VHL WAGENINGEN

Gender-Inclusion in Commercial Dairy Chains in the Global South

Bachelor Thesis

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ABSTRACT

Dairy business contributes to local economic growth and household food security (FAO, 2011). Women are highly involved in dairy production, but they are mostly not seen as dairy producers. This paper explores what are the key success factors of gender-inclusive interventions that enhance dairy value chain development from a business perspective in the global south. It presents arguments why private business should address gender in their dairy chain interventions and which interventions contribute to successful gender-inclusion.

Through desk study and the Agri-ProFocus partnership development organization, companies and research institutes have been identified which are operating on dairy chain development in the global south. A final selection of eight projects is based on addressing gender and dairy production of cow or buffalo milk, as well as showing a variety of approaches from different countries.

The analysis of the different cases focusses on the primary level to see clearly who benefits from gender-inclusive interventions and in which way. The different projects from Africa, Asia and Latin America are described in detail to illustrate projects incentives, activities and outcomes. Two gender sensitive tools, the Gender and Value Chain Empowerment Diamond and the Gender-Sensitive Value Chain Mapping, are used to identify the interventions' impact on women and men within the dairy chain, and its consequences for local business.

Findings suggest that gender-inclusion contributes to a win-win situation of local business and producer households. It increases milk volume and milk quality, which enables producers to address new (formal) markets. Next to that, it supports collaboration and exchange between wife and husband. Successful gender-inclusion makes women visible as dairy producers, includes them in dairy producer organisations and develops new business opportunities.

While some development organizations implement interventions, as trainings or networking events, by themselves, others chose an approach to address local business to apply these services to producers.

Projects report unanimously that the demand of quality dairy products is increasing over the years. This suggests business to establish gender-inclusive win-win business relations with dairy producers.

Key words: Women, gender-inclusion, dairy, value chain, commercial, market access.

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ABBREVIATIONS

ABS	African Breeders Services
AI	Artificial Insemination
BOAM	Business Organisations and Their Access to Markets
CSR	Corporate Social Responsibility
DCVP	Dairy Value Chain Project
EADD	East Africa Dairy Development Project
FAO	Food and Agriculture Organization of the United Nations
GAAP	Gender, Agriculture and Assets Project
GDP	Gross Domestic Product
GIZ	Gesellschaft für Internationale Zusammenarbeit GmbH (German Society for International Cooperation, Ltd)
Gokul	Kolhapur District Cooperative Milk Union
GSVCM	Gender-sensitive value chain mapping
HH	Household
ICRAF	World Agroforestry Centre
IFPRI	International Food Policy Research Institute
ILRI	International Livestock Research Institute
KDSCP	Kenya Dairy Sector Competitiveness Program
LOL	Land O'Lakes
NaWi	Afghan-German Sustainable Development Programme
NDDB	National Dairy Development Board
NGO	Non-governmental organization
PO	Producer organization
SDVCP	Strengthening the Dairy Value Chain Project
SNV	Stichting Nederlandse Vrijwilligers (Netherlands Development Organisation)
SSLLP	Small Scale Livestock and Livelihoods Program
UN	United Nations
UNFAO	UN Food and Agriculture Organisation
UNIDO	United Nations Industrial Development Organization
USAID	United States Agency for International Development
VC	Value Chain
VCED	Gender and Value Chain Empowerment Diamond
WDCLP	Women Dairy Cooperative Leadership Development Programme
WLDP	Women Leadership Development Programme (Gokul)
WUR	Wageningen University and Research centre

1. INTRODUCTION

1.1 TOPIC

While the volume of milk production in most European countries decreased over the last years, dairy markets grew in Africa, Asia and Latin America (Knips, 2005), engaging more and more development organizations in diverse dairy programmes. Dairy production is labour intensive, which results in various employments (ILRI, n.d.). Dairy animals (cattle and buffalos) provide a 'safety net' for the very poor and do not necessarily require land ownership for grazing; in contrast to agricultural crop production. Livestock serves consumption needs, social needs, and goods for festivals and ceremonies. Dairy products are mainly locally consumed, contributing to local economic growth and household food security (FAO, 2011). Multiple literature emphasise that the quality of milk is strongly related to hygiene and purity of milk production, which is mainly maintained by women. Still, women are often under-recognized in the dairy chain, not seen as dairy producer and lack ownership of land and animals. Additionally, access to services, credit, markets and business developments are often not provided to women (Agri-ProFocus, 2014). There are three main arguments why it is important to pay attention to gender equity: Firstly it is a human right to experience social justice, secondly gender equity and poverty reduction are closely related to each other and thirdly investing in gender equity means new business opportunities both for local enterprises and male and female producers. Not addressing women for local business means less profits, lower efficiency and decreased quality, resulting in missed business opportunities (KIT, Agri-ProFocus and IIRR, 2012). In diverse cultures women are mostly occupied with unpaid 'reproductive' work, whereas men do in general more 'productive' work (UNDP 1997, Cagatay 1998a, World Bank et al. 2009). KIT, Agri-ProFocus and IIRR (2012) believe that "investing in women and increasing the income they control is a very effective way to fight poverty" (KIT, Agri-ProFocus and IIRR, 2012, p.136). This report shows that gender-inclusion is attractive for business. It is leading to increased milk volume in the dairy chain, as well as improved milk quality, hygiene and shelf-life with women-inclusion. These and more improvements are results of diverse key success factors from a gender-inclusive approach of dairy chains development in Africa, Asia and Latin America, which will be described in the report.

1.2 CONTEXT

This report presents an applied research, conducted in the framework of a final thesis project for the study program International Development Management, major Fair Trade Management, at Van Hall Larenstein, Applied University of Science in Wageningen, the Netherlands. The external commissioner of the thesis is Angelica Senders, advisor on capacity development of Fair & Sustainable Advisory Services and network facilitator of the 'Gender in Value Chains' platform of Agri-ProFocus. Since Fair & Sustainable Advisory Services and Agri-ProFocus work closely together on gender issues in value chain development, they are joint commissioners of this thesis.

Fair & Sustainable Advisory Services is a Dutch consultancy company, offering services to organizations and companies, with businesses in developing countries, to build partnerships which promotes sustainable resource use and benefit sharing (Fair & Sustainable, 2014).

Agri-ProFocus is a partnership, founded in 2005 in the Netherlands, which brings together professionals, expertise and resources with the aim to strengthen farmers' entrepreneurship. The network members gather, train, connect and provide inputs and credits to farmer entrepreneurs and produc-

er organizations. To increase cooperation, Agri-ProFocus established Agri-Hubs (local networks) in Indonesia and twelve African countries, which build networks and facilitate cooperation.

In 2008 Agri-ProFocus started to work on the improvement of gender equity in agricultural value chain development initiatives. It shares concepts, tools and experiences through its network and online platform. Through the cooperation, resources as literature have been published and a pool of coaches, who combine gender and value chain experts, developed to deal with experiences of real-life cases. Additionally, trainings are provided and an online platform is created to exchange knowledge and experiences. Agri-ProFocus believes that by addressing gender gaps in the value chain, poverty and social injustice can be fought and chains can be made more robust and efficient (Agri-ProFocus, 2014).

This research presents successful gender-inclusion in dairy value chain upgrading. In the results, it reveals eight different cases of projects from different development organizations and business addressing gender issues in commercial dairy value chain upgrading. Interviews and literature provide information and give examples to answer the research question of this research. The discussion and conclusion will be made based on the results of the research. Finally, additional recommendations will be given to Agri-ProFocus and Fair & Sustainable staff, companies, government and NGO's, which are working in dairy chain development in the global south, on which success factors could lead to gender-inclusive dairy chain upgrading. Provided business arguments may attract local businesses to address gender in dairy chain interventions.

2. PROBLEM DEFINITION

A systematic overview of success factors in gender-sensitive dairy chain development in Africa, Latin America and Asia, and business arguments that can motivate local business to invest in gender-sensitive dairy chain development, are missing.

3. RESEARCH OBJECTIVE

The research aims to give an overview of business arguments and key success factors for a gender-inclusive approach to develop commercial[1] dairy value chains in Africa, Latin America and Asia.

Outcomes of the research will be:

1. Arguments to encourage private business chain actors to address gender in their dairy chains

2. An overview of key success factors for a gender-inclusive approach in dairy value chain development

Outcomes of the research are of relevance to Agri-ProFocus staff, companies, government and non-government organizations, which are active in dairy value chain development in Africa, Asia and Latin America.

4. RESEARCH QUESTION

What are the key success factors of gender-inclusive interventions that enhance dairy value chain development from a business perspective in the global south?

Sub-questions:

1. How are commercial dairy chains organized at primary level?
2. How was gender included in gender-inclusive dairy chain development to improve business?
3. What is the concrete impact of gender-inclusive dairy chain upgrading activities in terms of both business performance and gender equality?

[1] Commerce is defined as "exchanging, buying, or selling of things having economic value between two or more entities, for example goods, services, and money. Commerce is often done on a large scale, typically between individuals, businesses, or nations" (Cornell University Law School, 2014).

5. METHODOLOGY

5.1 LITERATURE REVIEW

Business perspective

Corporate Social Responsibility[2]

The trend of business to apply Corporate Social Responsibility (CSR) is increasing around the world. Carroll (1991) and Apotheker (2009 cited in KIT, Agri-ProFocus and IIRR, 2012, p. 262) argue that companies have different understandings and motivations to apply CSR: "Economic responsibility (be profitable), legal responsibility (obey the law), ethical responsibility (do what is right, just and fair) and philanthropic responsibility (be a good corporate citizen)". It is further used to improve companies' reputation.

UN Women and UN Global Compact (2011, p.3) see a confirmation from diverse research (made by UN Women, UN Global Compact, leading UN agencies, World Bank and World Economic Forum and more) "that gender diversity helps business perform better signals that self-interest and common interest can come together". It further sees governments realizing the importance of women-inclusion for local development.

McKinsey (2010 cited in KIT, Agri-ProFocus and IIRR, 2012, p.266) mentions that "gender equity can contribute to an innovative and transparent business operation in a company, and to equal opportunities for men and women (also in top positions)". That leads to increased and efficient positivity and profits for companies.

WO=MEN, a Dutch gender platform, sees a need of business to take a conscious step towards being able to understand chain activities and develop transparency in the chain (Wo=men, 2014). Business opportunities for women benefit business and economy and can contribute to a good companies' reputation. Women present new market opportunities as buyer, supplier and consumer. Companies may choose to be a driver of development or comply with voluntary standards.

Shared value

Porter and Kramer (2011) see business acting as business as the most powerful tool to address current global challenges. Their understanding of corporation is the creation of shared value, which concept is focussing to connect societal and economic progress to reach global growth. For that, companies need to: Rethink products and markets, redefine productivity in the value chain and enable local cluster development. "Every firm should look at decisions and opportunities through the lens of shared value", leading to new approaches, greater innovation, growth for companies and greater benefit for society (Porter and Kramer,2011, p.5).

Inclusive business

Inclusive business describes business approaches "benefiting poor people in developing countries through core operations on commercial terms" (Ashley, 2009, cited in DCED, 2014, p.1). It includes the perspective to see 'the poor' as consumers, but also as chain actors or employees along the entire supply chain. Supportive business environments, e.g. through the introduction of certification or research facilities contribute to mutual benefits.

[2] Corporate social responsibility is understood that "companies integrate social and environmental concerns in their business operations and in their interactions with their stakeholders on a voluntary basis" (European Commission, 2001, p.6).

To upgrade business successfully into inclusive business Jenkins et al. (2010 cited in DCED, 2014, p.4) suggests "five core business model: extending reach through distribution networks, facilitating financial access for suppliers and consumers, increasing demand by changing mind-sets, designing relevant products and services, and developing the right pricing and payments policies".

Value Chain

The term 'value chain' was initiated in 1985 by Michael Porter in 'Competitive Advantage: Creating and Sustaining Superior' in which he explains value chains as a "set of activities that are performed to design, produce and market, deliver and support its product" (Porter, 1985 cited in Kannegiesser, 2008, p.11). Cattaneo (2013, p.2) defines value chains as "a reference for the analysis of trade and industrial organization, describing the full range of activities that firms and workers perform to bring a product or service from its conception to end-use and beyond".

For Agri-ProFocus (2012) "a value chain refers to an entire system of production, processing and marketing from inception to the finished product. It consists of a series of 'chain actors', linked together by flows of products, finance information and services. At each stage of the chain, the value of the product goes up because the product becomes more available or attractive to the costumer" (Agri-ProFocus, 2012, p.5). Product ownership is changing between the chain actors towards the final consumers (Agri-ProFocus, 2012). 'Chain supporters, individuals or organizations, provide services to the chain actors. Additionally, the 'chain context' includes the larger economy, current exchange rates, governments, economic policy, governmental tax, regulations as well as legal structure (KIT, Agri-ProFocus and IIRR, 2012).
Definitions and understandings have been developed over time and reach a hit ratio of 91,800,000 at google.com in 2014.

To understand relationships between producers, buyers, and consumers in nowadays food systems Kaplinsky and Morris (2000 cited in Quisumbing et al., 2014, p.1) see **value chain analysis** as "a focused process of data collection and interpretation".

UNIDO (2011, p.1) describes **value chain development** as "a positive or desirable change in a value chain to extend or improve productive operations and generate social benefits: poverty reduction, income and employment generation, economic growth, environmental performance, gender equity and other development goals."

Gender

Gender is defined as a "culturally and socially constructed difference between men and women that varies from place to place and time to time" and is not, compared to 'sex', biologically determined (Business Dictionary, 2014). The personal sense of being male or female is a person's gender identity (Land O'Lakes, 2013). The UN women (2001, p.1) state that most societies show "differences and inequalities between women and men in responsibilities assigned, activities undertaken, access to and control over resources, as well as decision-making opportunities".

Literature describes gender in food security as an issue for women (FAO, 2011). Women embody around half of the working force in agriculture, but are not seen and valued equally as producer. Cooperatives bylaws make it often difficult for women to join cooperatives, women are not addressed to participate in technical trainings, have limited access to land and cattle ownership, and lack credits (KIT, Agri-ProFocus and IIRR, 2012). FAO (2011b) believes that "[...] if women had the same access to those resources as men, they would produce 20-30 per cent more food [...]" (FAO, 2011b, p.4). And, if resources would be available to both gender equally in developing countries, food production could increase between 2.5-4 per cent, which would feed between 100-150 million people. That means that women strongly effect food security and societies' economic development (FAO, 2011b).

Compared to men, women are mostly unpaid for their work related to cattle management and household responsibilities, and illiteracy reduces their bargaining power. Through these obstacles women "do not reach their potential as workers, entrepreneurs or consumers" (KIT, Agri-ProFocus and IIRR, 2012, p.37). KIT, Agri-ProFocus and IIRR (2012) see investment in gender equity as an effective tool to fight poverty. They state further, that gender inequity (def. below) in agricultural value chains are missed business opportunities because of three main reasons: Firstly, mixed gender management contributes to better business performance, secondly women are potential clients, suppliers and consumers, and lastly a company's reputation can be improved by employing women (KIT, Agri-ProFocus and IIRR, 2012).

Gender equity
Men and women are able to "develop their personal abilities", have no limitations to make their own choices and their rights, responsibilities, and opportunities do not depend on their sex (KIT, Agri-ProFocus and IIRR, 2012, p.2).

Gender equality
Gender equality refers to a fair treatment of men and women according to their respective needs. Equal treatment may require, in some cases, different treatment to obtain the same benefits and experience of rights. From a development background, gender equality often needs integrated measures "to compensate for the historical and social disadvantages of women"; e.g. mobility and access to education (KIT, Agri-ProFocus and IIRR, 2012, p.2).

Gender-inclusive intervention
A gender-inclusive intervention is defined as 'Gender-redistributive' interventions transforming "existing distributions of power and resources to create a more balanced relationship between women and men, touching on strategic gender interests" (March et al., 1999, p. 21). This change targets strategic gender interests (such as decision-making power, ownership, representation), by addressing practical needs (such as healthcare, making a household income, provision of housing) and strategic needs (challenging traditional division of labour and transforming unequal power relations). They are both important to address and inter-related (KIT, Agri-ProFocus and IIRR, 2012).

Empowerment
"Gender" and empowerment of "women" cannot be seen as the same, but are closely related. Women and men are a group of people. A society or culture is giving gender meanings to physical and biological differences and characteristics, which are defined as femininity and masculinity (Scott and Warren, 2009). Kabeer (1999, p. 437) sees empowerment as "a process by which those who have been denied the ability to make strategic life choices acquire the ability to do so". Empowerment aims at the idea that men and women have the same capacities in decision-making. Changing gender relation means that women are able to make decisions about their life themselves. This development includes the questions "of *what* is changing and [...] *how* that change is valued (KIT, Agri-ProFocus and IIRR, 2012, p.37).

Papa et al. (2000) see three dimensions of women's empowerment: Firstly, it is shown in communication and action aiming at social change within their households and communities, secondly it is enclosed in democratic practices (as female discussion and decisions targeting to improve their lives) and thirdly, "paradox and contradiction[3] are an important part of empowerment process" (Papa et al., 2000, p. 90). It is related to sharing emotions, to evaluating consequences of own actions on relationships and one's environment, and to supporting each other through collective action (Papa et al., 2000).

[3] Paradox and contradiction refers to the contradictory behaviour, in which verbal communication reverse with personal behaviour adjusted to cultural or societal norms (Papa et al., 2000).

5.2 CONCEPTUAL FRAMEWORK

The conceptual framework describes the different aspects of this research. Two tools will be used to evaluate different cases of gender-inclusive intervention in dairy value chains.

Gender-Sensitive Value Chain Mapping is a tool, developed by Vanderschaeghe and Lindo (Senders et al., 2013), to make all actors visible in the chain. It identifies opportunities of upgrading women's position, view possibilities of women's participation and the power relation within the value chain governance (Senders et al., 2013). For this research, the Gender-Sensitive Value Chain Mapping is adjusted to focus on women's upgraded position as through (visualized with red arrows for women). In some cases the number or percentages of employed women is known and mentioned in the arrow. Since formal and informal markets may have different chain actors and income streams for men and women, they are divided through a blue line (see figure 01). Percentages show the amount of milk sold over the certain market. That may in some cases include households selling via both channels and others selling their milk exclusively through one of these markets. The dollar sign ($) illustrates female and/or male income, generated through milk sales. The map shows also Market services provided to the different chain actors in the entire chain. Using the Gender-Sensitive Value Chain Mapping for all selected cases of this research provides a good overview of the similarities and differences in approaching dairy chain upgrading and gender inclusion.

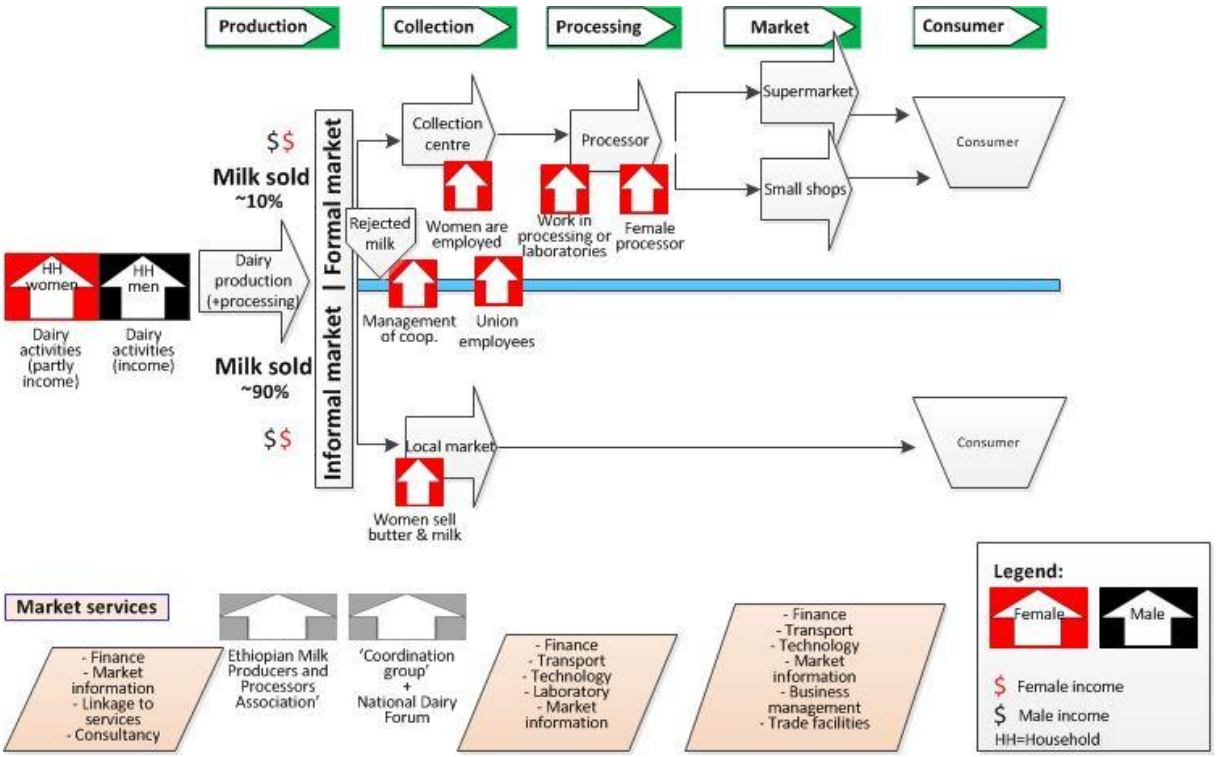

Figure 01: Gender-Sensitive Value Chain Mapping example from the Ethiopian BOAM case (adapted from: Senders et al., 2013)

Gender and Value Chain Empowerment Diamond

The Gender and Value Chain Empowerment Diamond is developed by Senders et al. (2013) to monitor the impact of a project by practitioners involved in value chain development interventions. It measures the impact on progress in four different dimensions (figure 02): two dimensions of gender equity (*Structure* and *Agency*) and two of gender mainstreaming[4] in value chain development (*Activities* and *Governance*). The research analyses in how far each project takes gender into account in the chain upgrading activities. All selected cases are compared and evaluated by applying the Gender and Value Chain Empowerment Diamond framework.

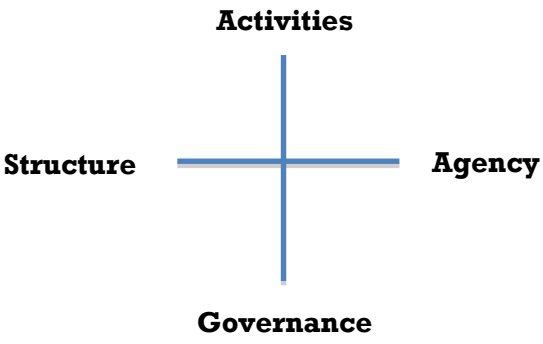

Figure 02: Value Chain Empowerment Diamond (adapted from: Senders et al., 2013)

Gender equity is analysed through (1) *agency* and (2) *structure* and illustrates the gender related results of a project (Senders et al., 2013):

(1) *"Agency"* describes the capacity of an agent to act independently and to be able to choose freely. This means in a value chain that a woman has the capacity to choose being involved in more activities and to perform in more leadership positions or decision-making roles.

(2) *"Structure"* discusses how far institutions build or limit opportunities for individuals. These institutions can be informal (social class, values, religion costumes or habits) or formal (laws and regulations). Structures may be at different levels (local, regional and international) and to diverse domains (economic, political, social and cultural).

Improvement of gender mainstreaming is evaluated through (3) value chain activities and (4) value chain governance, illustrating the value chain related results.

(3) *"Value chain activities"* is about farmers being engaged in more activities along the chain and women contributing through their activities to added value (increased productivity, higher quality etc.).

(4) *"Value chain governance"* refers to a *horizontal integration*, describing the diversity of involvements within the chain or in product diversification. It further describes governance through producer organization and their decision making in the value chain. This can be achieved by developing chain partnerships, long-term relationships with other chain actors, based on common interests and mutual growth.

The approaches development organizations chose to make women 'visible' in the dairy value chain and to support dairy value chain development, are shown in 'Results'. The analysis shows how development organizations and businesses intervene in dairy value chains, which different gender-inclusive approaches are chosen, and how gender-inclusion is leading to successful dairy chain upgrading. Successful approaches are formulated as 'success factors[5]'. Success factors may have a positive impact on local business and are communicated in form of attractive business arguments[6].

[4] Gender mainstreaming is a "globally accepted strategy for promoting gender equality". It refers to a gender focus in all kinds of "activities - policy development, research, advocacy/dialogue, legislation, resource allocation, and planning, implementation and monitoring of programmes and projects" (UN women, 2001, p. 1)

[5] Success factors show development towards dairy value chain development and (please see more p.16)

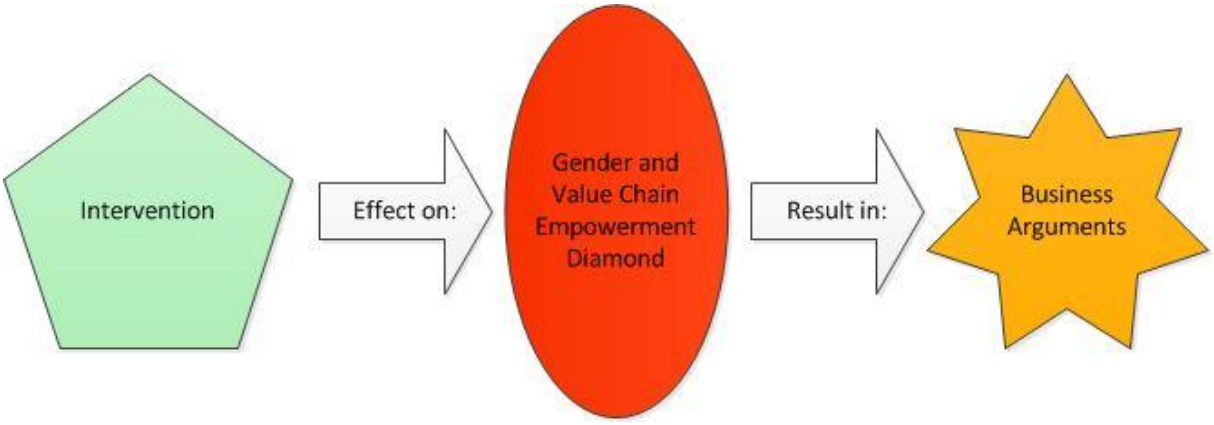

Figure 03: Concept of analysing project cases

Figure 03 explains how interventions will be analysed with the Gender and Value Chain Empowerment Diamond. The different gender-inclusive interventions have an effect on the four levels of the Gender and Value Chain Empowerment Diamond and result in arguments why private business chain actors should address gender in their dairy chains.

5.3 SELECTION PROCESS

Through desk study development organizations, companies and research institutes, which are operating in the global south on dairy chain development, are identified. Additionally, Agri-ProFocus staff gave suggestions for consultations. Those partners are requested to provide brief project details relevant for the research, which are gathered in a 'long-list'. A final selection is made to have diverse examples of countries and development organizations/business, in which dairy (cattle/buffalo milk) development interventions address gender-inclusion. The selection leads to a 'short-list' of which project participants are interviewed over Skype. One interview from Nicaragua is discarded due to insufficient data and because another case from Nicaragua has been already chosen. The remaining eight cases exceed the planned 5-7 case descriptions.

5.4 RESEARCH DESIGN

Desk research provided an overview of gender issues, the dairy chain and value chain development. Part of that are information from diverse development organizations, companies and research centres, with projects in Africa, Asia and Latin America. Participants were contacted by mail to collect overall information of potentially interesting dairy projects, showing a variety of approaches in which gender mainstreaming was an entry point.

Field research of selected projects was made with semi-structured interviews by Skype to gather information on diverse dairy chain upgrading and gender-inclusive intervention.

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gender equality, contributing to equal access to training and market information, entrance to producer organization's membership, a high management level of cooperatives, or the ability to freely choose chain activities and responsibilities.

