producer has a cow producing milk. For a poor smallholder wanting to expand dairy activities would require purchase of a CB heifer, which at current market prices starts at Tk. 60,000, credit requirements are different. The credit amount needs to be considerable (at least 60,000) and interest rates low or nil. Grace period until the CB heifer starts producing milk should be longer – about 9 months. The heifer has to come into productivity after it has been bought and then through milk sales it will enable the poor farmer to pay the loan installments. This is because of the uncertainty of

cow conceiving, giving birth to calf after which milk production rates are also a matter of concern. For dairy development, loans need to be longer term.

In Joypurhat, the preference was for bank loan according to one group while another group of producers were undecided on whether they would prefer bank or NGO. In Joypurhat, paddy, potato and vegetable cultivation are well-developed and supported by the government's agriculture extension service and long-term, low-interest bank loans from the government agriculture bank – Rajshahi Unnayan Krishi Bank (RAKUB¹²) for the local farmers. The farmers in Joypurhat are thus well acquainted with bank formalities and prefer the low interest and repayment at end of five years, similar to loans they take to invest in land crops. However, they report it is difficult to avail such a loan for dairy development and that the numbers of loans handed out are few.

Very few financial institutions are providing credit or any other financial incentive to the smallholder farmers. To address this gap the Bangladesh Food Security Investment Forum in its review (May 2010) recommended that the government should launch a nationwide interest-free loan for dairy smallholders and different entrepreneurs working dairy value chain. Furthermore, Bangladesh Bank in 2009 has issued notice to all private commercial banks to step up loans for agricultural SMEs, and at the same time lessons¹³ Lessons from India's farmer credit scheme may be researched and recommended for government banks. The project may include this in its policy advocacy concerns and lobby also with microcredit organizations to develop specific packages for poor smallholder dairy producers. In the Northwest districts the Rajshahi Krishi Unnayan Bank's (RAKUB) SME loan for dairy development is Tk. 25,000 to 500,000 at 15% interest for 2 years and loan repayment is monthly after a 3 month grace period¹⁴. For a bank whose priority is to develop agricultural potential, the loan package for dairy development is impractical for poor smallholders. The saving grace of these SME loans is that it requires no collateral but the interest rate and payment schedule make it affordable only for well-off farmers.

While the government has policies that indicate need for the agricultural development and institutional credit to be made available at the grassroots, the mechanisms are not actually pro-poor and may be debated that if availed, pull the poor farmers further into financial crisis. According to the Annual Agricultural/Rural Credit Policy and Program for Fiscal Year (2009-2010)¹⁵ *'the target for disbursement of agricultural/rural credit has been fixed at around Tk. 11.5 thousand crore for FY 2009-10 Agriculture/Rural Credit Program and the amount is the highest so far which will be disbursed and not be limited to grains and crops only; but also for fisheries, livestock and agriculture.'* However in both new and old policy actions defined in this paper, there is no direct mention of dairy development in comparison to emphasis made for crop cultivation and fisheries.

Challenges

- ♦ A major challenge for the project is in improving the quality of the AI service and making it affordable for the poor smallholders.
- ♦ Reducing cost of feed: This has been identified as the most expensive input by dairy producers reducing their profit margins from milk sales.
- ♦ Fodder cultivation needs to be promoted – this will contribute to reducing production costs.

¹² RAKUB is the government-controlled agriculture development bank operating in the northwestern districts of Bangladesh. RAKUB was established by the President's Ordinance No. 58 of 1986 with the aim of providing institutional agricultural credit for optimum utilization of agricultural potentials of Rajshahi Division. Taking over the branches and offices along with assets and liabilities of the Bangladesh Krishi Bank within Rajshahi division, the bank started functioning on 15 March 1987.

¹³ Agriculture, SME branches now mandatory for banks: <http://www.thedailystar.net/newDesign/news-details.php?nid=112858>; Posted on November 6, 2009 by Bangladesh economic news

¹⁴ Personal communication: SDVC Bogra office.

¹⁵ <http://www.bangladesh-bank.org/mediaroom/speech/sep072009gs.pdf>

- ♦ Short supply of vaccines – the government is sole supplier of Anthrax, BQ and HS and only two other pharmaceutical companies sells FMD vaccines. Overall the supply of ruminant vaccines falls very short of the country-wide demand. As the project continues to expand and include more dairy producers in the project, it will be more difficult to meet vaccination needs of the dairy producer. Unless the government steps up vaccine production, this will continue to be a problem for all livestock farmers.
- ♦ Continuing input company support for ISCs beyond project period: Even though it is profitable for them to expand and extend vet services through ISCs, input companies for feed and medicine may not continue this service without a guarantee fund, since it goes against their current approved mode of sales and service.
- ♦ Credit packages are not pro-poor and beyond the means of the very poor dairy producers to avail for dairy development requires access to long term low-interest or interest-free loans. Financial institutions do not provide credit or any other financial incentive to the smallholder farmers in Bangladesh for dairy purposes.

Recommendations

- ♦ To conduct a full assessment of the AI services with respect to AI technician training, semen quality and genetics, problems in preserving, carrying and applying AI, in order to plan how the problems in this sector can be minimized and AI services improved.
- ♦ Project may conduct price negotiations and product development for commercial cattle feed with the input companies supplying to stock to project entrepreneurs. It may be realistic to approach feed companies already working through the Rural Sale Program Pilot with SDVCP. RSP is in the position to push for product development by input companies supplying feed and benefiting from the grassroots coverage. Also reducing tariffs on imported cattle feed ingredients would contribute to bringing the price of cattle feed down.
- ♦ In order to continue to meet the vaccine requirements in the project area and beyond project period, the project LHWs will have to take forward the experience of the vaccination campaigns and capitalize on the relationship with DLS. Meanwhile depending on the cost and effectiveness of vaccines produced by private pharmaceuticals, project LHWs should be introduced to procure these.
- ♦ Step up distribution of grass cuttings, which may be channeled through the processors.
- ♦ In order for pro-poor credit packages for poor dairy farmers, the project will need to include this in its advocacy actions with Bangladesh Bank to review the bank loans for dairy development and mechanisms for the poor to access these loans.
- ♦ In order to give incentive to input companies to support the ISCs and even expand this activity to similar other entrepreneurs, a guarantee fund needs to be in place. CARE may source other regional microcredit and finance research schemes such as that of PKSF (Bangladesh's apex funding organization of microcredit programs) and/or the DFID-funded innovation funds and char programs in place to set a guarantee fund based on the success of the ISCs. At the same time bring into this collaboration the input companies after making ISCs a successful business case to their top management. This may be tried out as a pilot within project period.
- ♦ The Health Card system has proven useful and successful by both producers, LHWs and vets and this can be potentially upgraded as initially proposed in the project proposal to a carry an identification or registration number as is used for the livestock registration systems in European countries. This will contribute to tracking cattle health and in future provide basis of identifying genetics of the cow breed. Ideally it should be a system in place with the government DLS, however since the government resources are limited, this may piloted through a formal

milk processing company. The system may thereby be scaled-up to be taken over by the government.

- ♦ Backward linkage in input services is discussed in the CDVF pilot and PTC pilot under Section 11.

VI. ACCESS TO MARKETS

Milk Collection and transport: Processors collect individually from collectors who collect milk from producer groups in bulk. Both processors and collectors report that they get the milk supply timely, which most say they also used to get previously—only a few collectors report that previously they experienced delays in collecting and supplying since they used to practice door-door collection, which was time-consuming. Improvements in the collection system are perceived in the quality of milk which has improved and the mode of collection. Project collectors wait at a fixed location for milk collection where the producers supply the milk and so the collectors do not have to go door to door. Also since CARE has oriented the project collectors on safe and hygienic collection and transport of milk, milk spoilage is no longer a major issue as it was prior to project. Collectors find it convenient to procure milk in group and likewise disburse payments similarly. Collecting milk in bulk allows them to pay the group producers an average price.

Of the 14 producer groups visited eight producer groups sell milk to collectors who may or may not supply all of the milk to chilling plants. The producers of the other six groups are located near a market or collection point where they prefer to sell milk individually either to wholesalers or the informal processors. This is more so in Sirajgonj and Kurigram. By selling in the informal market they get a higher price. The Bogra yr-2 producers sell milk to a collection point established by Grameen-Danone which was negotiated by the project. Producers here were located remote to the main market and far from the main chilling plant and so the collection point enabled them to get an optimum price for milk.

Six chilling plants were visited and staff interviewed. The chilling plants are Grameen-Danone in Bogra, BRAC in Sirajgonj, Joypurhat, Rangpur, Kurigram and Milk Vita in Rangpur. The Nilphamari project producers located in Syedpur *Upazila* supply mostly through collectors to the BRAC Chilling plant in Taragonj, Rangpur, which is why two chilling plants were visited in Rangpur and none in Nilphamari. All the chilling plants except that of Milk Vita report improvements in the milk supply in terms of quantity and quality. They attribute this to the increased awareness of producers about giving cows improved feed, i.e., concentrate feed and green grass. The Kurigram Chilling plant manager also said that people are being more honest about not diluting milk with water.

Milk Price: The collectors and producers who deliver directly to the processor are paid according to fat content as tested at the chilling plants. Producers located near collection points or chilling plants prefer to sell directly since they can get a better profit and also because they do not want their milk mixed with another producer's whose milk might be of lesser fat content and then get a low average price. GD pays BDT 25-26 based on good fat content. There is a price list based on fat content displayed in the chilling plant. According to project producers, the milk price they now get is more than it was prior to project. Milk price charts from BRAC and Milk Vita chilling plants (2008 -2011) show that that price of milk has increased only by Tk. 1.10 to 1.90 (for fat content 4.0). The collectors too report that the price they get now from milk sales is better than what it was prior to the project. Informal processors pay on average Tk2-3 per liter more than the chilling plants and even up to Tk. 50 per liter in the festival season. Experienced collectors with astute business sense split their milk sales between informal processors and chilling plants. From the informal processors they get high milk price and maximize profit in the festival season while the chilling plant is a regular customer where they get commissions, stable milk price and can be sure of sales when the informal market demand drops.

For producers selling in group, they are usually located far or remote from the collection points or chilling plants and therefore it is of advantage to sell through a collector in group. CARE has assisted the producers to negotiate milk price with collectors and collection points which was not previously possible. The disadvantage of selling through the collector is that he gives a common price to all group members, i.e., BDT 20-22/litre and not according to milk density. Though the collectors have lactometer (given by CARE) to test milk density, they only use it when they suspect the milk quality

is poor. For collectors to test every producer's milk individually at collection is bothersome and time-consuming.

Payment: The processors pay the collectors after which the collectors pay the producers. This is either weekly or twice a week as arranged. Producers selling in a group find it convenient to be paid like this so that they get a good amount in hand at a time. Producers selling directly to a collection point get paid daily and for those selling to chilling plants like the collectors usually have a passbook, recording the milk supplied and payment given as arranged.

All the producers except Yr-1 Nilphamari producer group and yr-2 producer group from Rangpur say that they get paid according to what is decided by the processor or collector; they have not been able to bargain for higher prices. Higher prices are received in festival season when demand is high and informal market creates a pressure for the milk. The yr-1 Nilphamari producer group and yr-2 Rangpur producer group have been successful in negotiating higher milk price from the milk collectors. In Nilphamari, the producer group called a meeting of 3-4 milk collectors and asked for a price quote after which they chose the one who would give them best price. In Rangpur, the collector tried to get away with giving less price, but the producer group stopped giving him milk until the collector agreed to increase the milk price.

Producers interviewed from control areas all sold individually except in Rangpur Control-1 area where the producers were members of producer's association under Milk Vita. Individual sale was either from household door or sold in the informal market to informal processors or wholesalers. Control collectors collect milk door to door and this is very time-consuming for them for them and that group collection would save them time and money.

Three **milk bars** were visited and found that these bars were quite popular and customers and proprietor both report that the milk consumption has increased considerably in the market place. Children on the way to school come to drink milk from the bar. The Milk bar has proven good in increasing milk-drinking habit and also established an additional informal market for sale of milk by producers. Moinul Islam, owns a tea stall and also has a milk bar, in Joipurhat. He buys 10 liters of milk every morning from local dairy producers and all the milk gets sold by the end of the day. He makes an additional profit of about Tk. 3000 per month.

Access to marketing information: Collectors access milk price information at chilling plants and the informal market about price of milk. Producers too hear from collectors or when they go to the local bazaar or communicate over the mobile phone the current price of milk from other collectors and processors. The chilling plants fix milk price yearly from the company's head office and gives a consistent price. Producers supplying individually to chilling plants take advantage of the seasonal high price in the informal market and also sell there. Collectors are reported similarly to supply partially to chilling plants and part to informal market when demand and price is high.

Relationship: This has improved between the producers and collectors and likewise between collectors and processors because of the timely supply of milk, improved quality of milk and regular transactions. (*more on relationship under Section VIII, Qn 13*).

Discussion: Within project coverage there is an overall improvement in quantity and quality of milk produced from producer to collector to processor. Most of the control collectors on the other hand are in much the same position as in the baseline – collecting milk individually from households and still buying milk from the same number of producers they took milk from 2-3 years ago. All collectors report relationship with chilling plant is good since it is based on regular transactions. However, in order to supply to chilling plant, they require good amount of start-up capital since the chilling plants pay weekly and they have producers who want daily payment.

Challenges

For the project it is challenge to motivate producers to supply milk to chilling plants since the milk price is higher in the markets. While the formal processor companies may not admit it, in general

dairy producers are still suspicious of chilling plant staff's measurement of fat content. They instead therefore to sell to markets where they get a higher price irrespective of the fat content.

Recommendations

In order to motivate producers to sell milk more to the chilling plants: trust needs to be established – which requires transparency and accountability of the chilling plant staff to their suppliers.

Popularizing the milk bar in other areas will not only offer a channel for smallholder milk producers to sell milk but also motivate people to improve the milk-drinking habit.

VII. ACCESS TO INFORMATION

- ♦ CARE has established 69 Information Service Centers (ISCs). The five ISCs visited in this survey were found well-equipped to provide information and service for dairy producers. Information include product information for livestock, contact numbers of private and government vets, AI services and list of days when vets would be visiting the centers. These ISCs are based either within a medicine/feed sales shop or the establishment of any LHW. The locations of the ISCs have made it easy for producers to access service and information in remote areas. Where there are no ISCs, project producers are linked with the project LHW or the project selected feed/medicine shop for information. The Kurigram Years 1 and 2 producer groups that have not built sufficient confidence in the area-based LHW, depend on CARE field staff for information.
- ♦ These service centers have been linked up with pharmaceutical and feed companies, as well as with the DLS and AI technicians. The companies normally distribute their products up to *upazila* level. Linking them with service centers has increased the coverage and sales of products and in return company vets offer free service at least once in two weeks. Through the company linkage and regular visits by company vets, the LHW keeps up to date about new products and new techniques in treatment. The ISCs provide a center for discussion of dairy problems. In addition to learning about AI from CARE in group meetings, producers are now aware of AI services in the locality and try to avail of them. The ISCs are points of regular communication between the producers, LHWs and input companies. This is vast improvement in comparison to the pre-project scenario according to producers and LHWs. Other emergency information such as the spread of anthrax or a vaccination day is disseminated through public announcement. This is a convenient way of information dissemination in a short time. Furthermore the project LHWs have developed good relations and regular communication with the DLS from where they get any new information and likewise inform their clients.
- ♦ The project collector reports getting information from the companies he supplies milk and the informal market. The collector communicates only with the processors he sells to and the producers he buys from. He does not use the ISC.
- ♦ In the control areas, there are no information service centers and the producers have limited linkage with government livestock services and local feed/medicine shop where they can learn about cow rearing. LHWs working in the control area maintain good relations with the *upazila* livestock office to stay updated on veterinary information.

The project has been successful in establishing as well as building on existing relationships to enable information flow among the producers, collectors, LHWs/AIs, feed/medicine sellers. Recent developments to step up LHW-producer relationship is through producer group meetings facilitated by LHWs on cattle health care and management.

VIII. GENDER AND WOMEN'S EMPOWERMENT

SDVC project emphasizes women's participation in the dairy value chain. To ensure women's participation and has developed tools to assess women's participation in the value chain and made a list of barriers that women face preventing them from engaging in project activities. According to identified barrier, strategies were developed to enable the women being prevented to engage to be included. Where the project faced problems in women's participation, it facilitated community and family sensitization, which included individual and group meetings with household heads to develop better understanding and increase women participation on dairy related economic activities. The project until time of the MTE survey had not conducted any training or discussions on gender and women rights for project beneficiaries. Had such sessions been included at some stage of the capacity building efforts, the project might have been able to build the confidence and pro-activeness of women better through project activities. The evaluator found that women from the weaker groups and some from within the stronger groups were still apprehensive about their position in their household. The project starting in 2011 are including sessions on gender, women's role in dairy, their work etc. Some of these sessions will be conducted with the women member's spouse or guardian.

The main problems faced by the project were in tackling the conservative attitude of husband or guardian to allow women/girls to participate in project activities exposing them to outsiders and taking them to market places. Another challenge was faced when the farmer leaders and women LHWs were required to attend residential training away from their homes. These were overcome by inviting the guardians/spouses of the women to observe the training and training venues and dispel their concerns over the safety of the women. According to the project's gender manager, the project has been successful in tackling most of the problems including a few issues of domestic violence.

Project Producers

Women producers (except yr 1 and yr 2 groups interviewed in Kurigram) report that by being involved in CARE, they have risen above being just homemakers since their involvement in cow rearing and dairy management brings income to the household through sales of milk, cow dung and calves. Increased income has been key to improving their status and their voices being heard. Previously, while they did undertake considerable amount of work, including tending to cows, as is required in an agricultural household, they did not have any tangible income—therefore women did not have much say in household matter or own choices. In Kurigram, the women only have access to the income of the milk sales if they sell the milk from their homes, otherwise their husbands pocket the money after milk is sold. The improvement has been that they do not need to ask permission to use the money they earn at home. They use the money to buy small household items if it does not get spent on cattle feed.

Status within household

Since engaging in the CARE project, workload has increased since the cows require more attention in cleaning and feeding according to the project dairy management practices. They spend about three hours a day taking care of cows. In comparison to the male who spends only one day a month for the dairy, they do work of the other 29 days. Usually men cut grass and buy the feed while women do all the other work. The division of labor remains unequal. However they are happy to do the extra work since it is profitable. SDVCP recognizes that workload of women have increased and to increase men's support for the wife/mother, they including gender sessions where the husband or male family member will attend along with the female group members to analyze the workload of the women versus that of the men. This is expected to open up the men's eyes to the role of women in the household and make them supportive.

The income from sale of milk and cow dung is kept by the woman (except in Kurigram as discussed above), which they give to husband if required for household use. If she wants she can spend from her income without having to ask permission from her husband. Women now use their income for various uses: purchasing things for the family, children's school material, and own travel cost to go

to meetings and social visits. The money is also used for de-worming, treatment and vaccination of cow.

Women earning through milk sales is not new; however, the income from milk sales was not high enough to make a difference in the household income. And therefore their contribution was considered minor. It is customary for men and women in the area to discuss when procuring big items or making big investments, but again the final decision lay with the husband. Now their opinion is taken into consideration when making a big purchase or investment at home; previously the consultation that the husband made with the wife was only a token gesture—the women now have a say in household decisions.

Husbands have become more attentive and loving.

Husbands consider themselves fortunate if the wife brings money home.

Now our opinions are considered in buying land or cows or to spend money for children's education...

—producers of Doel group, Nobaduri, Sariakandi, Bogra

Status in community

Rearing dairy cows is traditionally a respectable work for the typical Bangladeshi homestead and so engaging in this work was not a problem for the women. Attending the group meetings has enhanced not only their technical knowledge but also developed their intelligence on how to negotiate with people from outside the home and solve own problem. Being knowledgeable in dairy management and CARE has helped them advice neighbors and relatives regarding cows and milk production.

Meeting with other women in a group meeting helps them share not only dairy issues but also discuss personal problems and seek solutions. This ranges from solving family conflicts, motivating the husband to listen to them and helping to solve other problems around farm-based products such as poultry, goats, paddy, and jute.

'We become courageous if we discuss together in a group – now we can speak up for ourselves'

Farmer leaders from Year 2 and Year 1 groups in Shariakandi, Bogra, are confident of engaging in local politics and running for elections as a member in the *Union Parishad*.

These improvements in a woman's status, her confidence to speak, help others in her group or community, make choices in purchase or activities differs from producer group to group. As expected, the Year-1 group is more advanced than the Year-2, which is more advanced than Year-3. In the mixed groups, women also are confident of speaking up. This is especially evident in the Nilphamari group where the women leader is as confident as her male counterparts. The Kurigram producer groups however are weak in this aspect.

The group effect: Being in a group forces poor women to communicate at a level contrary to the traditional behavior of being only seen and not heard. First talking and sharing common problems among themselves helps open up women to engaging with other women, after which they gain the confidence to graduate to dealing with other community people and dairy chain stakeholders.

The farmer leaders are chosen based on their education and position in the community. Usually coming from better –off families, they are already more confident and vocal than the poorer members of the group. The CARE meetings and training have developed these farmer leaders to become more organized in their interaction with LHWs, AIs, and collectors, confident in leading and supporting the group members. Among the general group members there are those who are a little more shy than others, they too recount that they are more confident than before when discussing gender issues and that they too are accorded respect by neighbors and relatives as they are now an income-earning member. However there is the risk of the woman going back to square one if she no

longer has an income – Is the respect accorded to her by her husband and in-laws only for as long as she is an income-earner?

Access to information and services

All the group members (except Kurigram groups of Years 1 and 2) report that they avail of services and resources from the ISCs, communicate with the project-trained LHWs, AIs and collectors. They are recognized as CARE's producer group members who are skilled in dairy management and production of milk. In comparison to pre-project period, these women are now positively recognized as entrepreneurs. The women producers report that they are well received in the community and can visit the LHW/AI as needed. Contributing to this improvement in status is the visibility in their well-being and confidence. Also they are persons that other non-project producers can approach for advice which they give willingly and proactively. This has been developed through the group meetings facilitated by CARE and meetings with other stakeholders. Furthermore, the local LHW sometimes also attend the meetings which has helped their introduction and communication.

