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Setting up sustainable dairy business hubs: A resource book for facilitators

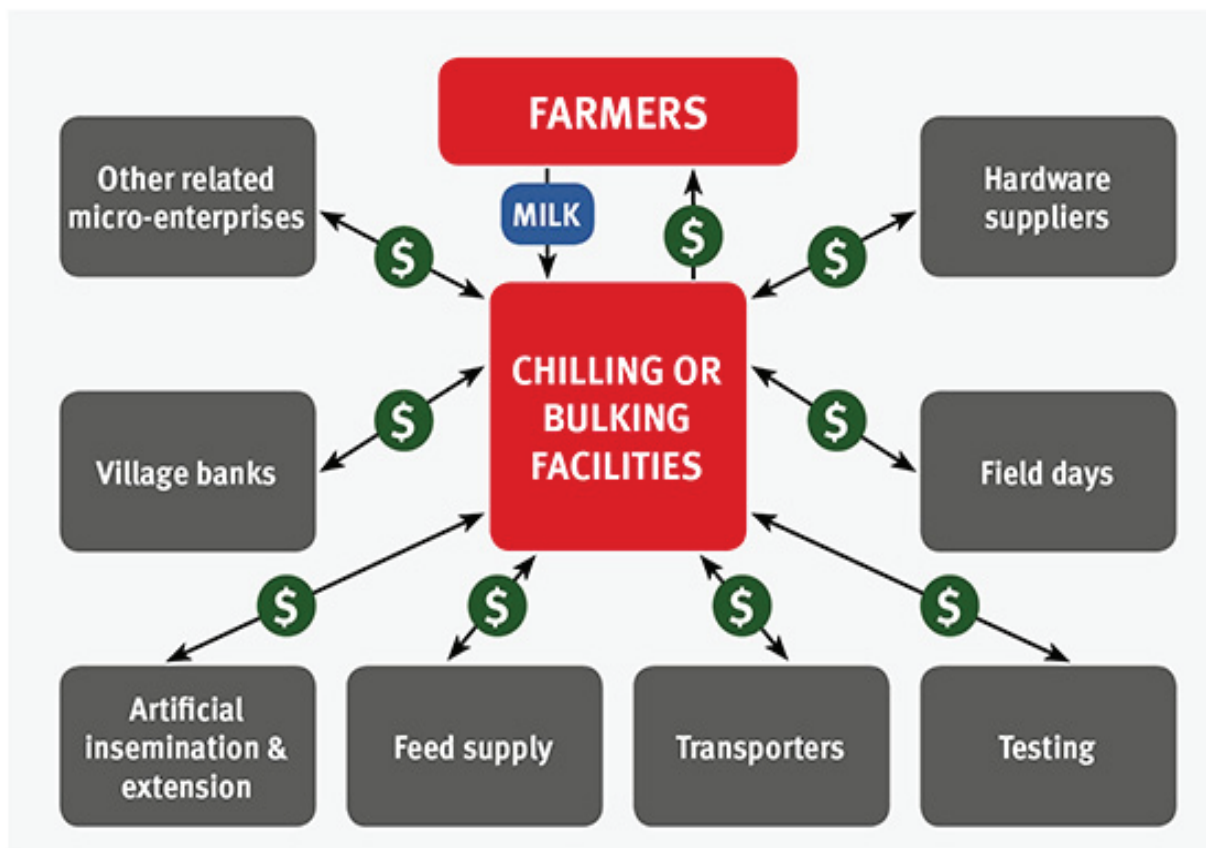


East Africa Dairy Development

In partnership with



The EADD hub approach



Setting up sustainable dairy business hubs: A resource book for facilitators

Version I

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1. East Africa Dairy Development




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Acronyms

AI	Artificial insemination
BDS	Business development services
CP	Chilling plant
EADD	East African Dairy Development
FSA	Financial services association
GIS	Geographic information system
ICIPE	International Centre of Insect Physiology and Ecology
DM	Dry matter
ILO	International Labour Organization
ME	Metabolic energy
MoE	Memorandum of understanding
MLE	Monitoring learning and evaluation
MTE	Mid-term evaluation
NGO	Non-governmental organization
PO	Producer organization
POSA	Producer organization sustainability assessment
SACCO	Saving and credit cooperative
SHG	Self-help group
SMART	Specific, measurable, attainable, relevant, time-bound
SOP	Standard operating procedure
SWOT	Strengths weaknesses opportunities threats
YEF	Youth Entrepreneurship Facility