[6] Business arguments are for instance: increase of milk volume, improved milk quality, improved food safety, stable milk supply

Desk research and field research provided information to formulate business arguments and gave an overview of key success factors in gender-inclusive approaches in dairy chain upgrading. The research is based on a qualitative research design, describing eight cases in detail.

5.5 DATA COLLECTION

Secondary data was collected through desk research. Staff of Agri-ProFocus was addressed by e-mail and in person to provide an inventory of interesting dairy programs worldwide. Additionally, development organisations and research organizations were contacted to collect overall information of potentially interesting dairy projects. Based on a long list of these projects a short list was made to select relevant and diverse dairy projects for further investigation through interviews and desk research. In total 9 staff members of development organizations and research centres were interviewed by Skype (see annex 02). These interviews were based on a questionnaire (see annex 03). During interviews notes were made and interviews recorded.

5.6 DATA PROCESSING

Secondary data and collected interviews were grouped according to: information on the dairy supply chain, objectives and targets of the intervention, the gender-inclusive intervention used, project activities, their outcomes, business arguments, successful examples of gender-inclusive intervention, and challenges faced in implementing gender-inclusive dairy chain upgrading. The research analyses activities, ownership and produced volumes on producer and cooperatives' level of eight projects. This level gives an indication of who benefits and in which way from dairy chain upgrading. It may also clear in some cases why a certain intervention was successful or failed. The dairy value chain is mapped and analysed by the Gender-Sensitive Value Chain Mapping tool with a gender focus to identify women's and men's activities and employments (see also conceptual framework). The tool is adjusted to the received information and differs slightly from the invented tool. Impacts on gender-inclusive interventions are illustrated through the Gender and Value Chain Empowerment Diamond tool. The tool helps to identify successful intervention strategies of dairy chain upgrading by addressing gender-inclusion. Selected cases were analysed to formulate business arguments and to give an overview of key success factors of dairy chain upgrading.

5.7 LIMITATION OF THE THESIS

The research uses data of semi-structured interviews and desk research, and does not cover own field research at producer's level by which observations might have contributed to a greater understanding. Receiving information through project facilitators and not project participants may influence the researcher's perception and could vary from the real situation. The research focusses on a selected number of cases made available mainly through development organisations, which are described in detail. Although cases are selected from different countries and diverse in their characteristic, it introduces only a few examples. An obstacle faced was in some cases missing data of household level. Projects did not evaluate its changes or the level in how far women contributed to improved business, which limits the outcome.

Within the time frame and available means, not all case descriptions have been confirmed by the interviewees.

6. RESULTS

Out of the received case descriptions, eight projects (see table 01) from different development organizations, companies and research centres in Africa, Asia and Latin America were selected. The descriptions provide different examples of dairy chain upgrading and gender-inclusive intervention and are based on the information provided by the interviewees; supported by additional literature (cited in the text). Figure 03 illustrates the location of the project interventions.

In the end of the chapter, an overview of 'Business Arguments' and 'Success Factors' will be given.

Table 01: Overview of case descriptions

Project:	Lead organization/business	Country:
1. Strengthening the Dairy Value Chain Project	CARE Bangladesh	Bangladesh
2. Kenya Dairy Sector Competitiveness Program	Land O'Lakes	Kenya
3. East Africa Dairy Development Project	Heifer International	East Africa
4. Business Organisations and Their Access to Markets	SNV Ethiopia	Ethiopia
5. Small Scale Livestock and Livelihoods Program	Heifer International Malawi	Malawi
6. Dairy Value Chain Project	UNFAO and NaWi	Afghanistan
7. Recursos Naturales y Fomento de Competencias Empresariales	GIZ	Nicaragua
8. Women Leadership Development Programme	Gokul Union India	India

Figure 03: Overview of the project locations (adapted from: Owasso Mid High School, 2014)

6.1 STRENGTHENING THE DAIRY VALUE CHAIN PROJECT – CARE BANGLADESH

Project Background

The Strengthening the Dairy Value Chain Project (SDVCP[7]) was led by CARE Bangladesh. The SDVCP project worked with the governmental livestock services department and local businesses. The five years project (2007 - 2012) was funded by the Bill and Melinda Gates foundation. Nurul Siddiquee has been involved in the project as the team leader. By now he still looks after the project performance. Impact was measured by IFPRI based on two control groups including a baseline survey in 2008 and an end-line survey in 2012 (Quisumbing et al., 2013).

Bangladesh has the third biggest cattle production in Asia. Around 90 per cent of its milk is produced by small-scale farmers living in rural areas. Most farmers own 0.05-2.29 hectares of land and 2-3 cattle per household. From the around 9 per cent landless farmers half are owning cattle, which is an important asset for them (Siddiquee and Southwood, 2011). The country's average milk consumption is far below the WHO recommended 250mL (Rao and Odermatt, 2006) and is closely related to the chronic malnutrition of predicted 30 per cent adult Bangladeshi women (Britt, 2010). Fresh local milk is expensive, but has a poor quality (Quisumbing et al., 2013). Although the country's milk sector is annually growing by around 1.9 per cent, 30 per cent is still imported, being preserved and with a longer shelf life than local milk (Siddiquee and Southwood, 2011).

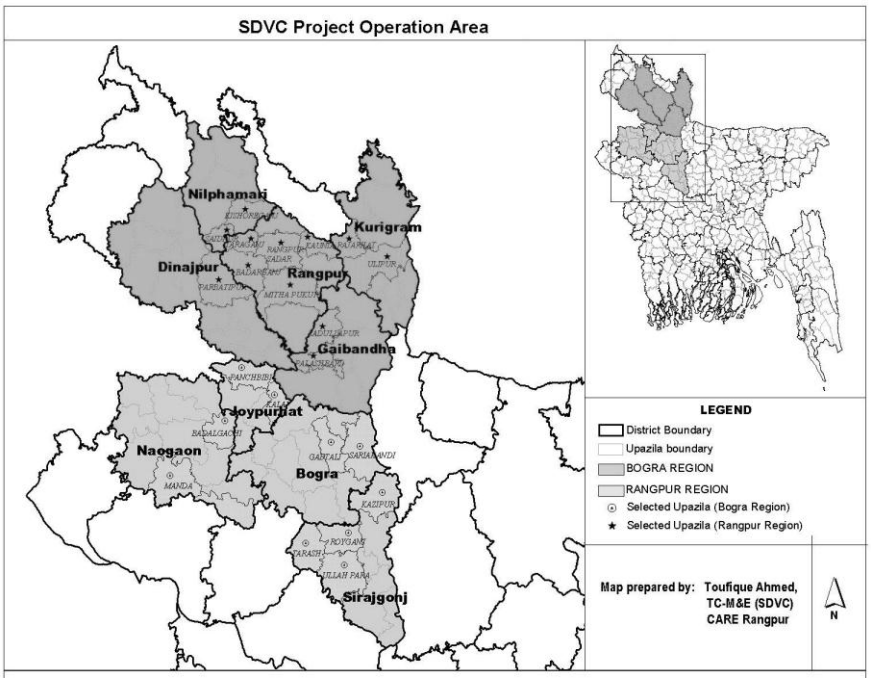


Figure 03: Project area SDVCP (Siddiquee and Southwood, 2011)

Focussing on nine districts of the North-West of Bangladesh, CARE Bangladesh chose an area with low milk yields, poor cattle breeds, a particularly weak dairy chain infrastructure and low trust between the chain actors (CARE, 2014a). Farmers face daily challenges in the "shortages of quality feeds and fodder, sub-optimal cattle nutrition, inadequate systems for breeding more productive

[7] SDVCP was part of the Gender, Agriculture, and Assets Projects (GAAP) led by the International Food Policy Research Institute (IFPRI) and the International Livestock Research Institute (ILRI).

cattle, inadequate disease control, poor housing and other animal management practices, limited access to veterinary care, and a disorganized milk collection, transportation and marketing system" (Siddiquee and Southwood, 2011, p.3).

With the SDVCP project CARE Bangladesh aimed at "increasing income of 35,000 smallholder and landless milk producer households, and to create employment opportunities for extremely poor households (especially women) through various activities along the dairy value chain" (Ahmed et al., 2008, p.2).

Main objectives of the SDVCP have been:

1. To improve milk collection systems in rural and remote areas,
2. To improve access to inputs, markets, and services by mobilizing groups of poor farmers, producers, and *char dwellers*[8],
3. To improve the milk transport network,
4. To ensure access to quality service at the producer level and
5. To improve the policy environment

Around 80 per cent of the project participants have been female farmers. One of the requirements of the participants was cattle ownership, which indicates that the target group have been not the poorest farmers (Quisumbing et al., 2013).

Objectives and Targets

SDVCP targeted small-scale and landless dairy farmers with 1-3 cows. Engagements of female participants were specifically targeted because of CARE Bangladesh's and the donors' commitments towards women's empowerment. Goals of the SDVCP were to "double the dairy-related incomes of farmers in the North-West of Bangladesh by improving milk collection services; increasing access to inputs, markets and services; improving the artificial insemination (AI) network; and improving the national policy environment for dairy industry development" (Siddiquee and Southwood, 2011 p.3).

During the time of 2007-2012 the formal market had no consistent pricing nor organized milk collection, which created a risk for farmers to be directly linked to a specific market. As a consequence, SDVCP aimed at improving the opportunities of the milk markets and let farmers decide over which market they wanted to sell their milk to receive the best prices.

The Previous Situation at Producers' Level

Bangladeshi women are significant contributors in the dairy chain, but their contribution is invisible and their participation has been under-recognized. They face a low status and live under hierarchical food consumption patterns at their homes. These patterns take also place during pregnancy and cause maternal and neonatal mortality and malnutrition. Around half of the women experience domestic violence at their homes (Siddiquee and Southwood, 2011). They have limited rights owning or controlling land and cattle, limited access to credit facilities, extension services and market information. Women own regularly poultry or small ruminants. Being in charge of household responsibilities, sometimes day labour, and cattle management, women are overburden with work (Quisumbing et al., 2013).

In 2007, at the beginning of the project intervention, the formal market was less than 10 per cent of the entire milk marketing. Milk was mainly sold, and partly consumed, through the informal market toward local processors. Productivity of the households' cows and the right fat content were the main points deciding through which market milk was sold.

Small scale dairy farmers traditionally divide dairy activities in the following way: Women feed the cat-

[8] *Char* dwellers are farmers who live on remote land "formed through a continual process of erosion and deposition associated with the major rivers that run through the country" (Quisumbing et al., 2013, p.7).

tle, clean livestock sheds, milk cows, and sell milk within the homestead. Men buy or collect the feed inputs, are involved in cattle breeding, herding and sell the milk outside of the villages. When families have a bigger amount of cattle, men help with the milking and feeding. Milk was sold to neighbours, over one collector going from house to house to the nearest chilling point or sold by men on the market. Income is generally controlled by the husband. Culture and tradition limit women's mobility to go outside the village for social or leisure locations, as well as for trainings or milk marketing purposes .

Access to the formal market, where the fat content needs to be high and milk is consistently sold, was challenging for small scale producer. The rejection rate was between 3-5 per cent. Often morning milk, with less fat, was sold to the informal market and evening milk sold over the formal market, where prices are higher.

Gender-Inclusive Intervention

CARE Bangladesh used the Women's Empowerment Framework to identify the core dimensions of empowerment: agency, structure and social relations[9]. Next to that the Women's Barrier Check-list gave an overview of the different positions in the chain in which barriers were experienced. It further suggests potential solutions and interventions for the project.

During the SDVCP the following analyses were made:

- Gender role analysis
- Gender equity format analysis
- Asset ownership pattern analysis
- Analysis on barrier/violence against women (CARE, 2013)

Project Activities

Project activities during the SDVCP were:

- Organizing farmers into groups
- Linking farmers to veterinarians, animal health worker, AI service providers, feed and service providers to receive quality services and inputs
- Encouraging farmer groups to bulk milk to attract commercial buyers and increase their bargaining power
- Trainings[10]
- Pilot project with the local milk processors like PRAN and BRAC
- Introducing quality testing technology (lactometer and digital milk-fat testing meters) to increase transparency and pay quality-based prices

Project Outcomes

After the five years project time, SDVCP participants sell 30 per cent of their milk over the formal market, production increased with around 50 per cent, the overall milk supply is more consistent, and the milk chain's infrastructure increased. Farmers shifted to formal markets and became loyal suppliers after experiencing regular collection of milk at village level and no market disturbance. Dur-

[9] *Agency*: refers to women's self-confidence and self-esteem, *Structure* to "socially constructed institutions, norms, values, attitudes and believes that effect women's agency" and *Social relations* to "networks and relationships through which agency may operate" (Siddiquee and Southwood, 2011, p.9).

[10] Trainings included discussion on violence towards women, price ranges and opportunities of formal and informal markets and cattle nutrition and health. Aiming on price reduction of transportation, trainings were hold to become collectors and transporters. Low yields were addressed by encouraging farmers to purchase cross-breed cattle, to use AI practices and to apply better livestock practices taught during the training sessions (Quisumbing et al., 2013).

ing a pilot intervention with milk processor PRAN, selected farmers were trained as collectors or transporters to reduce costs for transportation. Market information and knowledge, and the introduction of a lactometer and digital fat meter at village level contribute to transparency in the chain. Quality based selling, by which the fat content distinguishes the paid price, attract dairy farmers to sell also small amounts of good quality milk to the processor (Siddiquee and Southwood, 2011). Rejected milk (either due to climate conditions or bad treatment) dropped at collection points to almost zero. While milk processors in the formal market show interest to work with female milk collectors, the informal market is still male-dominated with 10 per cent higher income for men (CARE, 2014a).

Through the SDVCP 150 agricultural input shops were built. Many of the input suppliers have a double function working half day as livestock health worker and half day in agricultural input shops. The SDVCP built capacity on technical and business skills and established a network between the agricultural input shops. This gives farmers the possibility to buy quality medicine and other quality inputs. Around 20 per cent of the agricultural input shops are run by women from their homes, receiving a reliable income and strengthen their self-esteem through financial independence (CARE, 2014a).

Women showed success in establishing women saving groups with regular, small contribution. The group savings were used for vaccination and de-worming on a regular basis. They jointly decided how money should be spent.

Figure 02 shows the changed situations in the dairy activities. At producer's level, women take part in decision-making to market milk, selection of dairy inputs, are trained and work in diverse positions of the dairy chain (see also table 01). Ownership of land did not change significantly, but cattle ownership shifted partly to joint ownership (Quisumbing et al., 2013).

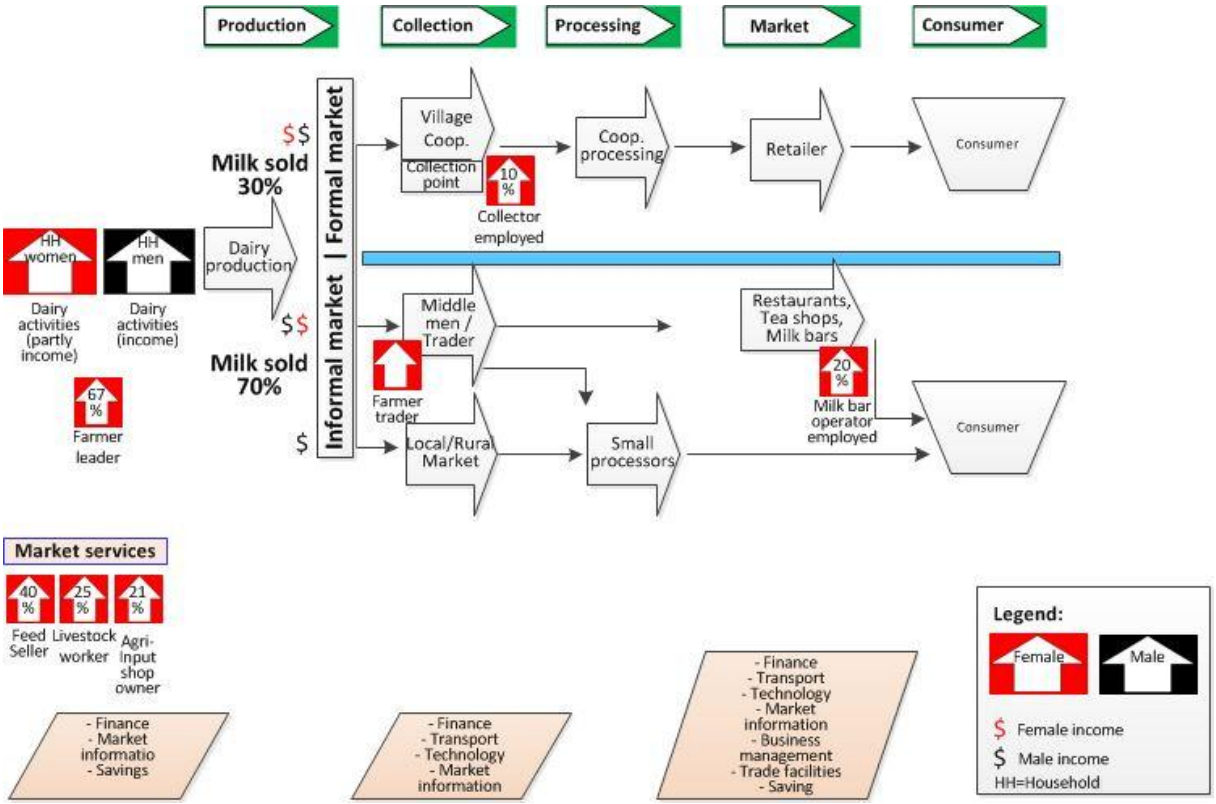


Figure 04: Milk chain through the SDVCP (adapted from: Senders et al., 2013)

A more detailed overview of achieved gender equity and gender mainstreaming targets are represented in table 02.

Table 02: Value Chain Empowerment Diamond on the SDVCP

Value chain activities	Agency
- Women are engaged in more chain activities and technology: • 10% / 17 milk collectors are women[11] • 79% / 25 863 women dairy farmers were trained[4] • 20% / 3 women are milk bar operators[4] • 40% / 43 women are feed sellers[4] • 25% / 42 livestock workers are women[4] • 21% / 31 input dealers are women[4] - 150 agricultural input shops (31 run by women)[12] - Nearly 50% increase in milk volume - Better milk quality - Women taking part in trainings - Women saving groups are established	- Skill development: • 67% / 1454 farmer leaders are women[4] • 10% / 5 women trained as AI workers[5] - Access to loans and saving groups - Building confidence and self-esteem - Negotiation with buyers - Average income of livestock health workers increased with 479% (US$ 19 to US$ 110 per month) between January 2009 to August 2012[5] - "Ability to access value-chain services" within and outside of the community[6]
Value chain governance	**Structure**
- Reduced barriers of participation for women in the formal dairy value chain - "Increased value of both agricultural and non-agricultural productive assets"[13] - "Ability to access value-chain services" within and outside of the community[6] - Formalizing women's activities (Registering farmers in cooperatives and encouraging formal arrangements with processors) - Better information/market information	Household: - Women participate in decision-making on dairy-expenditures - Increased decision-making power in income - Increased joint ownership - 75% of women mention to receive help at household activities from their husbands[14] - Increased sensitising in household and communities - Limited change in aggregation and distribution of household income[6] - "Significant positive impacts on the composition of household assets"[6] - Men appreciate women's economic contribution - Through participating in the SDVCP "increased value in jointly hold assets"[6] - Households time spend on dairy related activities increased, especially on hygiene and livestock health[6] Society: - Society allows women to become a member in a dairy cooperative- Increased respect and dignity from society and husbands - Increased women's mobility - Milk consumption increased in the project time - Women are consulted in dairy production issues[6] - Women participate in trainings/meetings

[11] (Siddiquee and Southwood, 2011)
[12] (CARE, 2014a)
[13] (Quisumbing et al., 2013)
[14] (CARE, 2013)

Business Arguments

- ✓ Mixed dairy producer groups perform best in hygiene and quality with a female cooperative leader
- ✓ Women groups increase milk production more than men groups
- ✓ Women show leadership quality and stabilize the position of the producer group
- ✓ Women are good in savings and use them in the most efficient way
- ✓ Women show a strong willingness to participate in trainings, to learn and to adopt
- ✓ Women show more adoption and learning during capacity building
- ✓ Women know best which family member needs extra nutrition of milk

Success Factors on Gender-Inclusion

❖ *Monitor and evaluate, if gender barriers have been overcome*

In the beginning of the project a gender analysis and a gender barrier analysis tool were made to streamline and monitor the follow-up of the project. Regular reports were written and specific issues of women producer, producer leaders and service providers were handled on a case to case basis.

❖ *Female farmers trust female service providers more*

Since 80 per cent of the dairy activities are done by women, and they are not recognized previously, targeting female producers is very effective, they respond well to the intervention. This is also confirmed from other dairy interventions by Diaka Shall director of Lending (Root Capital, 2014). Still, any intervention is related to the context and may not be successful in any way.

❖ *Acceptance and support of household and community for women's employment*

Working with many female producers and service providers can create the risk of unsensitised gender interventions and women getting a negative image when working in market service (e.g. AI). Care Bangladesh discussed with the households the women's and men's activities and responsibilities (mobility, times of travel). Additionally, they discussed the needed support of men or other family members making women work in untraditional professions in the dairy chain. Most success is seen when women are working in their natural space where they receive societies' acceptance.

❖ *Engaging women in their traditional working field*

The project saw success in engaging women in work they do traditionally (like cattle rearing). Related jobs, such as livestock health worker are seen more easily implemented as new working fields (Siddiquee and Southwood, 2011).

❖ *Mixed training groups*

CARE Bangladesh saw success in mixing training groups instead of having men-only or female-only groups. Siddiquee and Southwood (2011) assume that the different genders' skills and experiences, from the perspective of the homestead and market-based, result in the successful collaboration.

Challenges

- *Adoption of new practises*
  Farmers often hesitated to trust information or adopt new practises of trainers until success and value of early adopters was clearly visible. Next to that the performance and quality of the trainers was crucial to the adaptation. In general, farmers adopted the parts which seemed useful to them and in return saw an increase in profit. Through 'Need Assessments' CARE Bangladesh carefully identified their training contents. Building women's capacity was relatively new in the area. Men were in general less willing to adopt new practices than women. Finally, adoption is influenced by decision-making power within the household. One of the new practises encouraged farmers feeding cattle in adding some nutritious substances to the locally used dry rice straw.

- *Finding the right collection point*
  Within the SDVCP Care Bangladesh was challenged to find the right collection points, which was accessible to many farmers and not too far from the processors. Nurul Siddiquee states: "mobility of small holder women is a central success factor, if women sell their milk to the collection point" or to informal markets.

- *Low market demand*
  Linkages of farmers are especially important for female farmers, if market demand is low through inconsistent consumer behaviour. Selling milk only on irregular basis made some female farmers look for additional markets by themselves. In that way groups dispersed and thought activities were not practised. This was especially problematic for farmers who had invested and adopted project activities.

- *Acceptance of female service providers*
  Service provider women are often in untraditional roles. Their challenges are irregular mobility and the need of acceptance of their roles. During the SDVCP this intervention took much time to achieve changes and required many discussions and the support of the community.

- *Sustainability of female AI livestock worker*
  During the SDVCP most trained female AI service providers were before qualified livestock workers and provided many services of animal treatment and health services to male producers. AI is very untraditional for women, many men see it as a typical male job, which requires strength. Nevertheless, the female livestock workers did very well, seemed convenient and bet other male colleagues during the training; a certified AI service provider has the highest income. Later female AI service providers stopped working in that field being 'kicked out of the business'. The SDVCP team still tries to understand in what these women were lacking behind or, if only the societal aspect was pushing them out of business.

6.2 KENYA DAIRY SECTOR COMPETITIVENESS PROGRAM – LAND O'LAKES

Project Background
Land O' Lakes INC., the second largest farmers' cooperative in the United States. Their social cooperate responsible branch, International Development Division, received funds from USAID to lead the Kenya Dairy Sector Competitiveness Program (KDSCP). In the project time, from 2008 to 2013, Mary Munene was the Value Chain Coordinator with a focus on gender equality. The dairy intervention encouraged her to become a goat dairy farmer and cooperative member herself. With her motto "what I preach is what I practise on my farm" she invites farmers to come and see her dairy management and convince themselves. She joined her local cooperative to understand the benefits from a cooperative and became a leader and a role model for the community. Recently her work has been recognized by the Government of Kenya and appointed her to become a board member of New Kenya Cooperative Creameries to give advice to the management team on how to direct the company to become "the best cooperative of the country". Currently she is coordinating the Cooperative Development Program in East Africa.

The KDSCP worked with different institutions and actors in the dairy chain at producers' level, governmental institutions, transportation, bulking and processing services, till the final market.

Kenya's dairy sector "contributes 14 per cent of agricultural GDP and four per cent of overall GDP"; this number is annually growing by five per cent (Land O'Lakes INC. International Development, 2012). Within the country tradition and behaviour differ. The project took place in the Rift Valley, the south of Kenya. This is in strong contrast to the Central Province of Kenya in which women and men have almost an equal share in decision-making and where women would not agree to work without getting any benefit. The KDSCP used this advantage to slowly change the mind-set of the Rift valley dairy farmer's households. A bad cooperatives history where farmers were not paid made cooperative membership unpopular and resulted in difficulties for single farmers and agri-business service providers to receive loans.

Through previous violence of post-election Kenya's dairy farmers faced problems with destroyed infrastructure and increased animal disease outbreak. KDSCP did a study on the impact for the dairy industry and shared the outcome with all stakeholders. "Collectively dairy chain actors united to overcome the lingering" (USAID, 2013, p. 3).

Objectives and Targets
Land O' Lakes objectives was to increase access to business development services, and market share to the farmers' families and organizations that work along the whole value chain. Through this, quantity and quality of milk were expected to increase and smallholder farmers linked to the country's growing dairy market. Part of the project was also to develop a dairy business perspective to young farmers who do not own land, and to tackle in that way the challenge of aging farmers (USAID, 2013). Women's leadership positions were targeted on at least 40 per cent within the project time. The entire dairy sector faced unequal participation of men and women, which motivated KDSCP to start capacity building at household level.

At starting point bulking centres with cooler were seen as a good opportunity to sell more milk to the formal market, but since women might not receive profit from it, women were expected to lose interest in the project intervention. This fact motivated the KDSCP team to see dairy as a family business and to train the entire family to appreciate each other. In order to share income, men needed to realize the importance of women´s activities.

The Previous Situation at Producer's Level
At the start of the intervention dairy cows gave between 3-4 litre milk per day. Eighty per cent of the milk was sold to the informal market and only around twenty over the formal market. Small scale farmers needed to transport their milk to informal traders where payment was low and milk picked up unregularly (USAID, 2013). Trainings and demo visits were at inappropriate times for women and focussed on men; its knowledge was not given further to women. Usually women do not like to travel far, which often hinders them to open bank accounts. As a consequence accounts were in men's names and income controlled by them.

Traditionally Kenyan women do not own cows or land; cows are seen as a sign of status. Women have limited decisions-making on livestock investment and on cattle feed. They are responsible to carry water, collect firewood and milk the cows. Access to labour, land, human and financial capital is mainly dominated by men and results in unequal economical efficiencies. Following the tradition of local tribes, leadership roles were traditionally not for women (USAID, 2013) and most were too shy to speak out in front of men.

Dairy activities were divided in the following way: milking, feeding and water distribution was done by women, fodder collection, constructing e.g. grazing stand and bringing cows to AI service providers or for medical treatment was done by men. Morning milk was transported by men to the closest collection point of processors. Evening milk did not have a market, so that women sold it to neighbours or used it for household consumption.

Since women spent most of their time at their homes, they could observe best when the cows were on heat and advise the man to call the AI service provider.

Gender-Inclusive Intervention
A gender study on the performance of dairy business made clear that men and women have different roles and both need to be addressed. Land O'Lakes promoted women inclusion and trained the project team in the dairy sectors' gender issues. Indicators for monitoring and evaluating were developed to identify results on critical points of the gender study.