Through the capacity building sessions held by CARE field staff with producer groups, the group members gradually opened up when they understood their rights and how to negotiate. CARE also conducted matchmaking workshops introducing the LHWs, AIs, collectors and processors to the farmer leaders. The focused attention given by the CARE staff helped the group members and their leaders to overcome their inhibitions and speak up. The women in the project area have same access to the market as do men.

Though the Year-3 group has been formed just recently, they have been linked with the existing ISCs, project-trained LHWs and AIs and also collectors. The farmer leaders have already started to learn the art of negotiating for affordable service and goods and have reported good communication and access to services and information.

Control producers

Women producers from Bogra Control-1 area also report similar improvements in their lives over the last 2-3 years. During this time, they have become involved in cow-rearing more intensively and thus income from milk sales has increased. The income from milk sales is reserved by the woman. Being an earner has given them respect and improved status in their own household.

Producers from Control-2 areas report that women are typically responsible for cow-rearing, however the milk is sold by the male who collects the income and spends as he sees fit and then the remainder, if any is given to the woman. Still, since the woman's effort brings income to the household, she has a good status and with the remainder of the money from milk sales, she is allowed to spend according to need of the household. While there is knowledge and technology spillover from project to control, the empowerment of women is mainly limited to within the project areas – social aspects will not necessarily spillover to non-project producers.

Through the project's activities to build capacity of producers, build linkages through service and resources available locally, in the markets and bazaars, the women farmer leaders say it is now more acceptable for them to go to the bazaar. They do not have to face unpleasant comments as they are recognized as entrepreneurs.

In brief, women from the project have improved in various aspects, in comparison to the women producers in control areas. These include—control over income, increased decision making at household level, respect in the household and community, acceptance in community to engage in markets, ability to organize and run groups, take a leadership role among men.

Women Collectors

Though the project has trained 13 women collectors, none were interviewed in the survey areas. The perception of the communities about women working as collectors was mixed. The collectors said that it would be a difficult profession for women to undertake as physical strength is required to drive vans, collect and transport the milk containers. More so, it is a time consuming profession

taking the woman away from her home for long time and far distances. Chilling plant staff have said it is possible with the caveat it is a difficult task physically. Informal processors report that it might be possible since many women go to the market to sell milk. Another concern was expressed that to be a collector, the person needs to swift in transactions and building the business to increase coverage – many had doubts whether a woman could do this on her own.

Women LHW

The project has had to develop specific activities to sensitize family and community toward women's role in the dairy sector on par with men. However those who have been engaged as the survey has seen in the case of the women LHW interviewed have proven to be very successful and will thus continue in this profession acceptably. When asking men LHWs if women could enter this profession, they were positive in that being a LHW is an honorable profession and definitely women will be respected. She will be recognized for the money she earns and the service she delivers and this will gain her respect in the home and community. She would be a role model for other women and would gain access easily in dairy homesteads as women feel more comfortable talking to another woman about dairy problems. However, the difficulty lies in her security, i.e., in attending to late night calls and going far distances to attend to client.

At family level, there may be concerns of how the woman's in-laws would look at this profession as it would mean for the woman to be away from the home and engage in communicating with many people. While this might be possible for well-off educated families, it might not be so easy to convince the poorer families where the role of women is primarily in the home. These same concerns were expressed if a woman were to be an AI. Asma, the woman LHW interviewed in this survey described to us how she had risen from being a burden on her family to now being a major decision-maker. As a LHW she has gained respect in the community and people come to her to consult on issues other than cattle healthcare. Woman producers feel more comfortable talking to her than a man LHW.

Discussion:

The project has been very successful in engaging women in the dairy value chain in a more active role. With regards to target numbers, they have achieved the target well with women producers now about 79% of the project producers are women. With regards to women LHW and collectors, it has been less, only 25% LHW are women vs. the target 50% since engaging in this profession is untraditional in the rural context. The project has had to develop specific activities to sensitize family and community. However those who have been engaged as the survey has seen in the case of the women LHW interviewed have proven to be very successful and will thus continue in this profession acceptably. It can be expected that by the end of the project, the general picture of women's mobility in their communities and markets will visibly improve.

Challenges:

As the project continues to develop women as LHW and milk collectors, they will face the problems they already have identified and tackled – it is expected in the Bangladeshi context. Concern remains that for how well the empowerment achieved at family level will last—will it sustain for a woman if she loses her source of income?

Recommendations:

The project's strategies that have been developed to overcome barriers to women's development, need to be updated time to time and cases recorded well documented for future reference and action.

Also including male family members and guardians in observing project activities and participate in discussions is a good way to sensitize men toward the women in their family and the community.

The project group approach to capacity building has proven to be useful to building confidence of poor rural women.

IX. TRAINING AND CAPACITY BUILDING

Producers (and farmer leaders)

CARE has organized a total of 883 producers groups (323 female; 13 male and 547 mixed) as of August 2010. In 883 groups there are 27,068 (21,463 women and 5,605 men) producers members. After setting up a group of about 20-30 members and selecting the farmer leaders, the farmer leaders were given 3-day training on management; book-keeping; animal registration; feed and fodder; improving milk quality; fat testing; animal housing and husbandry. The CARE field facilitator through the farmer leaders, conducted meetings for the general group members to coach them in improved feeding practices, fodder cultivation, hygienic milk handling, in adopting improved animal husbandry and business practices. After training the farmer leader, they are giving training flipcharts and modules which aid them to hold group discussions on dairy management. In addition to these producers carry out demos with guidance of FL and CARE staff on silage and hay-making. Alongside these meetings, savings was encouraged. The producers report that the pictorial training material was especially helpful in identifying the cow diseases properly and how to take care of the cow.

The producers of all the groups are happy with the meetings and that it has assisted them to care for the cows more efficiently. From observation, though CARE has completed the project scheduled mentoring for Yr-1 and Yr- 2 groups, the producers continue to struggle to make a better profit margin from milk sales after all input expenses especially that of feed. Producers point out that unless feed price reduces or milk price increases, income and profit from milk production will not be steady.

The producers require more focused coaching to calculate and understand what feed combination will bring them best profit. Alongside the training they also need access to quality feed at affordable prices – which may be by increasing growth to quality grass, silage and motivation to adopt concentrate as major feed vs. the combination of multiple local items which increases the price. These are activities which have already been undertaken by the project however, considering the prevailing shortage of feed and fodder, these activities may need to be intensified. Since the general producer members learning process of modern dairy management and care techniques is around the group sessions, it is important that they have abridged versions of the sessions as pictorial booklets highlighting the salient points so that the retention of knowledge is better. Leaving the sessions with only their memory to depend on is not easy for a literate person and more so for the low-literate. Pictorial booklets will help to recall lessons or discussions and an improvement will be seen among the group members bringing about uniform practice of dairy feeding and care much more quickly. The literate group members do better than the low-literate ones since they can record what they learn at the discussions.

After two-three years in the project, bringing the farmer leaders together for sharing-learning meeting (batch by batch) according to district might bring to light what works best and at what cost through discussion and display of comparative experiences in feeding practice, care and milk production.

Collectors

CARE project has trained 207 collectors on lactometer usage, fat-testing mechanism and sanitary/safe handling operations to reduce milk spoilage. Most of the project collector reports that the on-the-job training on use of lactometer, fat-testing and safe handling of milk has been useful. Major benefit has been in the reduction of milk spoilage. The project has also introduced collectors to project producer groups. The milk from these groups are of good quality and therefore the collectors are able to sell at a better price to processors.

Collector recommends that if they were to receive training in dairy management similar to CARE producers then he would also be able to advise non-project producers on how to improve milk production. From interviews with the collectors, it seems that further business planning and

meetings with producers will improve the relation between the collectors and producers as well improve their business.

Livestock Health Workers

SDVCP has trained 168 LHWs of which 42 are women. The project has reviewed the paravet curriculum on dairy with help of BAU and conducted training which included an intensive 7-day course based in BAU, taught by BAU teachers. Further refresher courses were also given to the project LHW. Through the training courses, they have been linked with veterinary experts from the Agriculture University and government DLS. These linkages are important for them to discuss difficult cases as well as refer to the qualified vet as well as further establish the relationship with DLS which is crucial for their long-term support.

The trainings they received by LHWs as recounted by them were in three stages on Primary treatment, Disease Detection/Diagnosis, and the animal health card system. They are happy with the quality of the training as it has helped them improve their skills and learn new techniques. They found the training courses to be practical. They used to think the cows only had a limited number of diseases and that they knew all of them. Now they realize there is a lot more to know. LHWs request for regular refresher training is needed so that they can be up to date and not just during project period, beyond the project too. With the training the LHWs have received a kit box which has helped them to start up.

Control LHW who have attended or received training report that since the first training they never got refresher trainings – similar situation for the project LHWs who were ‘re-trained’ by the project. This is a concern voiced by the LHWs regarding the continuation of refresher training after project ends. DLS is the key organization to continue such training in the future at least every two years, however within the limited government resources, ensuring this may be a problem. Other options are organizing the LHW forums so that they can take charge of organizing their own trainings by accessing the institutes (Hajee Mohammad Danesh Science & Technology University and Bangladesh Agriculture University) that trained them during the project period. The training courses should be conducted by the personnel from the same institutes to ensure uniformity and quality of the training until the LHW curriculum is officially government-approved to be used nationally. The district-based DLS training should be budgeted in DLS activities as it tackles immediate practical problems in livestock and develops firm professional relationships between DLS veterinarians and LHWs. The project claims that the pharmaceutical companies arrange orientation for LHWs on new products and how these may be used and therefore this is a way for LHW to get updated information. While this is good, the companies tend to focus information only around their products. There needs to be another source of reference from where LHWs can learn about livestock drugs comparatively and from qualified vets, i.e., DLS, BAU and HDSTU.

The project training and kit box has enabled the LHW to deliver quality treatment for their clients. In addition the project has linked them with producer groups increasing their coverage, with processors and input companies and with government DLS to support their business. The LHW in turn have coached the producer groups they serve in the animal health card system. The cattle health card is an important tool to track the cow's health status. LHWs are interested in receiving AI training, which will help them increase their service and income and in turn make it more available to the producers within their coverage.

Artificial Insemination Technicians

The project Activity 20—*Train AI technicians with private sector AI service providers* in the project area was not realized.

Problems with the AI service discussed under Access to Inputs

Other project training

Further training under the project include training chilling plant operators and other technical staff of PRAN as part of the **PRAN-TetraPak** Pilot where an objective was to establish effective relationships between key dairy sector processors and producers.

The **CDVF** pilot too included training in animal husbandry and management which was conducted by the CDVF vets for the producers as support service from the formal processor, BRAC.

Recommendations:

The training curriculum and trainings developed and facilitated by the project have been well received by the project beneficiaries. However the general producer members, who are usually low literate need additional teaching material to help them recall discussion and lessons in dairy management and classes.

- ♦ Develop and distribute to all producers an abridged version of the training sessions conducted by farmers leaders

In order that LHWs do not fall back into a chasm of lack of updated technical know-how, depending only on linkages with government vets, institutionalized training should be regularly available for them to avail of from the DLS. This may be:

- ♦ LHW forums capacitated to organize own trainings for a fee engaging veterinarians from DLS, BAU and HDSTU.
- ♦ Pursue with HDSTU and BAU for the establishment of a training wing which will offer services for a fee.
- ♦ Advocate with DLS to include field-based refresher trainings at *upazila* and *zila* level for LHWs on livestock diseases and management in the annual budget.

X. RELATIONSHIPS AND OVERALL VALUE CHAIN INTERACTIONS

Producer-LHW: Based on the interviews and observations the producers report overall better and improved relationships with the LHWs and the project collectors, and this is reciprocated. The inputs services and resources of the producers have vastly improved through CARE activities in match-making, training and capacity building. Of the relationship and linkages, the LHW-Producer relationship has been particularly successful in its development.

Previous to the project activities, producer's access to veterinary services was limited and availability of feed and medicine was low in the areas. The government's DLS manpower is limited in the field. Also the trust and relationship between the parties was not easy. Through CARE's activities in building the technical and business management capacity of the LHW, introducing the LHWs as the first line of modern veterinary advice to the smallholder producers has been successfully accepted. The LHWs are now based locally and are readily available whenever the producer needs him/her. LHWs also sit in producer group meetings to discuss cattle health, which helps build the producers trust in the LHW. The LHWs also realize in order for them to continue being successful in their business and increase client coverage, they need to go a step further in their service to the producer. The LHWs, out of their own interest give the producers advice in cattle rearing beyond their call. In difficult cases the project LHW have the opportunity to call on professional vets or the government vet for advice – this too is of added advantage for the LHW's profile. The producers are in turn satisfied with the project LHWs service refers him/her to other dairy producers.

Producer –AI: The project has identified skilled AIs in the project areas and introduced them to the producers through match-making workshops. The project-selected AIs who are already employed with BRAC, the DLS or work independently have reported that their clientele has increased. Producers were largely unaware of artificial insemination and its purpose. Including this as one of the ten key aspects of good animal husbandry management may have impressed further upon producers to use AI services when and if possible. Producers say that the AI service is not readily available since number of AI technicians are few and also sometimes it takes more than one trial to ensure successful conception, which makes it expensive for them. The LHW who also give AI service are more easily available but the success rate remains doubtful. The project has not progressed to develop the AI service as well as the LHW service. Unless the quality of the service can be ensured, producers will be wary and careful in availing it.

Producer – ISCs: Another success story for CARE is the usefulness of the Information Service Centers. The producers are very happy with the ISCs equipped with LHW, feed and medicine and most of all—information and advice about cattle rearing. These are locally based, easily accessible owned usually by a LHW or medicine seller. Furthermore the linkage the project has made between the ISCs and input companies selling medicine and feed has ensured availability of medicine and feed not usually available at village level as well as the opportunity to have livestock seen to by qualified vets who visit the ISCs weekly or fortnightly. Both project and non-project producers avail of this centre. LHWs meet at the center which is a focal place to meet with input company representatives and vets. Since the ISC is based locally, the producers and the LHW, feed or medicine seller who runs the centre sells goods on credit and in amounts as the producer can afford. This is convenient for the poor smallholder producers. ISCs located in market places perform better as they are visible and accessible to the wider community and are utilized by non-project producers too.

LHWs- DLS: Most of the LHWs trained by the project already practiced in their locality and were known as paravets by the *upazila* level Department of Livestock. The project has built on this relationship further by involving the DLS vets to train LHWs in their jurisdiction. All LHWs interviewed have good relationship with the government vets professionally and feel easy to call on the DLS vet in times of emergency. The DLS vets too find it conducive to work with the CARE-trained LHWs, because of their skill and also because they help to contribute DLS agenda of extension support – the DLS suffers from a shortage of extension staff. The project LHW enable the DLS to

complete vaccination programs in their areas as well as de-worming and information dissemination to the producers. Being linked to the government vets is also good for LHW profile.

LHWs/ISCs- Input companies: LHWs have been linked to various input companies interested in increasing their coverage. These include Navana, Popular, Renata, ACI and others. Through knowledge sharing workshops the input companies have been linked directly to LHWs and ISCs. The LHWs are enlisted in the company customer lists and they get medicine from these companies at a discount. The input companies also provide free vet service at the ISCs. The LHWs are happy with this arrangement, saying that it has helped them to expand, increase clients, and give affordable goods and services to the village people. The input companies recognize that this link up to village level has increased their sales considerably but are in doubt whether they will continue with project phase-out. The input companies are target-oriented focused on making a specific sale monthly or annually and not concerned about the extra revenue coming in through increased coverage. They are more concerned about whether the village-based retailers have enough capital to buy the company goods in bulk and full payment. The newly established ISCs run by freshly trained LHWs will find it difficult to complete financial transaction as per input company requirement. Giving free vet support at ISCs is novel for the input companies and expanding this kind of service to other areas is difficult for them since they have limited manpower. However this may be replicable business model, if SDVCP can showcase this as a successful business case to top management of the input companies and make provision for a guarantee fund to satisfy company requirements and support the ISC entrepreneurship.

Producer- Collector : The Producer- Collector relationship as developed by the project is generally good. Collectors collect en masse from producer groups and pay them likewise. However this is for as long as the producers supply milk and collectors pay producers as arranged. The evaluator found that collectors were more trusting of the project producers because of the improved quality of milk, and that the project producers expressed their satisfaction about collectors in terms of having a regular channel for milk sales and income

Collectors trained by the project are satisfied that milk spoilage is now no longer a major issue. Improvements in milk supply is dependant on increasing number of dairy cattle and households as well as the quality of milk given – the collector knows this but does not seem proactive in offering his suppliers (the producers) further advice on dairy management, only sometimes linking them to vet services. This might be because nature of the collector's work requires timely collection over large areas and timely supply to processors. The project has started to introduce employment of subcollectors by collectors with wide coverage in order to improve timely milk collection and supply. In some areas, such as in Kurigram and Joypurhat, however it was found that the group collection system did not work out well, because there conflict regarding prices producers were getting. In Nilphamari, the collector's position with the producers is a bit different – producers dictate which collector's service they will take according to the price he can give. This is because there are more collectors (3-4) in their area and they have the option to make choice and thus get competitive prices.

Producer- Informal Processor: Producer relationship with informal processors, i.e., locally based tea-shops, sweet shops and restaurants are as it was prior to project—*supply milk and get paid* – a supply chain relationship. Still majority of the producers who are located near a bazaar will prefer to sell to informal processors because they pay higher price than the formal chilling plants around the year except in surplus season.

Producers – formal processors: Producers who are located near collection points and chilling plants deliver milk themselves or by a family member and get a fairly good price compared to the producer selling to the collector. However here too is a pre-dominantly supply connection. Though the project through its pilot (PRAN-TetraPak-Care and CDVF-BRAC) has tried to engage processors to offer backward linkage and vet support to the smallholder producers, this has not been totally successful due to producers looking for higher milk prices in the short-term and processors look to get milk supply at minimum cost incurred. These are ventures that need to be looked into further.

Also producers in the project area report of previous negative experiences with the chilling plant staff in not giving their due price according to fat measurement.

Collectors – Processors: Collectors maintain good relationships with both formal and informal processors. The nature of their profession requires them to be sharp and quick in making daily profits. Collector's relationship is also based mainly on the amount of milk delivered and timely payment made. The chilling plants report good relationships with the collectors but they do not attribute this to the project but because of the regular business transactions, however since project collectors trained have been trained to supply quality milk timely and with no milk spoilage, – business transactions have thus improved.

In the all control areas, dairy producers like the project areas have the best relationship with the local LHW or private vet. With the collectors it is irregular and transaction-based most of the time. Only in Rangpur Control 1, the Milk Vita producers are connected with the processor as members of the Milk Vita cooperative society.

The control LHWs maintain a good relationship with the government DLS staff, but have little or none with the pharmaceutical companies. Control collectors have multiple supply-based relationships with both informal and formal processor.

In Control-1 areas of Joypurhat, there seems to be an improvement in the relationship between the producers and LHWs, the latter being source of advice on dairy management, possibly contributing to improvements in milk production.

Conclusively along the direct value chain actors – producer-collector-processor, the relationship is good and financial dealing are based on verbal agreements, but this does not go beyond financial give and take. The Input service for the producers in comparison, particularly producer with LHW and ISCs has been well-established and trust developed.

Challenges:

Motivating input companies to conduct business in the current mode with the ISC entrepreneurs beyond project period may be at risk.

Getting collectors to be more responsive and honest in their dealings with producers is a difficult task.

Likewise encouraging producers to supply to processors and develop a longer term two-way relationship is subject to trust-building.

Motivating chilling plant staff to be transparent and accountable to their suppliers will also be a turn-around to how they see themselves as buyers.

Recommendations:

SDVCP can demonstrate and advocate the ISC-input company business case to top management of the input companies and to satisfy company requirements and support the ISC entrepreneurship research SDVCP can explore ways to establish a guarantee fund that will support both parties.

Project is already pursuing pilots working with processors offering support for the producers-special effort will be required to ensure that transparency and accountability is instilled in chilling plant operations so that producers are encouraged to supply to the chilling plants. To improve responsiveness of collectors, further business-planning and match-making workshops and meetings with producers are required.

XI. INVOLVEMENT OF RESEARCH ORGANIZATIONS AND PRIVATE SECTOR

14. Contributions by research organizations

- ♦ To address the bottlenecks experienced by the project, SDVCP has undertaken research collaborations with the **Community-based Veterinary Development Foundation (chaired by the Bangladesh Agricultural University) and York University, Canada**. These were to find practical solutions to the problems identified by staff and project beneficiaries.
- ♦ **CDVF** approached CARE to collaborate on expanding the CDVF's Community-based Veterinary Services – CDVS model in CARE project areas. The CDVS model consisted of vets and veterinary assistants working with farmers – organizing farmer groups, aggregating milk, delivering training in animal health and nutrition and offering a variety of preventive and emergency veterinary services. CDVS activities are similar to SDVCP's activities with dairy producers. To finance this service and sustain it, CDVS needs to receive a commission on every liter of milk that their farmers deliver to the chilling plant with whom CDVS would have an arrangement. This gave the opportunity for SDVCP to try out this service model with the poor smallholders in SDVCP's project area and thus support CDVS to develop a sound business plan toward financial self-sufficiency and scalability.
- ♦ Based on CDVF's experience and success in three other districts, CARE went on to include this as a pilot in Kalai and Panchbibi *upazilas*, Joypurhat district around the BRAC chilling plants. Under this innovation and collaborative pilot with CDVF, CDVF was to conduct a year-round training of farmers which would include reproductive health management, udder health management, calf health management, nutrition and feeding, silage and hay making, vaccinations against foot-and-mouth disease, anthrax and black quarters, and de-worming. Farmers' groups would be supported thus to produce good quality milk ensured by individual milk fat test and chilling milk within an hour in contrast to the current practice of up to four hours.
- ♦ These services would be supported by farmers' group/associations by charging Tk. 2.00 per liter of milk from the dairy processor, which is BRAC in this case, in the project areas for pooling 2000 liter or more milk daily. This would amount to Tk. 120,000.00 per month. Also, around Tk. 10,000.00 would be earned from emergency calls attended by the veterinarian at the rate of Tk. 100/call. Hence, the monthly grand total revenue is estimated to be Tk. 130,000.00. However, the total earning of the association will depend on the amount of milk collected by the farmers' groups and association and association. CDVF has used this model successfully in other districts (Satkhira).
- ♦ CDVF and CARE went into this collaboration for the period Jan-Dec 2010. The progress in BRAC's Panchbibi and Kalai areas is mixed. It is good as in CDVF feels its work with farmers and the service provided for them in healthcare, vaccination and so on was successful, however not so successful since the farmers who were in CARE's project area and farmer groups did not give all their milk to the BRAC Chilling Plant. Therefore less than 2000 liters per day was received by the chilling plant and the revenue needed to sustain this service was not achieved. While overall milk production had increased and there were improvements in milk quality, the farmers preferred to sell the milk to the nearby bazaar. The bazaars have highly fluctuating price for milk, paying much more than the processing plant in peak season. Furthermore, Joypurhat is near Bogra district from where wholesalers come to buy milk – raising the price of milk in the informal market even more.
- ♦ **Further on the CDVF project:** Also previous experience of the farmers with BRAC chilling plant was negative and the farmers did not trust the staff in their measurement of their milk quality and the price given to them. To overcome this so that BRAC can get a good supply of milk, they need to regain the trust of the farmers and also the milk production needs to be vastly increased so that higher portion reaches the chilling plants and can sustain the CDVF services. To gain trust

of the farmers, the milk quality measurement needs to be transparent and accountable – using digital meters.