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Preamble

Smallholders produce the bulk of the milk in East Africa. Dairy farming is a source of livelihoods for millions of women and men, providing source of nutrients for the family, income from the sale of milk, and other farm products like manure. There have been many discussions on how the increasing demand for milk and milk products in these countries could be met by smallholders, which would be a mechanism to increase farmers' income. Individually, however, they generate low volumes and are often scattered over large areas, and are therefore less attractive to private sector agribusiness partners. Collective action has therefore been advocated so as to create economies of scale both in marketing the milk and in providing inputs and services. Dairy business hubs are collective farmer-owned/managed milk bulking and/or chilling businesses from which farmers may also gain access to other services they need for their dairy enterprises. Having been supported in Kenya, Rwanda and Uganda (and recently in Tanzania) through the East Africa Dairy Development (EADD) project (<http://www.heifer.org/eadd/index.html>), these dairy business hubs, referred to in this book as 'dairy hubs' or 'hubs', have proven to be a potentially strong platform for improving smallholder dairy farmers' access to markets and inputs. The book draws on lessons learned, including the crucial aspect of involving private sector players, and aims to provide guidance on how to replicate the approach. It targets development facilitators, that is, staff and teams in charge of working with farmers, local government and private sector to establish collective dairy enterprises.

The book presents the rationale and the general steps to be followed to facilitate the evolution of a dairy hub; it also includes, selected case studies, tools and standard operating procedures (SOPs) that can be used, or adapted, when interacting with dairying communities.

We hope that you will find this book useful. We welcome your comments and suggestions for subsequent editions.

The authors



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Chapter I: Introduction

I.1 Objectives of the book

This book provides step-by-step information on how smallholder farmers can be facilitated to set up a farmer-owned/managed dairy hub, and how the hub functions as a business platform for leveraging commercialized dairy and livestock support services, including banking and finance, to improve and sustain farm productivity and efficiency. It describes the various steps that development facilitators can follow to accompany the farmers and communities in developing a hub that meets their needs and is adapted to their context. Even though a hub is defined as a business entity, it espouses a unique business model—as a collective business—and it is important to realize that social capital is often the cement of these relationships and cannot be ignored. Facilitators include staff of non-governmental organizations (NGOs), private entrepreneurs and public entities.

The book aims to play a role in enhancing rural livelihoods in East Africa, in a gender responsive and sustainable manner, through helping dairy farming families gain competitive access to markets that supply consumers with safe and affordable milk and milk products. The target audience is facilitators who are working in dairying in East Africa and elsewhere, with the aim of supporting dairy development through development projects and through private or public initiatives. The book is intended as a guide on developing, implementing and managing dairy hubs. It may also be useful in setting up related agribusiness projects where certain principles or concepts can be adopted as a whole or customized.

The book is based on experiences of the East African Dairy Development Project (phase I), EADD-I. EADD-I was formulated to learn; consequently, the book communicates and draws from this experience.

I.2 The producer organization and hub concepts

We use the term ‘producer organization’ (PO) to describe farmer groups of varying characteristics: large or small in terms of membership depending on farmer density in the locale; informal or formal—often they start as informal groups and formalize their status as they progress. EADD-I found that dairy farmer density was high in Kenya’s milk sheds with POs having an average of more than 3000 members while Uganda and Rwanda had lower densities, often from 50 to 200 farmers. There are many types of POs in terms of the organizational models, and level of growth and development. These include self-help groups (SHGs), primary and secondary cooperatives, unions, national federations, farmer companies, associations, and financial services associations (FSAs). Currently, new forms and types of POs have emerged, sometimes referred to as an ‘entrepreneurial producer organization’. Different from traditional POs, they are radically organized to regulate not only relations between members but also to incorporate an essential function of regulating the relationship between their members and the external world—between public and private players.

As business-oriented, member-based organizations, POs should be born of a shared problem—economic and/or social—that community members deem they can ameliorate by working jointly in a collective action spirit. Their overarching objective is therefore to enhance agricultural production and market access services to their members.