Land O' Lakes commits themselves to gender integration in their strategies, actions and programmes and make use of a gender task force team[15]. In each programme a gender lens is used in the program design and implementation (Land O'Lakes INC. International Development, n.d.).

Project Activities
The KDSCP included the entire dairy chain working with the government departments, governmental institutions and farmer organisations and associations to lobby for policies that impact the dairy sector.

Since most farmers were not organized in cooperatives, due to their bad experiences in the past, Land O' Lakes introduced the US cooperatives' history, its position, activities and benefits for its members, as well as the importance to address their leaders with questions and practise elections. Next to that the project team introduced methods and limitations of different alternative farmer organizations. Through open discussion, Land O' Lakes received trust to assist farmers, and participants decided themselves to become members of a cooperative. Representing female and male dairy producer cooperatives had to represent 30 per cent women participation. Within the KDSCP Land O' Lakes worked with 135 cooperatives, from which some were established, revised or newly created.

[15] The gender task force team consist of staffs from different departments and professions who contribute their thoughts and opinions to set strategic directions for the programmes (Land O'Lakes INC. International Development, n.d.).

The project had three different components:

1. Creating and enabling business environment
2. Focussing on farmers associations
3. Increase access to business development services

Creating and enabling business environment

- *Establishment of 'National Dairy Task Force'*

Within the first component, three subcommittees' were developed: competitiveness of the local dairy sector, production and marketing and cattle disease and pest control. A newly established "National Dairy Task Force" assessed the capacity of different local dairy institutions, discussed issues disturbing local dairy business, guided changes in policy, and initiated action plans to overcome critical points of Kenya's dairy sector (Mukumbu and Diang'a, 2009). The consequences of the post-election made the start of the intervention difficult. Its disease and pest outbreak was tackled through establishment of policies. Further policies and regulation were introduced to market products more effectively.

Focussing on farmer associations

- *Selection of appropriate project area*

A milk chain mapping identified geographical areas of maximum 35 kilometres distant to major towns. In this region cooperatives were determined and asked to participate in the program offering assistance to overcome their obstacles.

- *Training sessions*[16]

Trainings were organized at places, which were most appropriate for farmers and on topics suitable for the present season; e.g. in rainy season planting fodder trees, which provide cattle fodder (attractive for men) and firewood (attractive for women). Additional machinery, as for fodder cutting, could be bought by the cooperative and rented to its members, to save time.

- *To engender*

Activities were engendered to attract women and men in the diverse interventions (see above example of fodder trees).

- *Exchange visits of families*

Exchange visits of families to the Central Province in Kenya, where cultural differences exist, demonstrated the feasibility of women's decision-making and female ownership of cows and bank accounts. They showed the importance of planning together and working on common goals, so that morning and evening milk can be bulked and its benefits jointly shared to pay for children's education and household goods. Cooperating with bulking centres milk could be cooled and higher milk prices negotiated.

- *Participation in farmer field school*

Farmer field school training took place on a demo farm, in a close distance and in appropriate schedules so that female farmers could participate and manage their household responsibilities. Here par-

[16] Trainings were organized on the following topics: Breed improvements, fodder establishment and management, linking markets and services, gender awareness and promotion of women inclusion in cooperatives, youth training in technology (as Zero-Grazing and intensive cattle management on small parcel of land), to form legal and registered entities, write a business plan, create and revise cooperatives, capacity building (e.g. increase nutrition through soil fertility in backyard gardens).

ticipants were introduced to crossbreed cattle and improve crop cultivation in backyard gardens using cow manure to receive an additional source of income and improve households' nutrition.

Increase access to business development services

- *Appropriate training of extension service*

At the beginning of the project a diagnostic analysis was done to identify the key potential producing areas, its service providers within the dairy chain, the demand, awareness of chain actors towards those services, and required improvements. As a second step service providers, as government institutions, were requested to provide trainings on different topics. Program contexts were reviewed and extension servicers informed about the needs of farmers; included business analysis and training in customer care. (Previously the training was rather technical and missed "key components of business".) Extension staff were trained in "business opportunity in service provision" including identification of business opportunities, know-how of a successful entrepreneur, important linkages between chain actors, assistance in access to finance and more. In cooperation with the government rules and regulations were made, untrained people removed and trained, and a governmental system developed to identify needs of improvements to assist farmers better.

- *Introducing mobile banking and mobile market information*

KDSCP promoted formal business in which access to finance must be requested by local banks. Since bank accounts were previously in the hand of men who controlled the income, KDSCP introduced mobile banking to every women and men in the business who had a mobile phone. Since more than 50 per cent of the Kenyan population have a mobile phone, it became easy to transfer money. Families were free to decide on the depositor. Next to that, service providers were encouraged to introduce new application during regular field days or events to cooperatives providing its members with mobile weather forecast or other business related information. Additional meetings were organised between service providers and the cooperatives' management to choose the appropriate technology.

- *Access to finance*

KDSCP worked with almost all banks and microfinance institutions together (USAID, 2013) and requested them to develop financial services, which are related to dairy and are accessible for men and woman. The project helped farmers how to access loans, repay them and to ensure a correct handling. Men were encouraged to allow women to apply for women-friendly loans with lower interest rates.

- *Introducing biogas plant*

Biogas plants, fired by livestock dung, were introduced by KDSCP in cooperation with the local government, which funded 25 per cent of its total price. The technology aimed to reduce women's time on searching for firewood.

- *Cooperative store*

When bringing milk to cooperatives members could decide to receive part of their income in goods or to receive all payment in the end of the month. The cooperative store offered feeds, semen for AI, some animal drugs, fuel, household goods as sugar, coffee, school books, and more. In the end of the month goods were cleared with the milk supply of each household. This became an effective tool when husbands were not willing to share income with their wives.

KDSCP encouraged cooperatives to establish a fund for young people and women to start dairy business.

Project Outcomes

The five years program improved the livelihood of 230,848 small holder farming households of which 44 per cent (94,093) of the beneficiaries were women. In total, 86,979 dairy farmers (of which 40 per

cent were women) received trainings to improve quantity and quality of milk. In a household survey average amount of milk was measured from female and male producer. While female headed households' cows increased milk volumes on average from 4 to 8.25 litre per cow and day, male headed households' cows reached on average 8.17 litre per cow and day. In total the amount of quality milk increased about 140 per cent. Introduced AI technology was adopted from 74.5 per cent of female producers and 72.8 per cent from male producers. Biogas plants were slightly higher adopted by male headed households, it required funding and commitment to savings. Since Zero-Grazing management requires teamwork and increased labour, only 30.38 per cent of female headed households and 41 per cent male headed households adopted it. Land O' Lakes trained men and women as AI service providers and worked with financial service providers to receive services for both gender. Female AI service providers showed on average better uptake of AI and were preferred by female producer instead of male AI service providers.

From the beginning of the intervention, Land O' Lakes made sure that at least 25 per cent of the project facilitators were women. Previous projects showed that women reach out faster to other women and that husbands could become jealous when male trainer visit their wives frequently for trainings. Visiting the farmer field school increased women's self-esteem strongly and encouraged some to become trainers themselves, earn an income, and become able to buy appropriate clothes for official meetings themselves.

Some animal husbandry, or adopted technology (as the fodder cutter) encouraged men to interfere in women's activities (e.g. giving cows appropriate amounts of water). Women had less responsibilities and more time for attending meetings and this gave households the possibility to care for more cows, which became also attractive for men. It encouraged them to start planning and saving together. Income increased by more than 200 per cent (USAID, 2013). In total 36,744 dairy farmers, of which 36 per cent are women, were linked to credit facilities to improve their dairy business. In total around 1050 service providers were linked to dairy farmers (USAID, 2013). In general households team-up more often, women are consulted and there is almost an equal share in duties. Families have recognized dairy as a business opportunity.

By having at least 30 per cent of women participation in cooperatives, women's leadership positions increased visibly after the third year. Female led cooperatives initiating often more activities than men led cooperatives (buying inputs in bulk, banking facilities, establishing a dairy etc.). Men recognized that women in management positions improve the performance of cooperatives. Some cooperative leaders (male and female) became confident enough to stand for election in the new governmental delegation (e.g. women representatives). Cooperatives established a fund for young dairy farmers, who are keen to benefit from the support. At the end of the project around 90 people profited from it and more are on a waiting list.

Land O'Lakes trained 69 milk bulking groups and Small Business Organizations in Good Manufacturing practices and encouraged processors to become HACCP certified, as well as working under food safety regulations of ISO standards (USAID, 2013).

Throughout the project time the formal market increased from previous 20 per cent to around 60 per cent (latest study by SNV[17]). Reasons for this strong increase, Mary Munene sees in contracts, taking farmers serious, being committed to the cooperative, and families' understanding of dairy as a business.

Figure 05 shows the changed situations in the dairy activities. Women take part in decision-making to market milk, make their own choices, they are linked to service providers, are trained and work in

[17] The study is supposed to be finalized after the research project.

diverse positions of the dairy chain (see also table 06). Through exchange visits changes could be seen in cattle ownership.

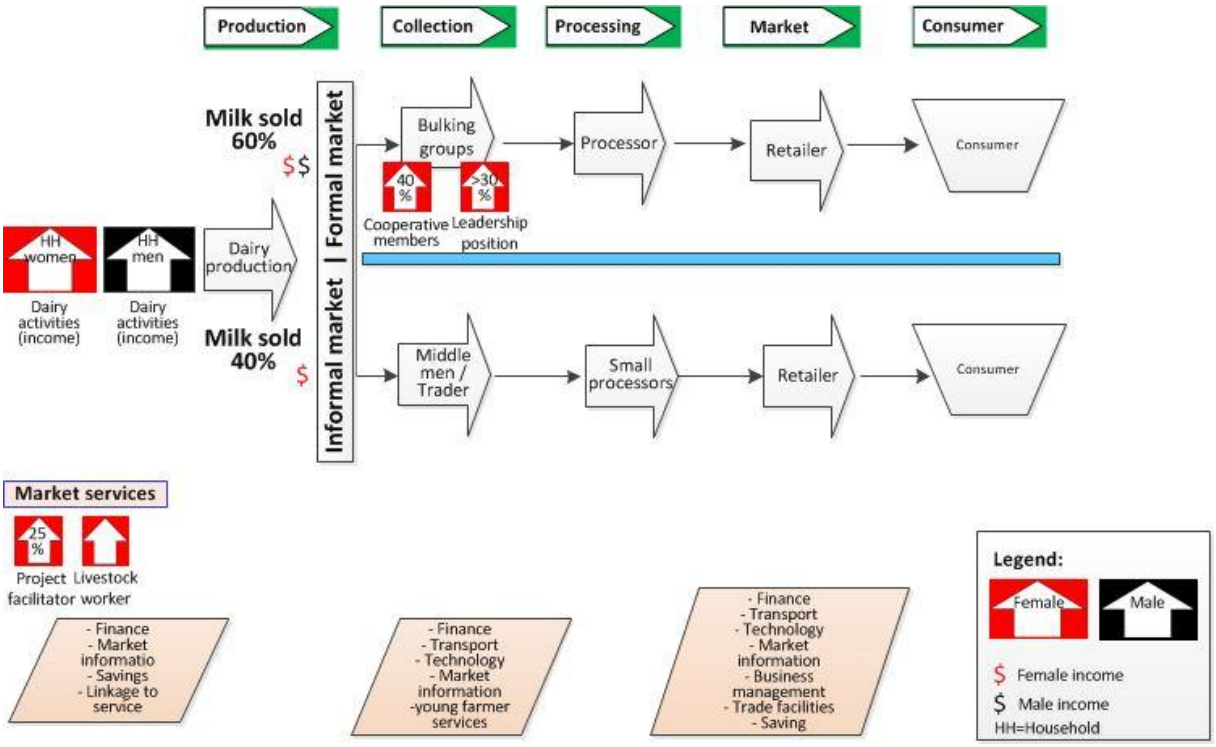


Figure 05: Milk chain through KDSCP (adapted from: Senders et al., 2013)

Table 03: Value Chain Empowerment Diamond on the KDSCP

Value chain activities	Agency
- Increased producer's family incomes by more than 200%[18] - Increased amount of quality milk 140%[23] - Formalizing female activities, as registering producer organizations, become emplyed - Gender regulations in cooperatives - Women are engaged in more chain activities and technology	- Access to loans (90 young female and male farmers received support from cooperative[23]) Women: - Gained confidence and self-esteem which encouraged some to become trainers themselves - Making own choices - Self determination - Improved (financial and business) skills
Value chain governance	**Structure**
- Cooperatives have 45 % women participation - 40 % women participation in trainings - Women participation in decision-making - Market information and knowledge - Register Self-Help Group as a Cooperative Society - Women led cooperatives - Expanding suppliers through active cooperative leaders - Better bargaining position	Household: - Men support women's new roles - Men appreciate women's economic contribution - Improved nutrition - Shared responsibilities Society: - Leadership positions are open to women - Registration of women farmers - Harmonized relations between neighbours (effected through the post-election violence) - Women are invited to meetings/trainings - Changes in cooperative bylaws

[18] (USAID, 2013)

Business Arguments

- ✓ Since men and women have different roles and activities, both need to be addressed to upgrade the dairy value chain
- ✓ Women trainer reach out faster to women and can prevent that husbands become jealous
- ✓ Female AI service providers showed on average better uptake of AI and are preferred by female dairy producer
- ✓ Women in management positions of cooperatives improve performance of cooperative
- ✓ Female headed households have slightly higher milk volumes and AI technology adoption

Social Arguments

- ✓ Increased food security through soil fertility of backyard garden
- ✓ Men and women team up, show more collaboration, women are consulted and duties shared
- ✓ More children of cooperative members go to school
- ✓ Participants' households have a better diet
- ✓ Biogas lamps increased health and lower time use
- ✓ Animal husbandry and adopted technology provide time to care for more cows
- ✓ Income increased by more than 200 per cent
- ✓ Project linked farmers to credit facilities
- ✓ Some male and female cooperative leader became confident to stand for governmental election
- ✓ International food security in processing plants

Success Factors on Gender-Inclusion

- ❖ The household approach showed good results in gender equity (to see business as a family business and promote joint decision-making and collaboration).
- ❖ Cooperatives are attractive for members, because they have access to inputs (contracted input suppliers, book stores etc.)
- ❖ Women have incentives to supply milk to cooperatives, since they have a store with payment in kind for milk
- ❖ Cooperative supports young farmers and female farmers with funds
- ❖ Cooperative leader position made farmers (male/female) confident enough to stand for governmental election
- ❖ Engender activities to attract men and women to adopt interventions
- ❖ Exchange visits to experience and learn from other cultures' gender relations
- ❖ Women's participation in farmer field school through appropriate distances and schedules
- ❖ Mobile banking enables women to open a bank account and to have access to market information without the need to travel

- Giving support in assessing and handling bank loans for men and women
- Men accept regular attendance from female project facilitators rather than male project facilitators
- Self-confidence through training encourages women to become trainer
- Female led cooperatives have more activities, which benefit their business interest

Challenges

- *Post-election violence*
  At the initial stage of the project, infrastructure was destroyed and farmers were challenged with disease outbreak.
- *Develop a sustainable approach*
  At staring point KDSCP experienced resistance from service providers, who were used from previous projects to receive payments for providing trainings. Land O'Lakes made clear that trainings may establish relationships to farmers. Farmers need to be seen as potential customers and must be convinced that they can benefit from their services. This marketing strategy for services was new and required to empower farmers and be gender sensitive so that, depending on the topic, men and/or women needed to be addressed, and times of training adjusted to their availability. In this business-to-business approach, Land O'Lakes sees the possibility to develop sustainable business relations.
- *No aid in the project*
  "This project did not give anything for free" states Mary Munene. Farmer and project partners showed resistance and low participation at the project start. In the third year they saw advantages and learned to adjust their roles. To create a situation in which everybody is at the same level, hotels were not paid for development partners. The measure of successful trainings was how strong livelihood and productivity improved, and how well farmers are linked to processors.
- *Creating a good relation to the governmental departments*
  Some governmental institutions expected payment for their project engagement. This situation could be changed by carefully reviewing commitments of the responsible person in a certain area and inviting him/her to see the project activities contributing on his/hers commitments. The approach of how this relationship is established is seen as crucial, governments and the private sector needed to see their own benefit.

6.3 EAST AFRICA DAIRY DEVELOPMENT PROJECT – HEIFER INTERNATIONAL

Project Background
The first phase of the East Africa Dairy Development Project (EADD) took place between 2008 and 2013. It worked with small-holder dairy farmers in Kenya, Uganda and Rwanda to increase their milk production and resulting incomes. Over time it has become "one of the leading market-oriented development initiatives in eastern Africa" (Heifer International, 2014). The second phased, EADD 2, is based on the success of the first phase and takes place in Kenya, Uganda and Tanzania between 2014 and 2018. Both project phases are funded by the Bill and Melinda Gates foundation and led by Heifer International. Rwanda received comparably much support through other regions and did not show a big demand of the formal dairy market, so that the project changed in the second phase to Tanzania. Isabelle Baltenweck leads the project contribution of International Livestock Research Institute (ILRI) and wrote the project proposal.

Project partners are TechnoServe, ILRI, The World Agroforestry Centre (ICRAF) and African Breeders Services (ABS). On country level, there is cooperation with the Ministry of Livestock and Environment, Ministry of Cooperatives, and Department for Veterinarian Services. Next to that the project worked with the different producer hubs at local level. TechnoServe works with new and existing farmer groups to organize them into dairy business associations and assist their management of dairy chilling plants. ILRI and ICRAF provided research, and ABS knowledge and information on breeding.

Working with 179,000 farming families in Kenya, Rwanda and Uganda (Heifer International, 2014) the project faced diverse site specific cultural differences.

Objectives and Targets
The aim of the EADD was to develop a sustainable and profitable business of producer organizations on the input and output side, in strengthening existing producer organizations, establish new ones, and contribute to an increase in milk quality and volume hubs needed to become sustainable with a manager and management board for the time after the project intervention.

The main approach of the project was the Heifer approach with its 12 principles (annex 01). A milestone of the intervention was to train at least a total of 30 per cent female producers and youth (female and male) dairy farmers and support their economic development.

EADD phase two is focussing on the linkage between dairy farmers and the private sector to provide services in milk production, processing, breed improvements, and more (Heifer International, 2014). The project wants to see gender equality with a "30 per cent increase in women engaging in dairy production and selling" (Odongo, 2014).

Previous Sales of Milk
At the starting point women's membership was extremely low. Women sold milk mainly over the informal market in which they had mainly control. Women being in control of income were mainly reported in Kenya (East Africa Dairy Development, 2010). In other areas a formal market was partly established. Household's situations and activities differ again from site to site. Isabelle Baltenweck believes "it's much thinner than country wise". A baseline study made by ILRI shows that approximately 70 per cent of the dairy activities are done by women, but 73 per cent of the dairy farms are managed by men and only 1,7 per cent jointly between women and men (EADD, 2011). In general men in Uganda and Rwanda are more engaged in dairy activities compared to Kenya, but there is no evidence how much time is spend in the different farm activities (East Africa Dairy Development,

2010). Uganda and Rwanda have some pastoral areas, which are male dominated societies with less gender equality, while in other areas Rwanda shows more development in gender equality. In Kenya many women work in higher working positions and Kenya's government released a law under which women are entitled to inherit the parents' land. Women's position is also reflected by the baseline study, which shows that "women among non-dairy households were reported to hold more leadership positions than men" (East Africa Dairy Development, 2010, p. 16).

In most areas morning milk is sold and its income controlled by men. Without cooling facilities evening milk is consumed or by women sold to neighbours. Land and cattle ownership is mainly "very old fashion" and dominated by men.

Gender-Inclusive Intervention

At the project start there were neither clear gender targets nor EADD staff appointed. With the initial baseline study, made by ILRI, a gender specialist joined in the project team, and based on the local data, a strategy was made in corporation with Heifer international. Staff and field staff were trained to apply a gender lens whenever possible and reflect on their own attitude to become more gender-sensitive. An action plan for four different locations (staff level, chilling plants, farmer group and producer level) pointed out specific issues and suggestions of improvement. In Kenya and Uganda a gender specialist was hired to ensure that a gender lens was applied to all activities. Rwanda did not hire a gender specialist, having a comparable good gender equality in the country.

Activities

In EADD Phase One, producer organizations were revised or established and linked with input services and output markets.

- *Establishing 'check-off system'*

Using 'check-off system' farmers were able to receive inputs on credits. Knowing the average milk supply of farmers, producer organizations would pay service providers in kind of milk from dairy producers.

- *Self-organized producer organizations*

The project facilitated hubs to develop self-organized producer groups. This was done by increasing their capacity and making clear that each hub should identify the specific needs of each producer organization. Next to that hubs were supported identifying potential services and were linked to the private sector. TechnoServe gave practical support to farmers who came in contact with service providers and advised them on the offer, its quality and possible complications. All business related interventions were guided by TechnoServe. Some private companies organized field days in which they promoted new technologies, dairy management and established business relationships to farmers.

- *Feeding advice*

Each hub was seen separately to identify the current feeding practises and farmers' challenges. Together with the World Agroforestry Centre ILRI introduced possible solutions and assisted them in the development of feeding plans and feeding options to overcome their challenges.

- *Radio extension service*

Weekly a radio channel gave farmers information from the dairy industry and milk market prices. In an additional forum farmers can ask questions via calls or mobile messages for the time of one hour per week. A pamphlet informs dairy farmers about project activities and technical topics, as AI and milk quality. In addition to that a newsletter is published quarterly (EADD, 2011).

- *Training* [19]

Much of the project time was used to provide trainings to participants. Looking back to the results Isabelle Baltenweck believes that farm visits are more effective than trainings. For trainings male and female producer were invited together. ILRI tried to promote mixed gender groups and paid more attention to active participation of women than a specific gender quota. Trainings lead by Heifer International differed in this respect slightly. The mid-term report states that the project targets 30 per cent women and 30 per cent youth participation in trainings and other interventions (EADD, 2011). Since some of the hubs have been relatively big, they were spitted in 15-30 peoples' groups to have a better feeling of belong, organizing milk collection, bulking or receiving services as a group. In Rwanda 'women groups' had often a high percentage of men participants, and were therefore rather called 'women-dominant' groups. Later in the project, emphasis was put on women and men following both the same trainings so that both know about suggested changes which are possibly implemented at household level.

- *Formalizing chain arrangements*

EADD formalized chain arrangements with farmers and processors in pastoral areas to develop space for negotiations and regular arrangements.

- *Gender lens in producer organizations*

The project team investigated producer groups' strategy plan and activities to see how women's position could be strengthened. They further emphasized the importance of women as milk supplier, as decision-maker and at hub level.

- *Registration*

Together with the Department of Immigration Heifer International supported 141,000 women and their children to register themselves through mobile phones (EADD, 2011).

- *Youth business groups*

Since young farmers have mostly no access to land and cattle, the project team assisted young women and men to form business groups that can offer hubs different services as selling or transportation of milk, providing hay, and more.

Other activities have been:

- Regulating and assessing the producer organizations annually on their site specific feed plants, access to animal health, extension services and more.

- Access to financial services (as loans for housing, health, education or cows) and bank accounts

- Establishing milk bulking and chilling plants

In phase one visits to 'demonstration farms' were not organized, but for phase two Isabelle Baltenweck believes that it has a potential. It could facilitate social change through exchanging information on technology, but also in leadership and gender issues. Seeing different behaviour and values in the same country "is powerful tool".

Project outcomes

By facilitating farmers entering the formal milk market the project team could see that in sites, in which a formal market partly existed, the likelihood that men would take control over income was

[19] On gender-sensitivity, animal husbandry, feed management, fodder plants, 'Household support to extension', leadership training (Kenya), group dynamics and governance, farm-record keeping, environmental conservation training, veterinary services, breeding and more.

smaller than in areas in which predominantly the informal market existed. In none of the countries milk was processed. Some hubs bulked milk, some continued to sell milk to traders. In total TechnoServe assisted the establishment of 82 dairy enterprises owned by farmers (TechnoServe, 2014). The project developed 'direct roles' for private dairy companies and government institutions. By operating in close contact with the local and national government, it ensures that activities are in line with governmental policies (EADD, 2011).

The project team sees that milk traders are the key actors who dominate the market. Ninety per cent of Tanzanian and Ugandan dairy farmers sell their milk over the informal market, and 70 per cent of the Kenyan dairy farmers. The main issue, which occurred in all three countries, was poor hygiene in milk handling. The project team worked with regulators and NGOs on certification processes to put emphasis on the importance of hygienic milk transportation and to ensure short transport times. In Kenya traders became certified and also Uganda and Tanzania are preparing for that. This trend can stimulate traders to come together and invest in milk tankers, as seen in Tanzania.

The project worked with 81 dairy producer organizations together to build milk bulking and chilling plants (Heifer International, 2014). Some of the milk transportation is organized by the producer organizations. Providing this service to their members, more women are attracted to supply milk. More than half of the dairy farmers use offered transportation (East Africa Dairy Development, 2010). The project sees a big increase in farmers' income all over the countries. Farmers of the three countries could double their income within the last 10 years. Isabelle Baltenweck believes that it is a change in mind set for farmers to sell their milk to producer organizations. A total of 203,778 small-scale farmers from Uganda, Rwanda and Kenya could be linked to institutions and service providers to increase their infrastructure and livelihood (Heifer International, 2014). Sometimes farmers showed resistance including women in the producer organizations, but some reported later that their performance increased with having female members.

Through the project women are employed at chilling plants, milk collection points, for quality testing, as accounts, running agro-vet stores and in the producer management board (the latter in reaching a ratio of 1:4). In 2010 mid-term evaluations measured 243 women and 203 youth in leadership positions. This exceeded targets. The project sees women being concerned to receive inputs and contributing to a big spill-over effect; "one women mobilized 502 shareholders in a month" (EADD, 2011, p.27). Additional, less migration towards cities can be seen. Families can pay children's school fee in-kind-of-milk (see also Activities, *'check-off system'*), which contributes to an increase in children's school attendance of at least 35 per cent (EADD, 2011). The project did not measure the social change of gender relation in households nor changes in women's self-esteem, but sees that becoming board member is more important to them. The project did not show big changes in women's ability of controlling income at producers level.

In all three countries where the EADD operates, the local law requires that producer organizations have at least one third of each sex in the management board. Women being in the management board are active in decision-making and promote other women to join the producer group. In general women are seen as active suppliers of milk, being organized or independently selling to traders. People told Isabelle Baltenweck that in jobs as secretary or treasurer "women are seen as more detailed and more trustfully with money". She believes that when women are part of the board more development will take place. In other cases where the project team persuaded board members to employ a woman Isabelle Baltenweck heard later "since we employed a woman things got better". Isabelle Baltenweck believes that men and women need to be empowered together "she [the wife] can only be empowered when the husband understands why she has to be empowered". Giving for example a cow to women and not recognising the role of a male household head "can break families". Working only with men is, in her opinion, not business wise, since only half of the population would be addressed.

With respect to feed practices, the baseline study, made by ILRI, did not show big changes. After two project years only a few farmers plant leguminous fodder plants, apply silage practises and Zero-Grazing is only implemented by Rwandan dairy farmers. Also homemade concentrates are not well adopted among farmers of all three countries. Fodder storage is still a challenge for all of them (East Africa Dairy Development, 2010). During the first two years of the EADD Phase One, 120,000 inseminations were applied through the project. Its best adoption was found in Kenya and Rwanda, in which governmental programmes supported the development. A possible reason of the hesitation to use it, is that "It takes 5 to 10 years for AI to make its full impact on household incomes" (EADD, 2011, p.13).

Environmental conservation of project sites showed various measures being in place at time of the baseline study. Trees have been planted and terraces constructed (East Africa Dairy Development, 2010).