- ♦ BRAC may require to make policy change in their operations for example to collect as much as possible from the farmers and not the collector so that the producer gets the commission and realizes a good profit from milk sales. Selling to the milk collectors deprives the producers by almost 55% (*pers. comm: CDVF- Prof Shamsuddin*) of the price at which it is sold at the chilling plant if the milk is of fat content at 4.0. Producers struggle to make a profit from milk sales barely get money to make up feed costs and family labor costs. BRAC would benefit by building farmers associations with farmer representatives delivering the milk instead of milk collectors. BRAC should recognize that the producers shoulder huge risks in tending and caring for livestock such as cows and producing a fast –perishable item such as milk. The collectors in the middle have little risk and almost all profit.
- ♦ Another reason for the mixed success in Joypurhat is probably because the main agro-products and professions are around two yearly rice crops alternating with potato crops. Dairy is a tertiary income. The time spent for dairy care and milk sales would be preferably spent in the field since this is a main source of income for poor farmers through labor or sharecropping. According to CDVF, had the pilot been carried out in districts such as Sirajgonj and Bogra where dairy is given higher priority, then positive results would have been realized. The one-year pilot in Joypurhat was ambitious, having to struggle with the farmers' opinion and mistrust of the BRAC chilling point staff.
- ♦ CARE and CDVF have an understanding that the pilot project will train the AI workers on importance and method of AI, liquid and frozen semen container management, semen thawing, heat detection, rectal palpation for pregnancy determination, possible causes for failure of AI and their remedies and so on. Based on this CDVF founder and BAU teacher, Prof Shamsuddin with another breeding expert from BAU, and two more international experts have been commissioned to analyze a survey CARE undertook in 2010 on 30,000 households looking at breed of cows based on observation technique. The BAU experts expect the data will be representative of the scenario of North West as well as most of Bangladesh and that they will be able to draw some conclusions and define actions to improve the AI service.
- ♦ CARE also has a MOU with the **Schulich Business School, York University**, mainly with Kevin McKague (PhD student) to support CARE project to study the partnerships with the private sector, how CARE is contributing to the dairy value chain, documenting the innovations and effective strategies that provide benefits to poor dairy producers. McKague and Schulich would gain from this collaboration an opportunity to research and make a contribution to management theory and literature through publishing findings in academic and practitioner journals. This seems to have been a good partnership for CARE, since McKague's analysis and documentation of project experiences have supported CARE to understand their work and report to the donor. Another important benefit has been in the documentation of the CARE experiences, since there is limited information on this sector in Bangladesh. At the International Dairy Conference in 2010 partly sponsored by the Dairy Net of which CARE is a member organization, the project's research was presented with McKague's input.

15 Private-sector engagement

- ♦ The engagement of private sector by CARE¹⁶ in the dairy chain interventions has been good in the last three years albeit some bureaucratic processes, such as formalizing agreements, defining activities and roles, and actually going into action, that may have slowed down progress.
- ♦ Through the collaboration, some of the private sector attitude of quick and short-term benefits may have been influenced to think in the longer term to reap potential and sustainable benefits.

¹⁶ CARE Bangladesh.(2010). Demonstrating Company Contribution to Inclusive Value Chains: A study of strengthening the Dairy Value Chain in Bangladesh by Kevin McKague, December 2010.

However this is an attitude that needs more effort on part of project and should be reflected in the company planning and strategies.

- ♦ **PRAN-TetraPak Pilot:** CARE worked with PRAN, the third largest milk processor in Bangladesh and TetraPak, an international liquid food packaging company to determine the optimal feed inputs for dairy profitability and create an opportunity for PRAN to determine how it could create a financially sustainable backward linkages model to help small farmers' access essential inputs and services. TetraPak was engaged in technical capacity to coordinate the pilot.
- ♦ The pilot has been successful in defining the optimal mix of concentrate feeds and green grass for maximum milk production. PRAN benefited with increased supply of milk from the pilot's smallholders. Data from PRAN collected from the second phase of 400 pilot farmers (including all of their 1,708 cows) showed that delivery of milk increased from 1,511 liters/day in February 2010 to 2,159 liters/day in March, 2010—an improvement of 43%.
- ♦ Though PRAN has demonstrated progress in working with farmers through its dairy hubs, there remain questions about PRAN's interest in smallholder farmers and developing an input-services model at scale. PRAN's strategic direction is more toward to buying more milk from medium-sized and large-scale farmers versus smallholders. Challenges were PRAN's insufficient manpower, delivery of feed and vaccination for producers and the production cost per liter milk—difficult for smallholders owning LB cows to afford. The pilot demonstrated however that it was a good way to demonstrate new feeding and care practice by introducing subsidized feed in the short-term. Also collection points have been benefited by this model through improved quantity and quality of milk supply and are interested in stepping up their role as focal points for primary advice and information – much like the ISCs. To encourage smallholders to invest in adopting the improved feeding combination will require a tailored support package with more focused individual household mentoring and access to credit. Collection points may be developed into ISCs and depending on the profits earned may be developed into a credit source for milk producers supplying to the collection point. The optimal feed combination identified needs to be made affordable for the farmers to reduce production cost of milk. PRAN and CARE are going through discussions on how to scale-up and expand to 10,000 farmers.
- ♦ The **CDVF-Pilot** is already discussed above. CDVF came forward to CARE with its model promoting a financially sustainable way to offer support services to producers from the processor. It is already a farmer-focused organization. While BRAC Dairy is a social enterprise and claims to focus on smallholders, in actuality, the service from the chilling points toward producers is limited. If even 1600 liters per day are supplied to the chilling plants then the pilot would be self-sustaining and CARE-CDVF are targeting 1,000 smallholder farmers to deliver 2,000 liters per day for each of the Kalai and Punchbibi chilling centers after one year. At the moment CDVF-linked farmers are supplying more than 700 liters of milk in each of the chilling plants and the pilot has been extended to March 2011 to achieve the break-even point of 2000 liters for each chilling plant. BRAC has been holding discussions for over a year to introduce digital fat-testing devices with CARE and thus gain trust and support of the farmers. BRAC will need to look into its operations on field to ensure it is being represented by its staff as a social enterprise helping smallholders to improve dairy production.
- ♦ The **Rural Sales Program (RSP)**, another project of CARE Bangladesh, started in 2004 and has forged effective partnerships with private sector corporations. RSP has demonstrated how a private company can enter the rural markets and expand their business with the help of NGOs such as CARE- and at the same time engender socioeconomic progress among rural people. RSP's innovation is: *Based on the notion of mutualism, if private sector organizations could be facilitated such that they are able to expand market coverage into otherwise unchartered rural areas, it would not only multiply sales manifold, but at the same time provide the rural poor with a tremendous scope for generating income.*

- ♦ By 2010, RSP has grown to include 3,000 women sales agents, US\$1 million in sales, a network of 100 wholesale distribution hubs and a range of products (shoes, toiletries, cosmetics, soap, cooking oil, spices, seeds, yogurt and mobile phones) from various companies (Bata, Unilever, Square, Lalteer, Danone and Grameen Phone). RSP sales agents are known as “*Aparajitas*” a Bengali word meaning “women who never accept defeat.” RSP selects, organizes and trains *Aparajitas* in accounting, customer relations, route mapping, negotiations and other business skills. RSP negotiates wholesale prices and product commissions with companies. CARE also establishes business relationships with the entrepreneurs who manage the distribution hubs.
- ♦ CARE partnered with RSP to develop the rural market and make dairy resources, goods and services for producers, LHWs and collectors available at affordable prices. CARE used RSP’s existing distribution network to introduce quality dairy input such as feed. Through this intervention CARE aimed to provide poor and low-literate smallholder farmers with good customer service and quality inputs from a knowledgeable and informed business owner. The RSP-CARE collaboration piloted its approach through input shops clustered around four Rural Sales Program distribution hubs. It has now established 26 rural village-level veterinary shops which have been linked to ACI-Godrej, Quality Feeds, Square, Fatema Feeds, and Renata. These shops run by qualified LHWs, now hold a variety of cattle feed, concentrates, and a range of animal health drugs (mainly livestock and poultry). According to project records as of Aug 2010, sales grew by over 70 percent for feed and consumer outreach has increased by 65 percent in just six months and almost 50 percent of the clients are nontarget (neighboring) farmers.
- ♦ ACI has expressed interest to continue marketing their goods through RSP since it has increased their grassroots coverage and sales in areas not reached previously. As part of the understanding with RSP and CARE, ACI give their feed at company discount and also attends meetings with the distributors, shop owners and the end customers (producers) to introduce the product.
- ♦ Two of the hubs in this collaboration are existing RSP hubs and two are new hubs catering solely agricultural goods. Experience of sales from these hubs has been mixed. In the existing hub: the entrepreneur got swamped by adding new agro-products to his list of items which have fluctuating prices. Used to steady non-fluctuating prices of FMCGs, this was difficult and new experience for the entrepreneur. However because these were old hubs, there was good distribution but sales volume was low. The new hubs sell only SDVCP’s introduced agro products, the entrepreneurs were adapted to specific agro-market product and made sales in good volume but the distribution of the material was not as good, probably because the hub was just established and not popularized in the area.
- ♦ From RSP’s perspective of women empowerment, mobile women salespersons like RSP’s ‘*Aparajitas*’ were not developed since the dairy goods cannot be easily carried door to door like shoes and other Fast Moving Consumer Goods (FMCG) goods. Each hub has about seven shops and there are now 26 shops which are all LHW – all men and a women. These shops are like a one stop service in feed-medicine and vet service which is why maximum owners are men (there are more men LHW than women LHW).
- ♦ RSP gets a commission from most private companies for including them in the RSP venture/supply chain however none from the agro product companies, have been charged any commission from the feed companies. On the positive side the hubs are growing and earning profit with the wider range of goods.
- ♦ Taking lessons from the RSP-SDVCP collaboration, the project needs search ways to include women such as involving the village women can be involved in small trade of specific products, e.g., feed from their home, or small shops servicing their village and local community.
- ♦ RSP through engaging with SDVCP has been successful in reaching the bottom of the pyramid market, i.e., the grassroots population who live below a dollar a day. This market is reached through agricultural products since agricultural livelihoods are the mainstay of the poor village

people in Bangladesh. RSP looks to potential expansion in grassroots such as small shops. Based on the success of this collaboration, RSP will be expanding to 15 shops per hub. In the scale up, they expect to charge a commission from the companies using the agro channels. Also to cater to the needs of the target population, there will be focus in product development which includes packaging, quantity and quality to make it affordable and easy to use.

- ♦ **CARE- BRAC pilot:** Farmers are de-motivated to sell milk to chilling plants either directly or via the chilling plant collectors because they are not content receiving average prices as result of milk aggregation in groups. CARE has been in discussion with BRAC for over a year to introduce community based individual fat-content testing centers. The centers will operate under BRAC's chilling plants and from these centers will deliver dairy producers on a sustainable basis and with a check-off system. It is expected that by getting milk price individually tested and priced will encourage farmers to pursue increased milk production. The producer will be able to buy inputs such as available feed/fodder, AI and credit services from the same place they sell milk. Choice of BRAC Dairy and livestock development program in this pilot is because they have all different services providing options ranging from feed to AI and credit. However they are functioning independently of each other and not integrated. The digital fat testing machine has been bought and will be introduced at the collector level.
- ♦ SDVCP and BRAC dairy are in discussion over details of the collaboration. Centered around the establishment of the digital fat-testing system, SDVCP will be creating awareness within the community to produce quality milk and increase the production; assist BRAC Dairy in establishing the service delivery model; share and contribute resources with the processor on fat testing machine establishment, quality maintenance and record keeping, build capacity of chilling plant staff and work with BRAC to improve the transportation system in remote areas.
- ♦ BRAC will establish a buy-back of milk from producers; ensure AI, Vet, Vaccine, De-worming services to the producers on a commercial basis; monitor and maintain the collection and fat testing process. BRAC Dairy has expressed this collaboration as a positive step to improve milk supply and deliver support to the producers. Concerns here are around trust issues between BRAC chilling plant staff and the local dairy producers. Producers report that the chilling plant staff in (Joypurhat) are not fair in the payment of milk according to fat content, which is why they prefer to sell to the informal processor. BRAC will have to work hard to gain this trust through capacity building and monitoring of staff and demonstrating a transparent and accountable system of milk collection and payment to the producers.

Linkage of Input companies with project ISCs: (this has been discussed under question 13)

- ♦ The concern is to find a way to engage private sector companies enabling them to realize their target sales and monthly financial transactions and also expanding their businesses through grassroots outlets such as the ISCs. An approach such as RSP's may be required.
- ♦ In order to give incentive to input companies to support the ISCs and even expand this activity to similar other entrepreneurs, a guarantee fund needs to be in place. CARE may source other regional microcredit and finance research schemes such as that of PKSF (Bangladesh's apex funding organization of microcredit programs) and/or the DFID-funded innovation funds and char programs in place to set a guarantee fund based on the success of the ISCs. At the same time bring into this collaboration the input companies after making ISCs a successful business case to their top management. This may be tried out as a pilot within project period or considered for SDVCP extension.
- ♦ **NGO platform -Dairy Net:** CARE along with other international NGOs have collaborated to form a Working Group on dairy sector development in Bangladesh known as the Dairy Net. The other organizations include Practical Action, Inter Cooperation, Plan International and CDVF. All these NGOs use the value chain development approach for milk market development in Bangladesh. The Dairy Net working group was formed because it was realized that if interrelationship and synergies within networks, pool resources and the flow of goods and services needed for

integration are not developed, there will be little coordination within this sector. DAIRY net's operating principles are:

- *To promote a shared commitment to develop the dairy value chain in northern districts;*
 - *To contribute to an improved policy environment for the dairy sector, consistent with the members agenda;*
 - *To develop and implement projects/ interventions to inform and advance the dairy sector agenda;*
 - *To develop options for addressing human capacity and skills development of the members;*
 - *To share information on best practices and lessons learned with members/ partner organizations in the public and private sectors.*
- ◆ Since the formation of the Dairy Net in 2009, the member NGOs have charted their geographical areas and identified overlap. The advocacy issue identified jointly was the legalization of LHWs. This support service has been identified by all NGOs as an important input in dairy development that needed to be standardized and certified legally. The Dairy Net sponsored some events of the International Dairy Conference and since May 2010, there has been little progress due to human resource changes in the member organizations.

The Dairy Net has the potential to be a platform of policy while the Bangladesh Dairy Development Board (BDDDB) stands inactive. To make it operative, engaging the private sector and think-tank organizations as members and strengthen its operational structure to overcome setbacks in HR changes is required. Also, input companies and processors have shared that there is a lack of formal sharing on national dairy issues and dairy-specific technology which this platform could conduct across the sector.

Discussion and Recommendations

- ◆ The SDVCP pilots have successfully engaged private sector and research organizations and researched innovative approaches and through its experiences are scaling up the potential aspects.
- ◆ In addition, another approach may be tested around the struggle to ensure continued buy-in by the input companies to support ISC entrepreneurs at grassroots. This may be in establishment of a guarantee fund by social regional microcredit and finance research schemes such as that of PKSf and other innovation funds motivating the input companies and tapping their CSR at the same time to continue business transactions and support for the grassroots entrepreneurs.
- ◆ The Dairy Net has the potential to be a advocacy platform for the dairy sector and needs to be reactivated if it the project and other development partners want to realize policy changes in the dairy sector. It needs to be re-structured and private sector companies invited to join.

XII. GOVERNMENT - VALUE CHAIN INTERFACE

- ♦ The CARE project through its training and capacity building activities have effectively built the relationship between LHWs and the Department of Livestock Services at district and *upazila* level. The project perceiving the problems in AI service delivery have set-back AI training and linkage with DLS.
- ♦ DLS officers at district level are involved in the training of project LHWs based in the respective districts. These are 3-day trainings where the DLS conducts classes for the LHWs and discusses field-based problem and practical solutions in cattle diseases and management. Relationships are developed at these trainings between the LHW and government livestock staff and officials and as mentioned earlier LHWs have called on their expertise whenever they feel problems in the field.
- ♦ The DLS has benefited by LHWs in that they are serving areas and households that the DLS's limited manpower extension services cannot reach and are involved in government vaccination programs ensuring better and timely coverage.
- ♦ District and *upazila* DLS officers have commended CARE's approach. But it is not clear whether this has been discussed at central level and whether they have promoted CARE's work. However in discussions with them, they recommend scale-up of the activities, especially around farmers' and LHWs, and that the training given for LHW at district level should be longer than 3 days in order to have a better scope to discuss and coach using field-based cases. Also a major recommendation is that a monitoring, follow-up and support system needs to be in place for the LHW to ensure quality service delivery. This they suggest should be through DLS and that CARE may develop a collaboration to develop this system.
- ♦ **The Bangladesh Dairy Development Board (BDDDB):** In 2008 under the caretaker government, CARE was the only INGO to become a member of the Dairy Development Board (DDB) and its executive committee. BDDDB was formed by the former caretaker government to serve the overall development of the dairy sector. It consists of important line ministries such as Ministry of Fisheries and Livestock, Ministry of Local Government and Rural Development, Ministry of Commerce, as well as departments such as DLS and Bangladesh Livestock Research Institute. CARE had expected that by being a member of the BDDDB, it would be in a position to take its policy agenda forward. At the same time CARE became a member of the Dairy Development Company, formed by private sector milk processors for overall development of the dairy industry. However the BDDDB has remained stagnant since its formation. The current government is wary about forums formed during the caretaker government and also the private processors were in contradiction over Milk Vita's membership in this board. The BDDDB now stands at a standstill and CARE has not been able to make use of this platform to any purpose.
- ♦ With regards to **policy**, CARE commissioned a review of the policy environment for the Dairy Value Chain in Bangladesh in 2010. With reference to the review, major policy barriers include:
 - ***Tax and tariff policy:*** Analysis of the tax and tariff policies showed that there was no functional link between global price, urban retail price and producer price and that dairy market imperfection created by dairy importers and domestic processors made these policies ineffective to benefit producers and consumers. The provisional livestock policy document did not shed much light on this issue.
 - ***The role of Milk Vita*** – Milk Vita is the only processor that has an Vita's vertically integrated model so that farmers can have a stake in its governance and management and its outcome, the model remain inconsistent and does not deliver quality of service to the producers that it should.
 - ***The private sector processors*** have also not played any significant role in the long-term growth of the dairy sector because of its small size and lack of interest in providing incentives

and services to the producers to increase productivity and efficiency. The private sector processors use traditional milk traders as agents for milk collection rather than reaching producers directly or through creating farmer groups to overcome the problem of small volume of individual households.

- **The limitations of the government 's DLS extension services-** Veterinary health and extension services are essential inputs for productivity improvement especially when better technology and inputs better breeds and feeds are used. However, the manpower for veterinary services are highly inadequate for the mandated services – no more than 10% of the ruminants can be vaccinated and treated with existing infrastructure and professional, staff.
 - **Credit** is an essential input for removing capital and cash constraint of smallholder producers but access to credit for dairy is very limited. NGOs provide about 50% of rural credit for livestock activities but only a small share for dairy. Krishi Bank provides about 6-9% of its loan for livestock activities and half of that goes for dairy activities. With such poor financial and investment in the dairy sector, growth would normally be expected to be low.
 - The government could potentially also help **formal sector processors** expand their processing capacity so they could buy more milk from farmers and meet unmet demand for milk and milk products in urban markets.
- ♦ **Recognizing the training of LHWs** – in order to augment the limitations of the DLS extension service, the LHWs have demonstrated they can play a considerable role however, LHW training curriculum needs to be standardized, a monitoring system in place to ensure the quality of LHW service rendered.
 - ♦ **Milk to be officially measured by digital fat testing meters** –Introduction of digital fat testing meters will **potentially** motivate smallholder farmers to engage in milk production if they can tangibly feel the income and profit made through producing quality milk.
 - ♦ An important action the government should take is developing **an evidenced-based artificial insemination and animal genetics program** for the country to improve dairy productivity. This may be the single most beneficial thing the government could do to benefit smallholders in the long term.

The project proposal advocates for favorable policies and practices for the growth and development of the dairy sector. The project in its multi-faceted approach to improve the dairy sector has been set back in its advocacy component by external problems. Also its interaction with government has been more with the DLS at field level. This needs to scaled-up to the central level. Specific changes at policy level will make it feasible to effect growth and development in the first four project objectives. Considering the project experience, the lessons learned and challenges faced, it has to take a major step in advocacy activities and dialogue. For this it is recommended that a **position for Advocacy Manager/Coordinator** be created to take forward the advocacy target of the project.