In so doing EADD-I found that successful POs gradually stimulate dairy-related economic opportunities that can eventually spur rural-based business hubs.

Three features define market access oriented POs in relation to their purpose, structure and core activity. They are:

- Rural *businesses*
- *Producer-owned, used and controlled organizations*
- Engaged in collective marketing activities
- Involved in direct provision or facilitation of desired inputs and services

Appendix I: summarizes the main characteristics of the common types of dairy producer organizations in East Africa.

Box I: What is a dairy business hub?

A dairy hub consists of an economically active producer organization (PO) and the set of business relationships and linkages with other public and private agribusiness partners that provide dairy-related inputs, milk market outlets and other services such as extension and farmer advisory services, and financing services.

A hub is therefore a cluster of services from which farmers are able to get inputs and services, including marketing their milk. Input and service providers find it profitable to offer their services through the hubs, thanks to the economies of scale the hub generates. A PO coordinates the activities.

In some cases the PO operates in-house business development services, for example, by operating an agro-vet shop, a savings and credit program, an artificial insemination program, and a fully-fledged farmer extension services program. Though these in-house services should operate as business entities, their primary motive should be facilitating members' access to the services rather than a profit motive simply for the sake of profit. Convenient payment mechanisms such as check-off systems are highly feasible under this mode. (See Box 2 on definition of check off)

In other cases the PO outsources such services from private enterprises already established within the catchment. These linkages can be strengthened with a binding agreement between the PO and the private provider to offer members services on credit by extending the check-off system to the private enterprise.

1.3 What is the ideal environment for hub implementation?

As explained above, at the core of a hub is a PO. A prerequisite for a dairy hub is therefore farmers' capacity and willingness to self-organize and to take collective action. This factor is difficult to quantify but it is important to assess that level and/or potential for 'collective action'. A proxy indicator could be when a group of dairy farmers requests a development agency, government department or milk processor for help in addressing the challenges they face in their dairying enterprises. Another indicator could be the existence of dairy farmer interests groups in the area, or the extent to which dairying is widespread and regarded as a major source of income and livelihood. EADD-I supported both pre-existing and newly formed dairy POs. Newly formed POs tended to respond better to external support for developing their capacity than did the pre-existing ones. The pre-existing groups tended to have a closed membership policy, making it difficult to accumulate the collective action needed to stimulate a hub.

The decision to establish a dairy hub should entail an assessment of whether the area has the environment necessary to implement it. An important factor in the dairy business is whether surplus milk is available at the households after the households' nutritional and calf-rearing requirements are met. Areas with high milk production are likely to be intertwined with favourable agro-climatic conditions—conditions that are necessary for implementing a dairy hub. For instance, in East Africa, the better-watered zones at medium and high altitudes, which are well adapted for high biomass production for forage-based dairying, are ideal, as well as at lower risks. Another important factor is market conditions, in particular the price of milk, which is influenced by supply vs. demand factors. In areas where the local demand for milk is high vis-à-vis the supply (milk deficit areas)—such as urban and peri-urban or arid and semi-arid

areas—the bulking concept might not be attractive, since producers have access to a lucrative local market outlets. In this case the value chain tends to be short—often from the producer to the consumer. Therefore, areas with high marketable surplus of milk and limited demand at the local markets (reflected in low milk price) are ideal for implementing the hub approach. The market environment entails different levels of availability of alternative markets (such as itinerant traders), proximity to major urban centres and main buyers, population density, income levels, and availability of the basic infrastructure of water, roads and electricity.

Policy environment is also an important factor. Policy tools such as prices (whether controlled or market regulated) and quality standards are important in the growth of the dairy industry. In addition, having the requisite public sector support services, such as animal health services, and having existing competitive markets where farmers can sell, are of paramount importance in implementing the dairy hub concept.