Other outcomes are:

- Established access to veterinary services
- Breeding services[20]
- Cattle feed supplements[20]
- 21 new chilling plants and 13 more are modernized additional to processors own chilling plants[20]
- 12 milk collection centres are registered[20] (each with at least 2000 members)
- Milk quality is tested at collection centres[20]
- Milk volume increased in Kenya with 65 per cent, Uganda 30 per cent and Rwanda 10 per cent[20]

Tables 04 gives an overview of achieved gender equity (Agency and Structure) and gender mainstreaming (Value Chain Activities and Value Chain Governance) and shows women's ability to apply leadership skills, become more confident, an increase in female membership in producer organizations and better knowledge and market information. Women are trained, and employed in diverse positions in the value chain.

Table 04: Value Chain Empowerment Diamond on the EADD

Value chain activities	**Agency**
- Women are engaged, and get income from more chain activities and technology: - Women work as milk collectors, at chilling plants, quality testing, accountants, in agro-vet stores, in the management board - Increase in women's membership - Women dairy farmer and producer are trained	- Women develop leadership skills - Access to loans and bank accounts - Negotiation with buyers and service providers - Ability to access value-chain services - Self-confidence increased through the application of a gender-lens at PO's and employment
Value chain governance	**Structure**
- Reduced barriers of participation for women in producer organization - Better information/market knowledge	Society: - Society allows women to become a member in a dairy cooperatives - Increased respect and dignity from society and husbands - Women are allowed to participate in trainings/meetings

[20] (EADD, 2011) from the Midterm evaluation

Business Arguments

- ✓ Women are active milk supplier
- ✓ Women are more trustworthy with money in the benefit of the cooperative (working as treasurer)
- ✓ Working only with men is not business wise, since half of the population would be left out
- ✓ *'Check-off system'* (farmers receive inputs on credits) encourage producer to buy offered services and increase their performance
- ✓ Women in the management boards are active in decision-making
- ✓ Women in management boards promote other women to join producer groups
- ✓ Young farmers developed business skills to serve services to hubs
- ✓ Benefitting children' s education, access to health care

Success Factors on Gender-Inclusion

- ❖ Make a business case to producer organizations on how they can involve women in their activities, so that they understand the importance of having also women in their producer organization
- ❖ Women need to see incentives to supply their milk to producer organizations (as in form of being registered and receiving an income)
- ❖ Women can only be empowered when their husbands understands the importance
- ❖ Producer organizations providing milk transportation services, attract more women to supply milk
- ❖ To hire a male gender activist, who formulates messages objective and without emotions, which convinces men faster.

Challenges

- ➢ *To provide incentives for women to supply milk*
  Traditionally, in the informal markets women do milking and sell milk to neighbours and local traders. Moving from the informal to the formal market, in which income increases, can attract men to take control over the income. Incentives have to be developed, so that incomes reach women and men.
- ➢ *Implementation exceed farmers capabilities*
  In some cases field staff was motivated and convinced of the need to adopt new implementations, which were outside of farmer's capabilities. Structural training was organized with field staff to develop a more rational view, to formulate implementations as an option, and to be aware, if farmers have the resources to implement it.
- ➢ *Misappropriate money*
  In some cases manager of producer organizations misappropriated funds/money.
- ➢ *Project size*
  Operating in a big project and in different countries, as the EADD does, makes it difficult and time consuming to implement changes.

6.4 BUSINESS ORGANISATIONS AND THEIR ACCESS TO MARKETS – SNV ETHIOPIA

Project Background

The Business Organisations and Their Access to Markets (BOAM) dairy project was supported by the Embassy of the Kingdom of the Netherlands and took place between 2005 and 2011. It was a pilot "private sector development project" using the value chain approach, to work mainly with the middle of the value chain actors, collectors and processors, in the main dairy provinces in Ethiopia. Mahlet Yohannes joined SNV in 2007 and became the lead adviser of the dairy value chain project.

Ethiopia has the largest amount of livestock in Africa, which is almost entirely of local breed. The dairy sector contributes 12 per cent to the Gross Domestic Product (GDP) and 26 per cent of the agricultural GDP. Regardless of the size of livestock its productivity is low and does not meet the growing urban market demand, so that the country imports dairy products from other countries. Most small-scale dairy farmers consume, or sell their milk locally in form of traditional butter and cottage cheese. Dairy consumption is strongly influenced by the orthodox religion including a total of 236 fasting days per year during which "milk consumption is prohibited" (Visser et al., 2012, p. 139).

Around forty years ago the Ethiopian government monopolized the only dairy processing plant. The company, now privatized, is the second largest pasteurised milk producer in the country. In 2010 the government developed the Ethiopian Meat and Dairy Technology Institute (EMDTI) now called Ethiopian Meat and Dairy Industry Development Institute (EMDIDI)working on national livestock constraints, and being "in charge of implementing policies relating to quality standards" (Visser et al., 2012, p.141).

SNV did not work directly with dairy farmers, but with private and governmental service providers. Its interventions can be clustered in four categories: 'Sector development', 'Business development', 'Knowledge development and learning' and 'Service provider development' (SNV Ethiopia, 2012, p. 140).

After finishing with the BOAM dairy project, SNV started with the Enhancing Dairy Sector Growth in Ethiopia (EDGET) project. The five year project (2012 to 2017) addresses 65,000 small-holder dairy farmer households in three of the major regions of the country. It promotes local small holder processing linking them with input suppliers and providing trainings in increasing productivity at household level.

Objectives and Targets

Objectives of the BOAM project have been "to strengthen the sector as a whole and included intervention that serve the interest of all actors involved in the value chain". This included three targets: 'Facilitating the establishment of Multi-Stakeholder Platforms', 'Strengthening of Sector Associations' and 'Supporting Effective Public Policy Management' (Visser et al., 2012, p. 140). With this target SNV Ethiopia aimed on improving the quality and productivity of the Ethiopian dairy sector.

Previous Sales of Milk

A starting analysis of the dairy sector showed that dairy farmers' management skills are relatively poor, and most are small-scale dairy farmers (owning 1-2 cows). Dairy farmers face challenges as communicable diseases transmitting tuberculosis and brucella, low production during dry seasons, poor extension services and land scarcity (Visser et al., 2012, p. 138). Next to that, infrastructure effects, transportation times, access to inputs and limited access to stable electricity for cooling (Visser et al., 2012). Due to poor infrastructure and a short shelf-life of dairy products "diversification is an economic decision" and only minimally practised in Ethiopia. Milk is nearly entirely sold over the informal market and only around 5 per cent sold and processed over the formal market.

Producer and processor organizations have mainly male member. Still, society does not show resistance to include women. At producers' level, women are mainly involved in dairy activities. They clean and feed cows, collect water and milk cows. Out of skimmed milk women make traditional butter, which they sell (sometimes next to milk) on local markets. Its transportation to the collection points is mainly done by children, but collection of money by men. Bigger volumes of milk are brought to the markets by men. Additionally, men collect feed for cows and milk cows themselves or with hired additional labour, when the household has a bigger amount of cows. At collection centres men and women are involved in dairy activities. In some cases collection centres process milk directly into cheese and butter. At large-scale level dairy activities are mainly a men business. Mahlet Yohannes sees the reason in the needed skills, training and education. Women work sometimes at laboratories or at processing. Decision-making is mainly done by men, but differs between households.

Mahlet Yohannes believes that "women are seen as producers" and that they are, together with their husbands, normally invited to attend trainings and meetings, but sees also that in most cases only men attend the trainings. SNV advised processors on organizing trainings with women and men together at local locations.

Gender-Inclusive Intervention
In the beginning of the intervention SNV did not have a clear gender strategy for the BOAM project. Although they understood women's dairy activities, interventions were "not very gender-sensitive". Through a gender analysis SNV planned more specifically to govern for more women participation within the dairy chain (see also Activities - *Women inclusion*).

In the current dairy project the focus is set on women headed households. The aim is that women groups process and sell independently in their local environment and receive income directly themselves. The project introduces new dairy products out of skimmed raw milk, and additional nutrients and vitamins, to increase local nutrition. SNV (and other donors) fund technology and provide training in milk handling and processing.

Activities
Within the BOAM project SNV worked on four main activities:
1. 'Sector development'
2. 'Business development'
3. 'Knowledge development and learning'
4. 'Service provider development'

Part of the ***Sector development*** was to create a Multi-Stakeholder Platform, to strengthen the position of dairy associations and to support 'Effective Public Policy Management' (Visser et al., 2012, p. 140):

- *Multi-stakeholder platform*

SNV invited different stakeholders of the dairy sector to become organized in a 'Coordination Group'. Quarterly in a year they meet with "producer cooperatives, producer unions, processors, the government, research institutes, financing institutions and NGOs working in the dairy sub-sector" (Visser et al., 2012, p. 140). One main activity have been to analyse the dairy sector on its main challenges and come up with a 'Strategic Intervention Plan'; it is focussing on possibilities to improve milk quality, upgrade dairy processing and packaging, improve breeding services, marketing of dairy products and supporting the enabling environment of the sector (Visser et al., 2012).

- *Strengthening Effective Public Policy Management*

The Coordination Group created a 'steering committee' to support the Ethiopian Dairy Board with documents and suggestions. Its main aim is to "bring all stakeholders together", including producer and processor, government and research institutes, as well as financing institutions and development organizations. Results [21] are shown to the National Dairy Forum (Visser et al., 2012, p. 141).

- *Ethiopian Milk Producers and Processors Association*

SNV established the 'Ethiopian Milk Producers and Processors Association' (EMPPA) to gather producer cooperatives and their unions as well as processors. "However, the two largest processing companies are not represented in EMPPA" (Visser et al., 2012, p. 141).

- *Supporting the* Ethiopian Meat and Dairy Industry Development Institute *(*EMDIDI*)*

SNV supported EMDTI with services for laboratory to monitor communicable diseases.

Business development included topics among 'Private Sector Actor Strengthening', 'Business-to-Business development support', 'Producer Group Strengthening' and 'Value Chain Financing':

- *Supporting private producer*

SNV supported "more than 10 private sector producer, collectors and processors" in writing their business plan and to enlarge their business. It further provided training on quality improvement and product diversification to company staff (Visser et al., 2012, p. 142).

- *Pilot of business hub*

SNV assisted six business-to-business development projects, which worked with smallholder farmers and producer organizations. An example was a producer union developing a pilot dairy business hub[22], which would in a longer run developed in a 'one-stop service centre'[23]. Producer can supply their milk and buy inputs as feed, AI and veterinary services and finance to that service centre. SNV organized a travel to Kenyan dairy hubs and did a feasibility study, as well as a project plan for a co-operative (Visser et al., 2012, p. 142).

- *Trainings*

SNV provided trainings on cattle management, hygienic milk handling and feed management to different dairy cooperatives and its unions.

- *Supporting business innovation*

SNV supported 'pilot business innovations' around milk collection, processing and access to agricultural inputs and services, in linking them to banks, investors and 'equity funds'. SNV financially supported screening marketing materials, facilitated business meetings and planning, and reported on the investments, which ended up in a 80 per cent funding for the establishment of the hub (Visser et al., 2012, pp. 143).

- *Payment in kind of milk*

Cooperatives provided feed and other inputs to their members in a payment in kind of milk system. Purchased goods were subtracted from milk supply. With this service cooperatives saw a greater

[21] The Coordination Group formulated a declaration aiming at: "Increasing funding, Improving market transparency and marketing structures, Improving regulation and introducing quality-based prices for raw milk, Making standards mandatory and certifying producers and processors, Strengthening research on pertinent issues that hinder the continued development of the sector (for instance access to good quality feed and AI services), Strengthening local capacity developers" (Visser et al., 2012, p.141).

[22] At a business hub are positioned close to producers and have cooling facilities for milk (Visser et al., 2012).

[23] In a 'one-stop service centre' producers can supply milk and purchase feed as well as "access services such as AI and veterinary services, as well as finance" (Visser et al., 2012, p. 142).

chance to receive regularly milk supply from producers (Visser et al., 2012).

- ***Knowledge:*** *Research*

Research was done by the 'Coordination Group' on topics as animal feed, animal fertility and milk quality. Results were shared in the group and on BOAM's website.

- *Attendance on international conference*

Through their network SNV could sent two women to Israel to attend an entrepreneurial conference. SNV paid for their transport and additional costs were covered by partners. One of the women developed afterwards a small scale processing plant and scaled up with the help of BOAM and its linkage to a bank to get access to finance.

SNV made sure that advisory services were organized by local **service providers** and it hired ten consultants service providers (Visser et al., 2012, p. 142).

- *Women inclusion*

The results of a gender study motivated SNV in "encouraging farmers' organisations to recruit more female members" and supported women's business with the idea that they could serve as a role model for other women. It encouraged women to govern in leadership positions along the dairy chain and to participate in their 'Young Professionals Programme'. SNV made sure that around half of the BOAM staffs are women. Next to that SNV supported system-thinking of women's function in the value chain, their boundaries and the behaviour of stakeholders (Visser et al., p. 142, 2012). SNV put emphasis on processors encouraging women to participate in trainings. Processors and SNV made husbands aware of their wife's contribution to dairy management and their potential benefits for the household. For the trainings and awareness campaigns SNV provided materials to processors. The BOAM team monitored and guided processors' performance through household visits' and an evaluation of the trainings. During an awareness program processors and the BOAM team discussed "popper use of household income" stimulating households joint decision-making. Still, its decision is left to the household and it is seen as a "very sensitive subject".

BOAM made sure that advisory services were organized by local **service providers** and it hired ten consultant service providers.

Project outcomes

In the provided trainings of cooperatives, BOAM sees a reason for the increase of 30 per cent of milk volume and the rejection rate of milk going down from 13 to 5 per cent. An impact assessment showed that producers of six producer organizations improved their production. The establishment of the cooperative business hub showed good results (e.g. quality based payment, established cooling etc.) and can be seen as an example for other cooperatives (Visser et al., 2012). Changes between the informal and formal market are relatively low.

Changes of gender equity are not measured by SNV. Still, SNV sees that when they requested the 'Coordination group' to select a woman in their committee more women than before came to meetings and trainings. The female processor, who went to the conference on entrepreneurship, made sure that she receives only milk from registered female producers. Her idea is that when she includes male producers, their wives would not follow up with trainings. She started to implement a quality-based-payment system and since she processes butter and cheese herself, she can directly see the effects of high quality milk. SNV realizes that other processors, bulking high volumes of milk, do not see the effect clear enough and are not yet motivated to implement a quality based payment system. At another SNV implemented project the system is put in place and more processors become interested in its implementation.

Through supporting the private sector cheese producing companies increased their production from 30kg to 300kg per day within two years, opening a second store and delivering to bigger markets as supermarkets. Next to that their suppliers increased from 109 to 400, so that the companies employed more staff (Visser et al., 2012).

Additional outcomes are:

- Established market linkages between smallholder dairy farmers and cooperatives and processors
- Linkage and knowledge sharing between members of the Coordination Group
- Creating a 'Steering committee' to establish the National Dairy Forum
- Processors diversify dairy products
- More than 50 per cent of the participants of the 'Young Professionals Programme' are women
- Half of BOAM's advisory positions are fulfilled by women
- The dairy sector became more competitive including many smaller processors
- National milk volumes doubled within the BOAM intervention time and its quality improved (Visser et al., 2012).
- More female producers are trained

Main lesson which SNV learned was that "it is the client who decides", regardless what the market offers (Visser et al., 2012, p.15). SNV believes that their approach, to work with processors and cooperatives, worked well to engage more producers and improve quality and volume of milk.

With regards to women's participation in the dairy sector SNV recognized that they have to put emphasis on women's attendance otherwise they will not appear.

Figure 06 shows the changed situations in the dairy activities and within the value chain. More women are employed or start their business. More women are registered in cooperatives and attend its meetings. Female and Male producers are linked to service providers. This is also illustrated in table 05) showing gender equity (Agency and Structure) and gender mainstreaming (Value Chain Activities and Value Chain Governance). The quality-based-payment system contributes to an increase in women's income, improvements in milk quality and results in an increase in female's self-esteem.

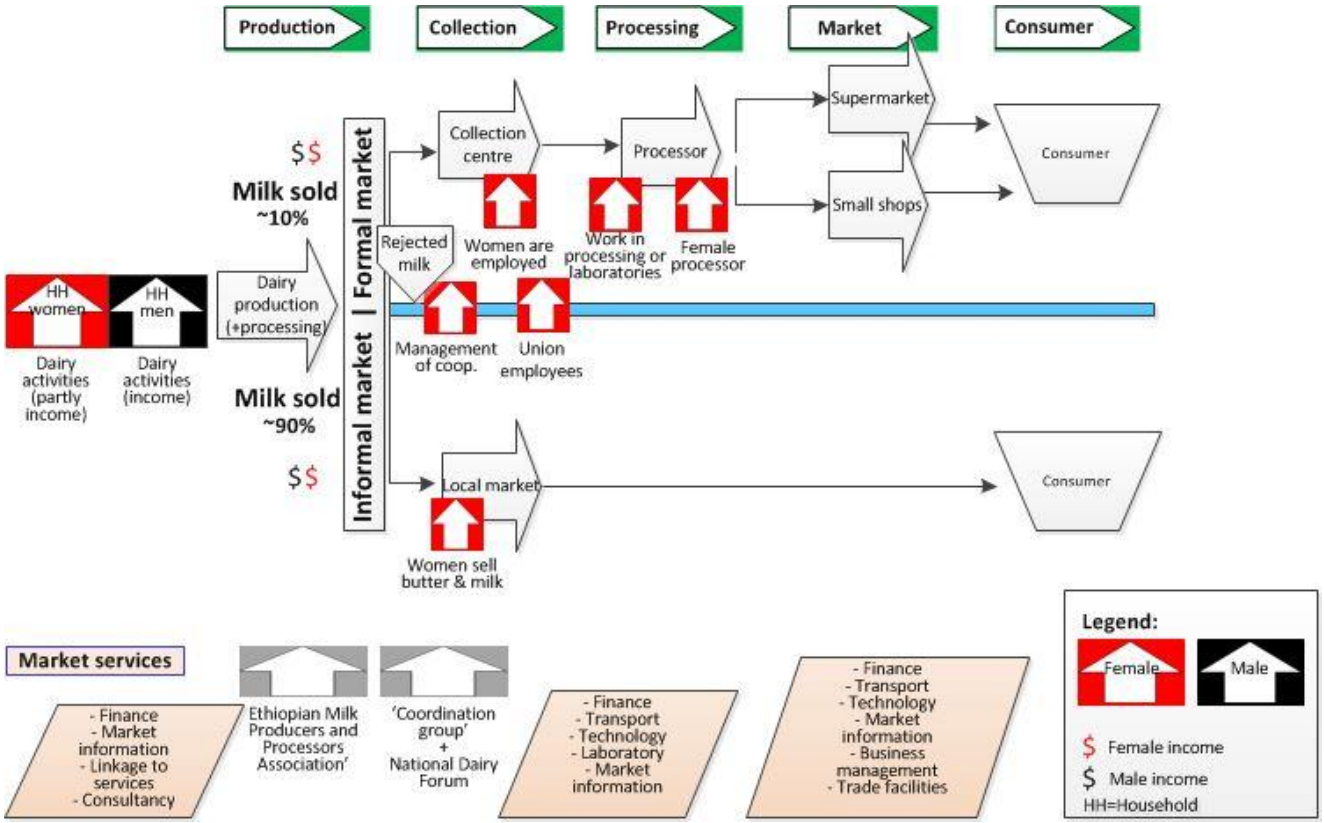


Figure 06: Milk chain through BOAM (adapted from: Senders et al., 2013)

Table 05: Value Chain Empowerment Diamond on BOAM dairy project

Value chain activities	Agency
- Women are engaged in more chain activities and technologies and earn more money - Involving women in the dairy chain has increased the volume of milk in the formal dairy chain - Women taking part in training has led to increased quality of the milk - By introducing quality-based-payment female producers start to target women and sees an improvement in quality	- Skill/business skill development (e.g. processor, who also choses to accept milk only from female producers) - Access to finance - Building confidence and self-esteem through employment within the chain
Value chain governance	**Structure**
- Women participate in decision-making at producers level - Women have access to market knowledge and information - Better bargaining position through quality-based-payments - Formalizing chain arrangements between farmers and processors	<u>Structure:</u> - More registration of women farmer - Women are in more leadership positions - Men and women are aware that women need to participate in trainings and meetings - Women participate in trainings/meetings - Women get more respect

Business Arguments

- ✓ Training female producer in milk hygiene improves milk quality
- ✓ With female training on cattle management milk volumes increased
- ✓ Training female small-scale processors results in a longer shelf-life of the milk
- ✓ Women are careful and precise in their work
- ✓ Trained women increases efficiency in the dairy chain

Success Factors on Gender-Inclusion

- ❖ To make sure that women attend awareness programmes, trainings, meetings etc., times and places need to be 'customized' to their needs
- ❖ To ensure that women follow up with trainings (and not only their husbands) processors need to address registered female producer.
- ❖ Put emphasis on women's attendance to trainings, meetings etc., otherwise they will not appear
- ❖ To attract more female producers, women processors need to be trained.

Challenges

- ➢ Women's time constraints
  Since women have many household responsibilities, their attendance to meetings and trainings is often difficult to realize.

6.5 SMALL SCALE LIVESTOCK AND LIVELIHOODS PROGRAM – HEIFER INTERNATIONAL MALAWI

Project Background

The Small Scale Livestock and Livelihoods Program (SSLLAP) took place between 2009 and 2012 and was founded by USAID and Heifer International. A project partner was the Ministry of Agriculture and Food Security of Malawi with its extension services. Heifer worked with 240 smallholder farmers households in the Mchinji district, positioned in the mid-west of Malawi (see figure 07).

Petronella Halwiindi is working since 2012 in the Heifer project as a country director.

Malawi is a democratically governed country in South Africa. Since 2012 it elected, as one of the first African countries, a female president. Malawi is political stabile, but still economically poor developed. Agriculture is one of the main economies of the country and most of its population are living in rural areas. The agricultural policy has big interest in the development of the dairy sector, which is currently only meeting half of the national demand (Heifer Netherlands, 2013). Eight per cent of the GDP is from livestock (Heifer International, 2014a) and the government tries to attract more investors by determining high import tariffs of dairy products (Heifer Netherlands, 2013).

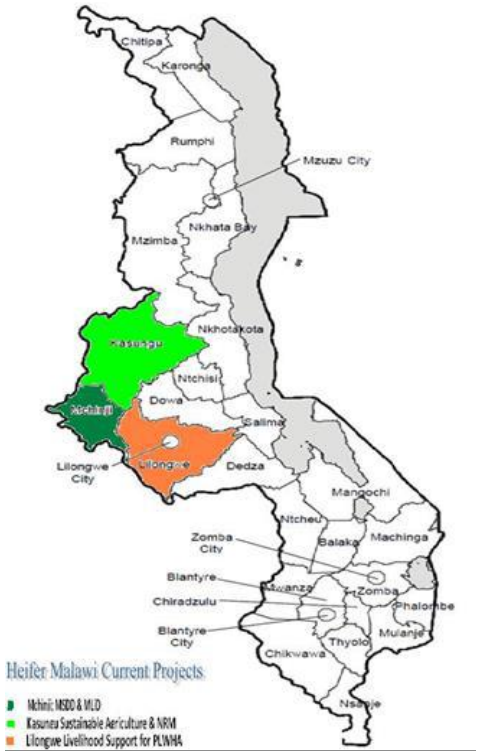


Figure 07 : Project area of the SSLLAP (Heifer Netherlands, 2013).

Local cows are low productive with an average yield of 0.75 litres per day. Lack of good feed and water result in animal diseases and death (Heifer Netherlands, 2013).

Cash crops, as tobacco cultivation, cause deforestation, but are an important source of income for smallholder farmers. Its supply chain is organized, has a good infrastructure, and farmers are certain to sell their products.

After the project Heifer International Malawi will hand over responsibility of trainings to the local government.

In 2013 Heifer International Malawi started with the second phase (2013 to 2016) of the SSLLAP. It is co-funded by Heifer Netherlands and Heifer International with the focus on malnutrition of children in the age of 6 to 56 months. In the second phase 12.000 smallholder farmer are addressed with the intervention (Heifer International, 2013).

Objectives and Targets

Following Heifers mission, to reduce hunger and poverty while caring for the earth, it aimed on value-based community development. Small-scale farmers, and specifically women, were targeted. Farmers were aimed to diversify their income sources and find an alternative, viable business to tobacco production, which is lowering the deforestation rate. Heifer's idea was that by establishing a milk chain, farmers could sell milk, increase their nutrition and require less land. For that it aimed on

grouping farmers together, delivering heifers and bulk milk. With a constant higher milk volume a reliable market could be approached, and farmers would receive higher prices.

Leading guidelines of the project were Heifers 12 guiding principles (see annex).

Previous Sales of Milk
Before the project time, there have been only a few milk producers in the area, who sold their milk mainly to neighbours.

Women are mainly seen in reproductive activities around the household being responsible for fire-wood, carrying water, and caring for the family.

Almost all farmers have access to wetlands enabling them year round cultivation. Men were mostly involved in cash crops as maize and tobacco cultivation and left land margins for women's cultivation of consumption crops. Women own sometimes chicken or goats, but land and cattle are traditionally owned by men. Households owning cattle divide tasks traditionally in that way that women have to collect water for cattle and households, and men and boys are collecting fodder. Milking is traditionally done by children and men, but hygiene of cattle is cared for by women.

Traditionally women travel with their husband together and in some cases, as bringing their children to school, also alone.

Gender-Inclusive Intervention
In the first phase of the intervention, Heifer's gender-inclusive interventions were guided through the principle 'gender and family focus' (see also annex 01). The principle encourages men and women to share decision-making and benefits coming through animals and trainings. It requests women and men to respect their roles and responsibilities, and to discuss patriarchy and inequalities openly. Heifer encourages households to allow their daughters to study mathematics and sciences, to support female entrepreneurs and to raise their sons to treat women equally (Heifer International, 2014b).

For the second phase of the intervention Heifer uses gender analysis tools, as Access to Control and Resources, 24 hour Profiles, Decision-Making matrix and more. The local situation and community was analysed at the beginning and an action plan developed to address gender gaps.

Project Activities
When implementing the project phase one, Heifer identified first the project needs and provided trainings to producers[24] and community animal health worker. For trainings all household members were invited together (also children). The participation of men and women was mostly similar, but often only one household member could attend the trainings, while the other stayed at home.

Community health workers were mainly trained in the identification of diseases and routine management practices. Through a certification (acquire through the project training) they could receive drugs as for de-worming and in identifying a few symptoms of local diseases they were able to provide basic service. For advanced treatments they were linked to the local vet.

- *Delivering heifers*

Heifer explained to the families, that provided 90 heifers are coming through the project and belong to the wife, husband and children of one household. They further explained that their responsibility needs to be shared collectively by all household members. Most of the heifer beneficiaries (70 per

[24] Trainings were organized on livestock husbandry, gender issues, heifers principles, leadership and group dynamics, farm business planning, AI-training, fodder management, stove construction, health nutrition, and more.

cent) were women, since most of the project participants were women. Petronella Halwiindi observed husbands being supportive to women, because they see the heifer which came through her as an income contribution. Halwiindi believes that "by owning the animal she is able to make decisions or contribute to decisions related to the animal". This effects decision-making in how generated income of milk is spent by the household. In that way Petronella Halwiindi considers "the cattle is strengthen her [the wives'] position within the family".

- *Establishment of milk collection centre*

To establish milk collection centres, Heifer funded a tank, the roof material and other small materials. Households organized the needed additional building materials and constructed the building under the supervision of Heifer. After finalizing Heifer organized the connection to the electricity grid. Incoming milk is tested on potential diseases and its quality.

- *Linkage to bulking and processors*

Through the governmental extension service Heifer International Malawi addressed potential farmers and got in contact with the farmers group BOA bulking. The group did not have cattle yet, but was interested to start dairy business and requested assistance from Heifer. Heifer linked producer households to the BOA bulking group and facilitated formal agreement with a bulking group on its transportation schedule and paid milk prices. For that farmers were assisted to calculate their production costs and could judge the offered price of the bulking group. At a later stage Heifer addressed processor Lilongwe dairy Malawi to process the bulked milk.