XIII. IMPACT, RELEVANCE, EFFECTIVENESS, SUSTAINABILITY, AND SCALE-UP

The project's objectives are

1. Improving milk collection systems in rural and remote areas
2. Improving smallholder milk production
3. Improving access to inputs, markets, and services by mobilizing groups of poor producers and input service providers
4. Improving the breeding/ artificial insemination (AI) network
5. Improving the policy environment.

Summary of the progress toward these objectives:

1. Improving milk collection systems in rural and remote areas	For project producers and the collectors engaged in the milk collection, the collection system has improved in quality, quantity, the transport and handling of the milk.
2. Improving smallholder milk production	All project producers report increase in milk production and incomes; however, production costs remain high, with increase in feed costs and adoption of project recommended practices in dairy care.
3. Improving access to inputs, markets, and services by mobilizing groups of poor producers and input service providers	Access to inputs for producers and LHWs has significantly improved. Access to markets has also improved.
4. Improving the breeding/ artificial insemination (AI) network	This remains a challenging area and unmet.
5. Improving the policy environment	The Project has made little progress in this area—progress in this area will directly transfer progress to the above objectives and the dairy sector country-wide.

Strengths of the project

- The responsiveness of CARE's field staff toward the project participants is impressive and considerable in contributing to project progress. The commitment of the staff has been key to catalyzing improvements in relationships and linkages among the dairy value chain stakeholders.
- Most producers are happy with increased milk production which they attribute to CARE interventions. They also attribute to CARE the improved linkages and relationships with LHWs, AIs as well as with the collectors.
- All LHWs are very satisfied with the training and enhanced relationship with DLS and linkage with input companies.
- Collectors are mostly satisfied with the increased coverage because of CARE's training in sanitary handling of milk and linkage with producer groups. – Group-wise collection of milk is very convenient for them.
- Women's Empowerment: Most women beneficiaries report improved status at household and community level, through project interactions, linkage development and most of all because they are income- earners.
- Value chain relationships- Significantly improved at input level for LHWs and Producers.
- Information service centers- play a critical role in input service delivery and access to improved dairy practices and treatment at grassroots for the producers and LHWs.
- LHWs have demonstrated ability to compensate lack DLS extension services at grassroots.
- Health cards have proven to be a effective in tracking and diagnosing cow health and treatment for producers, LHW and vets.

Weaknesses

- Targeting: change in targeting is not explained.

- SDVCP has a blanket capacity building support: but weaker producer groups need special attention.
- High feed price limits profits from milk sales: Project producers struggle to make profit even though milk production and income has increased.
- Most collectors do not see the benefit of offering support to their suppliers – that it might further increase their business and coverage.
- Access to dairy-friendly institutional credit is limited, not updated and not pro-poor.
- Private Sector commitment beyond project: Input companies supplying the ISCs is uncertain.
- Processors commitment to support producers – still in process, requires continuous effort.
- Advocacy forum for dairy sector not active, setback in advocacy for pro-dairy policies.
- Government Policy: import of powder milk has to be rationalized through proper regulation if increased domestic milk production is the objective.

Opportunities

- Most producers value CARE's interventions.
- Group-based approach promises empowerment and confidence building of rural and poor women producers.
- LHWs can be tapped to become the first line of advice in dairy development and the informal extension service to complement DLS.
- Formal processors have expressed buy-in to the dairy development process through collaboration with CARE.
- RSP-SDVCP pilot very successful in engaging feed companies to supply and support at grassroots.
- Locally, community people are looking favorably at women's participation in the dairy markets.

Recommendations according to project objectives:

Objective 1: Improving milk collection systems in rural and remote areas

- ♦ Activity to sensitize and engage the collector further in dairy development is needed. In the remote areas they are often the first external contact poor dairy producers have access to. This might be through engaging them to discuss how they can improve their business: during producer group meetings or in a group of collectors and further business planning activities.

Objective 2: Improving smallholder milk production

- ♦ To ensure that all the producers groups are getting optimum benefit of project recommended feed practices, experience-sharing meetings of farmer leaders from within the same *upazila* (subdistrict) may be organized. Through sharing experiences and listening to successful and stronger farmer leaders or group members, the weaker farmer leaders will find it easier to comprehend their gaps from within the same resources and environment. This is not the same as exposure visits district to district. This is an activity that will require separate budgeting.
- ♦ Despite project's effort to increase availability and affordability of feed and fodder, producers still find it a limiting problem in increasing milk production. The project needs to step up plantation of grass cuttings and motivate producers to find ways and plots to grow green grass in the project areas that have a shortage of green grass. Availability of UMB can be increased by establishing this as a home industry in project communities and market the product beyond project area. Silage has been introduced by project to be made by the households individually. In areas where green grass and corn growth is abundant, the project can facilitate this too as another home-based industry which may be taken up by both producers and nonproducers as an IGA.
- ♦ For SDVCP to build capacities of the weak producer groups in order to ensure that the prescribed dairy practices are uniformly followed. This may be by:
 - Including more literate and socially responsible people in the group- persons who are motivators in the community and can push the group development forward in absence of SDVCP staff.
 - Developing alternate leaders in the weak groups- to complement the present farmer leaders and ensure continuity of leadership.
 - Increasing frequency of group meetings – for low-literate people, particularly women, the

more frequent conversations are held around group activities, group goal and dairy development will contribute to continuous motivation to remain involved.

- ♦ Field staff to spend more time in group meetings giving more intensive support to the group and individuals – required to implement the above three recommendations effectively.
- ♦ The project's strategies that have been developed to overcome barriers to women's development need to be updated time to time and cases well documented for future reference and action.
- ♦ Also including male family members and guardians in observing project activities and participating in discussions is a good way to sensitize men toward the women in their family.
- ♦ The project group approach to capacity building has proven to be useful to building confidence of poor rural women and should be continued.

Objective 3: Improving access to inputs, markets, and services by mobilizing groups of poor producers and input service providers

- ♦ Procurement of feed in bulk by groups should be encouraged as this will help to bring down the input costs per household.
- ♦ Project may conduct price negotiations and product development for commercial cattle feed with the input companies supplying to stock to project entrepreneurs. It may be realistic to approach feed companies already working through the Rural Sale Program Pilot with SDVCP. RSP is in the position to push for product development by input companies supplying feed and benefiting from the grassroots coverage.
- ♦ *Advocate to reducing tariffs on imported cattle feed ingredients- this would contribute to bringing the price of cattle feed down*
- ♦ In order to continue to meet the vaccine requirements in the project area and beyond project period, the project LHWs will have to take forward the experience of the vaccination campaigns and capitalize on the relationship with DLS. Meanwhile depending on the cost and effectiveness of vaccines produced by private pharmaceuticals, project LHWs should be introduced to procure these.
- ♦ Step up distribution of grass cuttings, which may be channeled through the processors.
- ♦ In order to give incentive to input companies to support the ISCs and even expand this activity to similar other entrepreneurs, a guarantee fund needs to be in place. CARE may source other regional microcredit and finance research schemes such as that of PKSf (Bangladesh's apex funding organization of microcredit programs) and/or the DFID-funded innovation funds and char programs in place to set a guarantee fund based on the success of the ISCs. At the same time bring into this collaboration the input companies after making ISCs a successful business case to their top management. This may be tried out as a pilot within project period.
- ♦ The Health Card system has proven useful and successful by both producers, LHWs and vets and this can be potentially upgraded as initially proposed in the project proposal to carry an identification or registration number as is used for the livestock registration systems in European countries. Ideally it should be a system in place with the government DLS, however since the government resources are limited, this may be piloted through a formal milk processing company. The system may thereby be scaled –up to be taken over by the government.
- ♦ For smallholders interested to expand dairy activities and buy CB cows, linkage to affordable and easy credit facilities is required – this a requirement for the overall dairy industry.
- ♦ In order to motivate producers to sell milk more to the chilling plants: trust needs to be established – which requires transparency and accountability of the chilling plant staff to their suppliers.
- ♦ Popularizing the milk bar in other areas will not only offer a channel for smallholder milk producers to sell milk but also motivate people to improve the milk-drinking habit.
- ♦ In order for pro-poor credit packages for poor dairy farmers interested to expand dairy activities

and buy, the project will need to include this in its advocacy actions with Bangladesh Bank and RAKUB to review the bank loans for dairy development and mechanisms for the poor to access these loans.

- ♦ The training curriculum and trainings developed and facilitated by the project have been well received by the project beneficiaries. However the general producer members, who are usually low literate need additional teaching material to help them recall discussion and lessons in dairy management and classes.
 - Develop and distribute to all producers an abridged version of the training sessions conducted by farmers leaders
 - In order that LHWs do not fall back into a chasm of lack of updated technical know-how, depending only on linkages with government vets, institutionalized training should be regularly available for them to avail of from the DLS. This may be:
 - LHW forums capacitated to organize own trainings for a fee engaging veterinarians from DLS, BAU and HDSTU.
 - Pursue with HDSTU and BAU for the establishment of a training wing which will offer services for a fee.
 - Advocate with DLS to include field-based refresher trainings at *upazila* and *zila* level for LHWs on livestock diseases and management in the annual budget.
 - LHW training curriculum needs to be standardized, a monitoring system in place to ensure the quality of LHW service rendered
- ♦ Project should map the services established according to geographical locations and existing services before either developing new job opportunities or scaling up.
- ♦ SDVCP can demonstrate and advocate the ISC-input company business case to top management of the input companies and to satisfy company requirements and support the ISC entrepreneurship research SDVCP can explore ways to establish a guarantee fund that will support both parties.
- ♦ Project is already pursuing pilots working with processors offering support for the producers- special effort will be required to ensure that transparency and accountability is instilled in chilling plant operations so that producers are encouraged to supply to the chilling plants. To improve responsiveness of collectors, further business-planning and match-making workshops and meetings with producers are required.
- ♦ The SDVCP pilots have successfully engaged private sector and research organizations and researched innovative approaches and through its experiences are scaling up the potential aspects.
- ♦ In addition, another approach may be tested around the struggle to ensure continued buy-in by the input companies to support ISC entrepreneurs at grassroots. This may be in establishment of a guarantee fund by social regional microcredit and finance research schemes such as that of PKSF and other innovation funds motivating the input companies and tapping their CSR at the same time to continue business transactions and support for the grassroots entrepreneurs.
- ♦ The government could potentially also help **formal sector processors** expand their processing capacity so they could buy more milk from farmers and meet unmet demand for milk and milk products in urban markets.
- ♦ Introduction of digital fat testing meters will **potentially** motivate smallholder farmers to engage in milk production if they can tangibly feel the income and profit made through producing quality milk.

Objective 4: Improving the breeding/ artificial insemination (AI) network

- ♦ AI services should be improved in quality and cost so that producers with LB can get superior progeny cows – this is a problem-ridden sector which requires a well-thought out approach.
- ♦ To conduct a full assessment of the AI services with respect to AI technician training, semen quality and genetics, problems in preserving, carrying and applying AI, in order to plan how the problems in this sector can be minimized and AI services improved.

- ♦ Advocate with the government should take is developing an **evidenced-based artificial insemination and animal genetics program** for the country to improve dairy productivity. This may be the single most beneficial thing the government could do to benefit smallholders in the long term.

Objective 5: Improving the policy environment.

The project has been set back in its advocacy component by external problems. Government interaction has been more with the DLS at field level which needs to be scaled-up to the central level. Specific changes at policy level will make it feasible to effect growth and development in the first four project objectives. – considering the project experience, the lessons learned and challenges faced, it has to take a major step in advocacy activities and dialogue. For this it is recommended that a **position for Advocacy Manager/Coordinator** be created to take forward the advocacy target of the project.

Looking at the previous objectives that the project is trying to achieve to strengthen the dairy value chain and deliver benefits particularly for the poor smallholders, there is an underlying policy problem in every aspect:

- ♦ **Easy and accessible Pro-poor Credit packages** tailored for dairy development- NGOs provide about 50% of rural credit for livestock activities but only a small share for dairy. Krishi Bank provides about 6-9% of its loan for livestock activities and half of that goes for dairy activities. With such poor financial and investment in the dairy sector, growth would normally be expected to be low.
- ♦ **Tax and tariff policy:** requires review, particularly around import of cattle feed and powder milk.
- ♦ **Officially certifying the training of LHWs** – in order to augment the limitations of the DLS extension service, the LHWs have demonstrated they can play a considerable role however, LHW training curriculum needs to be standardized, a monitoring system in place to ensure the quality of LHW service rendered.
- ♦ **Milk to be officially measured by digital fat testing meters** –Introduction of digital fat testing meters will **potentially** motivate smallholder farmers to engage in milk production if they can tangibly feel the income and profit made through producing quality milk.
- ♦ **Government should offer incentives to help formal sector processors** expand their processing capacity so they could buy more milk from farmers and meet unmet demand for milk and milk products in urban markets.
- ♦ A single most important action the government could take to benefit smallholders is in developing an **evidenced-based artificial insemination and animal genetics program** for the country to improve dairy productivity.

The Dairy Net has the potential to be the advocacy platform for the dairy sector and needs to be reactivated if the project and other development partners want to realize policy changes in the dairy sector. It needs to be re-structured with inclusion of private sector companies, think tank organizations, research institution and key persons with influence in the country's economy. The Consultant feels that of all the recommendations made, the ones for objective five require priority attention. For the Dairy sector development, the advocacy approach should be radical and innovative in the Bangladesh context and not the customary NGO approach looking at series of project documentations and meetings. The sector requires a strong campaign approach similar to that of policy campaigns in the more developed countries.

Conclusion: The project has made momentous strides in improving the access of producers and LHWs to inputs. Milk production has stepped up. Milk collection systems where project actors are engaged has improved in quality and quantity, financial transactions from producer to processor operates smoothly. The project has to set its focus on improving profits from milk sales, to effectively

improve the AI service and most importantly advocate for pro-dairy policies and practice. With a pro-dairy policy in place, the persistent weaknesses in the dairy chain can be overcome.

ANNEX 1: TERMS OF REFERENCE (ToR)

Strengthening the Dairy Value Chain Project Midterm evaluation (ToR) Timeline: July-September, 2010

Document Review

1. Review Baseline report findings a) HH quantitative Baseline b) Non-HH stakeholder quantitative Baseline and c) Qualitative Baseline.
2. Review SDVC's progress report (Donor & Internal monitoring)
3. Review SDVC's milestone and impact notes
4. Review other documentation for future planning

Idea sharing with IFPRI, DATA & CARE for designing the instruments, methodology & other assessment focus.

Identify relevant priority interest points point out the areas of interest for assessing the progress of SDVC.

PART 1: Key indicators to be measured against the baseline for the project clients

A) Producer & Group point of interest

- i) HH production (lit)
- ii) HH Sales (lit)
- iii) HH sales income (tk)
- iv) Sales mode (individually or aggregated way, sales point, sales terms & condition etc.)
- v) Feeding practice

Group Cohesion

- vii) Groups' achievement (Dealing to have better price or other terms & condition)
- viii) Source of Input purchase (Feed, medicine, Fodder, fodder cutting/seed etc.)
- ix) Formal vs Informal share of SDVC producers' sold milk
-
-
-
- x) Relationship with milk buyersinput sellers
- i) Major success due to SDVC
- xi) Challenges & expectation

B) Collector point of interest

- i) Daily Collection by seasonality
- ii) Daily average clients number (Producers selling milk to collector)
- iii) Daily income from milk sales by seasonality
- iv) Collector helping hand (subcollector)
- v) Sales volume distribution (Formal vs Informal)
- vi) Collection process (individually or aggregated way, sales point, purchase terms & condition etc.)
- vii) Collection area coverage (SDVC groups area)
- viii) Collection distance
- ix) Collection transport use
- x) Avg. fat% received by season
- xi) # of Spoilage instance
- xii) Relationship with milk buyers and sellers
- ii) Major success due to SDVC
- xiii) Challenges & expectation

C) LHW/AI point of interest

- iii) Number of client served per day
- iv) Avg. monthly income (tk) by seasonality
- v) Avg. monthly cost (tk) by seasonality
- vi) Income distribution (Treatment, medicine sale, Feed sale, AI, etc.)
- vii) Linkages with major stakeholders (DLS, Medicine Company, producer group, AI company, feed company, NGO etc.)

- viii) Equipment/instruments used for this profession
- ix) Extension of services through the period (Compare with Baseline to Till now)
- x) Acknowledgement (from group, DLS, community, other stakeholders)
- xi) Total capital (Cash, equipment etc.) at present
- xii) Relationship with buyers and sellers
- xiii) Major success due to SDVC
- xiv) Challenges & expectation

D) Feed/Medicine seller point of interest

- i) Monthly income from sales
- ii) Monthly cost
- iii) Total capital (Cash & others)
- iv) Source of business items (Organization, brand, size)
- v) Supply chain
- vi) Supply coverage (Specially SDVC groups)
- vii) Marketing strategy
- viii) Relationship with buyers and sellers
- xv) Major success due to SDVC
- ix) Challenges & expectation

E) Chilling plant/Informal processor

- i) Monthly total collection (seasonal variation)
- ii) Monthly average purchase price
- iii) Monthly total purchase value (tk)
- iv) Measurement system (weight, quality)
- v) Other services offered (Compare with Baseline)
- vi) Payment procedure (Date, mode etc.)
- vii) Relationship with buyers and sellers
- xvi) Major success due SDVC
- viii) Challenges & expectation

5. Finalize the tools and methodology and sample size
6. Conduct assessment as per methodology agreed
7. Draft Report preparation
8. Sharing the report findings with concerned stakeholders
9. Finalize the report & Share with all

PART 2: To look at in terms of value chain actors / value chain supporter's relationships. To covers the key dimensions that the project has worked over the years:

1. Producer - Collector- Processor Relations:

What level of progress has been achieved in the following areas where SDVC operates?

- Transparency of Transactions (Price List displayed at Chilling Plant? Milk prices known by Producers? Awareness on lactometer/Fat Testing Process. Producer / Collectors present at time of lactometer or fat testing? Record Keeping and weighing procedure? etc.

- Efficiency of Transactions (How long does the milk transaction take? How frequently are the farmers paid for their milk?)

- Do farmers have access to quality inputs and services? Do the processors conduct training for producers / collectors? Do the processors provide a milk collection service from the HH level?

- Are processors engaging with producers in an organized manner than they were before? Are they making upstream investments in milk production than before?

- Are the producers organized so that they could engage with formal and informal processors effectively?

Clues:

Key Interviews: BRAC (field management), PRAN (Field management), Informal processors, milk collectors linked to both formal and informal processors, Milk bars

2. Producer / Processor (Formal/Informal) - Research Organization Relations:

- Are Research organizations engaged with producers, collectors, livestock health workers, feed sellers, formal and informal processors etc.

- Are their research demand-driven and responding to sector needs?
- Is the private sector cost-sharing / funding any research?

Clues: BAU, University of York, RSP research, Driven Partnership

Interviews: Prof. Shamsuddin, Professor Fazlul, Kevin Mckague, Saif al Rashid, Asif Saleh

3. Informal Processor - Terminal Market Relations / Dynamics:

- Were informal processors distributing and delivering milk to rural areas in a more responsible way?
- Were processors ensuring good quality milk at affordable prices?
- Were processors doing any point-of-sale promotion / consumer awareness campaigns?
- Was there any consumer advocacy group in place?

Clues: Informal processors, Milk bars, Collectors

Interview: Informal processors, Milk bar owners etc.

4. Producer - Financial Service Provision and relations:

Were the groups engaged with any savings and credit mechanism?

Assess the current status of savings and credit activities of the target groups against the baseline.

Clues: Savings groups

Interview: Savings groups, Driven Partnership

5. Input / Service Providers:

- To what extent were input service providers (feed, fodder, drugs, equipment manufacturers, milk can makers, Tetrapak, etc) engaging with the milk sector as they are now?
- What about service providers (vets, AI, etc)?
- At what levels in the value chain?
- Were they reaching smallholder dairy farmers?
- Did they have partnerships with processors?
- What are the innovations project has tried in terms of input-service delivery

Clues: Rural Sales Program-SDVC collaboration, Hub operation, ACI-Feed, Renata Pharmaceuticals. Operation of information service centers, livestock Health Workers.

Interview: ACI-Feed, Quality feed, Renata pharmaceuticals, Saif al Rashid (RSP), s etc. managers and entrepreneurs

6. Intra-NGO relations:

- To what extent are development agencies working together and sharing information, approaches, ideas than they were during the baseline?
- What level of coordination is present among the development organizations?
- How effectively were they engaging with the value chain actors and other value chain supporters?

Clues: Dairy network members (Inter-cooperation, Plan international, Practical action, Community Dairy veterinary Foundation)

Key interviews: Dairy Net members, International Dairy conference

9. Government - Value Chain interface?

- To what extent was the Gov't supporting and prioritizing the dairy sector in its national development plans?
 - Was the Gov't effectively engaging with the sector and developing pro-dairy policies?
 - What about Gov't Extension? How effective / responsive was this to producer / stakeholder needs?
- Clues: Care being member of Bangladesh Dairy development Board (BDDB) and Bangladesh Dairy Development Executive Committee (BDDEC). Recent budgetary allocations etc.
- Interviews: Dr. Jabbar

10. Overall Value Chain Communication, Information Flow, Coordination, Alignment:

- What was it like across the value chain? Was it broken, uncoordinated and disjointed? Were value chain actors working at cross-purposes? How this has progresses so far.