1.4 Outline of the book

The book presents the rationale and the general steps for facilitating formation of a hub. After the general introduction in Chapter 1, Chapter 2 provides information on how to identify a location where the hub approach is likely to work best. ‘Suitability’ considers both technical feasibility and social parameters. It describes how to involve stakeholders in selecting an appropriate geographical catchment and how to arrive at the decision of which type of hub options to implement or how to sequence the evolution of different hub options over time. Chapter 3 dwells on steps in supporting targeted communities of smallholder dairy farmers to establish and strengthen their producer organizations. This chapter focuses on the particulars of forming a PO, following a step-by-step description of the activities. Chapter 4 delves deeply into information on how dairy hubs can support farmers’ access to the milk market, discussing the hub options of: pre-bulking; bulking and chilling. In addition to facilitating market access, dairy hubs are a convenient platform that can strengthen farmers’ access to important advisory services, inputs and services for increasing milk production: this is the subject of Chapter 5. Chapter 6 deals with experiences and options to explore in financing the establishment and growth of a dairy hub. Chapter 7 presents the business case of integrating women and youth participation in the hub and provides experiences and strategies that can be implemented to ensure equitable benefits to women, men and youth. In any development activity, measuring success, feedback and learning are important to continuously improve activities, as discussed in Chapter 8. The chapter offers a rich informative discourse and guideline on implementing tools useful in evidence-based decision making. A list of useful resources and references is provided at the end. An appendix of selected case studies tools and standard operating procedures (SOPs) has also been included.

Chapter 2: Pre-hub establishment assessment

This chapter provides information on how the development of the farmer-centred dairy hub can be supported at the ‘appropriate’ location, with the ‘appropriate’ people, supporting the ‘appropriate’ hub type. Details of how to select target areas for hub implementation, the stakeholders to involve and the hub options to implement are discussed here.

2.1 Assessing a target area

The site where a hub should be developed is of great importance since it will determine the success of the hub and the overall effect of the development. Site selection is the first and most important step in developing a dairy hub. To assess sites and select those most suitable for implementing the hub approach, several useful steps should be considered. (These steps are detailed in an SOP on site selection, Appendix 2)



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Establishing a dairy hub is expensive and involving, yet ultimately rewarding if well thought out and the hub is established at the right place, within the right environment and with the right people and resources. It is important to consider the agro-climatic conditions and the market and policy environments that would yield the best results. The first and most important agro-climatic factor to consider is whether the area is typical for dairy. A hub can be successfully implemented only in areas where dairy flourishes but has problems with access to market and inputs. Therefore, the first step in selecting a hub site is to list potential dairy sites and use geographical targeting to identify and verify these sites based on agro-climatic potential and other factors affecting the market: the amount of rainfall, altitude, forage availability, probability of livestock disease and general economic activities (i.e. the position dairy takes compared with other economic activities in the area). Cattle population, breed and milk yields are therefore important. Another important factor to consider is the difference between the current milk productivity and the potential (the 'yield gap'): the higher the difference, the higher the motivation for farmers to invest in productivity-enhancing technologies. Current farm-gate milk price is a factor often missed: the lower the current price, the higher the farmers' motivation to work together and the higher the possibility to increase milk price to farmers through the hubs. Finally, as collective action is a social construct, the facilitator needs to check if there is an expressed need by the community to work together.

2.2 Identifying major stakeholders

Stakeholders include farmer groups, lead farmers, community leaders and opinion leaders, local authorities, and government ministries; in the private sector, processors, milk traders, input suppliers and stockists, financial institutions, and even training institutions. It is important to involve local authorities and the private sector players from the beginning and identify what they can do to support the process.

Farmers

While all farmers, especially in smallholder dairy systems, are important in developing a hub, the opinion leaders and model farmers are crucial as an entry point. They are knowledgeable, and have experience and good local reputations. Elite dairy farmers naturally wield influence on other farmers and therefore may serve as opinion leaders in the farming community. Their influence can be harnessed to:

- Identify current and future problem areas and possible solutions
- Mobilize other farmers—as opinion leaders, elite farmers are likely to be early adopters and can convince other farmers to join in the collective action
- Establish an interim board of directors/management committee—elite farmers can be instrumental in quickly forming the first governing body of a producer organization
- Provide some initial capital, if needed—owing to experience and knowledge, elite farmers are most likely to be comparatively well-off in resource and economic endowment; this resource and economic endowment can be tapped into, when needed, at the initial stages of forming the hub

However, it is necessary to exercise a lot of caution while involving the elite farmers so they do not dominate the hub process and discourage other less resource-endowed farmers from engaging in it, especially women and poorer farmers.