- *Women saving groups*

Collectively farmers applied for a loan to purchase farming inputs. Due to interest rates of 42 per cent, farmers felt challenged to pay back and saw all their incomes being given automatically from the cooperative to the bank. As a consequence farmers started side-selling of milk. Although it was not planned in the project Heifer started to train 5 female farmers ('village agents') to establish a women saving group with each 25 members. The groups meet weekly and contribute an agreed amount of money. After a saving period of one year small loans are given to members who show a good business proposals and pay the agreed interest rate of 20 per cent. Sometimes loans are taken for the business of members' husbands. Husbands see generated profit in the saving groups and encourage their wife's in the activity.

- *Energy saving stoves*

Heifer provided advised households on the construction of energy saving stoves made from mud. The stoves require less wood then open fire (contributing to less time use) and contribute to better health condition since they smoke less.

- *Awareness raising on girls' marriage*

In cooperation with NGOs as Plan International Heifer did awareness raising on girls' early marriages.

Other activities have been:

- All gathered groups were trained on gender issues
- Seeds and seedlings (delivered to all households)
- Opening of households bank account

Project Outcomes

All 90 heifers, which have been distributed by Heifer International Malawi were given further to another household ('Passing on the gift') till the end of the project. Petronella Halwiindi estimates that with the project contribution the number of cows increased with around 70 per cent. Since the first offspring is relatively young and not yet pregnant Petronella Halwiindi sees a disadvantage for households who receive the calf from other households. To increase the local breed Heifer Interna-

tional Malawi brought bulls and AI training in the project. Petronella Halwiindi perceives there is no social problem or disruptions in family dynamics when women own cattle, but instead women receive more respect and “more power [is] given to women”.

Cattle management is now managed in the following way: men organize feed, women bring water and children clean cattle sheds. Men or children transport and cash the milk at collection points. In the beginning some of the milk was rejected due to spoilage, but the rejection rate decreased soon to less than five per cent. All bulked milk is sold over the formal market and in the end sold to small shops and supermarkets.

Monthly Lilongwe dairy transfers payments to the established family bank accounts. Decision over income is predominantly made by men, but depending on the household member who owns the cow. Petronella Halwiindi believes “there is still a lot to do to strengthen the decision-making power of women”, but sees also, that many women become confident in decision-making and jointly decide on how money is spend. The general workload of households increased ever after having own cattle.

Bank accounts are established for the household member who own (Heifer’s) cattle. Women are normally joint by the husband when going to the nearby bank to collect money. Milk incomes contribute to over 50 per cent of the total household income and reach high importance in the household. As a result of the increased income and joint decision-making more children are sent to school, housing structures improve and household’s members are better dressed and improve their nutrition.

Tobacco cultivation is still practised, but less from cattle owners than other farmers.

Heifer International Malawi sees success in the established women saving groups through which members can apply for a loan. At village level women’s position is strongly influenced by the saving group.

Access to and control over resources are available to women, but mainly controlled by men. Becoming a member of a producer organization did not activate resistance in society. Women moved into leadership position as secretary, treasurer and the vice president of the milk collection centre.

Figure 08 gives an overview of the changed situations within the dairy chain. It shows women’s employment, the new position of a female vice president, established saving groups and support services at different stages of the chain.

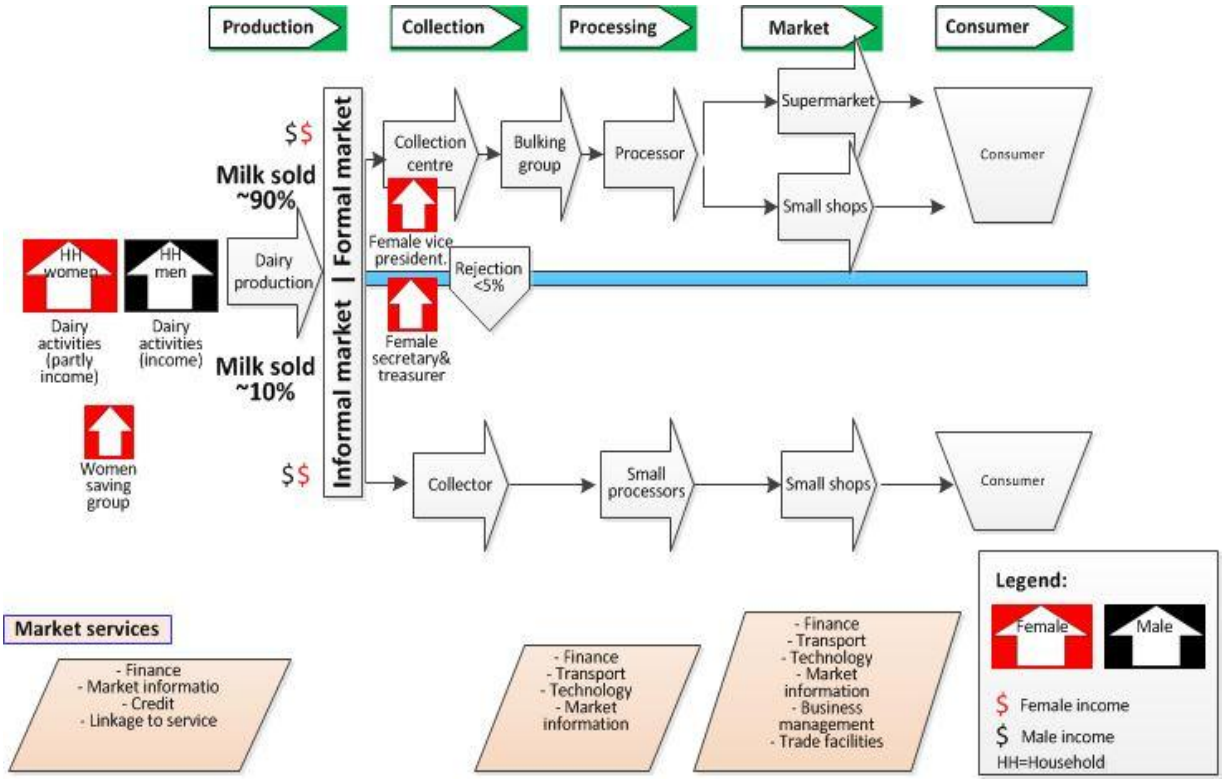


Figure 08: Milk chain through the SSLLAP (adapted from: Senders et al., 2013)

Table 06 shows developments in gender equity (Agency and Structure) and gender mainstreaming (Value Chain Activities and Value Chain Governance). Cow ownership and employment, but also activities in saving groups increase women's self-esteem and contribute to increased chain activities.

Table 06: Value Chain Empowerment Diamond on the SSLLAP

Value chain activities	**Agency**
- Women are employed in more chain activities(secretary, treasurer and vice president of the milk collection centre) - Women taking part in trainings - Women saving-groups enable women to start small scale business - Women sell more milk to the formal market this has increased their income (min. 50%)	Women: - Making own choices in sending children to school - Skill development in e.g. cattle management - Improved business skills to market milk - Access to loans - Building confidence and self-esteem in owning a cow and contributing to income and employment
Value chain governance	**Structure**
- Women participate in decision-making how income is spend and having a say in cattle management and marketing of milk - Market knowledge and information - Expanding supplier through business arrangements - Women co-led-cooperative	Household: - Shared responsibilities - Women are respected - Women have a voice/take part in decision-making - Improved nutrition - Women control income and resources Society: - Women are member of a producer organization - Changes in status, values and habits - Leadership positions are open to women - Women are respected - Women have a voice - Women participate in meetings/trainings

Business Arguments

- ✓ Women care traditionally for the hygiene of cattle, so addressing them is effective
- ✓ With improved incomes and women's saving group more money is available so that farmers are able to scale-up their business

Social Benefits

- ✓ More children are sent to school, contributing to increased education (which may result in new business opportunities)
- ✓ Household nutrition and housing improved

Success Factors on Gender-Inclusion

- ❖ Cattle ownership strengthens women's position in the household
- ❖ Farmers are able to buy inputs due to loans from women saving groups
- ❖ With an increased income women urge to send girls to school, resulting in a higher number of educated girls under project participants.

Challenges

- ➢ *Mobility*
  Training of "community animal health worker" was initially planned as a ten day training. Resistance was shown from husbands, who accepted a not more than of 1-2 days training outside of the community. Next to that they found the jobs needed to travel to different clients not appropriate for women. When families chose a family member to attend the training, women were only occasionally chosen.

- ➢ *Attendance of meetings*
  In the beginning of the project only men attended meetings. When Heifer emphasised the importance of women participating in the meetings the situation slowly changed. Changes required time and were "sometimes one-to-one basis".

- ➢ *Early marriage of girls*
  Girls are mostly married when coming in the puberty. With the marriage the girls family receives some money for the arrangement and is freed from responsibilities. Most families send rather boys to school, since they traditionally stay with their families at their parents' home. Heifer worked on the issue in cooperation with NGOs as Plan International, which are specialized on its awareness raising.

- ➢ *Decision-making on income*
  Decision-making on income required much time to partly change husband's perception.

6.6 DAIRY VALUE CHAIN PROJECT – UNFAO AND NAWI

Project Background
From 2002 to 2009 the UN Food and Agriculture Organisation (UNFAO) guided the Dairy Value Chain Project (DVCP) in Afghanistan. It covered the regions Balkh, Kunduz provinces and Kabul. When FAO stopped the Afghan-German Sustainable Development Programme, NaWi continued the partnership with dairies in Mazar-e Sharif and Kunduz provinces (Zulmai, 2010). Additional donors have been Land O'Lakes. The project is planned till 2014, but possibly extended into a new project phase (Millsopp, 2014). Zemarai Zulmai is the project coordinator of the Dairy Value Chain.

In the north of Afghanistan livestock, mainly used for meat consumption, plays an important role. Yields are low due to poor husbandry, nutrition and management system. Most households own 1-2 cows and sell only its surpluses locally. Market demand of fresh milk is high, but since local milk has a short shelf life, Ultra High Temperature dairy products are imported from neighbouring countries. Locally, milk is processed in yoghurt and cheese (Zulmai, 2010).

NaWi established a partnership with processor Balkh Dairy in Mazar-e Sharif province, in the north of Afghanistan. The project started in 2010 targeting 700 farmers (350 men and 350 women) and expanded till 2014 to 2000 members (350 men & 1650 women) applying to 19 collection centres (Zulmai, 2014).

Seasonality is strongly influencing milk production and drops between November and February. At peak production times, milk is processed into butter, buttermilk and paneer[25]. Butter is kept till Ramadan when prices increase. In summer there is a strong demand in yoghurt. During shortage, additional milk is purchased from farmers outside the cooperative.

Most village men shared the opinion that women are responsible for reproductive work and girls do not need to go to school, "because they will learn topics which might be against Islam and Islamic rule". Rural and urban lifestyles differ tremendously. Most rural inhabitants are illiterate and require from project staff to find ways to convince them to let women work outside their homes.

Objectives and Targets
The objective of the project is "to improve rural economic development and food security in Afghanistan by raising the productive capacity of the National Dairy Sector through integrated model of dairy development scheme". In more detail that means for NaWi:

- To increase farmer families' income
- To increase milk volume and dairies' production
- To improve cross breeding
- To improve milk quality
- To establish milk collection centres and create new jobs
- To secure long-term dairy supply
- To diversify the range of dairy products
- To offer farm based training for women on dairy management around health and hygiene
- To empower the women and encourage them to participate in community development
- To substitute the imported products
- To achieve dairy based food safety and increase food security

[25] Paneer is traditional unfermented cheese

NaWi aimed at the partnership with Balkh Dairy processor "to reach its full capacity of up to 6,000 to 6,500 litres/shift/day." To receive more milk, the target area was planned to be expanded (Zulmai, 2014, p.7).

Previous Sales of Milk

Previously, only morning milk was collected and some surpluses of evening milk heated up and mixed with the morning milk. Not having a market for the evening, milk farmers hesitated to have more cows (Zulmai, 2010). Commonly cattle are owned by men or the entire family. Women have no authority in decision-making and limited access to land, cattle or financial means.

At production level, activities are divided in the following way: Women do milking two times a day, care for the hygiene at the milking place and bring the milk to the collection centre. They further support their husbands in cattle feeding and cleaning the stables. Men are responsible for Zero - Grazing management, carry water, feeding cows, clean and manage the cattle stable, wash cows, and breeding. They bring cows to health-care vaccination and support their wife sometimes to carry milk to collection points. Responsibilities of cashing money from collection centre and keeping it differs between families.

The Balkh Livestock Development Union, owned by four cooperatives, had established eight collection points where milk was tested and further transported to Balkh Dairy processor.

At the beginning of the project, women were cooperative members, but not seen in leadership positions. Due to short shelf-life, 90 per cent of urban dairy products were imported and only around 10 per cent of the market share was fresh milk from Afghanistan.

Gender-Inclusive Intervention

Gender-inclusive interventions were planned from the start of the project. NaWi implemented their own strategies and tools according to the regional culture. They employed local female extension workers, female trainers and female supervisors. An awareness campaign was used during family visits and to encourage men and women to work jointly outside their homes. It introduced modern lifestyles and presented a study outcome of urban women who worked at clinics to illustrate how men and women can support each other in business and change their circumstances.

Project Activities

- *Baseline study*

At the beginning of the intervention NaWi conducted a baseline study to identify participants' needs and the general current situation.

- *Expand the project target area*

To gain more milk volume and reach the full capacity of Balkh Dairy, the target area was expanded. In 2012 GIZ financially supported two new collection points with basic equipment to measure milk quality and trained 300 new farmers on improved cattle management. One year later another 500 new farmers joined these trainings and another 5 milk collection points were established (Zulmai, 2014).

- *Trainings*

Every two months trainings for producers[26] and processors[27] were organized by female-staff of the Balkh Dairy union after surveys and need assessments took place. Because of regional and cultural

[26] Training were offered on: Improved cattle management (cattle health care, veterinary issues, cattle cross-breeding, proper feeding/watering), improved quality of milk production (cattle keeping, hygienic milk handling, milk collection, milk quality testing), remodelling cattle stables, sales, financial issues, marketing, supplying to collection centres and more.

concerns female and male producers were trained separately. Union and cooperative staffs were trained together on contexts of their responsibilities. During the NaWi's project time 800 new female producers were trained on improved cattle management (Zulmai, 2014). The union trained female producers in good milking practices and chose a group leader to further train smaller groups of women on a regular basis.

- *Marketing and sales support*

NaWi financially supported marketing in organizing TV and radio advertisements, print billboards, brochures and information kits.

- *Support of first intervention time*

The UNFAO provided forage seed, feed concentrate, veterinary services and training in good milking practices and "donated its dairy equipment and vehicles" to dairy farmer. Next to that it supported the establishment of a feed mill in Mazar-e-Shari (Zulmai, 2014, p.7).

- *Monitoring team*

Balkh Dairy union monitors and evaluates the processes regularly to see how the different steps of production, processing and marketing perform. To overcome negative findings, it responds with immediate short-term trainings.

- *Family excursions*

During excursions, women were specifically targeted. Three days training provide knowledge on how to market and present their products. In total, more than 2000 families did this intensive training.

Other activities have been:

- Analysing milk quality before its processing (through international advisors)
- Establishing proper financial and management system (through national and international advisors)
- Employing female staff
- Awareness program (see *Gender-inclusive intervention* above)
- Developing training materials
- Funding training building for Balkh Dairy union
- Funding collection centre building and equipment[28]
- Funding construction of a deep well and its water pump[5]
- Establish cooperatives
- Establish seven new collection centre
- Funding chilling tanks in main collection centres
- Funding building construction and equipment for dairy packaging and processing[29]
- Registering dairy producers' cooperatives as legal members of Balkh Dairy Union[4]

Project Outcomes

Farmers are registered at Balkh Dairy and agree to sell all their milk to the union; except amounts for consumption. Between 2010 and 2014, the number of cooperative members more than doubled with a total of 2000 dairy farmer (350 men and 1650 women) and exceeded initial project expectations. In some cases villagers showed resistance to include women in producer organisations and gender roles challenged working with female producers. Still, overall women empowerment can be

[27] Processors received trainings on quality improvement of production
[28] (Zulmai, 2014)
[29] Funded by Land O'Lakes. The Balkh Dairy cooperative union purchased the needed land with its own finances.

seen in the following ways: For the first time three female staff are employed in the dairy and eight in the union. Within the NaWi project time the number of female cooperative member increased from 350 to 1,650. Around 30 women are trained and allocated in producer cooperatives' management, to collection points and processing plants where they are working together with their male colleagues. Each cooperative included 3-5 female members in their management. With a regular income women experience decision-making power over household expenditures. Generated income is shared and its decision-making jointly done inside the family. In agreement with the husband, wives decide about household goods, children school expenditures and food items. Stated by a woman: "Now our husbands ask us for money when they need to buy something". Women's self-esteem increased and they experience respect and appreciation from their families and society. Girls can go to school and women are allowed to work in collection centres, processing plants, at management and decision-making level, and share ideas and experiences. Women participate in management meetings and regular trainings, and take part in awareness programmes in rural and urban areas.

Milk collectors are members of the producer cooperative. Their profit margins are set by Balkh Dairy. Zulmai states that "milk collectors forfeit their milk procurement costs" when the union rejects the milk. They need to register all farmers supplying milk on a daily basis and pay them weekly. Book of records is shown to the union on a weekly basis. Delivered milk of each collection centre is tested in a laboratory for its quality and possible disease transfer. The processing unit is pasteurizing and homogenizing milk and process it to yoghurt. It is further packed, cold-stored and delivered to the final market (70 retail 'window-shops'[30] and 10 supermarkets around Mazar city).

With the quality improvements Balkh Dairy achieved a good reputation among consumers. They developed two different prices for bulk and fresh products. Middle class consumers in Mazar show interest in fresh high quality dairy products. Although prices increased with at least 15 per cent, due to quality improvement and increased demand, they are still below the import prices and demand is not yet met. Lower prices are charged for fresh bulk products sold over 'window-shops'. Balkh Dairy equipped them with refrigerators to secure quality.

Through active marketing Balkh Dairy became a successful business and could establish itself well in the market. They pay salaries, investments in upgrading business as cold store, machineries, veterinary services, extension service etc. The union has a department for Animal Health Care, Animal Feed Production and Women Trainers Extension. The union trained women to become group leader of women groups. They can receive a commission of sold feed concentrate and forage seed. Balkh Dairy decided to continue supplying veterinary services after the project intervention. The number of contracted trainers increased over the project time from a few short term contracted trainers to 10 trainers and 2 'master' trainers. The union's profits "return to farmers directly in the form of dividends, or indirectly in the form of higher milk prices and lower input costs." (Zulmai, 2010, p.7). The Advisory Committee of the Executive Committee consist of different chain actors and advisories as well as representatives of farmers' cooperatives (Zulmai, 2010).

Between 2010 and 2014 two new cooperatives were established, twelve new collection points built and fifty new retail shops sold the unions dairy products (Zulmai, 2014). Due to better cattle nutrition and knowledge the amount of milk sold to the cooperative increased per household from 1-3 litres per day in 2002 up to 15-18 litres in 2012. Improved management and knowledge contributed also to less seasonality. Families' income increased by at least 40 per cent. The increased productivity resulted in higher volumes at collection points: from initially 2,900 to 5,300 litres per day and its total processing from 993,000 to 1,468,000 litres of milk. With the increased milk quality the formal market increased to 60 per cent (with a steady increase) and offered a higher range of products[31].

[30] "Window shops" are private retailer selling dairy products commission based (Zulumai, 2010).
[31] Milk, yoghurt, cheese, buttermilk, cream, butter, quark and more.

Figure 09 shows the changed situations in the dairy activities. Women take part in decision-making to market milk, are trained and work in diverse positions of the dairy chain (see also table 07).

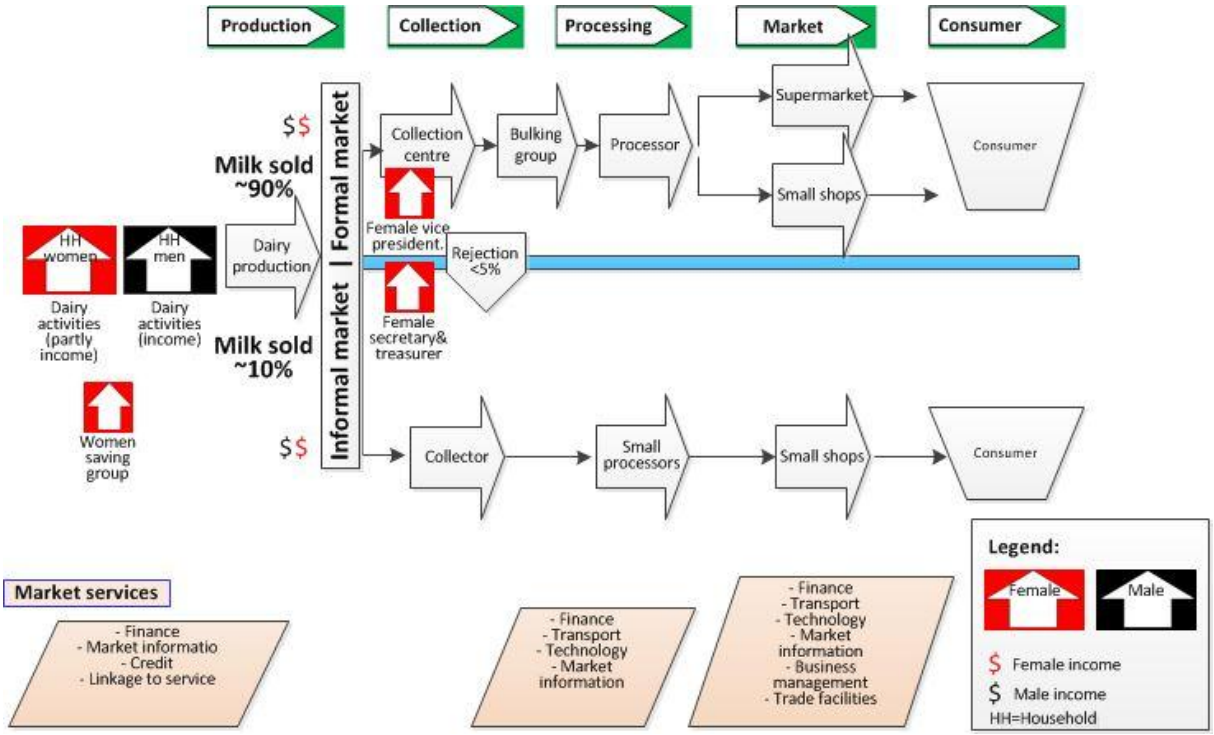


Figure 09: Milk chain through the DVCP (adapted from: Senders et al., 2013)

Table 06 shows developments in gender equity (Agency and Structure) and gender mainstreaming (Value Chain Activities and Value Chain Governance). Employment increases women's self-esteem and contribute to increased chain activities. Through women's contribution in quality and quantity of milk the union can address the formal market with nearly their entire products. The project contributed to a strong increase in female membership in producer organizations.

Table 07: Value Chain Empowerment Diamond on the DVCP

Value chain activities	Agency
- Product diversification (yogurt, but also butter, paneer[25], quark and butter-milk) - Women are engaged in more chain activities and technologies - Higher quantities and qualities of milk - Women taking part in trainings - Family income increased with min. 40%	Women: - Making own choices to supply their milk to cooperatives - Skill development (e.g. dairy management) - Improved business skills (e.g. focussing more on milk hygiene) - Access to finance - Building confidence and self-esteem in receiving an income

Value chain governance	Structure
- Women participate in decision-making - Women control part of the income - Market knowledge and information - Better bargaining position - Expanding supplier - Women are in the coop. management	Household: - Women are allowed to travel - Shared responsibilities Society: - Women and men are organized and registered (1,650) - Changes in rules, regulations, status, values and habits (household and society) - Registration of women farmer - Leadership positions are open to women - Women invited & participate in meetings/trainings

Business Arguments

- ✓ Men are often occupied with outside work and leave women with cattle management
- ✓ When increasing the target area and offer cooperatives membership the number of women increased significantly

Social Arguments

- ✓ Making women visible in the dairy chain gives them the possibility to play a role in society, increase their knowledge and making an income
- ✓ Through employment women experience decision-making power
- ✓ Monthly income of families increased at least with 40 per cent
- ✓ It is a human right to experience decision-making and to share benefits

Success Factors on Gender-Inclusion

- ❖ *NaWi's awareness and campaign program targeted wives and husbands together to attend trainings and supported their collaboration.*

- ❖ *To employ female project staff and stimulate employment of women in cooperatives*
  The project employed a female extension servicer and encouraged the cooperative union to employ female staff.

- ❖ *Awareness raising and training made it possible that women work in different positions of the dairy chain*

Challenges

- ➢ *No trust in project*
  At the initial stage of the project producer did not trust the intervention and gathering and establishing cooperatives became difficult. After the formation of the first cooperative and a milk collection point interest grew. Ideas, results and impacts were openly presented and farmers linked to regular markets.

- ➢ *Overcoming gender constrain*
  Over a period of almost three years NaWi faced obstacles on including women in leadership positions. Challenges still occur when staff needs to work with female producers.

6.7 RECURSOS NATURALES Y FOMENTO DE COMPETENCIAS EMPRESARIALES – GIZ

Project Background

The project Manejo Sostenible de Recursos Naturales y Fomento de Competencias Empresariales (MASRENACE) - Management of Natural Resources and Strengthening of Entrepreneurial Capacities - took place in the Northern Atlantic Autonomous region of Nicaragua. In the time between 2008 and 2013 the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) was leading and funding the MASRENACE project. During the project time GIZ worked closely with local government on value chain standards and on municipalities' role to comply health and quality standards in dairy processing units. Together with Oxfam GB they tackled the issue of women's cattle ownership and access to finance. During the project time Mieke Vanderschaeghe (and Patricia Lindo) worked as free consultants facilitating workshops with staff members and dairy households on the sensitization of gender-inclusion for dairy producer families.

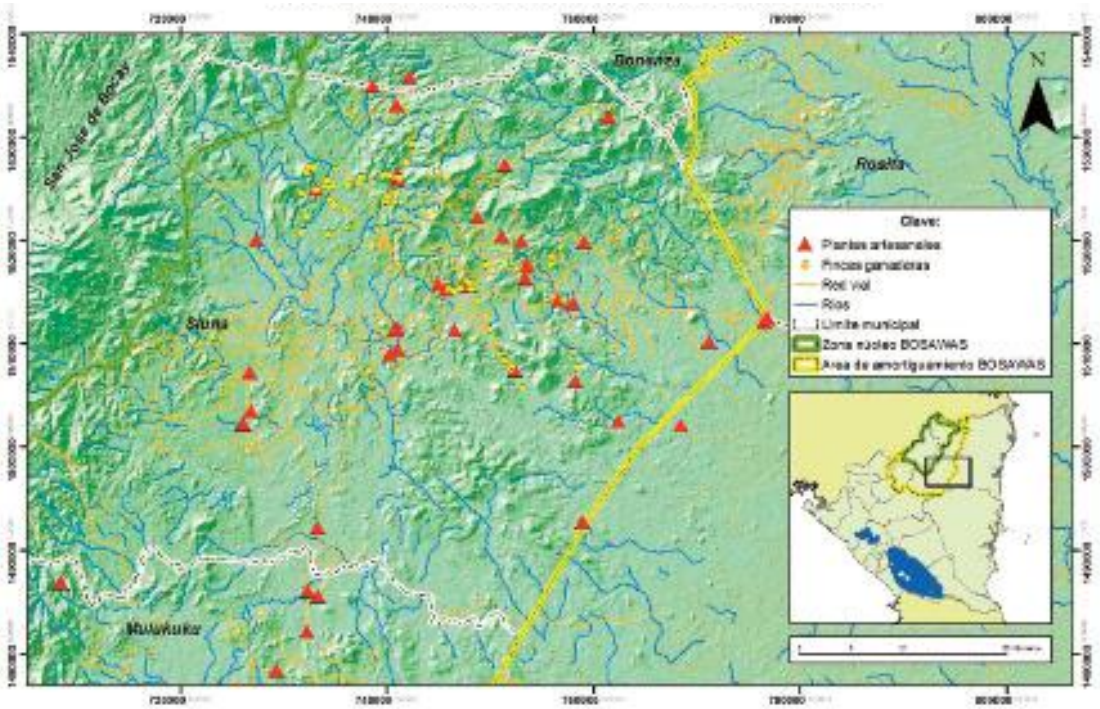


Figure 10: Project area of MASRENACE (Vanderschaeghe, 2013)

The main aim of the project was to protect the Bosawas Biosphere Reserve, which is gradually decreasing through high deforestation. Eighty per cent of the project area is situated in the buffer zone of the BOSAWAS Biosphere Reserve. It is annually decreasing by 45,000 ha through illegal deforestation. The reserve covers three different municipalities, Siuna, Bonanza and Rosita, in which approximately half of the inhabitants are indigenous people. The population is poor and lives mainly from economic activities as mining, livestock, basic grains and wood, which makes land unproductive. MASRENACE project worked on value chains of dairy, cocoa, timber and essential oils to reach a more sustainable production. Around 10 per cent of the project area is occupied through livestock activities with an increasing tendency (Weiskopf, 2013). The project area is in an isolated region with poor infrastructure and commonly not reached by dairy processing companies, so milk is locally processed into cheese by traditionally small processors or at home.