Part three: Key evaluations regarding gender and training for Midterm evaluation

Gender part:

Progress during that period:

- Increased leadership skill among women farmer leader.
- Increased knowledge on farm management, problem solving ability and capability of long term planning etc.
- Increased awareness on milk production, vaccination, de-worming, feeding related issues, plantation of green grass, AI, ISC etc among women participant.
- Increased savings attitude to our women participant
- Agency level of women participant (especially women LHW, few collector and FL) (not 100% but near 50% or more than that) has increased because they can carry out her own analyses, make her own decisions, and take her own actions.
- Increased mobility in and out side the community

Clues: Women FL, LHW, Collector, feed seller

Interview: Ms. **Zinnatun Nessa**, FL, Varotoo, Sardarpara, Bdalgachi, Naogaon, **Aktari Begum, FL**, Syedpur team, Union- Beliachondi, **Ms. Majeda Begum, member**, W/O- Jangsher Ali, Village- Nobadori, Union: Sariakandi, **Shilpi Begum** FL, Majbari. Srikandi. **Ms. Bulbuli**, FL Ramnagor, Sarikandi, **Bithi Rani** LHW and **vet medicine shop keeper**, Kurigram, **Asma Begum**, LHW Mithapukur, **Ms. Rina**, LHW, Naogaon, **Ms. Chanchala Rani**, LHW, Kurigram, **Ms. Sarothi**, Collector, Panchbibi, **Ms. Fulira** feed seller, bogra etc

Training part:

Progress during that period:

- Increased facilitation skill among our FL to take learning session through flip chart
- Maintain de-worming schedule
- After getting savings and accounting training, they aware to keep record on savings and others.
- Increased grass plantations by the producer (before joining SDVC 0% were present for growing grass.)

Clues: producer, FL

Interview: Grass producers

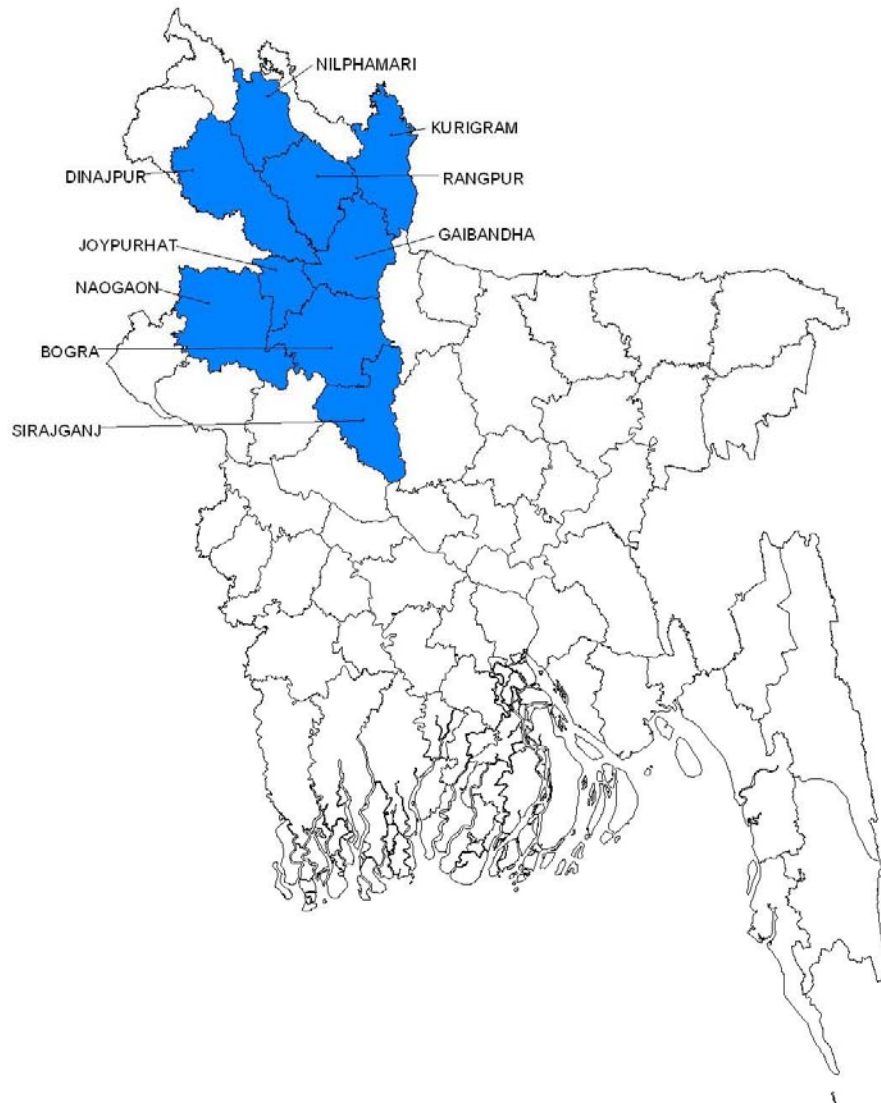
ANNEX 2: MTE SURVEY PLAN IN THE FIELD

Day	Date	district	Upazila	Project union	Control 1 Union	Control 2 Union
Wednesday	24Nov	Sirajgonj	Raigonj	Sonakhara		
Sunday	29Nov	Bogra	Shariakandi	Fulbari- and Nepaltoli		
Tuesday	1Dec	Joypurhat	Kalai	Ahmedabad		
Wednesday	2Dec	Joypurhat	Kalai		Jindapur	
Thursday	3Dec	Bogra	Shariakandi		Char gushaibari	
Friday	4Dec	Joypurhat	Joypurhat Sadar			Dogasi
Saturday	5Dec	Sirajgonj	Ullapara	Salongo	Durganagar	
Sunday	6Dec	Bogra	Dhupchachia			Borodhaap
Monday	7Dec	Rangpur	Rangpur Sadar,		Tampat	
Tuesday	8Dec		Rangpur Sadar & Mithapukur	Tampat & Kafrikhal		
Wednesday	9Dec		Gangachhora			Borabil
Thursday	10Dec	Nilphamari	Syedpur	Khata Modhupur	Soyeel	
Friday	11Dec	Nilphamari	Syedpur	Khata Modhupur		
Saturday	12Dec	Kurigram	Rajarhat			Nazimkhan
Sunday	13Dec	Kurigram	Rajarhat	Biddyanonda		
Monday	14Dec	Kurigram	Rajarhat	Ghorioldanga		

Notes: In the project areas, producer groups, LHWs, AIs, ISCs, Milk Bars, informal/formal Processors and Collectors were interviewed. In the control areas producers, LHWs/AIs and collectors were interviewed.

ANNEX 3: PROJECT AREAS

SDVC Project Area



MTE field survey areas



Annex 4: List of FGDs with Project Producer Groups

1. List of FGDs with Project Producer Groups

Name of group	District	Location: village, union, upazila	Year of establishment	FGD participants		
				Total #	F	M
Ashar Alo Group	Bogra	Majbari, Fulbari, Sariakandi	2008	18	18	0
Doel Group		Nobaduri, Sariakandi, Sariakandi	2009	10	10	0
Ashar Alo 2 Group		Buruj, Nepaltoli, Sariakandi	2010	10	10	0
Uttar Pulla Dairy Development Committee	Sirajgonj	North (uttar) Pulla, Sonakhara, Raigonj	2008	15	14	1
Lal CNG Group		Barogoza, Salongo, Ullapara	2009	10	10	0
Jaba Noapara Dairy Care Committee	Joypurhat	Ghoshalpur Nawpara, Ahmedabad, Kalai	2008	10	10	0
Borai Dairy Care Committee		Borai, Ahmedabad, Kalai	2009	7	5	2
Hossain Nagor Hindu Para Milk Production and Sales Group	Rangpur	Hossain Nagor Hindu Para, Tapat, Sadar	2008	12	10	2
Radhaballabpur Milk Production and Sales Group		Radhabalobpur, Kafrikhal, Mithapukur	2009	10	10	0
M Sadarpara Dudh Milk Production and Sales Group	Nilphamar i	M Sardarpara ,Khata Modhupur, Syedpur	2008	10	8	2
Paschim Kohar Dudh Milk Production and Sales Group		Paschim Kohar,Khata Modhupur, Syedpur	2009	10	3	7
Uttar Chatura Dudh Milk Production and Sales Group	Kurigram	Uttar Chatura, Biddyanonda, Rajarhat	2008	11	11	0
Khetabgha Milk Production and Sales Group		Khetabgha Sardarpara, Ghorialdanga, Rajarhat	2009	10	9	1
Angatipara Dudh Milk Production and Sales Group		Angatipara, Ghorialdanga, Rajarhat	2010	10	6	4

2. List of FGDs with Control producers

District	Location: village, union, <i>upazila</i>	FGD participants		
		Total #	F	M
Control 1				
Bogra	Gosaibari, Sariakandi, Sariakandi	6	4	2
Sirajgonj	Bagolpur, Durganagar, Ullapara	7	7	0
Joypurhat	Bamangaon, Jindapur, Kalai	6	6	0
Rangpur	Ajijulla Shahapara, Tapat, Rangpur Sadar	5	5	0
Nilphamari	Soyeel, Khata Modhupur, Syedpur	6	6	0
Kurigram	Borobilpara, Nazimkhan, Rajarhat	8	4	4
Control 2				
Bogra	Baodhap, Dhupchachia, Dhupchachia	5	4	1
Joypurhat	Ghasaria, Dogasi, Joypurhat	7	7	0
Rangpur	Thakurdah, Borabil, Gangachhora	4	4	0

3. Interviews with SDVC partners and dairy value chain supporters

Kevin Mckague	PhD Candidate, Schulich School of Business, York University
Dr Debasish Paul	Head of Sales & Marketing (Cattle Feed) ACI-Godrej Agrovat Private Limited
Dr Mosleh Uddin	Deputy General Manager BRAC Dairy and Food Project
Shaikh Saif Al Rashid	Program Manager, Private Sector Engagement, Economic Development Unit, CARE-Bangladesh
Prof Shamsuddin	Community-based Dairy Veterinary Foundation
Prof Fazlul Haque	Bangladesh Agriculture University
Dr Md. Rakibur Rahman	Chief Dairy, PRAN Dairy Ltd, PRAN-RFL Group
Sayef Nasir	Country Director, Tetra Pak
Dr Ajhar	Ex-District Livestock Officer, Kurigram, currently PSO, Pathology Section, Bangladesh Livestock Research Institute
Md. Shafiqul Islam	District Livestock Officer Sirajganj
Mr Asaduzzaman	Sr. Zonal Manager, Navana Pharmaceuticals Ltd
Mr Zakaria	RSM, Popular Pharmaceuticals Ltd.

ANNEX 5: DETAILS OF SDVCP PRODUCER GROUP CAPACITY

In summary, the groups interviewed by the survey look like this:

	Yr 1	Yr 2	Yr 3
Bogra	Strong	Strong	Good on way to being strong
Sirajgonj	Strong	Strong	
Joypurhat	Weak	Weak	
Rangpur	Good	Good	
Nilphamari	Strong	Strong	
Kurigram	Weak	Weak	
			Good: have potential to be stronger

Bogra and Sirajgoni

- ♦ Year 1 (established in 2008): These group members were proactive and smart in answering questions. Support from project staff is rarely needed because they have developed within this time into a mature group able to do their own negotiations. This was evident from the way they explained their accounts books and schemes. They explained in detail the production cost of milk. Negotiations with collector and LHW are conducted by the farmer leaders. They arrange vaccination service in group. Farmer leaders help obtain AI services for the general members.

The general group members are also aware of their role and farmer leaders are supportive of the group activities. Group members expressed satisfaction at being member of these groups. The savings component is strong in both district groups and there are nondairy members who participate in the savings activity. This indicates they meet regularly. There have been no dropouts so far.

Both district Year-1 groups have higher proportion of LB cows to CB cows. Bogra yr-1 group sells milk group-wise since they are located remote to the nearest chilling plant and market, while the Sirajgonj Year-1 group producers prefer to sell individually to the informal market where they get a satisfactory price.

- ♦ Year 2 (established in 2009): The farmer leaders are strong, explaining accounts and group activities. Group members in general understand the project's activities and have adopted the dairy management knowledge well. The general members too were able to participate fully in discussion on production cost, income and profit from milk sales.

Group activities mainly include discussion of dairy problems, getting vaccination support and maintaining a savings. Since a collection point for Grameen-Danone is nearby in Bogra Yr-2 group area, the producers sell their milk individually and directly and therefore have not developed group-wise production plan or marketing plan.

- ♦ Year3 (established in 2010): The Yr -3 Bogra group was not structured in answering questions, however were very aware in their response about dairy management. Questions were mostly answered by the leader and the general members require much more support in understanding their own role in the group and the purpose of the project interventions to help themselves in increasing milk production. This group was formed in August 2010, the farmer leaders and general members still need considerable support and capacity building from CARE. The commitment of the Yr-3 group is no less than that of Year-1 and 2 groups. The Year-3 group members seem to have benefited from the LHWs, and ISCs in place. Alongside building the capacity of the producers, they had ready access to information in place and to input services.
- ♦ Farmer leaders of Year 1 and Year 2 are able to function independently, but the farmer leaders of the Year-3 producer group in Bogra still require support to run meetings, conduct savings and build linkage with input providers.

Joypurhat

- ♦ Both Year-1 and 2 producer groups were weak in the FGDs. The farmer leaders could not answer questions clearly on dairy management. Year-1 group do not hold their meetings regularly. They only meet when Care field staff come to visit them. Year-1 group had no savings activity, lack of which results in less solidarity of group to discuss dairy activities. Year-2 did have a savings activity which required depositing BDT 5/- per month, but neither farmer leaders nor general members were able to say how much had been deposited individually or as a group so far. They have no plan for the savings activity.
- ♦ Yr-1 used to sell through a project-collector but they had conflict with him regarding price of milk paid and prefer to sell milk individually to the informal market which is nearby. Yr-2 sell through a collector but not happy with the milk price. As groups, the producers avail of vaccination collectively. They were divided in opinion as to whether it was the project LHW or the BRAC doctor that helped them with vet and vaccine services. In yr-1 group, there are a few members who despite having attended the group meetings remain inactive about developing the dairy.
- ♦ The main profession in Joypurhat are two crops of paddy and one of potato, dairy comes third to these and barely given attention in comparison to other district groups – this probably is one of the reason of the poor activity and solidarity of these groups.

Rangpur:

- ♦ Both yr-1 and yr-2 groups were weak compared to the Bogra and Siragonj groups. Yr- 1 group was a mixed group. They were slow in responding to the CARE questions and had to be probed repeatedly for answers. Majority of them had sold cows since they could not cope with the rearing cost of cattle, attributing this to the increased feed cost and low milk price. Most of the producers were low literate and more concerned about their land crops.
- ♦ Yr-2 group seemed better than Yr-1 in that the farmer leader was well-informed on dairy activities and took it upon herself to support the general group members. She used to be a teacher in the informal primary schools. The group has a savings component which has over BDT 22,000 in savings. Loans have been taken by four members amounting to BDT 8,000/-. The Farmer leader takes care of the accounts and all group activities. Yr- 2 FL bargains for higher milk price with milk collector while the yr-1 group members take price of whatever the collector gives them.
- ♦ The relationships developed with the LHW and ISCs are strong and with collectors likewise amicable. They have a reliable source of input support and satisfactory channel of milk sales. When the collector tried to give them low price for milk, they refused to sell to him until he raised his price comparable to market price. The collector agreed to meet their demands.

Nilphamari

- ♦ Of all the groups interviewed in this survey, both Nilphamari yr-1 and yr-2 groups were found to be sharp and knowledgeable about how dairy is to be managed, milk sold and input accessed. The groups have savings activities.
- ♦ The Year-2 group is comparatively much stronger consisting of mixed membership. The women and men responded equally to FGD questions and the woman farmer leader was as active as her male counterparts. The farmer leaders play a strong role in group activities and the savings component are being built with the common vision to buy cross breed cows. As a group they not only take vaccination collectively, but also buy cattle feed collectively. This has not been observed in the other groups. Group meetings are held regularly. Such active participation of a group is impressive where most of the group members are very poor and rely on multiple sources of income. It might be because the farmer leaders are mature in age and experience in comparison to the leaders of other group.

- ♦ The yr 1 group in Nilphamari was also almost as good as yr-2. The group members are trying very hard to make a profit out of dairy. Total savings in group is Tk. 8884/= regularly saving BDT 10 every two weeks. Among the farmer leaders are two students and they read books on dairy management even outside what the SDVCP field staff instruct. They discuss what they learn regularly with the general member, majority of whom are low-literate women. Both Nilphamari producer groups have opened bank accounts to save the money in order to invest in buying a cross-breed.

Kurigram:

- ♦ Three producer groups were interviewed, one each from Years 1, 2, and 3 of the project. Year 3 was much stronger than both Years 2 and 1 and Year 2 stronger than Year 1. Year 1 producers are mostly illiterate including the farmer leaders which might explain comparatively poor response. Year-1 and 2 producers by being attached with project and field staff for the last 2-3 years were able to state the project's system of dairy management but where group cohesion is concerned, they are weak and do not wholly utilize the project-facilitated linkages with project LHWs for vet care and advice. Savings are very small, Tk. 10/month. Year 2 is only slightly better dominated by a farmer leader who is an influential person in the area. To access information they still call on CARE staff. One group actually stated that they will not continue group activities after project activities are resolved.
- ♦ Comparatively the Year-3 group is more active and both leaders and general members participated in the discussion. They report strong relationship with the project LHW and project's recommended feed and medicine shop. They are already able to source information from these people without the support of CARE field staff and are enthusiastic about improving milk production. Here the group leaders include educated persons from the community, i.e., a teacher and a local LHW. This is a positive reflection of the project's strategy to include educated and better-off producers in the producer group.
- ♦ The producer groups in Rajarhat *upazila* are subject to annual flooding causing them losses every year and thus the smallholders are mostly very poor, landless agriculture labor –based families. The poor producers cannot afford the feed required to care for cattle as recommended by project and thus yields have not increased as expected. The producers of Years 1 and 2 have sold off 1-2 of their cows as they could not afford the feed expenses. Year-3 group, established last year are located in the same context and it seems that the leadership has helped the group to progress better than the other two groups.

ANNEX 6: SURVEY CHECKLISTS

PRODUCER GROUP FGD CHECKLIST

November 2010

Prior to starting FGD: welcome the participants, introduce self and where you are from, explain the objective of the meeting, take introduction from the FGD participants.

DATE:

VILLAGE:

UNION:

UPAZILA:

DISTRICT:

GROUP NAME:

NOTE FOR FACILITATOR: Any problems in arranging the FGD: what and why? How was it tackled?

PROFILE OF FGD

1. Total number and gender of participants, do they belong to the same group:
2. Major professions of participants and participant HH other than milk production

A. SDVC PROJECT APPROACH (*this is to check whether the project participants understand the project and its objective and link it to their own purpose*)

- 1) Do you understand what CARE's project is about?
Do you understand how and what CARE is trying to do? Can you tell us?
- 2) Do you agree with their way of work to help you in milk production and marketing
- 3) How frequently do CARE staff come to visit you? Do they listen to your problems?
- 4) If you have any problems with project activities, how do you tell CARE? Is there any formal system? how do they respond to your concerns and complaints? Are you satisfied with their support

B. GROUP DYNAMICS (PART 1):

a) Group Formation and Structure

- 1) Age of the group: when was this group formed? Is it new under CARE or an older group?
- 2) How many group members did you start with?
- 3) How many group members do you now have?
- 4) How was this group formed? How were group members selected? Who were involved in the selection of the group members? You or CARE ie who led and finalized the selection?
- 5) Are there any members in your group that did not fit CARE's selection criteria?
- 6) Were there any disagreements among community people about selection of project participants? How were these tackled?
- 7) Have there been any drop outs, if yes, why?
- 8) Does the group have a management committee? If yes, who are the members, how are they selected? Who has driven the selection? Was it controlled by CARE or was it decided through community involvement and decision?
- 9) What is the **organizational structure** of the group?
 - i. How are the leaders selected?
 - ii. Who are the leaders?
 - iii. What kind of participation do the general members have in the producer group meetings?
(passive/active)
- 10) Group management members: what are your roles and responsibilities?
- 11) Group general members: what are your roles and responsibilities?
- 12) What are the main group activities?
- 13) How frequently does the group meet?
- 14) What are the main **discussion points** of your group meetings?
- 15) What is the **decision making process** in your groups?
 - i. Do you vote for decisions?
 - ii. Do you require external assistance ie CARE staff support in conducting group meetings or are you able to run the group meetings independently?

C. PRODUCTIVITY AND INCOME:

a) Dairy structure and production

- 1) Current number of milking cows in the group (within the month of this FGD) LB vs CB
- 2) Has the milk production of your cows increased since you became group members of the CARE project?
If **YES**, by how much (*eg less than 1 litre, 1, 2 or 3 litre or more per cow per day*)?
Ask individually and then take a range
- 3) Why do you think milk production has increased? What factors (*feed, medicine, care, management etc*) contributed to the increase? (*List the factors and then ask group to prioritize*)
How do you think the factors you mention helped increase the milk production?
- 4) Do you think milk production could have been higher/better? If yes, why did it not happen? What factors prevented from getting a better increase in milk production?