In brief, it pays to invest in understanding community dynamics in targeted areas. Often, programs tend to concentrate on the technical feasibility of a project. Participatory rural appraisal tools and techniques can be applied to rapidly gain a historical perspective and understanding of a community's experiences, preparedness and existing support mechanisms for local action.

Local authorities

In such a development process, local authorities play a facilitative role, as they are responsible for providing a range of public goods and services. In general, their roles and responsibilities cover various aspects of:

- Approving locations for business premises
- Planning
- Roads infrastructure
- Water supply and sewerage
- Development incentives and controls
- Environmental protection including rivers, lakes, air and noise
- Recreation facilities and amenities
- Agriculture, education, health

They also represent local communities, voicing local concerns and responding to local needs.

Specifically related to dairy, local authorities have a statutory responsibility of controlling and preventing a range of diseases that affect people and livestock. Their role in public health includes regulating food hygiene, animal health and welfare, and private drinking water supplies, among others. They also formulate and put into effect animal identification, movement and tracing regulations. These are crucial roles in dairy development in an area. Consequently, involving local authorities at the beginning of developing the dairy hub is critical. Local authorities should be involved at the beginning of the dairy hubs' implementation by:

- Meeting them and informing them of the process, its objectives, goals, plans and challenges.
- Discussing with them how they can support the planning, agreeing on how they can be involved, and identifying areas of synergies where resources can be pooled.

Government ministries

The main ministries and departments of interest could be agriculture and livestock, veterinary, cooperative development and probably training institutions. Government thus becomes an important stakeholder since it plays a wider role in creating a favourable environment for sustainable development of the livestock industry. Government can provide support services that increase productivity and that add value and market access for livestock subsector products. Government offices are both sources of expert opinion, data and information regarding the potential and the challenges for developing a dairy hub and sources for facilitating crucial services during implementation. Therefore, engaging them in developing a hub is vital since they can support the venture by providing much needed information about the dairy industry in the area, providing support services that farmers need in developing their dairy enterprise (for instance, animal health services and extension services), and supporting the hub development by creating and enforcing a favourable legal and institutional framework for developing the dairy sector sustainably.

Involving them from inception also ensures that the hub development will be aligned with the wider development agenda for the area and presents early opportunities of leveraging and synergizing on related development initiatives.

The private sectors

The involvement of the private sector is critical to the dairy hub in terms of forging healthy partnerships for service delivery to farmers. Also useful in complementing the hub activities are banks and financial institutions, agro-vets,

private artificial insemination (AI) and animal health technicians, transporters and feed suppliers. For instance, banks would be useful for processing payments to farmers for milk delivered to the dairy hubs. Private technicians can offer services to farmers with a payment arrangement that is beneficial to farmers, thereby helping the hubs improve farmers' access to both markets and inputs.

Engaging the private sector should be based on the premise that smallholder farmers participate as equal partners. Smallholders present an excellent opportunity to expand private sector market share (for inputs and other services) and they provide a secure, guaranteed, supply base for a reliable quality and quantity of milk. The private sector should consider that, although organizing collective action requires costly investments, it overcomes most challenges the sector encounters when dealing with smallholder farmers, promising sustainable returns in the medium to long term. By presenting how the hub approach is best suited to address these concerns and unlock opportunities on a win-win basis, it is expected that a buy-in, by private sector players, can be secured.

2.3 Assessing hub options

Basically, site selection exercise entails a holistic approach to assess whether a site is suitable for implementing a dairy hub. At the same time, one needs to decide on the type of hub to implement, based on the site characteristics and some basic criteria. From EADD-I's experience, the possible hub types are:

- Pre-bulking
- Bulking
- Chilling

In areas of low milk density and/or strong capacity or presence of milk traders, *pre-bulking* is most appropriate since there is little incentive for collective milk marketing. The pre-bulking model is discussed further in the **Pre-bulking** section.

In areas of medium milk density and/or low capacity or presence of milk traders, *bulking* is an appropriate option as farmers find it difficult to market their milk, see details in the **Bulking** section. This is also the most appropriate option for areas where milk volumes would not be sufficient to warrant the capital expenditure on chilling equipment.