Other institutions who were involved in MASRENACE are the local government, Ministry of Agriculture, Ministry of Natural Resources, Institution Agricultural Technology INTA, Ministry of Health (MINSA). The latter was involved in working on regulations of local dairy processing units to comply with health and quality standards.

Although women are responsible for diverse dairy activities, next to their reproductive work, they are hardly addressed as dairy producer and involved in cooperatives.

Objectives and Targets

The objective of MASRENACE was to decrease deforestation by intensifying cattle keeping, and improve quality and competitiveness of local stakeholders through sustainable management and increasing biodiversity (Vanderschaeghe, 2013). Sustainable production was aimed in implementing a management plan for the reserve and encourage producers and processors to focus on clean milk handling, improved animal husbandry, as well as assist access to new local and national markets. Specific goals of GIZ were to strengthen the National Farmer Union (UNAG) and cooperatives and supporting municipalities in regulation of milk processing and complying with quality standards. Through development of an inspection system, trained staff and appropriate equipment, national standards were meant to increase hygiene at processing units (Vanderschaeghe, 2013). Another important objective of MASRENACE was to improve the position of women in the value chain and increase their self-esteem and appreciation through promoting the importance of women's quality management in the dairy chain.

Through the different implementations, MASRENACE project aimed at increasing families' well-being and preserve the Bosawas Biosphere Reserve.

The Previous Situation at Producer's Level

At the start of the project, three main problems influenced the development of the dairy chain: Milk handling and local cheese processing was unhygienic, there were no specialized services offered from public nor private investors, which could stimulate chain development, and there were no regulations for local institutions in place. Wastewater from local cheese processing contributed to contamination of open water sources (with nitrate, formalin and chlorine) and affected its ecosystem seeing in fish deaths and illness for cattle. Institutions and farmer organizations were often weakly organized and resulted in low power market trading and processing milk (Vanderschaeghe, 2013).

At family level dairy activities are divided in the following way: women collect water, caring for the hygiene of animals and milk buckets, process milk into traditional cheese and market it. Men do traditionally milking once a day, collect fodder, and bring cream cheese and liquid cream to markets in Siuna and its surrounding. When processed in local cheese processing factories, mostly owned by men, cheese is sold to intermediates, who sell cheese illegally in El Salvador (Vanderschaeghe, 2013). Dairy producers have between 10 to 50 cattle, producing between 10 and 60 litres of milk per day (KIT, Agri-ProFocus and IIRR, 2012). Men are traditionally the cattle owners and retain milk income. Women are not well represented in cooperatives, do not participate in trainings and events, and have limited access to credit, information and land.

Women are the main labour force in the area and together with their responsibility of reproductive work they experience a high working load. Problems increase in some cases when men feel addicted to alcohol and gambling (Weiskopf, 2013).

Gender-Inclusive Intervention

Weiskopf (2013) believes that "there is no one-fits-all solution to address gender inequalities in value chains. Solutions differ from value chain to value chain and country to country". Interventions need to be adjusted to the socio-cultural situations to change 'gender-power relations'. These relations have been identified through a gender-sensitive analysis at the initial starting point of MASRENACE.

Within MASRENACE project a six months gender training took place on sensitization of gender-inclusion. In four sessions 25 members of dairy cooperative and their spouses discussed together their roles and expectations (KIT, Agri-ProFocus and IIRR, 2012).

GIZ implemented their own developed 'ValueLinks' tool which is an "action-oriented approach for promoting economic development with a value chain perspective". It guides participants to identify employment and income possibilities for enterprises and farmers working in a value chain (International ValueLinks Association e.V., 2009).

Project Activities

MASRENACE project operated on different levels in the value chain. It worked with 200 to 300 farmer's families on quality improvements and organized cooperatives.

- *Gender training*

Four different sessions in gender training were offered to families of Cooperativa COACAN and the farmers group Negrowás in Siuna. In the first session, male and female producers were requested to draw the value chain with its activities. Afterwards drawings were compared and discussed. This gave female producers an understanding of the value chain. The second session was paying attention to milk quality and its importance for the market. By focussing on milk quality cooperatives could enter 'higher-value markets' and pay farmers higher prices. Trainers put emphasis on women's and men's contribution to quality, and the benefits each of them obtains. In the third session men and women discussed services they receive and needed (e.g. credit for buying cows, training on pasteurising management or assistance on bank accounts). In the final workshop, dialogue was held on husband's and wives' communication. This included discussions on family life improvements, mutual support, and equal share on decision-making and benefits. Participants further discussed in which way cooperatives could register families as one unit (KIT, Agri-ProFocus and IIRR, 2012). Women did not face resistance to become registered in the cooperatives, since there have been already female leaders in health and education at the beginning of the project.

- *Constructing processing unit*

In 2013 GIZ and Oxfam GB invested in the construction of a processing unit of the cooperative so that milk could be pasteurised and new markets attracted.[32]

- *Reinforcing governmental control*

MASRENACE project worked with the local and national government on regulating health and quality standards in processing units to increase the quality of cheese and develop higher market prices. Cheese was planned to access formal markets in Nicaragua and to be directly and legally exported to Central America, therefore it was a milestone to comply with health and quality standards.[1]

- *Geo-referencing*

With geo-referencing technology the project mapped locations of cheese making units and cattle farms around Siuna. Maps were used to measure destinations within the chain and illustrated the current situation of the dairy sector to the government.[1]

- *Register association*

Three women's groups showed clear business ideas for an identified market. The project assisted them in writing a business plan and registered the groups as formal association.[33]

Other activities have been:

[32] (Vanderschaeghe, 2013)

[33] (Lindo and Vanderschaeghe, Asesoría en género, 2009)

- Value chain analysis and market study to determine the demand for existing and potential markets and trends
- Identify and recommend needs of improvements between current products and market requirements
- Producer and processor training[34]
- Providing producer access to services
- Creating job opportunities for women in processing units
- Train governmental institutions to become more gender-sensitive and not being gender-blind to chain equalities
- Co-financing activities related to gender equity
- The project worked with wives of organized producers, focussing on household as family business
- Development of UNAG - Service Union for Strengthening Cooperatives
- Establishing quality monitoring system at processing units
- Assistance on product development, including its names, logo and marketing (Lindo et al., 2012).

Project Outcomes

The gender training resulted in registered producer organizations; some producer's wives are now members of cooperatives, and entered new roles. The milk producer cooperatives increased their members from 8 to 43 per cent within a year and showed that female leaders strongly attract other women to join the cooperative. In general, the number of female members increased from 48 in 2008 to 108 in 2012. A group of five dairy cooperatives formed a union and elected a woman as their president (KIT, Agri-ProFocus and IIRR, 2012). Women have developed self-esteem and self-confidence, became aware about their business contribution, articulate their interests and suggestions, and demanded a bigger share of income. It shows that generated income through employment contributes strongly to empowerment of women. Husband's awareness of women's contribution made them more open to changes and agreeing on women's mobility. In some families husbands support women in reproductive work. Still, traditional roles are difficult to change and this requires time. Some changes are seen in the registration of land and cattle, which is partly now in the names of women.

The program made sure that dairy trainings, information and additional support reach both women and men. It made clear that women's activities are essential for the hygiene and the resulting quality of milk, and that they have an interest in improving livestock feed. GIZ and Oxfam GB analysed cooperatives' services towards female farmers, built empathy and trust within the group and stressed the importance of communication and transparency to succeed collectively.

After the project, invitations to meetings are still formulated to the entire producer family. Women have more access to credit and gained more knowledge about market and prices resulting in a better position during negotiations. Farmers' organisations achieved legal status, opened a group bank account and formulated clearly roles and responsibilities towards their members. Next to that they es-

[34] Training was offered among others on: Gender-sensitivity, good management practices, hygienic milk handling, farm planning, producer and processor technology, business planning, biodiversity management and agro-forestry, quality and health standards, internal assessments, community management services (water, health, education).

tablished a simple management and accounting system to provide transparency (Lindo et al., 2012). Farmers show more interest in food and health quality improvements and act stricter according to the regulations. Within the MASRENACE project, a quality monitoring system was evaluating sanitary conditions, and infrastructure to establish safety manufacturing conditions on 49 processing plants. The system contributed to an increase of product quality and increase in milk volume. By establishing smaller processing equipment, the project enabled women to work in processing units. Vanderschaeghe believes that through the project it could be seen that while women working in processing units "processing became cleaner, more organized, more hygienic". That was an 'eye opener' for most partners, the government and other private partners as cooperatives and producers.

With regards to the management on biodiversity, there is an in increase in forests from 180ha to 1,500ha between 2009 and 2012. More families show changes in behaviour and work under agroforestry management systems (Lindo et al., 2012).

After the intervention only little amounts of cheese are entering the national and export market. Oxfam is still active in the region and assists the projects partly in producing traditional cheese with national quality standards. In the last years Oxfam GB and the local government established various women projects, which is seen in line with the national development of women entering more jobs.

Project impacts were measured through a systematisation. Vanderschaeghe believes that it takes often more years to see sustainable impact on project intervention.

Figure 11 shows the diverse markets in which milk is processed to cheese and sold legal, as well as illegal (through local small processors). Through the intervention one woman became a leader of a cooperative union, women are registered in producer organizations and employed in the cooperative processing unit (see also table 08).

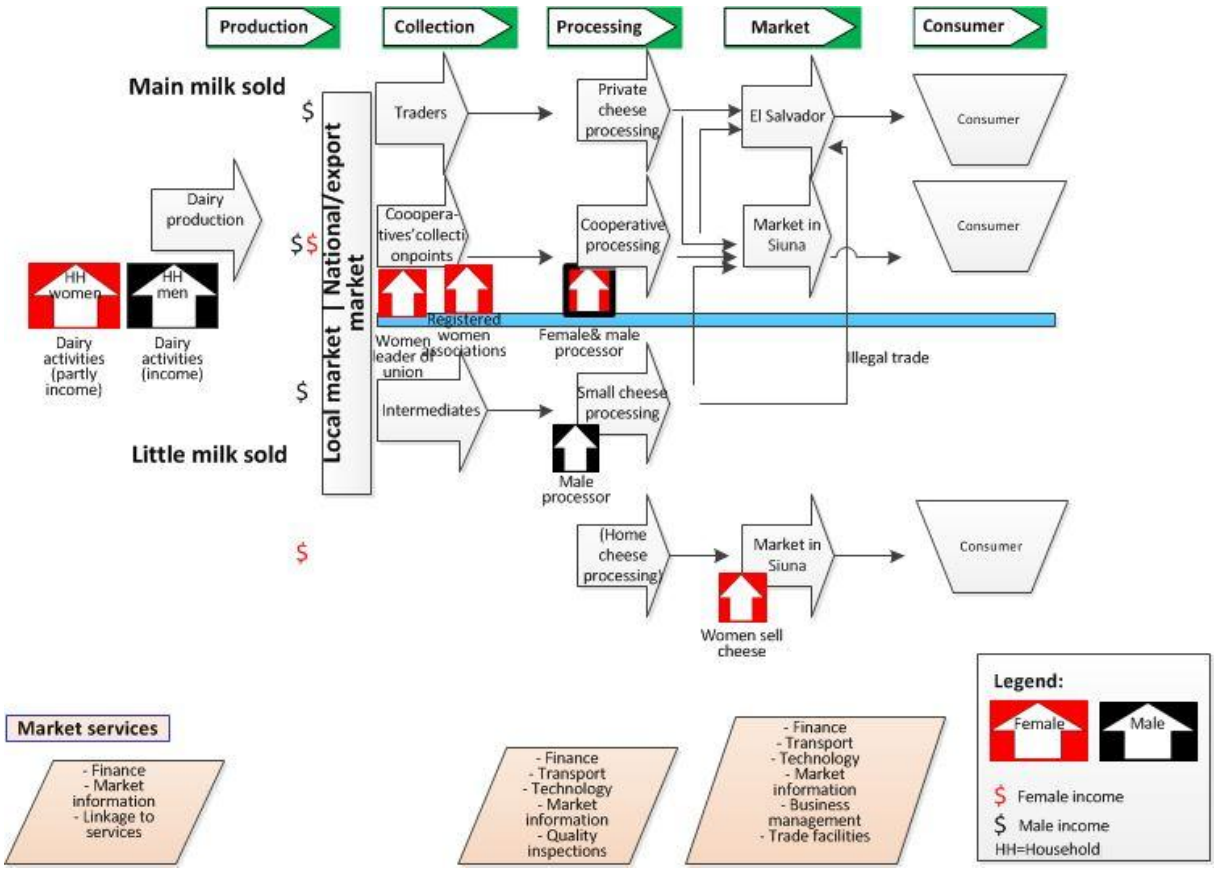


Figure 11: Milk chain through MASRENACE (adapted from: Senders et al., 2013)

Table 08 illustrates developments in gender equity (Agency and Structure) and gender mainstreaming (Value Chain Activities and Value Chain Governance). Women contribute to an increase in quality milk and cheese processing by caring for hygienically dairy product handling. Because women become visible in the chain they receive more respect and take part in decision-making of cattle management.

Table 08: Value Chain Empowerment Diamond on the MASRENACE

Value chain activities	Agency
- Women work with new techniques (processing) - Women contribute to higher quantities and qualities of quality milk and cheese - Women taking part in training	Women: - Increase self-esteem and self-awareness through becoming visible in the chain and joint decision-making - Express opinions in dairy management - Use market services - Show skill development (e.g. hygiene, applying to safety standards) - Improved their business skills (to market milk hygienically) - Have access to finance
Value chain governance	**Structure**
- Woman becomes president of union - Women gain information on improved cattle management and market knowledge - Formalizing women's activities in registered PO's and applying to safety standards - Women have better bargaining position with improved quality in dairy products - Women participate in decision-making at producers level	Household: - Men's support for women's new roles - Shared household responsibilities - Women gain mobility - Activities are valued Society: - Stimulate change in values and perception - Cooperatives simplified entrance for female producer (bylaws) - Women are invited & participate in meetings - Women are (partly) owner of land and cattle - Activities are valued - Leadership positions are open to women - Increased female PO membership

Business arguments

- ✓ Women do a better job in leadership positions as men
- ✓ Women's activities are essential for the hygiene and result in milk quality
- ✓ Women work cleaner, more organized and more hygienic in processing units
- ✓ There is a link between women empowerment and quality upgrading

Social arguments

- ✓ Generated income through employment contributes strongly to empowerment of women
- ✓ Families increased their diet and more children are sent to school
- ✓ It is a human right to give women business opportunities

Success factors on gender-inclusion

- ❖ *To focus on dialogue, discussion and working together. Address inequalities in households and in the chain through discussion*
- ❖ *Indirect family approaches result in more equity*

During gender trainings families were encouraged to reflect on their household situation, to value each other's contribution, improve their family life and team work, and equally share their benefits.

- *Enter the dairy market with quality products in which women play a role*
  While addressing new markets with quality products women's and men's contribution and effects need to be identified and its benefits shared.

- *Reflecting on equity in benefits of the business*
- *Developing processes and projects in the interest and voice of women*
- *Promote women's membership in producer organizations and provide capacity building*
- *Ensure that women are invited to meetings in the cooperative to achieve their participation*

Challenges

- *No clear business motivation*
  The project did not formulate a clear business motivation. Most cheese is sold (illegally) on the market in El Salvador where high quality standards are not demanded.

- *Little capacity of public authority*
  Public authority has little capacity and resources to control quality and hygiene of small-scale processors. Oxfam GB focussed on applying best practices at production level and linked participants with other regions and chain actors. The project tried to translate local situations to other regions with a more favourable environment.

- *Limited financial means*
  The financial means of the project were limited working in different complex value chains.

- *Rural environment*
  The project position was isolated and with a poor infrastructure creating unfavourable environment for the interventions.

6.8 WOMEN LEADERSHIP DEVELOPMENT PROGRAMME – GOKUL UNION INDIA

Project Background

In 1947 the Indian government worked with producers to increase milk production. It established first small colonies close to the major cities, but since they did not succeed well, dairy cooperatives were developed. Kolhapur District Cooperative Milk Union's (Gokul) is a Milk cooperative union established in 1963. In 1978 Gokul was covered under Operation Flood Programme of National Dairy Development Board (NDDB). On a national level around 40 per cent dairy business is organized by cooperatives and the rest by private enterprises. Over the years Gokul gained a total of around 378,000 milk producer members being organized in 3,800 dairy cooperatives (of which 30 per cent are women), who supply daily around 900,000 litres of milk. Milk is nearly entirely sold as fresh milk to major Indian cities (Gokul, n.d.). For its performance Gokul received repeatedly prices and rewards by the national government (Gokul, 2014). Gokul's activities include milk processing, product manufactures and its marketing. Next to that it provides input services, timely milk bills to its producers and more (see activities).

Gokul received 70 per cent loans and 30 per cent subsidies from the European Union during the Operation Flood Programme through the NDDB, India. NDDB's study outcome motivated Gokul to develop the Women Dairy Cooperative Leadership Development Programme (WDCLP).

An interview has been conducted with Dattatray Ghanekar and Neeta Kamat. Through his master thesis on how women empowerment is slowly changing the attitudes and behaviour of women he came through the NDDB to Gokul as the general director. Neeta Kamat holds a master degree in business administration and works since 1989 at Gokul as the assistant officer. She is the instructor of the women development group.

Objectives and Targets

Based on NDDB study Gokul saw the need to strengthen dairy producer groups, the position of dairy producer, and to address female dairy producers, who are really involved in the business. In doing so Gokul focussed with its Women Dairy Cooperative Leadership Development Programme (WDCLP) on women, addressed them through self-help groups and other women's groups, but involving also male producer in their program. Next to that other stakeholders, as input suppliers and local banks, were targeted.

With the WDCLP Gokul aimed on the empowerment of women to increase their participation in cooperatives and increase in that way the amount of milk. Providing trainings and awareness programmes aimed on improved hygienic milk handling, quality improvement and more cooperation within the household.

Previous Sales of Milk

Around 1970, dairy producers had no incentive to increase milk quality, since payment was not rewarding quality. Implementing the Operation Flood Programme with quality-based payment dairy farmers were encouraged to supply bigger volumes of quality milk. Gokul reorganized farmers into cooperatives, and saw an increase in milk volume and its quality.

Ninety per cent dairy producers are small-scale farmers, of which 40 per cent are landless, and only 2 to 3 per cent have more than 10 ha of land. Dairy producers have on average 2 to 3 animals, which are mostly owned by men. Ghanekar estimates "those women are handling nearly 85 per cent of

dairy activities", but sees also that division of activities vary from place to place, influenced by cultural means. Most female producers do, next to their household responsibilities: cleaning of cows and their shed, milking, looking after the cow's health and bring them to the veterinarian, and transporting the milk to the village cooperative or collection points of informal markets. Collection points of the informal market are often in 5 to 7 kilometre distance, which makes it difficult for women to supply milk regularly.

Husbands bring fodder and are engaged in other agricultural activities. Traditionally men own land, decide over income and hold the membership in cooperatives, and they are the ones who speak with government officials when it comes to management of agribusiness activities or financial decisions. This resulted in nearly 100 per cent male dairy producer membership at village level.

India's culture, traditions and local values have a strong influence on household and society. Ghanekar sees that "women have been traditionally considered inferior in status to men. Widows or neglected women do not hold property as land or other assets. Ghanekar believes that, if they have one or two cows it can give them a living.

Gender-Inclusive Intervention

The study outcome of the NDDB motivated Gokul to start focussing on women's education, their membership in cooperatives and to encourage them to take leadership positions. Since 1995 Gokul is implementing the WLDP, consisting out of forming self-help groups, awareness trainings, technical trainings, diverse excursions and more (see also activities).

Annually Gokul is preparing an action plan in which 10 to 15 villages are selected for the WLDP. In the second year programmes are repeated to consolidate the programmes' objective.

Activities

In 1988 the NDDB conducted a study, which identified the need to focus on female education and encourage female and male dairy producer to become cooperative member and work in leadership positions within the dairy chain. One year later Gokul started to offer trainings to their members. In 1995 Gokul implemented the Women Dairy Cooperative Leadership Development Programme (WDCLP). The program is implemented by five female officers and 22 women who help voluntarily. Volunteers are from the same villages or its region and come from agricultural communities, so that they know the local practises and languages. Gokul gives them a small financial compensation and provides extensive training over a period of two years.

- *Trainings*[35]

Trainings are organized at village, regional and district level and adjusted to the needs and availability of the women. Trainings are offered up to a maximum of three days per unit over a total time scale of at least one year. Most trainings are gender divided, other trainings as for volunteers are gender mixed. AI breeding services are not yet offered by women in which Ghanekar sees mainly the need of strength and much travelling and less societal problems, but he sees women in that activities on a long run. All trainers need to have a general understanding about the dairy sector to be able to answer diverse questions. Since women seem to feel more comfortable and tend to ask more questions with female trainers Gokul tries to have as much as possible female trainers, but till now

[35] The programme includes women's trainings on: hygienic handling of milk, veterinarian services, sanitation, by-law of cooperatives, dairy management, meaning of women empowerment process, leadership programme, different government schemes, childcare and more. For men trainings are offered on: male awareness, management committee training programmes, sectary training program, leadership development program, motivation program and more.

the group is mixed. Gokul pays most of its trainers, and covers extra expenditures as transportation costs.

- *Conference*

Gokul organizes lectures hold by committee members and external experts.

- *Regional Meeting*

During regional meetings debates are arranged to increase awareness of gender-inclusion.

- *Forming women self-help groups*

Gokul started to operate in a few villages and expanded over the years to a total of 350 villages in the district. At the beginning the leadership programme was organized with two female officers, but by now 21 volunteers joint and are responsible for 10 villages over a period of one year. Volunteers visit dairy producer regularly to talk to female producers and suggest to them to become organized in a self-help group. These groups are supposed to consist of 20 female producers, who are linked to local dairy cooperatives, being part of the union. The cooperative is providing the self-help groups with a room for meetings or an office.

- *Group performances*

WDCLP volunteers organized local festivals at which wives and husbands jointly organize and exercise the program. Local games, dances and songs encourage also shy women to act in public and work together. The program includes discussions based on the goals of the WDCLP to make men and women aware about women's status in society, their barriers and limitations.

- *Media screening*

Within the WDCLP films and audio tapes were presented to increase women's awareness.

- *Field visits*

Visits to specific villages, micro training centres, model dairy cooperatives or model dairy farms are organized for producer couples together. Five model farmer couples are chosen for their 'modern' scientific practices, productive outcomes and their ability to explain their knowledge well to others. Additional visits are organized to a cattle field factory or to local NGOs who provide training programmes on women empowerment. They also assist women in organizing self-help groups and possibilities to market their own handicrafts, manufactured vegetables or other skills to have a side income.

- *Male awareness*

Volunteers go regularly to producers' homes to talk to household members, especially family leaders, and try to make men aware of gender inequalities. Next to that male committee members and local leaders are consulted to support the WDCLP. Discussions are seen as a lengthy, but effective way to reach awareness.

- *Financial schemes*

Women self-help groups are guided to form saving groups. Additionally, Gokul provides a funding scheme to their milk producers, which consists of joint contribution between union, cooperative and producer.

- *Subsidies to cooperatives*

Cooperatives are supported with stationery, computerization, construction of buildings and fountain construction. Additional, cooling facilities are established at village level to enable a cold milk chain. Cooperative staff is paid by the union.

Additional services to producers:

- Vaccination, cattle medicine
- Calf Rearing Scheme
- Production of cattle feed and its supplements
- Subsidized fodder seeds
- Artificial Insemination Services
- Transportation of milk
- Insurance facility
- Weekly veterinarian services at village/producers household level (for additional visits producers need to pay half of the normal fees)

Project Outcomes

When starting with the women awareness program Gokul saw that women started to join the cooperative, come to meetings and improve their dairy management. Women went voluntarily to other houses to request dairy farmers to sell milk to the cooperative (Gokul, n.d.). Although women became active in cooperatives and are aware about their services (e.g. AI services, calf rearing scheme, and other improvements to increase milk yields) the number of registered female producer did not exceed 30 per cent.

Between 1995 and 2012 Gokul implemented the WDCLP in 573 villages together with 922 village level dairy cooperatives and trained 214,291 female producers. By now it collects milk of 378,000 milk producers in Kolhapur district and process and markets it further. Over the years 1,697 self-help groups were formed with 22,703 women participants. These saving groups could be linked to local banks, which support their financial activities (Gokul, n.d.).

Through the WDCLP Gokul developed a relationship with its members, and especially women, and got in return loyal milk suppliers. Producers recognized the importance of taking part in trainings and being responsible members, who care about clean and hygienic milk production. Members became aware that milk business is viable, and understand consumer' demand. The training program made women more aware of their personal and social status and their contribution to the dairy business. Women became also more independent to travel to nearby towns. Ghanekar sees today's women in general more independently, working in diverse leadership positions, being able to inherit their father's property, and more divorces enabled through women and men. At the same time he sees big differences between rural and urban areas. The regulation of the local government, to include in each village two women in the management committee contribute to an increase in female leadership positions. The trend is also seen in NGOs, politics and other cooperative activities. Through the intervention Ghanekar saw that "if a woman is in a leadership position naturally other women follow". An important part in the empowerment process is seen in the self-help group and the group performances, which made men and women aware of women's status in society, their barriers and limitations. In the WDCLP two women work as veterinarian, but in general the number of women in leadership positions is still relatively low. Kamat and Ghanekar see changes in perception as a slow process and often women's situation and behaviour change entirely after marriage.

To create an incentive for members to supply quality milk Gokul introduced a quality-based payment system. Supply of buffalo milk varies relatively strong between rainy season and dry season, while

cow milk supply stays relatively stable over the year. Most members supply twice a day around 2 to 3 litre of milk, but other examples with much higher supply exist as well.

Figure 12 gives an overview of the milk chain stimulated through the WDCLP. It shows women's employment within the milk chain and services provided to the chain.