- 5) If the milk production has **NOT** increased, why do you think are the factors responsible for not increasing milk production?
- 6) How much is your current milk production (litres per day or per month) as a group?
How much is your current milk production (litres per day or per month) as individuals? (*range*)

Let's discuss the dairy management a little bit more in detail

b) Dairy management, Feed and Care

- 7) What aspects of the CARE dairy management practices in feeding and care have the producers adopted? Why did you choose to specifically adopt these practices?
- 8) Is there any practice that CARE introduced that you have not adopted? Why not?
- 9) What feed and fodder do you give the cows now?
What feed and fodder did the producers give before participating in CARE?
- 10) How did you **care** for your cows now?
How did you **care** for them before participating in CARE ?
What **medicine** do you give your cows? Is it the same as before joining CARE?

c) Production Expenses (take current and compare to before Project)

- 11) What are the main expenses in your dairies?
How much is spent **per cow per month or per day for feed?** (*range: whatever the response, calculate per month*)
How much was this before the project? Is it less or more?
How much is spent **per cow per month or per year for medicine?** (*range: whatever the response, calculate per month; these might be for anti-helminthics, vaccines, vet services for calf delivery*) *Consideration will be given to mainly regular preventive medication, calf delivery and AI services and not the cost incurred for problems like mastitis, anthrax etc*
How much was this before the project? Is it less or more?
Are there any **other expenses** in taking care of a cow? (*range: this might be electricity, light bulbs, coil, labour, milk collection...*)
- 12) **Production Cost of milk: Income from milk sales per month per cow divide by expenses per month per cow:** (*the producers should be able to calculate this with a little help; if not please calculate at end of FGD session and ask a couple of more literate producers to check with you*)
So, has the **cost of producing milk per liter** increased or decreased since CARE participation? Why?

d) Milk price and income

- 13) What **price** are you now getting for your milk?
Is the milk price you get now more or less than before CARE participation?
- 14) If milk price is **higher**:
Then what factors contributed to the increase in price?
How did the milk price get increased? (*explain the process*)?
Do you think you could have gotten a higher price? What factors prevent from getting an even higher/better price?
So how much is your current income from milk sales per day or per month? (*range*)
- 15) If milk price is **same or lower**:
Why are you not getting a higher milk price? What factors prevent from getting a higher price? (*one of the factors may be increase in milk supply due to CARE interventions*)
- 16) Has the **total income** from selling milk increased since CARE participation? If **YES**, what factors contributed to the increase?
- 17) If the total income from selling milk has **NOT** increased, what are the reasons?

e) Use of income from milk sales: consumption of milk

- 18) With improved sales in milk production, what do you do with the extra income? *Investment, assets, health, food, loan repayment, education, watsan, etc*
- 19) Now that milk production has improved in quality and quantity, how much of the milk is consumed at household? Is this more or less than prior to pilot? Why?

f) Recommendations from the participants

- 20) In your opinion, what more can CARE do to help increase milk production, get better price, and thereby increase your income from milk production?

D. GROUP DYNAMICS (PART 2):

- 1) What is the status of the group **savings** and individual savings? Do you have a bank account, where and how much?
- 2) Do you have any **loans**?
a) How many loans so far, how many loans have been returned in full, how many are pending?
b) For what purpose were these loans taken? (investment in business, home repairs, children's education etc)
- 3) Who keeps record of the savings and credit books? Who is/are responsible for **record-keeping** ?
- 4) How are group activities **monitored**? *ie balancing the savings and credit against bank statements; follow up on loan payment?*

- 5) What are the **benefits** of being part of a group? Why not operate individually?

E. ACCESS TO INPUT SERVICES AND RESOURCES

a) Access to service

- 1) Since project started, is it easier to access the services for animal health (*Vaccination, LHW, vets and AI*) or is it the same? From where do you get these services (local LHW, processors)?
- 2) Do you have to **negotiate** for these services? Who does the negotiation (*is it from the group*)? Or do you have a long-term agreement /relationship with the service providers of AI and vet med (vets and LHWs) or any processor?
- 3) Does the **processor** where you supply/sell milk give any input service support? How is this service delivered by the processor? What is the payment system? Is this convenient for you? (probe for efficiency and sustainability off this linkage?)
- 4) Are they locally available?
- 5) If **access has improved**, how has it improved? What are the factors that make it easier to access these services?
- 6) Do you get the service as soon as you need it, is it sufficiently available? How has it been made more available in comparison to before the project- what has the project done to enable this?
- 7) Is it timely available? (on a scale of 1 to 5 (bad to good) rate how quickly you get the service)
- 8) Are you happy with the quality of service? (on a scale of 1 to 5 (bad to good) rate the quality of service)
- 9) Are you able to afford the price of the service? on a scale of 1 to 5 (bad to good) rate the price of service)
- 10) Could these services be made easier to access and made available? How?
- 11) If **the access to the service has not improved**, why not? What needs to be done to improve it?

b) Purchase of Feed and Medicine

- 12) Where do you buy your feed and medicine? (*mobile vendors, local retailers etc*)
- 13) How is it decided from where to purchase the input (*from personal relationship or advice of the CARE staff/LHW/AI*)?
- 14) How are these procured by the group? Individually or in bulk? Where is the purchase made? Are the inputs sufficiently available?
- 15) Who makes the negotiation? Is there any agreement between the group and the retailer?
- 16) Does the feed/medicine seller give any advice on dairy management, care, feed, medicine? Is this advice important for you? Or do you prefer to advice of the LHW/AI?
- 17) Are you satisfied with the quality of feed and medicine? How do you determine the quality is good or bad?

c) Health (and the health card)

- 18) What are the health problems that you face in your cows? List according to priority?
- 19) How did you care for cow prior to pilot? (cleaning, vaccination, feeding, treatment, shelter)
- 20) What is the animal management and care you practice now? Where did you learn/adopt the current practice? cleaning, vaccination, feeding, treatment, shelter
- 21) Who gives the vaccination? What is the arrangement? (*Prior to project and now*)
Are you satisfied with the current arrangement? If yes, what aspect do you think is most satisfactory?
If no, why not and what needs to be done to improve this?
- 22) Do you use Artificial Insemination service? What is the arrangement? (*Prior to project and now*)
Are you satisfied with the current arrangement? If yes, what aspect do you think is most satisfactory?
If no, why not and what needs to be done to improve this?
- 23) Do you have health cards for your cows? What is the use of the health card? Is it useful?
- 24) If **yes**, how has having a health card been useful for you? Do they need support in updating the health card? If yes, who helps you?
- 25) Has the health of the cows improved after participating in this project? If yes, what are the factors contributing to the improvement of the health?
- 26) If health of cow has not improved or is this the same as before, why is this so and what needs to be done?

d) Access to Finance

- 27) What are your main sources of finance and credit? (*their own savings/MFIs/NGOs/Banks*)
- 28) Which source of credit is helpful/convenient and why? (*is it b/c of less paperwork, interest rates, payment system, distance*)

F. ACCESS TO MARKETS

a) Milk collection transport and supply

1. To whom do you supply the milk produced? Do you give the milk individually or as a group?
2. How is it collected? Who collects it and how is it transported?
3. What is the payment arrangement for the milk? When do you get paid? Do processors conduct business in milk transactions with producers in an organized manner, i.e., group-based?
4. Are you satisfied with the mode and frequency of payment made to them for their milk sales by the collectors, chilling plants and processors? If yes, what aspect contributes to their satisfaction? If not, why not?

b) Milk price

1. With whom do you negotiate milk price and how do you negotiate the price? Are lactometers/fat-testing apparatus used in determining quality and price of milk?
2. Is there a chart for milk price based on milk fat that is used for price determination? Is this publicly available for you?

3. Is it convenient to sell the milk aggregated or do you think it would be better to sell individually? Which one do you feel is more beneficial for them and why?

G. ACCESS TO INFORMATION

1. Where do you get your information about milk price and supply?
2. To whom or where do you go for updated information regarding milk price and sales and also for technical advice?
3. Is there an information center in this area? If yes, how effective is the information centers for you as source of information?
4. What kind of information is available at the information center? Do you also get technical advice here?
5. How else would you prefer to get information about milk sales and technical advice?
6. How effective has CARE been in disseminating information and awareness raising about milk production and benefits of milk in nutrition? How was this information broadcast (posters, leaflets, meetings, discussions etc: Which mode/media of information dissemination is effective for this area?
7. Do you as producer group have regular communication with collector, LHWs and input service provider at the information service center?
8. Overall do you have sufficient access to information on technologies, inputs, and services to address these constraints that you face in milk production and marketing?
9. What more needs to be done to increase your access to all these information?

H. DAIRY MANAGEMENT AND LABOR:

- 1) Who takes care of the cows? (male, female)
- 2) Amount of labor spent for the dairy (Hours per day)
- 3) Is dairy management and care the main duty of this person/s? How do they manage time now compared to previously in dairy management vs other duties?
- 4) Any salaried laborer? (male/female)? What is the cost? Is this a new/recent addition?

I. GENDER

- 1) What is the role of women in dairy management in your HH?
- 2) Do you have any preference as to whether man or woman should be engaged in dairy management? What is the division of labor: who does what?
- 3) Do the women farmers feel that their status has changed in their household since participating in this project? If yes, is the change better or worse than before? Why?
- 4) What is their current status (respect and importance) in the community? If changed, then better or worse? Why?
- 5) Has your (woman *producer*) income increased? If it has, who spends the money?
- 6) Do you feel that you have a better role in decision making in the home? In their community? How do you think this happened? Can you give examples where you led the decision-making?
- 7) Has your confidence, movement in the market place, bargaining and marketing skills improved? If yes, what factors contributed to the change?
- 8) What are the main obstacles faced by with respect to your involvement in the dairy business and in your homes?

J. TRAINING/CAPACITY BUILDING

1. What training/advice/support have received from this project? Mention the name of the events/support, from whom and when?
2. Was the training/support given appropriate, relevant and sufficient? If yes, what were these and if no, why not?
3. Do you feel the need for any (further) training/support? On what topic/issue?

K. DISASTER MANAGEMENT AND MITIGATION:

1. What kind of disasters do you have to face in this area?
2. How do these disasters affect your dairy ?
3. What mitigation/coping mechanisms do you use to reduce effect of disaster on your dairy and your livelihoods?

FINALLY:

1. What has been the most important activity/ element/lesson of this project for you?
2. Have you shared this knowledge among your farmer neighbors or other family members who are not part of this project?
3. Do you have anything else you would like to say or any suggestions ?

PROJECT LHW/AI INDIVIDUAL INTERVIEW QUESTIONNAIRE

November 2010

Prior to starting interview: welcome the participant, introduce self and where you are from, explain the objective of the meeting, take introduction from the participant.

NOTE: text in italics are tips for the facilitator

Start interview

DATE:

NAME/S OF LHW/AI:

Gender:

VILLAGE: UNION:

UPAZILA:

DISTRICT:

NOTE FOR Interviewer: Any problems in arranging the interview: what and why? How was it tackled?

PROFILE OF interview/discussion

- ♦ Total number and gender of participants:
- ♦ Major professions of HH other than LHW and/Or AI

A. SDVC PROJECT APPROACH (*this is to check whether the project participants understand the project and its objective and link it to their own purpose*)

1. Do you understand what CARE's project is about?
Do you understand how and what CARE is trying to do? Can you tell us?
2. Do you agree with their way of work to help you as a LHW or AI
3. How frequently do CARE staff come to visit you? Do they listen to your problems?
4. If you have any problems with project activities, how do you tell CARE? Is there any formal system? how do they respond to your concerns and complaints? Are you satisfied with their support

B. INCOME:

g) Number of Clients and area coverage

1. For how long have you been a LHW and /or AI?
2. How many clients do you serve per day?
3. How many clients (producers) do you have currently? How many of these are CARE project producers?
4. How many did you have before participating in the project? Has this increased or is the same?
5. If the number of clients have increased, what contributed to the increase in number of clients?
6. How many cows are you covering now? is this more or same per HH than before?
7. What areas do you cover? Are the areas widespread?

h) Service

8. What kinds of service do you give? What are your rates? How do you get paid? Does your service include additional advice for the producers? What are the problems that you face in delivery of your service? How can these be overcome?

i) Income

9. What is income per month now? Is this subject to seasonal variations? How does it differ in the different seasons? Why?
10. Has your income increased since participating in CARE activities? If yes, what are the factors contributing to this and what has CARE's role been here?
11. What is your net profit per month? (*may give a range*)
12. If income has not increased, why not? What needs to be done?
13. What are your costs in delivery of your service? How much per day or per month? Have costs increased since project participation? If yes, what are the factors contributing to this and what has CARE's role been here?
14. What is most important to help you increase your income?

Providing more animal health treatments, Selling more feed, Selling more veterinary medicines, Better relationship with veterinarians, Better relationship with farmers, Greater access to knowledge about animal health services, Greater access to credit, Opportunities for other income generating activities, Better relationships with formal processors (BRAC, Milk Vita, PRAN, etc.), Other?

15. In your opinion, what more can CARE do to help improve the animal health and thereby improve your service and increase your income?

C. ACCESS TO INPUT RESOURCES

1. Since project started, is it easier to access the resources required for the LHW/AI service? From where do you get these resources? Are the resources you require locally available? (equipment, medicine etc)
2. Does the processor whose producers you serve give any resource support? How is this resource transacted with the buyer? What is the payment system? Is this convenient for you?
3. Do you get the service as soon as you need it, is it sufficiently available? How has it been made more available in comparison to before the project- what has the project done to enable this?
4. What are your main sources of finance and credit? (*MFIs/NGOs/Banks*)
5. Which source of credit is helpful/convenient and why? (*is it b/c of less paperwork, interest rates, payment system, distance*)

D. MARKET INTEGRATION

1. Do have any formal or informal agreement with the producers and processors? If yes, how were these agreements facilitated? Have these agreements helped you in your LHW/AI business?
2. What are the main obstacles in of expanding your services? How can these be overcome?

E. INFORMATION AND RELATIONSHIPS

1. Where do you get your information about dairy-related health issues? (veterinarians)
2. To whom or where do you go for updated information regarding livestock health, equipment and medicine?
3. Is there an information center in this area? If yes, how effective are the information centers for you as source of information and technical advice?

4. How else would you prefer to get information about dairy related health issues and technical advice? (*training and support from processor-based /govt veterinarians*)
5. How effective has CARE been in disseminating information and awareness raising about improving and maintaining animal health in milk production? How was this information broadcast (posters, leaflets, meetings, discussions etc)? Which mode/media of information dissemination is effective for this area? Has this contributed to increasing demand for your services?
6. Do you have regular communication with other value chain actors ie producers, collectors and buyers at the information service centers?
7. with which people do you require strong linkages as a LHW/AI
8. Overall do you have sufficient access to information on technologies, inputs, and services to address the constraints that you face in animal health service?
9. What more needs to be done to increase your access to all these information?

Relationship

10. How is your relationship with milk buyers and producers? Do you have formal agreements with these people for your service? What are the terms and conditions?
11. How has your relationship with the following people changed because of the SDVC project?
12. With which people has relationships and linkages improved and why? What was CARE's role in bringing this about?

SDVC producer households, Non-SDVC producer households; Other members of the community, Chilling centers, Informal market milk buyer, processing companies, Veterinarians, Dairy processors (Milk Vita, BRAC, PRAN, etc.), DLS, Medicine companies, AI companies

13. With which people has there been no change in relationship or has gotten worse and why? How could this be improved?
14. Do you feel that you have goodwill and trust in their transactions? Have project activities contributed to developing linkage and networks among the VC actors? If yes, among which actors? What activities? How were the linkages and networks developed? If not, why not

F. GENDER

1. How is the role of women as LHW seen in your HH?
2. Do you have any preference as to whether man or woman should be engaged LHW? Why?
3. Do the women LHW feel that their status has changed in their household since participating in this project? If yes, is the change better or worse than before? Why?
4. What is their current status (respect and importance) in the community? If changed, then better or worse? Why?
5. Has your (woman LHW) income increased? If it has, who spends the money? Who takes lead to decide how your income should be spent?
6. Do you feel that you have a better role in decision making in the home? In their community? How do you think this happened? Can you give examples where you led the decision-making?
7. Has your confidence, movement in the market place, bargaining and marketing skills improved? If yes, what factors contributed to the change?
8. What are the main obstacles faced by with respect to your involvement in the dairy business and in your homes?

G. TRAINING/CAPACITY BUILDING

4. What training/advice/support have received from this project? Mention the name of the events/support, from whom and when?
5. Was the training/support given appropriate, relevant and sufficient? If yes, what were these and if no, why not?
6. Do you feel the need for any (further) training/support? On what topic/issue?
7. Has the CARE- introduced match-making meetings between actors? If yes, between which actors? Have the match-making meetings between actors been effective? If yes, in what way?

H. IMPACT and RELEVANCE, EFFECTIVENESS, SUSTAINABILITY AND SCALE-UP

4. Do you think that this project has been able to help you effectively increase your income and your position?
5. What do you feel are major problems you faced when participating in the project?
6. How have these problems been overcome?
7. Have there been any negative impacts or effects because of the project?
8. Which project activity ensures long-term benefit for you?
9. Which project activities should be expanded for milk collectors ? why?
10. What are the major successes due to SDVC?

FINALLY:

11. What has been the most important activity/ element/lesson of this project for you?
12. Have you shared this knowledge among your farmer neighbors or other family members who are not part of this project?
13. Do you have anything else you would like to say or any suggestions ?
14. What are your expectations for your business in the future?

MEDICINE RETAILERS

November, 2010

DATE:

VILLAGE:

UNION:

UPAZILA:

DISTRICT:

Name of respondent and business:

NOTE FOR FACILITATOR: Any problems in arranging the FGD: what and why? How was it tackled?

A. SDVC PROJECT APPROACH (*this is to check whether the project participants understand the project and its objective and link it to their own purpose*)

1. Do you understand what CARE's project is about?
Do you understand how and what CARE is trying to do? Can you tell us?
2. Do you agree with their way of work to help in improving the milk production and associated inputs businesses?
3. How frequently do CARE staff come to visit you? Do they listen to your problems?
4. If you have any problems with project activities, how do you tell CARE? Is there any formal system? how do they respond to your concerns and complaints? Are you satisfied with their support?

B. INCOME:

1. What is your monthly income from sales? Has this increased since the SDVC project? Has the number of clients increased?
If yes, why, and what are the contributing factors to increase in your sales and income?
2. What is your monthly cost for your medicine business? What is your profit per month? Can you tell us your total capital (Cash & others)
3. What obstacles stand in the way of increasing your income?
4. How important are the following to help you increase your income?
Selling more veterinary medicines, Better relationship with drug company suppliers, Better relationship with farmers, Greater access to knowledge about animal nutrition and health, Greater access to credit, Opportunities for other income generating activities, Better relationships with formal processors (BRAC, Milk Vita, PRAN, etc.), Other?

C. Inputs:

1. What medicines do you sell? Which ones do you sell most? ie brands, company?
2. How do you get the medicine supply? Do you have long term agreements with your suppliers? If there is an agreement, was this developed as a result of SDVC project activities?

D. Market

1. Who are your majority customers? Project or non-project? Why?
2. Do have agreements with your buyers (eg SDVC producers), how were these agreements arranged? Have these been of benefit to your business? How?
3. Do have any business plan on how to increase your customer coverage? Has SDVC been of any assistance in developing the business plan/marketing strategies?

E. Relationship

1. How is your relationship with milk producers and your suppliers? Is it a very formal business relationship or has it graduated to trust and goodwill? How has your relationship with the following people changed because of the SDVC project?
2. With which people have relationships and linkages improved because of CARE interventions? Why and how?
SDVC producer households, Non-SDVC producer households; Other members of the community, Veterinarians, Dairy processors (Milk Vita, BRAC, PRAN, etc.), DLS, Medicine companies, AI companies
3. With which people has there been no change in relationship or has gotten worse and why? How could this be improved?
4. With which stakeholders would it be beneficial to improve your business, why and how can this be done?

F. GENDER

1. How is the role of women as medicine seller seen in your HH and community?
2. Do you have any preference as to whether man or woman should be engaged in vet medicine sales? Why?
3. Do the women medicine sellers/retailers feel that their status has changed in their household since participating in this project? If yes, is the change better or worse than before? Why?
4. What is their current status (respect and importance) in the community? If changed, then better or worse? Why?
5. Has your (woman *medicine seller*) income increased? If it has, who spends the money? Who takes lead to decide how your income should be spent?
6. Do you feel that you have a better role in decision making in the home? In their community? How do you think this happened? Can you give examples where you led the decision-making?
7. Has your confidence, movement in the market place, bargaining and marketing skills improved? If yes, what factors contributed to the change?
8. What are the main obstacles faced by with respect to your involvement in the vet medicine business and in your homes?

G. TRAINING/CAPACITY BUILDING

1. Have you received any training/advice/support on medicine sales? From whom? Mention the name of the events/support, from whom and when? Did these help you? Was the training/support given appropriate, relevant and sufficient? If yes, what were these and if no, why not?
2. Do you feel the need for any (further) training/support? On what topic/issue?

H. IMPACT and RELEVANCE, EFFECTIVENESS, SUSTAINABILITY AND SCALE-UP

1. Do you think that this project has been able to help you effectively increase your income and your position?
2. What do you feel are major problems you faced when participating in the project?
3. How have these problems been overcome?
4. Have there been any negative impacts or effects because of the project?
5. Which project activity ensures long-term benefit for you?
6. Which project activities should be expanded for milk collectors? Why?
7. What are the major successes due to SDVC?

FINALLY:

1. What has been the most important activity/ element/lesson of this project for you?
2. Have you shared this knowledge among your farmer neighbours or other family members who are not part of this project?
3. Do you have anything else you would like to say or any suggestions ?
4. What are your expectations for your business in the future?

FEED SELLERS CHECKLIST

November, 2010

DATE:

VILLAGE:

UNION:

UPAZILA:

DISTRICT:

Name of respondent and business:

NOTE FOR FACILITATOR: Any problems in arranging the FGD: what and why? How was it tackled?

I. SDVC PROJECT APPROACH (*this is to check whether the project participants understand the project and its objective and link it to their own purpose*)

- 1) Do you understand what CARE's project is about?
Do you understand how and what CARE is trying to do? Can you tell us?
- 2) Do you agree with their way of work to help in improving the milk production and associated inputs businesses?
- 3) How frequently do CARE staff come to visit you? Do they listen to your problems?
- 4) If you have any problems with project activities, how do you tell CARE? Is there any formal system? how do they respond to your concerns and complaints? Are you satisfied with their support

J. INCOME:

1. What is your monthly income from sales? Has this increased since the SDVC project? Has the number of clients increased?

If yes, why, and what are the contributing factors to increase in your sales and income?

2. what is your monthly cost for your feed business? What is your profit per month? Can you tell us your total capital (Cash & others)
3. What obstacles stand in the way of increasing your income?
4. How important are the following to help you increase your income?
Selling more feed, Selling more veterinary medicines, Better relationship with feed and drug company suppliers, Better relationship with farmers, Greater access to knowledge about animal nutrition and health, Greater access to credit, Opportunities for other income generating activities, Better relationships with formal processors (BRAC, Milk Vita, PRAN, etc.), Other?

Inputs:

5. What feed and fodder do you sell? Which ones do you sell most? ie brands, company?
6. How do you get the feed supply? Do you have long term agreements with your suppliers? If there is an agreement, was this developed as a result of SDVC project activities?