In areas of high milk density and far away from the market, *chilling* becomes necessary, although POs can start by selling un-chilled milk. This hub type points to a chilling plant model as the appropriate option, as discussed in the **Chilling Plant Hub** section.

It should be noted that in some instances, the pre-bulking and bulking options could be implemented on a transitional basis, as a PO builds experience and capacity to operate a chilling model.

Pre-bulking

The pre-bulking dairy hub model should be adopted if milk production in the area or site is not substantial enough to justify PO bulking. This model ideally defines a hub linked to traders in rural areas and targets rural farmers (for instance, traders in rural or extensive livestock production systems) or peri-urban farmers. In this hub model, the main drive should be to stimulate production by supporting access to inputs and services. POs can support farmer market access by adopting strategies that would:

- Stimulate production through increased access to inputs and services by farmers;
- Increase volumes handled by private milk traders, thereby increasing their profitability and hence their sustainability;
- Ensure that farmers get high-quality services, for instance, strategies that assist in accreditation of AI technicians and animal health providers.

One tested strategy that a PO can use to satisfy all the above-mentioned requirements is by developing payment arrangements that enable farmers to meet their livelihood needs while gaining access to inputs on credit as well as other dairy-related services. Borrowing from EADD-I, one such strategy is the 'check-off system' payment arrangement.

Box 2: The check off system

A check-off system is a payment arrangement where farmers can get inputs and other services on credit based on their milk deliveries to the hubs that serve as collateral for the credit. In other words, farmers pay using future expected earnings from milk that is already delivered to the hub (the hubs in this case consolidate the earnings from milk delivered over a certain period, say one month, into a one-off payment after the delivery period has lapsed).

In pre-bulking, the check-off system needs to be organized differently given the absence of mechanisms to recoup the costs of the services obtained on check-off i.e. milk deliveries to the hubs. Figure 1 illustrates how the check-off payment can be implemented in a pre-bulking model. The producer uses the service or input on credit against the milk supplied to the trader. The design of this check-off arrangement system makes the trader the custodian of the payment agreement; hence the trader facilitates payment of inputs and services to the service provider.

Figure 1: Check-off payment arrangements in pre-bulking hub

Check off arrangement



Apart from the check-off system, another modality that POs can use to support farmers' access to markets is by instituting capacity building efforts for increased production. Training farmers on proper animal husbandry, milk quality and hygiene, and providing extension services (discussed further in Chapter 4) would translate to increased farm productivity, especially when supported by access to input credit. With such support systems in place and working efficiently, it is expected that farmers would increase production. An increase in production would give farmers more collective bargaining power and hence they should progress into negotiating for these services collectively. Eventually, pre-bulking can progress towards a bulking model.

Bulking

In the bulking model, farmers, through the POs, bulk milk without chilling it. Buyers collect the milk at the bulking site(s). A bulking model is recommended for areas or sites where milk volumes are not sufficient to warrant capital expenditure on chilling equipment.