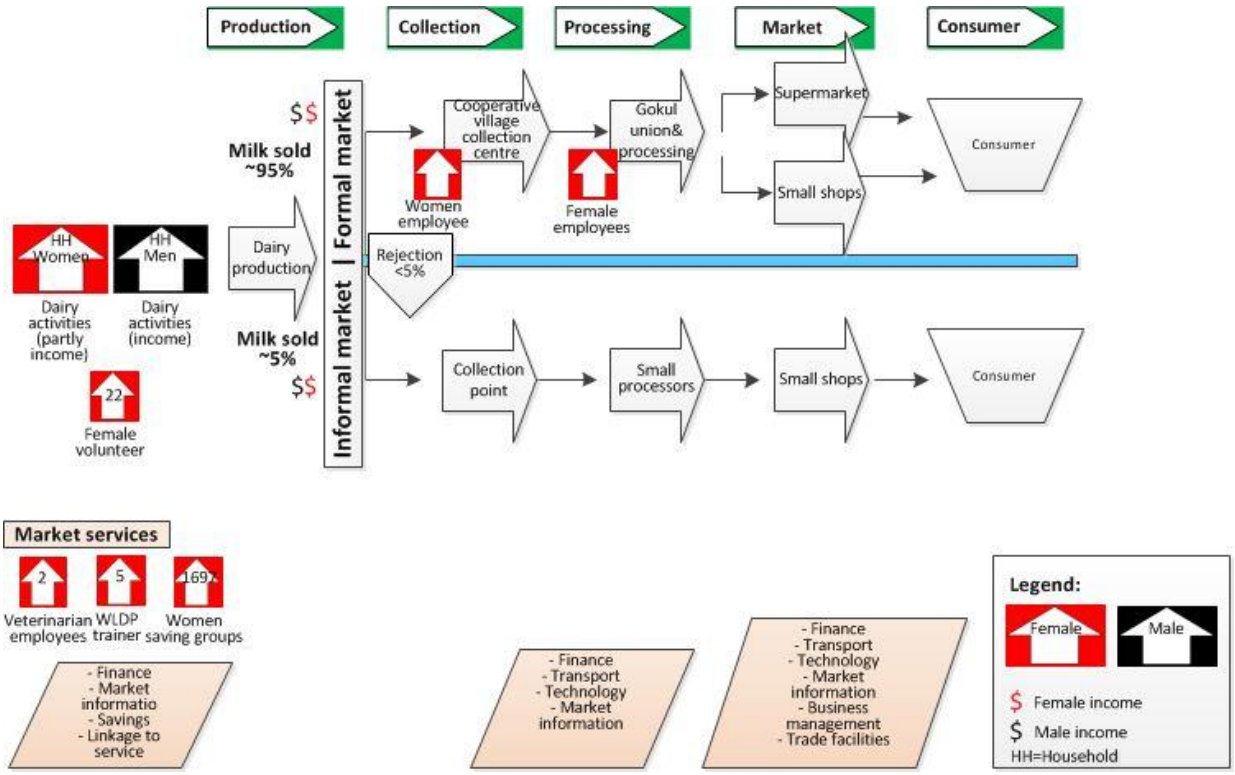


Figure 12: Milk chain through WDCLP (adapted from: Senders et al., 2013)

Table 09 gives an overview of WDCLP's contribution with respect to gender equity (Agency and structure) and gender mainstreaming (value chain activities and value chain governance) within the chain.

Table 09: Value Chain Empowerment Diamond on the WDCLP

Value chain activities	Agency
- Women contribute to better quality of milk - Women contribute to more milk production - Women are engaged in more chain activities - Women work in business support services - 214,291 women take part in training - 1,697 self-help groups were formed (22,703 women participants) and women-saving groups	- Women's self-esteem and self-awareness increased, because they became aware of their status and contribution to the business - Self-determination to market milk and join cooperatives - Skill development (e.g. business) - Access to funding scheme and loans - Access to diary management subsidies - Women's income increased

Value chain governance	Structure
- Reduced barriers for women's participation in business activities (e.g. self-help groups) - Women participate in (business) decision-making (through the self-help groups) - Women have better information about dairy management and hygiene and know market requirements - Network of chain supporters expanded	Household: - Women travel more independently - Men appreciate women's economic contribution Society: - Values and perception towards women are changing - More registration of female producers - Women are invited & participate in meetings - Activities of women are valued - Leadership positions are open to women - Increased female PO membership

Business arguments

- ✓ Women do most of the producer activities, so it is efficient to address them
- ✓ When female farmers join to supply milk the overall bacterial counter goes down and the milk temperature stays correct
- ✓ When receiving milk from female project participants all quality impacts (as temperature, bacterial counter, fat content) clearly improving
- ✓ Female leaders attract other women to join producer organizations

Success factors on gender-inclusion

- ❖ *Observe the local situation to adjust interventions to that situation*
  By observing the local situation it becomes clear which household member has cattle or land ownership, makes the decisions and is involved in the diverse dairy activities. Interventions need to take these situations into account.

- ❖ *Train and recruit female trainers*
  Women feel more comfortable with women trainers and tend to ask more questions

- ❖ *Joint visits to micro training centres, or dairy cattle farming plant*
  Traditionally women do not accompany their husbands, since both have their responsibilities/work and go only together to the temple, ceremonies or marriages. The joint travel is enjoyed as a making a trip together.

- ❖ *Discussion of gender issues during joint participation at festivals and games*
  Traditional festivals and games, in which men and women organize and participate, offer a good possibility to address gender issues, and promote changes in perception and appreciation of each other's contribution and abilities.

Challenges

- ➢ *Barriers of women's participation*
  Gokul experienced difficulties to stimulate change of men's perception towards women's participation. Various training programmes were developed to contribute to an empowerment of the female milk producer and the selection of village level cooperatives was care-

fully chosen. A reason for the relatively low number of registered female producers (after all the years of the WDCLP) is seen in the national pressure on rural communities to balance traditional norms with the modern urban life style.

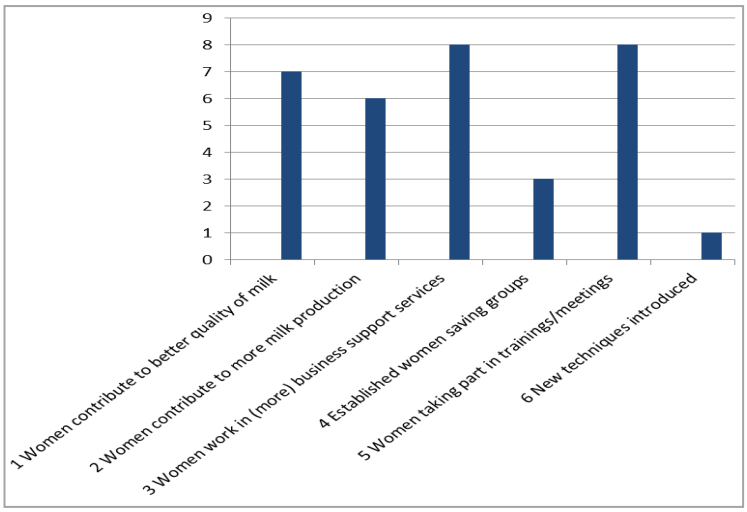
- Women seem to be challenged in 'unlearning' traditional traditions and norm.
- Women face, next to their reproductive work, a high workload with the dairy management.
- Since most producer households face daily economic struggle, social changes are valued less.

Kamat and Ghanekar believe that these challenges can be overcome through regular consultation with family leaders (mostly husbands) and trainings of male cooperative members.

6.9 SUMMARIZING OUTCOMES OF THE GENDER AND VALUE CHAIN EMPOWERMENT DIAMOND

Value Chain Activities

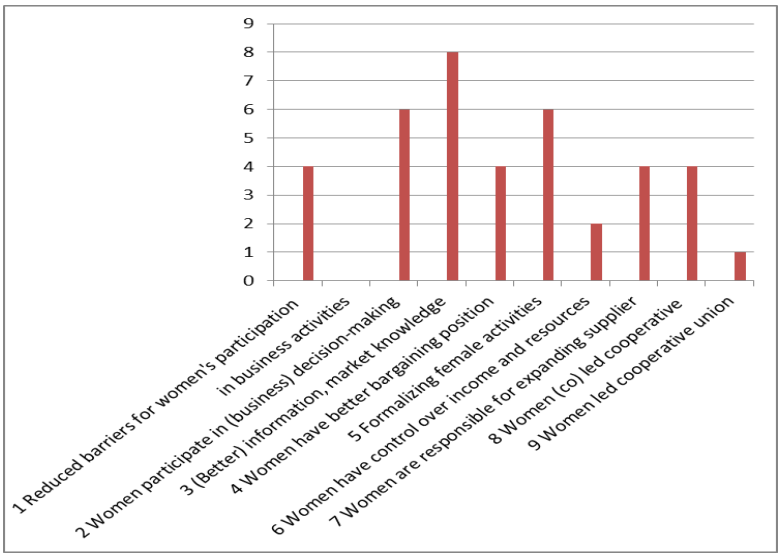
Graph 01 shows that all projects contribute to women's employment in business support services (3) and promote women's participation in trainings and meetings (5). Nearly all projects confirmed that women are contributing to an increase in milk quality and its volume (1), (2). Although overall participants emphasised that women are important for milk hygiene and clean handling of milk (strongly contributing to milk quality), and supplying fodder to cows, some participants hesitated to confirm that women are responsible for an increase in milk quality *activities* and quantity. Often these figures were not measured in the end-line of the project, or the number of project participants was so big that observations could not easily be made. Introduced techniques (6) contributed to women's employment as processors (case 6.7).



Graph 01: Summarizing value chain

Value Chain Governance

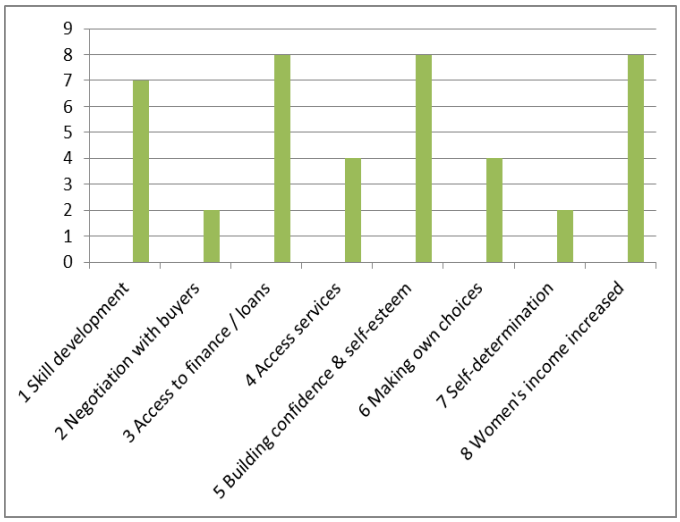
Graph 02 shows that all projects could provide (market) information and knowledge to women (3). Female activities could be formalized (e.g. becoming a registered PO, applying to food and safety regulations, formalizing arrangements between chain actors etc.) in almost all projects (5). Within the chain six projects reported that women participate in decision-making and have a voice in business decisions (2). Four projects have women led or co-led cooperatives or (in two cases) women being part of the management board (8). In one project (case 6.7) a woman was selected as the president of the cooperative union (9). Only two cases mentioned that women are in control of income and resources (6). Half of the projects mentioned that women can easier join business related activities, than join POs (1). A better bargaining position (4) and women being responsible for a bigger number of suppliers (7) are seen in female led cooperatives, female entrepreneurs and societal change in values and norms.



Graph 02: Summarizing value chain governance

Agency

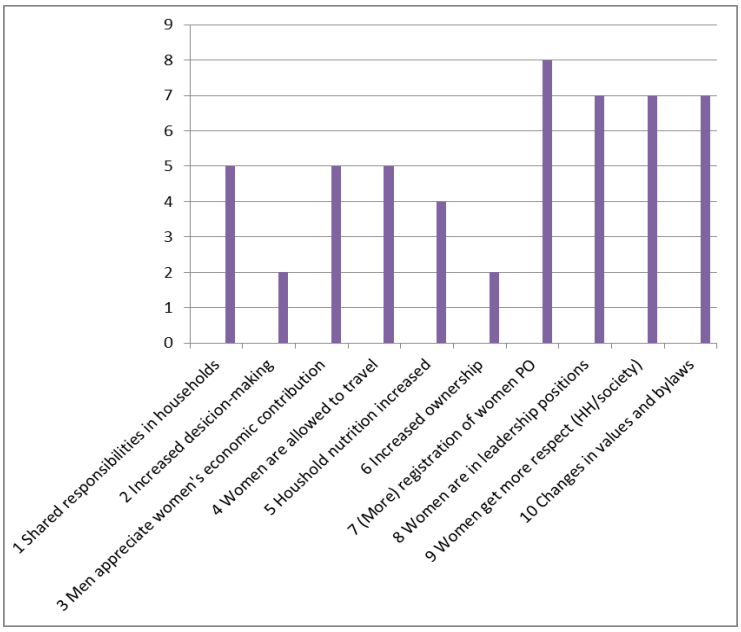
Graph 03 shows that in nearly all projects women increased their skills (1) (e.g. improved hygiene, fodder management, leadership practises, and sometimes marketing, finance etc.). All projects had a positive impact on women's self-esteem and confidence (5), their income or access to finance increased (8), and all projects secured access to finance (3). Increased income can result in form of shared benefits at household level or through employment. In two cases it was mentioned that female-led cooperatives negotiate stronger for better prices (2) and access to inputs compared to other cooperatives. Self- determination (7) was only mentioned by two interviewees.



Graph 03: Summarizing Agency

Structure

Graph 04 shows impact on gender equity at household and societies level. Household: Most projects reported shared household responsibilities (1) and men's appreciation of women's economic contribution (3). Increased decision-making (2) on income or purchase) was only mentioned from two projects. Changes on ownership (6) are also in general relatively small, because owning cows and land attaches also cultural and status meanings. Still, projects see that households' nutrition increased (5). Many projects reported that women are allowed to travel (4). Society: All projects have female and male producers registered in producer organizations (7). In almost all projects (more) women were moving into leadership positions (8). Women receive (more) respect in their families and in their society (9). Nearly all projects see changes in bylaws and values (10), which have impacts on membership in producer organizations, leadership positions and more.



Graph 04: Summarizing Structure

6.10 SUMMARIZING BUSINESS ARGUMENTS

The following table gives an overview of the different business arguments mentioned in the case descriptions. In some cases the interviewee did not mention specific business arguments, but their overall interventions and project goals target a certain statement as "Women have a (human) right to take part in decision-making/to have business opportunities". The statements below focus on the statement from the interviews.

Table 10: Overview of Business Arguments

Business Argument:	Case description:
1. **Women are active milk suppliers and their groups supply the same or more milk than men groups.**	SDVCP BOAM, EADD, KDSCP, WDCLP
2. **Women (groups) strongly contribute to good milk quality and hygienic handling.**	SDVCP, BOAM, SSLLP, MASRENACE, WDCLP
3. **Women's dairy activities strongly determents shelf-life of milk**	BOAM, WDCLP
4. **Producer organizations' performance best with female leader** (and mixed gender group).	SDVCP, KDSCP, MASRENACE
5. **Female animal health worker show good / better performance than men** (e.g. better outcomes of AI, which results in more productive cattle breeds).	SDVCP, KDSCP
6. **Women empowerment contributes to quality upgrading.** (Empowerment encourages women to perform in leadership positions and professionalize their business).	MASRENACE, WDCLP
7. **Women's employment in processing or bureaucracy results in good performance** (they are more precise than men).	BOAM, EADD
8. **During trainings women show strong(er) willingness to participate and learn than men** (which may result in increased production and milk quality).	SDVCP, WDCLP
9. **Capacity building/new techniques are stronger adopted by women than men** (this may result in increased production and milk quality).	SDVCP, KDSCP
10. **Addressing the right target group with interventions shows better results** (women are responsible for most dairy activities at producer's level. Addressing them with interventions those areas result in effective interventions).	BOAM, EADD, KDSCP, DVCP, MASRENACE, WDCLP
11. **Women participation/leadership positions increase the number of participants** (women tend to attract other women to become member of producer organizations and supply milk).	EADD, KDSCP, DVCP, WDCLP
12. **Women become visible / their position is strengthened** (this may results in more household collaboration and improved dairy management).	all
13. **Gender-inclusion contributes to more collaboration in the house-**	KDSCP, MASRENACE

holds (which benefits business decisions).	
14. **Women are good in saving money** (this enables HH to do investments in e.g. technology contributing to intensive dairy management).	SDVCP, SSLLP
15. **Female leaders are strongly engaged in their position and responsibilities** (this may result in formalized chain arrangements, access to good quality inputs, access to input services for producers etc.).	EADD, DVCP
16. **Women are more trustworthy with money in the benefit of the cooperative** (e.g. when working as treasurer).	EADD
Considering the importance of inclusive business development:	
1. **Women experience respect in HH/**society (this leads to more equal gender relations).	all
2. **With increased income women pay attention to increased HH nutrition & children's school attendance** (resulting in human health and increased business interest).	SDVCP, EADD, KDSCP, SSLLP
3. **Women have a (human) right to take part in decision-making/to have business opportunities.**	DVCP, MASRENACE

6.11 SUMMARIZING SUCCESS FACTORS

The table below gives an overview of successful interventions to achieve gender-inclusion in dairy value chains. These success factors lead to improved performances, which result in a win- win situation for private business and producer's business (see business arguments in table 6.10). The table distinguish between success factors benefitting business, and gender equity. It has to be taken into account that gender equity benefits also business as households' collaboration, and exchange of knowledge and experiences lead to better dairy management.

Table 11: Overview of Success Factor

	Success factor:	Project:
Leading to successful business:		
1)	**Women need to see incentives to supply their milk to producer organizations** (membership, receiving income, payment-in-kind-of-milk, access to inputs, establishing network, close distances to collection points, funding etc.).	EADD, KDSCP, MASRENACE
2)	**Processors need to address female producers to ensure that women follow up with trainings** (and not only their husbands).	BOAM
3)	**Customize times and places to the need of women to make sure that women attend farmer field schools, awareness programmes, trainings, meetings etc.**	BOAM, KDSCP, MASRENACE
4)	**Processors need to be trained to attract more female producers.**	BOAM
5)	**Mobile banking enables women to open a bank account and to have access to market information without the need to travel**.	KDSCP, EADD
6)	**Give support to men and women in assessing and handling bank loans.**	KDSCP
7)	**Female led cooperatives have more activities, which benefit their business interest.**	KDSCP
8)	**Awareness campaigns increase collaboration between wives and husbands, which may affect decision-making and sharing incomes.** (This is likely to result in better win-win situations for business).	DVCP
9)	**Having mixed gendered training groups results in more collaboration and exchange of information between men and women** (which benefit business as well).	SDVCP
Leading to gender equity:		
10)	**Monitor and evaluate, if gender barriers have been overcome** (to reach gender equity).	SDVCP
11)	**Female farmers trust more female service providers / trainers and tend to ask more questions.** (Next to that husbands may rather agree on their wife's training with female service providers, so that they do not see a reason to become jealous through frequent visits).	SDVCP, WDCLP, KDSCP

12)	**Women are successful in new roles or employment when their husbands collaborate, and society and household support her** (e.g. by accomplishing accompanying her during night travels or sharing household responsibilities).	EADD, SDVCP
13)	**Households' gender relations may change when wives and husbands have joint visits e.g. to micro training centres, dairy cattle farming plant, or experience other ethnic groups with different gender relations.**	WDCLP, KDSCP, (EADD)[36]
14)	**Discussion of gender issues, during joint participation at festivals and games, results in more respect between men and women and increases self-esteem of women.**	WDCLP
15)	**Emphasis that women are invited to trainings, meetings etc. otherwise they will not appear.**	BOAM, MASRENACE
16)	**Make a business case to producer organizations on how they can involve women in their activities, so that they understand the importance of having also women in their producer organization.**	EADD
17)	**Women become trainer through the self-confidence they gained in attending trainings.**	KDSCP
18)	**Women may have a stronger position in the household and society when they own cattle.**	SSLLAP
19)	**Farmers are able to buy inputs due to loans from women saving groups.** (This enables them to intensify their dairy management and resulting milk volume and milk quality).	SSLLAP
20)	**With an increased income women urge to send girls to school, resulting in a higher number of educated girls under project participants.** (Higher education may result in the development of new (dairy) business and lowers the chance of migration).	SSLLAP, EADD
21)	**Female employment improves women's self-esteem and attracts other women to join producer organizations.**	DVCP
22)	**Gender equity increases with indirect family approaches.**	MASRENACE

[36] Although it was not implemented in EADD one Isabelle Baltenweck (case 6.3) saw it as a successful tool will be implemented in EADD two.

7. DISCUSSION AND CONCLUSION

This chapter summarizes and analyses the previous described cases with regards to gender-inclusive interventions. In answering the three research questions emphasis will be put on the organization of commercial dairy chains at primary level, how gender was included in gender-inclusive dairy chain development to improve business, and in which way business performance and gender equality is influenced by the dairy chain upgrading. Question one is analysed with the view on producer's level, the level of cooperatives or collection points and the support level with its market services. In question two outcomes are grouped according to the different level of the Gender and Value Chain Empowerment Diamond[37] (see also chapter 5.1). In answering research question three it will be looked how social developments are related to business.

1. How are commercial dairy chains organized at primary level?

Producer's Level

In all described cases, activities at producer's level are highly managed by women. Sharing benefits and joint decision-making between wife and husband is depending on cultural habits at site level and household's state of awareness. Interestingly there are many similarities between the different cases with regards to the situation at producer's level. In all cases women do on average at least half of the dairy activities next to their reproductive roles, but they are hardly addressed as dairy producer. In some cases women are registered in producer organizations. Benefits are in most cases not shared between male and female producers, women own hardly land or cattle, and decision-making is mainly done by husbands. With regards to income, most projects report that income, generated through informal markets, go partly to women. Not all sites milk their cows twice a day, but in case cows are milked twice, morning milk is mostly sold over the formal market and its income in general controlled by men. Evening milk is often not selected by formal business and mostly sold by women to their neighbours or close by markets, which generates income to them. Inequalities exist also in access to inputs as knowledge, market information, credit and trainings. In most cases projects aim on strengthening the male and female producer's access to markets and inputs. Approaches differ as much as its outcomes with regards to changed activities at producer's level and access to inputs (see research question two).

Collection Point / Cooperative Level

Small-holder producers sell milk over the informal and/or formal market. Depending on the quality requirements of the formal market, and the quality of milk, producer may sell only part of it over the formal market. Milk which is rejected at formal markets' collection point may be still sold over the informal market to local traders/collectors. At collection points, quality and purity is often tested with a lactometer or fat meter, which provides transparency for all chain actors. Some collection points introduced quality-based payment, by which the fat content distinguishes the price, others test only on bacterial infection or other possible spoilage.

[37] **Agency** influences directly women's self-esteem and confidence in acting independently, **Structure** is looking at household's and societies impact on Agency, at **Value Chain Activities** emphasis is put on women's activities in value chains (as in how far she is doing what she does better), and **Value Chain Governance** looks at the relationships within the chain influenced by standards, organization of producers and decision-making (Senders et al., 2013).

Support Level
After processing milk, dairy products/milk is sold to small shops and/or to (urban) supermarkets. With an increased income and media attention, many (especially urban) consumers demand more diversity on dairy products and higher quality standards which require cooling and appropriate infrastructure.

Milk sold over the informal markets goes rather diverse ways. It is either collected by a trader, who goes from house-to-house, and sells it further to restaurants, milk bars or small processors or it is sold over the local market, and in some cases further sold to a small processor. In other cases one household member is transporting milk to a trader, or households sell it directly to neighbours. Depending on consumers' demand, diversity of dairy products differs. Product diversity is mostly smaller in rural areas and more diverse in urban areas.

2. How was gender included in gender-inclusive dairy chain development to improve business?

Value chain activities
Gender-inclusion was practised at different levels of the projects, involving project staff and project participants, as well as external chain supporters. Project facilitators see a gender study as an important start of each new development project. It may show local circumstances, identify gender relations and their barriers, and suggest possible interventions. Next to that Mieke Vanderschaeghe (MASRENACE case 6.7) stresses that project interventions need to address inequalities of households and the chain through discussions (see also case 6.7). A gender study in the EADD and in the KDSCP project showed also a demand in training own staff and chain supporters on gender issues. The need to communicate openly about gender inequalities is also shared by other project facilitators.

When supplying milk to producer organizations or business EADD, KDSCP and MASRENACE emphasised the importance of showing women incentives[38]. If these incentives are not given, there is a likelihood that women side sell to other traders from which they receive direct payment (e.g. reported by EADD when income was not shared between woman and man or in the SDVCP case when collection points were not close enough to producers). The loyalty towards business, but also from business towards farmers is essential to create business relationship (required for the functioning of value chains), which was also reported in the SDVCP case when market demand was not continuous. These irregularities are especially challenging for small-scale producers in countries as Ethiopia, in which religious fasting days drop market demand.

Value Chain Governance
Since men and women are engaged in dairy activities, which influence milk quantity and quality, collaboration between both is essential when approaching new (formal) markets. Project facilitator (e.g. SDVCP) saw that producer lack understanding in which way milk prices were determined. The introduction of quality testing technology provided transparency and understanding. Quality-based payment increases farmer's incentives to sell also small amounts of good quality milk to formal markets (SDVCP, WLDP). Since quality is closely related to feeding and hygiene, which is mainly done by women, it is especially important for business to address them in person.

In all cases projects made efforts to link farmers with other chain actors and supporters to improve access to knowledge, inputs and markets. KDSCP and BOAM choose an approach by which trainings are provided by other chain actors or service providers. An additional network of stakeholders was established to support producer's access to inputs. In the case of BOAM, different groups and plat-

[38] Examples for women's incentives are: membership, receiving income, payment in kind of milk, access to inputs, establishing network, close distances to collection points, funding.

forms were established to support dialogue and develop policies in the national dairy sector. For both projects an incentive was to establish relationships and gender sensitive training sessions which would sustain after finalizing the project intervention. To reach that, KDSCP made business aware that male and female farmers could become their potential clients and therefore need to be served according to their needs. KDSCP further assessed the governmental extension service and guided their attention to a business perspective focussing on the specific business needs of farmers. Concern was given in monitoring and evaluating this process. EADD facilitator supervised farmers when coming in contact with business (contracts). This empowered farmers to understand the meaning and consequences of their contracts. KDSCP and EADD assisted also households when opening a bank account over their mobile; and promoted cooperatives to buy additional application with information relevant for dairy business.

Structure

When project staff organized trainings, SDVCP and WLDP saw success in employing female trainers whom female participants tend to ask more questions. Pretty et al. (1995) experienced that women, tend to have strong feelings when exposed to a problem and next to that occasionally the perception of being incomplete or embarrassed, which could support the motivation to train women and men separately. In contrast to that, EADD chose to train wife and husband together, so that both would be informed about possible interventions at household level. At staff level, projects experienced different success: Isabelle Baltenweck (EADD team) believes that their male gender-specialist was most convincing to male producer in his objective (not emotional) approach, which might be especially applicable in male-dominated societies. KDSCP saw success in employing a female project facilitator, since husbands tend to become jealous when their wives are frequently visited by male staff.

During trainings, gender-inclusion was differently addressed among projects. While SDVCP, SSLLAP and KDSCP seem to have had more success and better performances with mixed gender groups, the SDVCP sees more engagement of women in gender separated training groups. Accordance exists on organizing meetings and trainings in an appropriate distance and time for women to enable their attendance. Pretty et al. (1995) points out that participant's self-esteem is a strong element of motivation and experiencing a lack of motivation is often a reason why training contents are not adopted. That means, that by increasing self-esteem of women and enable their participation through appropriate times and distances to their homes their motivation to join interventions and adopt learning is likely to be higher. This was also mentioned by Isabelle Baltenweck of the EADD project where trainer approached dairy producer with Implementations that exceeded farmer's capabilities, so that practices were not adopted.

In the KDSCP project staff considered to teach techniques and technology, which provide incentives for men and women together[39]. In that way their adoption benefited both, also when men and women do not share their incomes. An adoption on the feed cutting technology resulted in more time for women to care for wellbeing of family and to raise more cattle, which was also an incentive for men to jointly save money for its rent, and resulted in household's economic development.