Market

7. Who are your majority customers? Project or non-project? Why?
8. Do have agreements with your buyers (eg SDVC producers), how were these agreements arranged? Have these been of benefit to your business? How?
9. Do have any business plan on how to increase your customer coverage? Has SDVC been of any assistance in developing the business plan/marketing strategies?

K. Relationship

10. How is your relationship with milk producers and your suppliers? Is it a very formal business relationship or has it graduated to trust and goodwill? How has your relationship with the following people changed because of the SDVC project?
11. With which people have relationships and linkages improved because of CARE interventions? Why and how?
SDVC producer households, Non-SDVC producer households; Other members of the community, Chilling centers, Informal market milk buyer, processing companies, Veterinarians, Dairy processors (Milk Vita, BRAC, PRAN, etc.), DLS, Medicine companies, AI companies
12. With which people has there been no change in relationship or has gotten worse and why? How could this be improved?
13. With which stakeholders would it be beneficial to improve your business, why and how can this be done?

L. GENDER

8. How is the role of women as feed seller seen in your HH?
9. Do you have any preference as to whether man or woman should be engaged in feed selling? Why?
10. Do the women feed sellers feel that their status has changed in their household since participating in this project? If yes, is the change better or worse than before? Why?
11. What is their current status (respect and importance) in the community? If changed, then better or worse? Why?
12. Has your (woman *feed seller*) income increased? If it has, who spends the money? Who takes lead to decide how your income should be spent?
13. Do you feel that you have a better role in decision making in the home? In their community? How do you think this happened? Can you give examples where you led the decision-making?
14. Has your confidence, movement in the market place, bargaining and marketing skills improved? If yes, what factors contributed to the change?
15. What are the main obstacles faced by with respect to your involvement in the feed business and in your homes?

M. TRAINING/CAPACITY BUILDING

1. Have you received any training/advice/support on dairy management? From whom? Mention the name of the events/support, from whom and when? Did these help you? Was the training/support given appropriate, relevant and sufficient? If yes, what were these and if no, why not?
2. Do you feel the need for any (further) training/support? On what topic/issue?

N. IMPACT and RELEVANCE, EFFECTIVENESS, SUSTAINABILITY AND SCALE-UP

15. do you think that this project has been able to help you effectively increase your income and your position?
16. What do you feel are major problems you faced when participating in the project?
17. How have these problems been overcome?
18. Have there been any negative impacts or effects because of the project?
19. Which project activity ensures long-term benefit for you?
20. Which project activities should be expanded for milk collectors ? why?
21. What are the major successes due to SDVC?

FINALLY:

1. What has been the most important activity/ element/lesson of this project for you?
2. Have you shared this knowledge among your farmer neighbours or other family members who are not part of this project?
3. Do you have anything else you would like to say or any suggestions ?
4. What are your expectations for your business in the future?

PROJECT COLLECTORS (GROUP) INDIVIDUAL OR FGD CHECKLIST

November 2010

Prior to starting FGD: welcome the participants, introduce self and where you are from, explain the objective of the meeting, take introduction from the FGD participants.

DATE:

NAME/S OF COLLECTOR/S:

VILLAGE:

UNION:

UPAZILA:

DISTRICT:

NOTE FOR FACILITATOR: Any problems in arranging the FGD: what and why? How was it tackled?

PROFILE OF interview/discussion

- ◆ Total number and gender of participants:
- ◆ Major professions of HH other than milk collection

A. SDVC PROJECT APPROACH (this is to check whether the project participants understand the project and its objective and link it to their own purpose)

- 1) Do you understand what CARE's project is about?

Do you understand how and what CARE is trying to do? Can you tell us?

- 2) Do you agree with their way of work to help you in milk collection and marketing
- 3) How frequently do CARE staff come to visit you? Do they listen to your problems?
- 4) If you have any problems with project activities, how do you tell CARE? Is there any formal system? how do they respond to your concerns and complaints? Are you satisfied with their support

B. PRODUCTIVITY AND INCOME:

a) Number of Clients and area coverage

- 1) For how long have you been a milk collector?
- 2) How many clients (producers) do you have currently? How many of these are CARE project producers?
- 3) How many did you have before participating in the project? Has this increased or is the same?
- 4) If the number of clients have increased? What contributed to the increase in number of clients?
- 5) How many milking cows are you covering now? is this more or same per HH than before?
- 6) What is the average number of clients to the collector (FGD qn)

- 7) What areas do you cover? Are the areas widespread?

b) Collection and transport

- 1) How much milk do you collect in a day? What form of transport do you use? What is collection according to season? How many times a day do you collect?
- 2) Do you have anyone to assist you in milk collection eg a subcollector? What is the working arrangement and how do you pay him/her?
- 3) Do you collect milk individually or in an aggregated way?
- 4) What is the change in milk supply using the aggregate collection of milk from the producer groups? is it more conducive to deal with producer groups or individual producers? Why?
- 5) Do you have agreements with the producers? If yes, how was this facilitated, what are the main terms and does having an agreement with producers help your business?
- 6) Are you able to collect the milk timely?
- 7) How do you pay the producer? Immediately on collection or later after you have made your sales?
- 8) Do have any formal agreement with the producers/producer groups, which ensures that they will consistently supply you with milk and that you collect from them? Or is this based on goodwill?

c) Milk quality:

- 1) How do you test for quality (fat) of the milk you collect from producers?
- 2) Are you aware of the fat testing process? Do you use any fat-testing apparatus?
- 3) Does the fat/quality vary in seasons? What is the variation according to season and breed?
- 4) Is the quantity and quality of milk better now after CARE project or is it the same? If yes, why is it better? If no, why not and what needs to be done?
- 5) Is spoilage a major issue in milk collection and supply? What contributes to spoilage? Has the incidence of spoilage increased since participating in CARE project?

d) Milk Price:

- 1) Are you getting better/higher milk price than you used to before this project? What are the factors contributing to getting a higher price? Do you think you can get a higher price? What factors prevent from getting even a higher price?
- 2) When selling your milk to collection points or chilling plants, is the milk you sell checked for fat using a lactometer or similar apparatus? Has this enable you to receive a fair price for the milk you sell?
- 3) If you are not getting higher milk price, is this because of increased milk supply in the community due to CARE interventions? What other factors are responsible for not getting higher milk price?
- 4) Has the cost of collecting and transporting milk per liter increased or decreased since CARE participation? Why?
- 5) Has the total income from selling milk increased since SDVCP participation? If yes, what factors contributed to the increase?
- 6) If the total income from selling milk has NOT increased, what are the reasons?
- 7) What is most important to help you increase your income from milk collection?

Higher volumes of milk, Better quality milk, More collection points, Greater access to knowledge about safe milk handling practices and hygiene' Digital fat testing meter, Vehicle for milk transport, Handling cans, Greater access to credit, Opportunities for other income generating activities (feed selling, etc.), Longer term contracts with producers, Better relationships with formal processors (BRAC, Milk Vita, PRAN, etc.) and Other?

- 8) In your opinion, what more can CARE do to help the collection and transport system of milk and thereby increase your income from milk sales?

C. ACCESS TO OTHER INPUT RESOURCES

- 1) Since project started, is it easier to access the resources required for the milk collection and transport system? From where do you get these resources?
- 2) Does the processor where you supply/sell milk give any resource support? How is this resource transacted with the buyer? What is the payment system? Is this convenient for you?
- 3) What other resources do you require apart from milk supply? Are the resources you require locally available?
- 4) Do you get the service as soon as you need it, is it sufficiently available? How has it been made more available in comparison to before the project- what has the project done to enable this?
- 5) What are your main sources of finance and credit? (MFIs/NGOs/Banks)
- 6) Which source of credit is helpful/convenient and why? (is it b/c of less paperwork, interest rates, payment system, distance)

D. ACCESS TO MARKET

a) Milk sales

- 1) To whom do you sell your milk: volume according to formal vs informal
(Formal (collection point, BRAC, Milk Vita, PRAN, etc.) ; Informal (local sweet shops etc))
- 2) Where do you prefer to sell the milk? Why, what are the added benefits?
- 3) Do have any formal or informal agreement with your buyers? If yes, how were these agreements facilitated? Have these agreements helped you in your milk collection and supply business?
- 4) What are the main obstacles in of increasing your income from milk sales? How can these be overcome?

E. INFORMATION AND RELATIONSHIPS

1. Where do you get your information about milk price and supply?
2. To whom or where do you go for updated information regarding milk price and sales and also for technical advice? (knowledge about safe milk handling practices and hygiene; fat testing)
3. Is there an information center in this area? If yes, how effective is the information centers for you as source of information?
4. What kind of information is available at the information center? Do you also get technical advice here?
5. How else would you prefer to get information about milk sales and technical advice?
6. How effective has CARE been in disseminating information and awareness raising about milk production and benefits of milk in nutrition? How was this information broadcast (posters, leaflets, meetings, discussions etc)? Which mode/media of information dissemination is effective for this area?
7. Do you have regular communication with other value chain actors ie producers, LHWs and buyers at the information service centers?
8. Overall do you have sufficient access to information on technologies, inputs, and services to address these constraints that you face in milk production and marketing?
9. What more needs to be done to increase your access to all these information?

Relationship

10. How is your relationship with milk buyers and sellers? Do you have formal agreements with these people?
11. How has your relationship with the following people changed because of the SDVC project?
SDVC-affiliated milk producing households, Non-SDVC milk producing households; Other members of the community, Chilling center manager, Informal market milk buyers
12. With which people has relationship improved and why? What was CARE's role in bringing this about?
13. With which people has there been no change in relationship or has gotten worse and why? How could this be improved?
14. Do you feel that you have goodwill and trust in their transactions? Have project activities contributed to developing linkage and networks among the VC actors? If yes, among which actors? What activities? How were the linkages and networks developed? If not, why not

F. GENDER

- 1) How is the role of women as milk collectors seen in your HH?
- 2) Do you have any preference as to whether man or woman should be engaged in milk collection? Why?
- 3) Do the women collectors feel that their status has changed in their household since participating in this project? If yes, is the change better or worse than before? Why?
- 4) What is their current status (respect and importance) in the community? If changed, then better or worse? Why?
- 5) Has your (*woman collector*) income increased? If it has, who spends the money? Who takes lead to decide how your income should be spent?
- 6) Do you feel that you have a better role in decision making in the home? In their community? How do you think this happened? Can you give examples where you led the decision-making?
- 7) Has your confidence, movement in the market place, bargaining and marketing skills improved? If yes, what factors contributed to the change?
- 8) What are the main obstacles faced by with respect to your involvement in the dairy business and in your homes?

G. TRAINING/CAPACITY BUILDING

1. What training/advice/support have received from this project? Mention the name of the events/support, from whom and when?
2. Was the training/support given appropriate, relevant and sufficient? If yes, what were these and if no, why not?
3. Do you feel the need for any (further) training/support? On what topic/issue?
4. Has the CARE- introduced match-making meetings between actors? If yes, between which actors? Have the match-making meetings between actors been effective? If yes, in what way?

H. IMPACT and RELEVANCE, EFFECTIVENESS, SUSTAINABILITY AND SCALE-UP

1. do you think that this project has been able to help you effectively increase your income and your position?
2. What do you feel are major problems you faced when participating in the project?
3. How have these problems been overcome?
4. Have there been any negative impacts or effects because of the project?
5. Which project activity ensures long-term benefit for you?
6. Which project activities should be expanded for milk collectors ? why?
7. What are the major successes due to SDVC?

FINALLY:

8. What has been the most important activity/ element/lesson of this project for you?
9. Have you shared this knowledge among your farmer neighbors or other family members who are not part of this project?
10. Do you have anything else you would like to say or any suggestions ?
11. What are your expectations for your business in the future?

CONTROL PRODUCER GROUP FGD CHECKLIST

November 2010

Prior to starting FGD: welcome the participants, introduce self and where you are from, explain the objective of the meeting, take introduction from the FGD participants.

DATE:

VILLAGE:

UNION:

UPAZILA:

DISTRICT:

GROUP NAME: *are they members of any other dairy-based group?*

NOTE FOR FACILITATOR: Any problems in arranging the FGD: what and why? How was it tackled?

PROFILE OF FGD

Total number and gender of participants:

Major professions of participants and participant HH other than milk production

A. PRODUCTIVITY AND INCOME:

a) Dairy structure and production

1. What is the size of your dairy? *(Take number of cows from each producer and get a range and calculate an average)* and how many of these are milking *(take range)*? What kind of cows do you have ie LB or CB *(take numbers from each producer so that we can determine what the trend is, i.e., proportion of LB and CB)*
What is your cow's current milk production (LB/CB)? Has this been the same over the last 3 years? Have you seen any improvements?

If **YES**, by how much *(eg less than 1 litre, 1, 2 or 3 litre or more per cow per day)*?

Ask individually and then take a range

2. If there is any improvement in milk production over the last 2-3 years, why is this so? What are the factors contributing to improvement in the milk production, have you adopted any new feeding or care practice or access to better input, services or is it because of the breed of the cow has improved? *(List the factors and then ask group to prioritize)*

How do you think the factors you mention helped increase the milk production?

3. If the milk production has **NOT** increased, why do you think are the factors responsible for not increasing milk production?

Let's discuss the dairy management a little bit more in detail

b) Dairy management, Feed and Care

4. How do you take care of your cows:
5. Feeding (time, type and amount), shelter, medicine
6. Are you aware of the CARE project that works with producers, collectors, LHW/AIs to improve milk production and milk sales?
7. What do you know about the dairy management practices in feeding and care? How did you get the information? What do you think about it? Have you adopted any of the CARE-introduced practices?
8. Over the last three years, has there been any other organization or company that has supported you in improving dairy production? Or have inputs and services easier to access or not? What have these been?
9. Have you adopted any new dairy management process ie in feed/shelter/medicine? from whom? Which ones and specifically why these practices?

What **feed and fodder** do you give the cows now? has this been the normal practice for the last 2-3 years or have you adopted something new or changed any thing? Why have made any changes, what/who influenced you?

How did you **care** for your cows now? has this been the normal practice for the last 2-3 years or have you adopted something new or changed any thing? Why have made any changes, what/who influenced you?

What **medicine** do you give your cows? has this been the normal practice for the last 2-3 years or have you adopted something new or changed any thing? Why have made any changes, what/who influenced you?

c) Production Expenses (take current and compare to before Project)

10. What are the main expenses in your dairies?
How much is spent **per cow per month or per day for feed**? *(range: whatever the response, calculate per month)*
Have these expenses been the same or changed over the last 2-3 years?
How much is spent **per cow per month or per year for medicine**? *(range: whatever the response, calculate per month; these might be for anti-helminthics, vaccines, vet services for calf delivery)* Consideration will be given to mainly regular preventive medication, calf delivery and AI services and not the cost incurred for problems like mastitis, anthrax etc
Have these expenses been the same or changed over the last 2-3 years?
Are there any **other expenses** in taking care of a cow? *(range: this might be electricity, light bulbs, coil, labour, milk collection...)*
11. **Production Cost of milk: Income from milk sales per month per cow divide by expenses per month per cow:** *(the producers should be able to calculate this with a little help; if not please calculate at end of FGD session and ask a couple of more literate producers to check with you)*
So, has the **cost of producing milk per liter** increased or decreased over the last 2-3 years? Why? *Eg cost of inputs have increased, CARE project activities have created some sort of crisis situation limiting availability of inputs*

etc- Specifically need to know whether CARE's activities have had a positive or negative effect around non project producers or have there been other external factors in play?

d) Milk price and income

12. What **price** are you now getting for your milk? Are you satisfied with the milk price that you get? Has this milk price fluctuated over the last 2-3 years – is it more or less?
13. If milk price is **higher**:
Then what factors contributed to the increase in price? How did the milk price get increased? (*explain the process*)?
Do you think you could have gotten a higher price? What factors prevent from getting an even higher/better price?
So how much is your current income from milk sales per day or per month? (*range*)
14. If milk price is **same or lower**:
Why are you not getting a higher milk price? What factors prevent from getting a higher price? (*one of the factors may be increase in milk supply due to CARE interventions with project producers*)
15. Has the **total income** from selling milk increased for you over the last 2-3 years? If **YES**, what factors contributed to the increase?
16. If the total income from selling milk has **NOT** increased, what are the reasons?

e) Use of income from milk sales; consumption of milk

17. If you have improved sales in milk production, what do you do with the extra income? *Investment, assets, health, food, loan repayment, education, watsan, etc*
18. how much of the milk is consumed at household? Is this more or less in the last 2-3 years? Why?

f) Recommendations from the participants

19. In your opinion, what more needs to be done to increase milk production, get better price, and thereby increase your income from milk production?

B. ACCESS TO INPUT SERVICES AND RESOURCES

e) Access to service

1. From where do you get your service for animal health (*Vaccination, LHW, vets and AI*)? Has there been any changes in price, quality, availability and access to these services over the last 2-3 years or is it the same?
2. If the changes have been positive/better, why? what contributed to making these changes; how did these changes come about?
If **access has improved**, how has it improved? What are the factors that make it easier to access these services?
Do you get the service as soon as you need it, is it sufficiently available? How has it been made more available in comparison to before the project- what has the project done to enable this?
Is it timely available? (on a scale of 1 to 5 (bad to good) rate how quickly you get the service)
Are you happy with the quality of service? (on a scale of 1 to 5 (bad to good) rate the quality of service)
Are you able to afford the price of the service? on a scale of 1 to 5 (bad to good) rate the price of service)
Could these services be made easier to access and made available? How?
3. If the changes with regards to price, quality, availability and access to these services have not been favorable, why not and what has contributed to making this situation unfavorable or worse? How can it be improved?
4. If the **access to the service has not improved**, why not? What needs to be done to improve it?

f) Purchase of Feed and Medicine

5. Where do you buy your feed and medicine? (*mobile vendors, local retailers etc*)? why do you buy from these retailers or people that you do? What are the factors that influence your decision: *distance, old relationship, trust, quality*?
6. How is the purchase made: bulk or as per need? On credit, or on cash payment? Is there any sort of understanding b/w you the buyer and the input seller? Are you happy with the price?
7. Are you satisfied with the quality of feed and medicine? How do you determine the quality is good or bad?
8. Does the feed/medicine seller give any advice on dairy management, care, feed, medicine? Is this advice important for you? Or do you prefer to advice of the LHW/AI?
9. What can be done to improve your purchase of feed and medicine?

g) Access to Finance

10. What are your main sources of finance and credit? (*their own savings/MFIs/NGOs/Banks*)
11. Which source of credit is helpful/convenient and why? (*is it b/c of less paperwork, interest rates, payment system, distance*)

C. ACCESS TO MARKETS

c) Milk collection transport and supply

1. To whom do you supply the milk produced? Do you give the milk individually or as a group?
2. How is it collected? Who collects it and how is it transported? Is the collection and transport system satisfactory for you? Has this changed in any way over the last 2-3 years? What have the changes been?
Have these changes been beneficial? If yes, how,? If No, why not ? (*Need to probe whether CARE activities or participants have impacted these producers in any way?*)
3. What is the payment arrangement for the milk? When do you get paid? Do processors conduct business in milk transactions with producers in an organized manner, i.e., group-based?

4. Are you satisfied with the mode and frequency of payment made to them for their milk sales by the collectors, chilling plants and processors? If yes, what aspect contributes to their satisfaction? If not, why not?

d) Milk price

1. With whom do you negotiate milk price and how do you negotiate the price? Are lactometers/fat-testing apparatus used in determining quality and price of milk?
2. Is there a chart for milk price based on milk fat that is used for price determination? Is this publicly available for you?
3. Is it convenient to sell the milk aggregated or do you think it would be better to sell individually? Which one do you feel is more beneficial for them and why?

D. ACCESS TO INFORMATION

1. Where do you get your information about milk price and supply?
2. To whom or where do you go for updated information regarding milk price and sales and also for technical advice?
3. Is there an information center where you can dairy information in this area? Who has set it up? If yes, how effective is the information centers for you as source of information?
4. What kind of information is available at the information center? Do you also get technical advice here?
5. How else would you prefer to get information about milk sales and technical advice?
6. Do you as producer have regular communication with collector, LHWs and input service provider? How do you maintain your communication? at the information service center or any other manner?
7. Overall do you have sufficient access to information on technologies, inputs, and services to address these constraints that you face in milk production and marketing?
8. What more needs to be done to increase your access to all these information?

E. DAIRY MANAGEMENT AND LABOR, GENDER (looking at role, division of labour, economic engagement, decision-making, choices, empowerment)

- 1) What is the role of women in dairy management in your HH?
- 2) Do you have any preference as to whether man or woman should be engaged in dairy management? What is the division of labor: who does what? Is this practice traditional or have there been any changes in recent years? If yes, why and how?

Who takes care of the cows? (male, female); Amount of labor spent for the dairy (Hours per day)

Is dairy management and care the main duty of this person/s? Any salaried laborer? (male/female)? What is the cost?

Is it still the woman who does the main tasks, or have the men started to give more time and effort/ has labour been hired, are children more involved etc: basically looking for changes in attitude in division of labour .

- 3) Who manages the financial matters (savings, expenses, investments, decision-making) in the HH and for the dairy? Do women in your HH have any role in financial matters?
- 4) What are the main obstacles faced by women with respect to their involvement in the dairy business and in your homes?

F. TRAINING/CAPACITY BUILDING

1. Have you received any training/advice/support on dairy management? From whom? Mention the name of the events/support, from whom and when? Did these help you? Was the training/support given appropriate, relevant and sufficient? If yes, what were these and if no, why not?
2. Do you feel the need for any (further) training/support? On what topic/issue?

G. Knowledge about the SDVC project:

1. Do you know about the project by CARE? From where have you heard about the project?
2. What do you know?
3. Do you think it is good, relevant, appropriate, sustainable?
4. NO/YES: why
5. What is particularly good or bad about the project?

FINALLY:

12. Do you have anything else you would like to say or any suggestions ?

PROJECT LHW/AI INDIVIDUAL INTERVIEW QUESTIONNAIRE

November 2010

Prior to starting interview: welcome the participant, introduce self and where you are from, explain the objective of the meeting, take introduction from the participant.

NOTE: text in italics are tips for the facilitator

Start interview

DATE:

NAME/S OF LHW/AI:

VILLAGE:

UNION:

UPAZILA:

Gender:

DISTRICT:

NOTE FOR Interviewer: Any problems in arranging the interview: what and why? How was it tackled?

PROFILE OF interview/discussion

- ♦ Total number and gender of participants:
- ♦ Major professions of HH other than LHW and/Or AI

A. INCOME:

g) Number of Clients and area coverage

1. For how long have you been a LHW and /or AI?
2. How many clients do you serve per day? How many cows are you covering now? has this increased or is the same per HH over the last 2-3 years?
3. How many clients (producers) do you have currently? Has the number of clients increased within the last 2-3 years? Why? What *(is it because of increased number of producers or demand for his/her services?)*
4. what contributed to the increase in number of clients?
5. What areas do you cover? Are the areas widespread?

h) Service

6. What kinds of service do you give? What are your rates? How do you get paid? Does your service include additional advice for the producers? What are the problems that you face in delivery of your service? How can these be overcome?

i) Income

7. What is your income per month now? Is this subject to seasonal variations? How does it differ in the different seasons? Why? Has your income increased over the last 2-3 years? If yes, what are the factors contributing to this?
8. What is your net profit per month? *(may give a range)*
9. If income has not increased, why not? What needs to be done?
10. What are your costs in delivery of your service? How much per day or per month? Have costs increased since project participation? If yes, what are the factors contributing to this and what has CARE's role been here?
11. What is most important to help you increase your income?

Providing more animal health treatments, Selling more feed, Selling more veterinary medicines, Better relationship with veterinarians, Better relationship with farmers, Greater access to knowledge about animal health services, Greater access to credit, Opportunities for other income generating activities, Better relationships with formal processors (BRAC, Milk Vita, PRAN, etc.), Other?

B. ACCESS TO INPUT RESOURCES

1. What resources do you require as a LHW and/or AI? From where do you get your resources? Are the resources you require locally available? (equipment, medicine etc)
2. Does the processor whose producers you serve give any resource support? How is this resource transacted with the buyer? What is the payment system? Is this convenient for you?
3. Do you get the service as soon as you need it, is it sufficiently available? Has the availability of the required resources improved over the last 2-3 years? What contributed to this (more businesses locally etc)?
4. What are your main sources of finance and credit? *(MFIs/NGOs/Banks)* Which source of credit is helpful/convenient and why? *(is it b/c of less paperwork, interest rates, payment system, distance)*. Has credit been easier to access in comparison to previous years? If yes, why? If not, why not and what needs to be done?

C. MARKET INTEGRATION

3. Do have any formal or informal agreement with the producers and processors? If yes, how were these agreements facilitated? Have these agreements helped you in your LHW/AI business?
4. What are the main obstacles in of expanding your services? How can these be overcome?

D. INFORMATION AND RELATIONSHIPS

15. Where do you get your information about dairy-related health issues? *(veterinarians...)*
16. To whom or where do you go for updated information regarding livestock health, equipment and medicine?
17. Is there an information center in this area? If yes, how effective are the information centers for you as source of information and technical advice? How else would you prefer to get information about dairy related health issues and technical advice? *(training and support from processor-based /govt veterinarians)*
18. Do you have regular communication with other value chain actors ie producers, collectors and buyers at? with which people do you require strong linkages as a LHW/AI
19. Overall do you have sufficient access to information on technologies, inputs, and services to address the constraints that you face in animal health service?
20. What more needs to be done to increase your access to all these information?

Relationship

21. How is your relationship with milk buyers and producers? Is it a very formal business relationship or has it graduated to trust and goodwill? How has your relationship with the following people changed because of the SDVC project?
22. With which people have relationships and linkages improved over the last 2-3 years and why?
SDVC producer households, Non-SDVC producer households; Other members of the community, Chilling centers, Informal market milk buyer, processing companies, Veterinarians, Dairy processors (Milk Vita, BRAC, PRAN, etc.), DLS, Medicine companies, AI companies

23. With which people has there been no change in relationship or has gotten worse and why? How could this be improved?

E. GENDER

1. How is the role of women as LHW seen in your HH and community? Do you have any preference as to whether man or woman should be engaged LHW? Why?
2. What would be the main obstacles faced by a women LHW/AI in the dairy business and in your community? Why? How can these be overcome?

F. TRAINING/CAPACITY BUILDING

1. Have you received any training/advice/support on dairy management? From whom? Mention the name of the events/support, from whom and when? Did these help you? Was the training/support given appropriate, relevant and sufficient? If yes, what were these and if no, why not?
2. Do you feel the need for any (further) training/support? On what topic/issue?

G. KNOWLEDGE ABOUT THE SDVC PROJECT:

1. Do you know about the project by CARE? From where have you heard about the project?
2. What do you know?
3. Do you think it is good, relevant, appropriate, sustainable?
4. NO/YES: why
5. What is particularly good or bad about the project?

FINALLY:

13. Do you have anything else you would like to say or any suggestions ?

CONTROL COLLECTORS INDIVIDUAL OR FGD CHECKLIST

November 2010

Collectors may be interview where possible in groups or individually.

Prior to starting FGD or interview: welcome the participants, introduce self and where you are from, explain the objective of the meeting, take introduction from the FGD participants.

Start FGD/interview

DATE:

NAME/S OF COLLECTOR/s:

VILLAGE:

UNION:

UPAZILA:

DISTRICT:

NOTE FOR FACILITATOR: Any problems in arranging the FGD: what and why? How was it tackled?

PROFILE OF interview/discussion

- ♦ Total number and gender of participants:
- ♦ Major professions of HH other than milk collection

A. PRODUCTIVITY AND INCOME:

a) Number of Clients and area coverage

1. For how long have you been a milk collector? (*in group discussion take a range of experience*)
2. How many clients (producers) do you have currently? Has this number increased within the last 2-3 years? By how many? What contributed to the increase in number of clients?
3. How many milking cows are you covering now? is this more or same per HH than before?
4. What areas do you cover? Are the areas widespread?

b) Collection and transport

5. How much milk do you collect in a day? What form of transport do you use? What is collection according to season? How many times a day do you collect? Do you have anyone to assist you in milk collection eg a subcollector? What is the working arrangement and how do you pay him/her?
6. Are you able to collect the milk timely? How do you pay the producer? Immediately on collection or later after you have made your sales?
7. Do you collect milk individually or in an aggregated way? What is the change in milk supply using the aggregate collection of milk from the producer groups? is it more conducive to deal with producer groups or individual producers? Why?
8. Is the process you describe been the same in the last 2-3 years? Have there been any changes to how you conduct the collection and transport system? what have these changes been and have these been beneficial or not for your business? What are the factors contributing to the changes?
9. Do you have agreements with the producers? If yes, how was this facilitated, what are the main terms and does having an agreement with producers help your business? What ensures a consistent supply of milk from the producers? Is it a formal agreement or based on goodwill?

c) Milk quality:

10. How do you test for quality (fat) of the milk you collect from producers?
11. Are you aware of the fat testing process? Do you use any fat-testing apparatus?
12. Does the fat/quality vary in seasons? What is the variation according to season and breed?
13. Have you observed any change in the quantity and quality of milk from your producers over the last 2-3 years or is it the same? If yes, why is it better? If no, why not and what needs to be done?
14. Is spoilage a major issue in milk collection and supply? What contributes to spoilage? How do you tackle this?
15. What is the quality of milk like now? Is it better, worse or the same compared to what you have been collecting in the last 2-3 years? If it is better, why? And if not, why not?

d) Milk Price:

16. Are you satisfied with the milk price you are getting? Are you getting better/higher milk price now than in the last 2-3 years? If yes, what are the factors contributing to getting a higher price? Do you think you can get a higher price? What factors prevent from getting even a higher price?
17. When selling your milk to collection points or chilling plants, is the milk you sell checked for fat using a lactometer or similar apparatus? Has this enabled you to receive a fair price for the milk you sell?
18. If you are not getting higher milk price, why is this? *is this because of increased milk supply in the community?* What other factors are responsible for not getting higher milk price?
19. Has the cost of collecting and transporting milk per liter increased or decreased now compared to 2-3 years ago? Why?
20. Has the total income from selling milk increased this year compared to previous years? If yes, what factors contributed to the increase?
21. If the total income from selling milk has NOT increased, what are the reasons?
22. What is most important to help you increase your income from milk collection?
Higher volumes of milk, Better quality milk, More collection points, Greater access to knowledge about safe milk handling practices and hygiene' Digital fat testing meter, Vehicle for milk transport, Handling cans, Greater access to credit, Opportunities for other income generating activities (feed selling, etc.), Longer term contracts with producers, Better relationships with formal processors (BRAC, Milk Vita, PRAN, etc.) and Other?
23. What are the main obstacles in of increasing your income from milk sales? How can these be overcome?
24. What is required to help the collection and transport system of milk and thereby increase your income from milk sales?

B. ACCESS TO OTHER INPUT RESOURCES

1. What other resources do you require for the milk collection business apart from milk supply? Where do you get these? Are these easily available and of quality? Has the availability and price of these resources improved within the last 2-3 years or is the same? If it is better, why, what are the contributing factors? And if not, why not and what needs to be done?
2. Does the processor where you supply/sell milk give any resource/service support? How is this resource transacted with the buyer? What is the payment system? Is this convenient for you?
3. What are your main sources of finance and credit? (MFIs/NGOs/Banks) Which source of credit is helpful/convenient and why? *(is it b/c of less paperwork, interest rates, payment system, distance)*

C. ACCESS TO MARKET

a) Milk sales

1. To whom do you sell your milk: volume according to formal vs informal ie who do you sell to most and why? *(Formal (collection point, BRAC, Milk Vita, PRAN, etc.) ; Informal (local sweet shops etc))*
2. Where do you prefer to sell the milk? Why, what are the added benefits?
3. Do have any formal or informal agreement with your buyers? If yes, how were these agreements facilitated? Have these agreements helped you in your milk collection and supply business?
4. What are the main obstacles in of marketing milk ? How can these be overcome?

D. INFORMATION AND RELATIONSHIPS

1. Where do you get your information about milk price and supply? To whom or where do you go for updated information regarding milk price and sales and also for technical advice? (knowledge about safe milk handling practices and hygiene; fat testing)
2. Is there an information center in this area? If yes, how effective is the information centers for you as source of information? What kind of information is available at the information center? Do you also get technical advice here? How else would you prefer to get information about milk sales and technical advice?
3. Do you have regular communication with other value chain actors ie producers, LHWs and buyers?
4. Overall do you have sufficient access to information on technologies, inputs, and services to address these constraints that you face in milk production and marketing?
5. What more needs to be done to increase your access to all these information?

Relationship

6. How is your relationship with milk buyers and sellers? Do you have formal agreements with these people? Has this improved or not over the last 2-3 years and what are the contributing factors to the changes in relationship, if any?
7. Do you feel that you have goodwill and trust in your transactions? How has this evolved over the last 2-3 years? Is it better, if yes, what are the contributing factors and if not, why not?

E. GENDER

1. How do you see the role of women as milk collectors ? how is it seen in your community? Do you have any preference as to whether man or woman should be engaged in milk collection? Why?
2. What would be the main obstacles faced by a women collector in the dairy business and in your community? Why? How can these be overcome? (*mobility, decision making etc*)

F. TRAINING/CAPACITY BUILDING

1. Have you received any training/advice/support on dairy management? From whom? Mention the name of the events/support, from whom and when? Did these help you? Was the training/support given appropriate, relevant and sufficient? If yes, what were these and if no, why not?
2. Do you feel the need for any (further) training/support? On what topic/issue?

G. KNOWLEDGE ABOUT THE SDVC PROJECT:

1. Do you know about the project by CARE? From where have you heard about the project?
2. What do you know?
3. Do you think it is good, relevant, appropriate, sustainable?
4. NO/YES: why
5. What is particularly good or bad about the project?

FINALLY:

1. Do you have anything else you would like to say or any suggestions ?

PROCESSORS CHECKLIST

November 2010

Processors include informal: sweet shops, ghee makers, tea shops and formal processors include collection points and chilling plants

DATE:

NAME/S OF Processor:

VILLAGE:

UNION:

UPAZILA:

DISTRICT:

NOTE FOR FACILITATOR: Any problems in arranging the FGD: what and why? How was it tackled?

PROFILE OF interview/discussion

- ♦ Total number and gender of participants:
- ♦ Major professions of HH other than milk collection

A. PRODUCTIVITY AND INCOME:

a) Number of Clients and area coverage

1. For how long have you been a milk collector?
2. How many clients (producers) do you have currently? Has this number increased within the last 2-3 years? By how many? What contributed to the increase in number of clients?
3. How many milking cows are you covering now? is this more or same per HH than before?
4. What areas do you cover? Are the areas widespread?

b) Collection and transport

5. How much milk do you collect in a day? What form of transport do you use? What is collection according to season? How many times a day do you collect? Do you have anyone to assist you in milk collection eg a subcollector? What is the working arrangement and how do you pay him/her?
6. Are you able to collect the milk timely? How do you pay the producer? Immediately on collection or later after you have made your sales?
7. Do you collect milk individually or in an aggregated way? What is the change in milk supply using the aggregate collection of milk from the producer groups? is it more conducive to deal with producer groups or individual producers? Why?
8. Is the process you describe been the same in the last 2-3 years? Have there been any changes to how you conduct the collection and transport system? what have these changes been and have these been beneficial or not for your business? What are the factors contributing to the changes?
9. Do you have agreements with the producers? If yes, how was this facilitated, what are the main terms and does having an agreement with producers help your business? What ensures a consistent supply of milk from the producers? Is it a formal agreement or based on goodwill?

c) Milk quality:

10. How do you test for quality (fat) of the milk you collect from producers?
11. Are you aware of the fat testing process? Do you use any fat-testing apparatus?
12. Does the fat/quality vary in seasons? What is the variation according to season and breed?
13. Have you observed any change in the quantity and quality of milk from your producers over the last 2-3 years or is it the same? If yes, why is it better? If no, why not and what needs to be done?

14. Is spoilage a major issue in milk collection and supply? What contributes to spoilage? How do you tackle this?
- d) Milk Price:**
15. Are you satisfied with the milk price you are getting? Are you getting better/higher milk price now than in the last 2-3 years? If yes, what are the factors contributing to getting a higher price? Do you think you can get a higher price? What factors prevent from getting even a higher price?
 16. When selling your milk to collection points or chilling plants, is the milk you sell checked for fat using a lactometer or similar apparatus? Has this enabled you to receive a fair price for the milk you sell?
 17. If you are not getting higher milk price, why is this? *is this because of increased milk supply in the community?* What other factors are responsible for not getting higher milk price?
 18. Has the cost of collecting and transporting milk per liter increased or decreased now compared to 2-3 years ago? Why?
 19. Has the total income from selling milk increased this year compared to previous years? If yes, what factors contributed to the increase?
 20. If the total income from selling milk has NOT increased, what are the reasons?
 21. What is most important to help you increase your income from milk collection?
Higher volumes of milk, Better quality milk, More collection points, Greater access to knowledge about safe milk handling practices and hygiene' Digital fat testing meter, Vehicle for milk transport, Handling cans, Greater access to credit, Opportunities for other income generating activities (feed selling, etc.), Longer term contracts with producers, Better relationships with formal processors (BRAC, Milk Vita, PRAN, etc.) and Other?
22. What is required to help the collection and transport system of milk and thereby increase your income from milk sales?
- B. ACCESS TO OTHER INPUT RESOURCES**
1. What other resources do you require for the milk collection business apart from milk supply? Where do you get these? Are these easily available and of quality? Has the availability and price of these resources improved within the last 2-3 years or is the same? If it is better, why, what are the contributing factors? And if not, why not and what needs to be done?
 2. Does the processor where you supply/sell milk give any resource/service support? How is this resource transacted with the buyer? What is the payment system? Is this convenient for you?
 3. What are your main sources of finance and credit? (MFIs/NGOs/Banks) Which source of credit is helpful/convenient and why? *(is it b/c of less paperwork, interest rates, payment system, distance)*
- C. ACCESS TO MARKET**
- b) Milk sales**
1. To whom do you sell your milk: volume according to formal vs informal ie who do you sell to most and why? *(Formal (collection point, BRAC, Milk Vita, PRAN, etc.) ; Informal (local sweet shops etc))*
 2. Where do you prefer to sell the milk? Why, what are the added benefits?
 3. Do have any formal or informal agreement with your buyers? If yes, how were these agreements facilitated? Have these agreements helped you in your milk collection and supply business?
 4. What are the main obstacles in of increasing your income from milk sales? How can these be overcome?
- D. INFORMATION AND RELATIONSHIPS**
8. Where do you get your information about milk price and supply? To whom or where do you go for updated information regarding milk price and sales and also for technical advice? (knowledge about safe milk handling practices and hygiene; fat testing)
 9. Is there an information center in this area? If yes, how effective is the information centers for you as source of information? What kind of information is available at the information center? Do you also get technical advice here? How else would you prefer to get information about milk sales and technical advice?
 10. Do you have regular communication with other value chain actors ie producers, LHWs and buyers?
 11. Overall do you have sufficient access to information on technologies, inputs, and services to address these constraints that you face in milk production and marketing?
 12. What more needs to be done to increase your access to all these information?
- Relationship**
13. How is your relationship with milk buyers and sellers? Do you have formal agreements with these people? Has this improved or not over the last 2-3 years and what are the contributing factors to the changes in relationship, if any?
 14. Do you feel that you have goodwill and trust in your transactions? How has this evolved over the last 2-3 years? Is it better, if yes, what are the contributing factors and if not, why not?
- E. GENDER**
1. How do you see the role of women as milk collectors ? how is it seen in your community? Do you have any preference as to whether man or woman should be engaged in milk collection? Why?
 2. What would be the main obstacles faced by a women collector in the dairy business and in your community? Why? How can these be overcome? *(mobility, decision making etc)*
- F. TRAINING/CAPACITY BUILDING**
1. Have you received any training/advice/support on dairy management? From whom? Mention the name of the events/support, from whom and when? Did these help you? Was the training/support given appropriate, relevant

- and sufficient? If yes, what were these and if no, why not?
2. Do you feel the need for any (further) training/support? On what topic/issue?

KNOWLEDGE ABOUT THE SDVC PROJECT:

1. Do you know about the project by CARE? From where have you heard about the project?
2. What do you know?
3. Do you think it is good, relevant, appropriate, sustainable?
4. NO/YES: why
5. What is particularly good or bad about the project?

FINALLY:

1. Do you have anything else you would like to say or any suggestions ?

**RELATIONS BETWEEN THE RESEARCH ORGANIZATIONS AND PRODUCERS / PROCESSORS
(FORMAL/INFORMAL):**

1. How are they acquainted with SDVC? In what research activities of project are they involved?
2. For whose benefit and what purpose is the research being done?
3. How have they developed the research for the project? Have they consulted with the project beneficiaries/stakeholders (producers, collectors, livestock health workers, feed sellers, formal and informal processors etc). what kind of consultations have been held
4. How has the research benefited the sector? And how do they follow-up?
5. What is the mode of collaboration with SDVC? (cost sharing/funding etc)
6. How do they see to continue their research if SDVC were no longer in the picture ie phases out?
 - a. What are the major policy barriers to the development of the milk value chain?
 - b. How do existing government policies (e.g., tax, tariff, and subsidy policies) and regulations affect (a) milk production, (b) input supply, (c) processing, and (d) marketing?
 - c. What policy actions are needed to promote the incorporation of small farmers into the dairy value chain?

INTRA-NGO RELATIONS:

1. For how long has the Dairy Net been operative? How long have they been members and why are they members ie what activities do they have in the dairy sector?
2. How do they work with the other Dairy Net members and any other organization working in the Dairy Sector? How frequently do they meet and share information? Is this formal/structured sharing or informal: meetings, meeting minutes; newsletters, emails, website etc)
3. How has SDVC contributed to these relations?
4. what is the level of coordination between one organization with another (map)
 - a. What are the major policy barriers to the development of the milk value chain?
 - b. How do existing government policies (e.g., tax, tariff, and subsidy policies) and regulations affect (a) milk production, (b) input supply, (c) processing, and (d) marketing?
 - c. What policy actions are needed to promote the incorporation of small farmers into the dairy value chain?
5. Have the organizations working in the dairy sector been effective in engaging with dairy sector actors and supporters? Has this progressed over the last 2-3 years and what has contributed to this?

GOVERNMENT - VALUE CHAIN INTERFACE?

2. What is GOB's stance about the dairy sector? How is it prioritized in the national development plans? What has the govt done to support the dairy sector? (including budgetary allocations, taxes etc)
3. Are the govt policies favorable to developing the dairy sector? Yes/no – why?
 - a. What are the major policy barriers to the development of the milk value chain?
 - b. How do existing government policies (e.g., tax, tariff, and subsidy policies) and regulations affect (a) milk production, (b) input supply, (c) processing, and (d) marketing?
 - c. What policy actions are needed to promote the incorporation of small farmers into the dairy value chain?
4. Are the GoB extension services sufficient at grassroots? Yes/no- what more is required?

INPUT / SERVICE PROVIDERS:

1. How do these input service companies respond to the requirements of the dairy sector? To what extent/ how have they contributed to supporting the actors and the field level producers?
2. What steps do they take to market their product? Does this include technical advice and support for the producers, and other support services (LHW, AI, feed/med seller)
3. Are these companies engaged with the milk sector eg as a member of dairy-based forum? Do they have partnerships with processors? How do they keep abreast of the dairy news in-country?
4. What do the companies think of SDVC's activities in the Dairy sector? Is there anything they could have done differently or better?
5. Are the project innovations in input service delivery eg CDVF successful, practical and sustainable?
 - o What are the major policy barriers to the development of the milk value chain?
 - o How do existing government policies (e.g., tax, tariff, and subsidy policies) and regulations affect (a) milk production, (b) input supply, (c) processing, and (d) marketing?
 - o What policy actions are needed to promote the incorporation of small farmers into the dairy value chain?