KDSCP and the EADD put emphasis on business opportunities of young farmers. During the KDSCP cooperatives provided funds to young farmers and women and the EADD assisted young farmers to come up with business services, which can support the local hubs. Giving new business opportunities to young men and women provides them incentives to stay in rural areas and to continue dairy business. This is business-wise important, because it works against urban migration and demographic aging of dairy producers.

[39] Joint incentives were seen e.g.in introducing fodder plants which are appropriate for fire wood and cattle feed or a fodder cutting machine, which would save time and allow households to care for more cattle.

Agency
The WDCLP organized joint visits to training centres, a cattle farming plant and KDSCP a visit to another regions of the country in which men and women had different gender relations. These visits seemed to encourage husbands and wives to change their perception of cattle management and joint decision-making. Seeing different behaviour in women's and men's decision-making and sharing of benefits is seen as a very effective tool to change gender roles. This is also supported by Isabelle Baltenweck and planned for EADD 02.

When women are targeted to enter into new professions EADD and SDVCP emphasised the importance that women are supported by their husbands and the community. Without that support women could get a negative image and their business success is unlikely to be happen. While the SSLLAP saw women's cattle ownership linked with an increase in households' and societies' respect and women's self-esteem, EADD and SDVCP see aid, given in form of cattle as problematic. Main reasons are seen in not respecting the authority of household heads and resulting family problems. Although this is not observed in the SSLLAP project, it may require context-wise interpretations.

3. What are the concrete impact of the gender-inclusive dairy chain upgrading activities in terms of both business performance and gender equality?

Interpretations of interventions need to be seen in the local context. Changes in behaviour are influenced by religion and culture, adoption of interventions, the degree of required changes and much more. Projects had different objectives, target groups, budgets and number of participants, but they show all that gender-inclusion is successful.

The overview of successful interventions (table 11) shows a variety of interventions approaching gender-inclusion. Project outcome, as women's employment increases women's self-esteem and business performances, which result in a win-win situation for producer and business (see e.g. case 6.7). NaWi's awareness program (case 6.6) is one example in which gender-inclusion resulted in more collaboration between husband and wife, others are the KDSCP's visit to another region of the country in which different gender relations stimulated project participants to share incomes and increase joint decision-making (case 6.2).

All projects report that through the intervention women have more market knowledge and information, receive more respect from their husbands, and their self-esteem and confidence increased. This is also reflected in more leadership positions and the overall increase of women's employment in the chain. In all projects the number of registered female farmers raised, household income increased and they have access to credits and finance (see more in chapter 6.9). With an increased income projects facilitator (SSLLAP, case 6.5 and EADD, case 6.3) see more children attend school. More education in rural areas benefits local business developments and works against urban migration, which clearly benefits also local business. The increased confidence is one of the dimension Papa et al. (2000) describe in the definition of women empowerment.

All projects state an increased participation of female producers in trainings, their strong willingness to learn and adopt new techniques (as seen e.g. in SDVCP, case 6.1). This addresses the assumption of the FAO that with gender-inclusion would increase food production[40]. Overall project outcomes

[40] "[...] if women had the same access to those resources as men, they would produce 20-30 per cent more food [...]" (FAO, 2011b, p.4).

show increase milk volume and milk quality, which enable producers/producer organizations to address new (formal) markets. This confirms the belief of KIT, Agri-ProFocus and IIRR (2012) and other project facilitators in missing business opportunities by not addressing gender inequalities. Project outcomes show women-empowerment and upgraded milk quality, which confirms Mieke Vanderschaeghe's belief (case 6.7) that women's empowerment and quality upgrading are related to another.

Since all projects report an increasing demand of dairy products (especially in urban areas), business will require more quality milk volume to meet the demand of a growing population and an increasing middle class. Interventions as the SDVCP measured an increased income also for business, which confirms Porter and Kramer (2011) idea of 'shared value' [41], who see in it the development towards new approaches, greater innovation, greater benefit for society.

[41] See also Literature review or (Porter and Kramer,2011).

9. RECOMMENDATION

Recommendations are given to development organizations involved in dairy value chain upgrading and to the commissioner of this thesis, Agri-ProFocus and Fair and Sustainable.

To Development Organizations

1. Initial project start, formulation of interventions

- *Do a gender sensitive analysis of constraints at different levels of the dairy chain*.
  (It is an effective tool to identify site specific challenges and appropriate interventions)

- *Include gender-inclusive interventions from the beginning in all interventions.*

- *Employ female staffs, who get trust from husbands, when wives are frequently visited. They also stimulate shy female producers to ask more questions* (see case 7.1, 7.2, 7.8).

2. Implementation of interventions

At value chain level:

Producers

- *Include gender-inclusive interventions for young women and men in dairy business.*
  Give young men and women business opportunities, so that they see incentives to stay in rural areas and to continue dairy business; see case 6.2

- *Train female and male producer in technical skills.*
  Women do major dairy activities

- *Involve women in training on quality and marketing*.
  Their dairy activities are important to upgrade milk quality and they have marketing activities with local traders

The Household

- *Promote household cooperation Organize farmer excursions for dairy producer couples to other (national) sites in which gender-inclusion is practised differently.*
  (This may change perception in decision-making and sharing of incomes; see case 7.2 and 7.3)

- *Local games promote collaboration between men and women.*
  (During local festivals husband and wife may jointly participate in its performance and appreciate each other's contribution. At the same time it is a good occasion to discuss gender sensitive behaviour; see case 7.8).

- *Give women training on financial literacy and introduce mobile banking to men and women.*
  (Women have marketing activities, are controlling (part of the) income and face barriers of mobility; see case 7.2, 7.3)

Producer organisations

- *Formulate to cooperatives the business potential to win female dairy producer as members (see case 7.3).*

- *Cooperatives need to give incentives to female and male dairy producers to supply milk jointly.* (Incentives for both as: membership, receiving income, payment-in-kind-of-milk, access to inputs, establishing network, close distances to collection points, funding).

- *Promote female registration in producer organization and request women to be volunteers to facilitate cooperative groups.*
  (To promote their women's attendance in producer organizations; see case 6.3, 6.2, 6.6, 6.8).

- *Use a male and female gender training facilitator.*
  (This increases the potential that both women and men understand the importance of gender-inclusion; see case 6.3).

Businesses

- *Explain local businesses the potential to address female and male dairy producers in their individual dairy activities to them as win loyal buyers (see case 7.2)*

- *Make women visible.*
  (A poster campaign, e.g. at input shops and processors, may illustrate female producers in their dairy activities to promote mind-set change)

At the level of Support Services

- *Guide (governmental) extension service to become aware about gender inequalities and apply gender-inclusion in their work. Train them to support farmers in becoming successful entrepreneurs* (see case 7.2).

- *Promote female employment as service provider.*
  (Female employment gives women self-esteem and confidence, women tend to consult other women more and feel more encouraged to join producer organizations. Moreover, women show good performances as with AI uptake and their employment contribute to a change in perception; see case 6.1, 6.2, 6.3, 6.6, 6.8).

- *Make sure that women and men are invited to meetings and trainings.*
  (Chose appropriate times and places to make women participation possible. If mixed or gender specific groups are most effective is context related. Contents should be adjusted to the (realistic) possibilities of female's and male's situation e.g. their budget and available time; see case 6.2, 6.3).

- *Organize participatory gender trainings*.
  (Participatory gender approaches, in which both gender illustrate the chain actors and activities, reflect on benefits, and decision-making and needed services show successful outcomes; see case 7.7).

Enabling Environment

- *Work with governmental departments on land rights, which enable women to inherit their families' properties and implement quality standards in which women play a role.*

3. Monitoring and evaluation

- *Evaluate and monitor results of the interventions barriers during the project time.*

To Agri-ProFocus

Recommendations to Agri-ProFocus Netherlands built on the existing online platform 'Gender in Value Chains Ning', their international coaching packages, written literature and a gender network of international experts. To promote gender-inclusion further in the Agri-ProFocus partnership, the following suggestions are given.

Webinars

- *Agri-ProFocus Netherlands could organize regular webinars on gender-inclusion.*
  (This may enable diverse audience of business and development organizations, to join, but also international Agri-hub members or research centres. It may give also the room to explain specific gender tools, which are developed and appreciated by the Agri-ProFocus network).

- *Agri-hubs may offer webinars at their local fairs.*
  (In cooperation with Agri-ProFocus Netherlands webinars could be streamed in one room, so that local business is able to attend gender-inclusive webinars. In connection with the webinar a discussion can be led to formulate concrete actions).

News

- *Stimulate discussion on gender-inclusion.*
  (When organizing network meetings, coaching or discussions, stimulate discussions on addressing business involved in dairy value chain upgrading).

- *Include gender events in the Agri-ProFocus newsletter.*

- *Start a gender newsletter.*
  (A small gender newsletter could be developed to inform members of the 'Gender in Value Chains Ning' about the latest events, developments and insights around gender).

- *Offering opportunities for students on gender-topics.*
  (Students from knowledge institutes, as Van Hall Larenstein or Wageningen University, could support local hubs with presentations, assist and organize interventions, as field excursions and develop strategies to address local business with the given 'Business Arguments' of this report).

REFERENCES

Agri-ProFocus, 2014. *Who we are* [online]. Available at: <http://www.agri-profocus.nl/agri-profocus/mission-vision> [Accessed 28. February 2014].

Agri-ProFocus, 2014b. *Dutch dairy chain approach: tailor made solutions for entrepreneurs*. [online]. Available at: <http://www.agri-profocus.nl/2014/articles/dutch-dairy-chain-approach-help-the-farmers-and-they-will-help-themselves> [Accessed 25 April 2014].

Ahmed A.U., Minten, B., Quisumbing, A., Roy, D., 2008. *Monitoring and impact evaluation strategy for strengthening the dairy value chain project in Bangladesh*, Final Research Proposal, International Food Policy Research Institute, CARE Bangladesh

Britt, C., 2010. *Gender Assessment USAID/Bangladesh*. Washington, DC: USAID

Business Dictionary, 2014. *Business dictionary.* [online]. Available through: <http://www.businessdictionary.com/definition/gender.html> [Accessed 03. March 2014].

Çagatay, 1998. *Gender and poverty. Working paper series, WP5. Social Development and Poverty Elimination Division, United Nations Development Programme* [pdf] Çagatay. Available at: <*http://eco.ieu.edu.tr/wp-content/Genderand-Poverty.pdf*> [Accessed 17 April 2014].

CARE, 2013. *Care GAAP Presentation January 2013* [online]. Available at: <http://www.slideshare.net/IFPRIGender/care-gaap-presentation-january-2013> [Assessed 04 April 2014].

CARE, 2014a. *Women's Participation in the Dairy Value Chain in Bangladesh*, SDVCP Project Documents

CARE, 2014b. *Empowerment Impact Measurement*, SDVCP Project Documents

Cattaneo, O., 2013. *Joining, Upgrading and Being Competitive in Global Value Chains*, Policy Research Working Paper 6406. [pdf] World bank. Available at: <http://elibrary.worldbank.org/doi/pdf/10.1596/1813-9450-6406>[Accessed 03. March 2014].

DCED, 2014. *Private Sector Development Synthesis Note: Current Debates on Inclusive Business Models*. [pdf] The Donor Committee for Enterprise Development. Available at: <http://www.enterprise-development.org/page/download?id=2359>[1 July 2014].

East Africa Dairy Development, 2010. *East Africa Dairy Development Project Baseline Surveys Report, Report 7, Impact Indicators*. [pdf] Available at: <http://cgspace.cgiar.org/bitstream/handle/10568/34461/EADD%20baseline%20report%207%20impact%20indicators%20_UPDATED%20JUNE%202010.pdf?sequence=1> [Accessed 6 June 2014].

EADD, 2011. *Milking for Profit Midterm Report 2008-2010* [pdf] Nairobi: East Africa Dairy Development Project. Available at: <http://cgspace.cgiar.org/handle/10568/16441> [7 June 2014].

European Commission, 2001. *Green paper: Promoting a European framework for corporate social responsibility*. [pdf] Commission of the European Communities. Available at: <http://www.csr-in-commerce.eu/document_library.php/en/717/green-paper-quotpromoting-a-european-framework-for-corporate-social-responsibilityquot-com2001366-fi> [Accessed 17 June 2014].

FAO, 2011. *Notes on Livestock, Food Security and Gender Equity.* Animal Production and Health Working Paper. No. 3 [pdf] Rome: FAO. Available at: <http://www.fao.org/docrep/014/i2426e/i2426e00.pdf> [Accessed 13 June 2014].

FAO, 2011b. *FAO at Work 2010-2011: Women – key to food security* [pdf] Rome: FAO. Available at: <http://www.fao.org/docrep/014/am719e/am719e00.pdf> [Accessed 13 June 2014].

Fair & Sustainable, 2014. *About Fair & Sustainable*. [online]. Available at: <http://www.fairandsustainable.nl/about/> [Accessed 03. March 2014].

Gokul, 2014. About us. [online] Available at: <http://www.gokulmilk.coop/about-us.html>[Accessed 20 June 2014].

Gokul, no date. *Gender issues in dairy value in change for Kolhapur district , Maharastra State, India.* [leaflet]

Heifer International, 2013. *Nutrition Project 2013 Baseline Survey Report*.

Heifer International, 2014. *East Africa Dairy Development* [online]. Available at: <http://www.heifer.org/eadd/index.html>[Accessed 2 June 2014].

Heifer International, 2014a. *Malawi*. [online]. Available at: <http://www.heifer.org/ending-hunger/our-work/africa/malawi.html> [Accessed 19 May 2014].

Heifer International, 2014b. *The foundation of transformation* [online]. Available at: <http://www.heifer.org/ending-hunger/the-heifer-way/mission-and-cornerstones.html> [Accessed 19 May 2014].

Heifer Netherlands, 2013. *Projectoverzicht Zuivelproject Malawi*. [pdf] Roosendaal: Heifer Nether-lands

ILRI, no date. *The dairy industry in a changing world* [online]. Available at: <http://www.ilri.org/InfoServ/Webpub/fulldocs/SmHDairy/chap1.html> [Accessed 24 March 2014].

International ValueLinks Association e.V., 2009. *The International ValueLinks Association e.V.* [online]. Available at: <http://www.valuelinks.org/index.php/about-us/association>[Accessed 03 June 2014].

Kabeer, N., 1999. Resources, agency, achievements: Reflections on the measurement of women's empowerment. *Development and Change* [e-journal] 30, pp.435 - 464. Available through: Wiley Online Library <http://onlinelibrary.wiley.com/doi/10.1111/1467-7660.00125/full>[Accessed 16 June 2014]

Kannegiesser, M., 2008. *Value chain Management in the Chemical Industry.* Berlin: Physica-Verlag

Kaplinsky, R. and Morris, M., 2000. *A Handbook for Value Chain Research.* London: International Development Research Centre

KIT, Agri-ProFocus and IIRR, 2012. *Challenging chains to change*. Amsterdam: KIT, Agri-ProFocus and IIRR

KIT, Agri-ProFocus and IIRR. ,2012. Making women dairy farmers visible in Nicaragua. In: Vanderschaeghe, M. and Lindo, P. *Challenging chains to change: Gender equity in agricultural value chain development*. Amsterdam: KIT Publishers, RoyalTropical Institute, Amsterdam. p.126-129.

Knips, V., 2005. *Developing Countries and the Global Dairy Sector- Part I: Global Overview* [pdf] Rome: FAO. Available at: <http://www.fao.org/ag/againfo/programmes/en/pplpi/docarc/wp30.pdf> [Accessed 24 March 2014].

Land O'Lakes INC. International Development, no date. *Women in Development, The Land O'Lakes Experience*. [pdf] Land O'Lakes. Available at: <http://www.idd.landolakes.com/stellent/groups/public/@lolinc/documents/web_content/ecmp2-0154066.pdf>[30 May 2014].

Land O'Lakes INC. International Development, 2012. *USAID Impact Features Land O'Lakes Blog on KDSCP* [online]. Available at: <http://www.idd.landolakes.com/ECMP2-0169682.aspx>[30 May 2014].

Land O'Lakes, 2013. *Gender identity is an individual's internal, personal sense of being male or female* [pdf] Available at: <http://www.idd.landolakes.com/stellent/groups/public/documents/web_content/ecmp2-0181347.pdf>[Accessed 16 June 2014].

Lindo, P. y Vanderschaeghe, M. Asesoría en género, 2009. *Asesoría en género en cadenas de lácteos, cacao y madera en el triángulo minero – Nicaragua Informe Final*, *GIZ and Oxfam GB.*

Lindo, P., Vanderschaeghe, M., Vallecillo, H., Weiskopf, B. Historia de éxito, 2012. *Historia de éxito: Fomento cadena de valor de ganadería sostenible y productos lácteos en el Triángulo Minero, zona de amortiguamiento de la reserva Biosfera BOSAWAS*. [pdf] October 2012 ed. NICARAGUA: GIZ, Report.

March, C., Smyth, I. and Mukhopadhyay, M., 1999. *A guide to Gender- Analysis Frameworks*. London: Oxfam GB

McKinsey, 2010. *Women at the top of corporations: Making it happen. Women Matter series*, [pdf] Paris: McKinsey & Co. Available at: <http://www.mckinsey.com/search.aspx?q=women+at+the+top+of+corporations%3A+making+it+happen> [Accessed 13 June2014].

Millsopp, F., 2014. Contact on the 'Afghan-German Sustainable Development Programme'. [mail] (Personal communication, 2 June 2000).

Mukumbu, M., and Diang'a, D., 2009. *Usaid Kenya Dairy Sector Competitiveness Program Quarterly Progress Report January 2009 - March 2009.* [pdf] Nairobi: USAID. Available at:<http://pdf.usaid.gov/pdf_docs/Pdaco022.pdf>[30 May 2014].

Odongo Dorine, 2014. Gender components at EADD. *Livelihoods, gender and impact blog*, [blog] 22 May, Available at: <http://livelihoods-gender.ilri.org/2014/05/21/tracking-the-progress-of-a-dairy-development-project-eadd-implements-use-of-the-stage-gate-assessment-tool/> [Accessed 07 June 2014].

Owasso Mid High School, 2014. *World: Political.*[online] Available at:<http://images.classwell.com/mcd_xhtml_ebooks/2005_world_history/images/mcd_wcg_0618168419_pgA2_f01.jpg> [Accessed 27 June 2014].

Papa, M. J., Singhal, A., Ghanekar, D. V. and Papa, W. H., 2000. Organizing for Social Change Through Cooperative Action: The [Dis]Empowering Dimensions of Women's Communication. *Communication Theory*, *10,* pp.90–123. doi: 10.1111/j.1468-2885.2000.tb00181.x

Porter M. and Kramer M., 2011. *Creating Shared Value*. [pdf] Harvard: Harvard Business Review Available at: <http://www.waterhealth.com/sites/default/files/Harvard_Buiness_Review_Shared_Value.pdf>[Accessed 10 March 2014].

Pretty, J.N., Guijt, I., Thompson, J., Scoones, I., 1995. *Participatory Learning & Action, A Trainers Guide. The World Health Organisation, its history and impact*. London: IIED.

Quisumbing, A.R., Roy S., Njuki, J., Tanvin, K. Waithanji, E., 2013. *Can Dairy Value-Chain Projects Change Gender Norms in Rural Bangladesh?*, *IFPRI Discussion Paper 01311*[pdf] IFPRI. Available at: <http://www.ifpri.org/publication/can-dairy-value-chain-projects-change-gender-norms-rural-bangladesh-0> [Accessed 20 June2014].

Quisumbing A.R., Rubin, D., Manfre, C., Waithanji, E., Bold, van der , W., Olney, D., Meinzen-Dick, R., 2014. *Closing the Gender Asset Gap*. [pdf] IFRI. Available at: <http://www.ifpri.org/publication/closing-gender-asset-gap> [Accessed 17 June 2014].

Rao, C.K. and Odermatt, P., 2006. *Value chain analysis report of the milk Market in Bangladesh*. Dhaka, Bangladesh: Intercooperation

Root Capital, 2014. 'Applying a gender lens to agriculture', webinar [online]. Viewed 29 April 2014, <https://www.youtube.com/watch?v=yovJwMHQe5s&utm_source=hs_email&utm_medium=email&utm_content=12742099&_hsenc=p2ANqtz-_asDA6C9yk76w9-wcPq18BSWYB9FXCq1Es10-vAISKlKgsoS0irJuBudhO7F76XCedXORelJI7L4zJCqqNCKZdwcui-w&_hsmi=12742099>.

Scott, M. and Warren, K., 2009. *Media education foundation study guide, The codes of gender* [pdf] 2009: Media Education Foundation. Available at: <https://www.mediaed.org/assets/products/238/studyguide_238.pdf>[Accessed 17 June 2014].

Senders, A., Lentink, A., Vanderschaeghe, M., Terrillon, J., Snelder, R., 2013. *Gender in Value Chains – Practical toolkit*, Arnhem: Agri-ProFocus.

Siddiquee, M.N.A. and Southwood R., 2011*. Integration of women in the Dairy Value Chain: The Strengthening the Dairy Value Chain in Bangladesh Project*. [doc] Available through: CARE Bangladesh

SNV Ethiopia, 2012. *Improving Ethiopia's Raw Milk.* [online] Available at: <http://www.snvworld.org/en/regions/world/news/improving-ethiopias-raw-milk>[Accessed 9 June 2014].

TechnoServe, 2014. *East Africa Dairy Development.* Available at: <http://www.technoserve.org/our-work/projects/east-africa-dairy-development> [Accessed 7th June 2014].

UN women, 2001. *Gender mainstreaming: strategy for promoting gender equality* [pdf] unknown: UN women. Available at: <http://www.un.org/womenwatch/osagi/pdf/factsheet1.pdf> [Accessed 10

March 2014].

UN Women and UN Global Compact, 2011. *Women's Empowerment Principles United Nations Global Compact.*[pdf] UN Women. Available at: <http://www.unwomen.org/~/media/Headquarters/Attachments/Sections/Partnerships/Businesses%20and%20Foundations/Women-s-Empowerment-Principles_en%20pdf>[Accessed 17 April 2014].

UNDP, 1997. *Human development report, in Human development to eradicate poverty 1997* [pdf] New York: Oxford University Press. Available at: <*http://hdr.undp.org/en/reports/global/hdr1997/*>[Accessed 17 April 2014].

UNIDO, 2011. *Pro-poor Value Chain Development: 25 guiding questions for designing and implementing agroindustry projects*. [pdf] Vienna: United Nations Industrial Development Organization (UNIDO). Available at: <http://www.unido.org/fileadmin/user_media/Services/Agro-Industries/Pro-poor_value_chain_development_2011.pdf> [Accessed 17 April 2014].

USAID, 2013. *USAID Kenya, Dairy Sector Competitiveness Program, Impact Report.* [pdf] Kenya: USAID. Avialable at: <http://www.idd.landolakes.com/stellent/groups/public/documents/web_content/ecmp2-0177079.pdf>[23 April 2014].

Vanderschaeghe, M. ,2013. *Cadena de Valor de Ganadería Sostenible y Productos Lácteos Amigables con el Medio Ambiente en el Triángulo Minero, RAAN. Sistematización de Experiencias y Lecciones Aprendidas en el proceso de Gestión de Calidad.*[pdf] May 2013 ed. Mieke Vanderschaeghe

Visser, P., Steen, M., Greiling, J., Hayesso, T., Neefjes , R. and Greijn, H. (Eds.), 2012. *Pro-Poor Value Chain Development: Private Sector-Led Innovative Practices in Ethiopia* [pdf] Addis Ababa: SNV Netherlands Development Organisation

Weiskopf, B., 2013. *The role of farmers organizations in strengthening value chains in Nicaragua: gender perspectives*. [PowerPoint presentation] 4th GFRAS meeting Platform side event: Donor approaches to rural advisory services. Available at: <http://www.donorplatform.org/cobalt/user-item/653-aleksey/4-gender-and-youth/2061-the-role-of-farmers-organizations-in-strengthening-value-chains-in-nicaragua-gender-perspectives>[02 June 2014].

WO=MEN,(2014): *Duurzame Inclusieve Economie* [online]. Available at: <http://www.women.nl/duurzame-inclusieve-economie/>[Accessed 10. March 2014].

World Bank, IFAD and FAO, 2009. *Gender in agriculture sourcebook*. World Bank, Food and Agriculture Organization of the United Nations, and International Fund for Agricultural Development. [pdf]. Available at: <*www.worldbank.org/genderinag*> [Accessed 10 April 2014].

Zulmai, Z., 2010. *Baseline report for, The Balkh Dairy Union in Mazar-e Sharif, NaWi, GIZ* [pdf] February 2010 ed. Zemarai Zulmai

Zulmai, Z., 2014., *Sustainable Economic Development Program, Agribusiness-Dairy Products, Achievement Report, Balkh Dairy Union, NaWi, GIZ* [pdf] January 2014 ed. Zemarai Zulmai

ANNEX

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ANNEX 01: HEIFER PRINCIPLES

Heifers 12 guiding principles
(Heifer International, 2014b)

1.
Passing on the Gift
- Project participants receive a heifer, seeds or trainings and are requested to pass it / the offspring to another family in the community.

2.
Accountability
- Heifer demands responsibility from its staff, the community and partner organizations.

3.
Sharing & Caring
- "Sharing resources and caring for each other"

4.
Sustainability & Self-reliance
"The families we work with strive for sustainable, self-reliant lives so that they will continue to thrive on their own".

5.
Improved Animal Management
"Our farmers learn how to keep their animals safe, healthy and productive".

6.
Nutrition & Income
"Farmers reap rewards from their gift animal through the consumption and/or sale of products such as milk, eggs, meat, cheese, honey and wool".

7.
Gender & Family Focus
"Women and men are encouraged to share in decision making as well as in the benefits the animals and training bring".

8.
Genuine Need & Justice
"Those most in need are given priority in receiving animals and training".

9.
Improving the Environment
"Sustainable farming techniques, reforestation and tree-saving biogas are important components in all of our projects".

10.
Full Participation
"Everyone is expected to work together to bring about their community's transformation".

11.

Training & Education
"Participants learn nuts-and-bolts skills such as how to build sturdy pens and grow fodder. They also receive in-depth training in all 12 Cornerstones".

12.

Spirituality
"Our common belief lies in the value of all life, a sense of connectedness to the Earth and a shared vision of the future".

ANNEX 02: LIST OF INTERVIEWEES

Interviewee	Organization	Case
Mr Nurul Siddiquee	CARE Bangladesh	6.1
Mrs Mary Munene	Land O'Lakes	6.2
Mrs Isabelle Baltenweck	ILRI	6.3
Mrs Mahlet Yohannes	SNV Ethiopia	6.4
Mrs Petronella Halwiindi	Heifer International Malawi	6.5
Mr Zemarai Zulmai	NaWi	6.6
Mieke Vanderschaeghe	Consultant	6.7
Mr Dattatray Ghanekar and Mrs Neeta Kamat	Kolhapur District Cooperative Milk Union's (Gokul)	6.8
Mrs Sylvia Torres	Consultant	

ANNEX 03: INTERVIEW QUESTIONS

1. Project background
1.1. Are all producers linked to a certain chain, market, factory?
1.2. Which role do additional organization/governmental institution/company play in the project?
1.3. Which are your program activities?

2. Previous sales of milk
2.1. How would you describe/analyse the old situation?

3. Objectives and target group of the project
3.1. What were/are the objectives?
3.2. Who were selected as target group?

4. Gender inclusive intervention
4.1. When did you start to implement gender inclusive intervention in your project?
4.2. Which gender-inclusive interventions and approaches did you use?
4.3. Which influence do household and society (culture, traditions, local values) have on gender roles?
4.4. Do men or women show resistance to include women (or men) in producer organizations?

5. Project outcomes
5.1. What were the outcomes in terms of business / chain performance (activities and governance)?
5.2. What were the outcomes with respect to gender / gender equality (agency and structure)?
5.3. What is the project outcome with respect to the division of the formal/informal market chain and possible business arguments?

6. Challenges faced
6.1. Which significant obstacles did/do you face during the project?
6.2. How could you overcome these challenges?