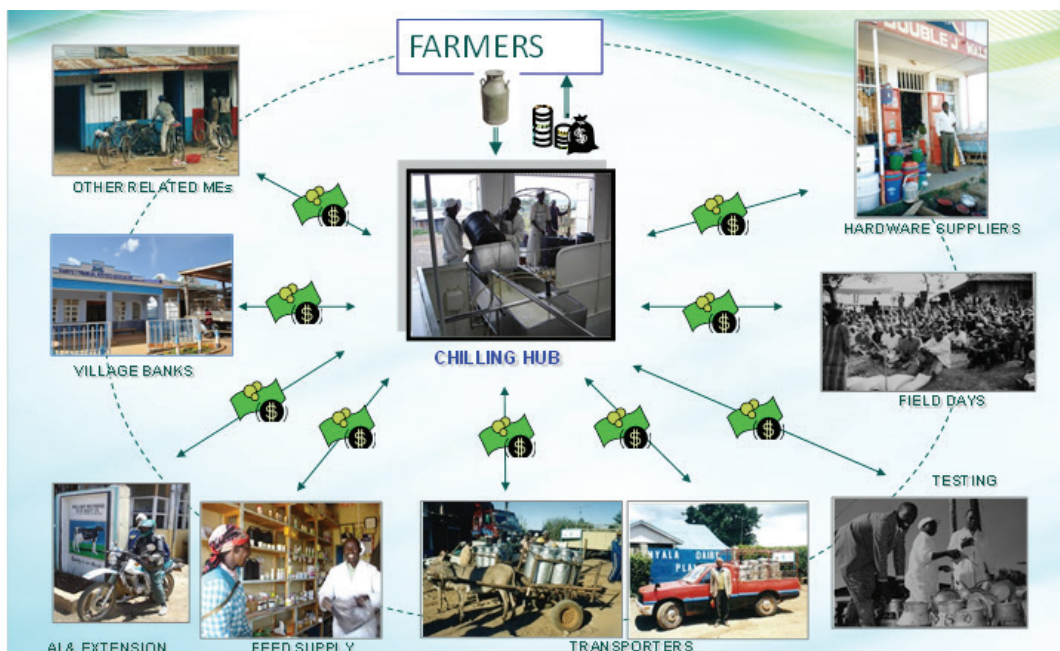
In bulking hubs, the PO can organize/coordinate the check-off payment system. The PO receives the milk; it computes the value of the milk received and before it pays the farmer it deducts any costs of inputs and services the farmer incurred on credit from the PO (in-house services) or from private providers affiliated with the POs (outsourced services) during the same period.

In a bulking model, the POs engage buyers of the farmers' bulked milk through contracts, for instance, contracts with processors and transporters, if any. Therefore, efficient handling of issues such as milk quality, and transport and contractual arrangements with buyers are important for continued utilization of the hubs by farmers in a collective effort.

In the bulking hub approach, cost of the collective action proposed is low due to minimal capital expenditures and few staff required, meaning the price paid to farmers is only marginally lower than the milk selling price. This is encouraging to farmers supplying milk to the hub. Low barriers to entry by new members, and general recognition that benefits of membership rise with the number of members, is at the heart of the hub approach. Improving efficiency in collecting milk will be achieved through:

- Improving milk transportation, for example making contractual arrangements between the PO and the transporters;
- Making favourable contractual arrangements with the buyer. A trader who buys bulked milk from a PO should be encouraged to offer a better price since bulking is a cost-saving measure, saving the buyer costs in transport, logistics, time and other resources that the buyer would otherwise have had to use to collect the milk;
- Delivering quality milk by defining and enforcing delivery times, using appropriate milk cans, and testing milk for quality assurance;
- Supporting the supply and demand side of business development services (BDS), the efficiency and effectiveness of BDS by linking them to the PO through check-off, thereby, improving productivity.

Chilling plant hub



A chilling hub is a dairy hub that undertakes a milk chilling process by acquiring a milk cooler and its accessories (including a premises and other related equipment)—referred to as a chilling plant (CP). A CP model should be implemented in sites or areas with both high milk volumes surplus and difficulties in reaching the market, which justify both bulking at PO level and capital expenditure on chilling equipment. CPs of different sizes can be constructed; thus a feasibility study is necessary to further assess the commercial viability of the various CP sizes. The feasibility studies aim at objectively and rationally uncovering the strengths and weaknesses of the proposed venture, opportunities and threats as presented by the environment, the resources required to carry the project through, and ultimately the prospects for successful completion of the project. The feasibility analysis should help determine the size and type of CP to be installed in a particular site. Ultimately, a decision must be made on financing the CP. It can be financed by farmer equity or debt (farmer-owned CP), by processors (processor-owned CP), by renting (rented or rent-to-own CP), or a combination of these options.

A PO can start by bulking milk without chilling it until milk volumes increase sufficiently to warrant installing a CP. The added advantage of such a start is that the PO acquires managerial experience in running the PO—experience that can be advantageous when seeking to obtain a loan. In the case of CP hub, there are various models, described below.

1. Farmer-owned CP

In this farmer-owned and managed milk collection and chilling centre, farmers raise equity and/or debt and use it to finance the installation of the CP. The PO manages the CP and earns profits when the CP business is profitable. The motive is to market members' milk and for the PO to make a profit. The farmers decide where to sell their bulk chilled milk (unlike in a processor-owned CP).

2. Processor-owned CP

A processor owns a CP in an area in which there is a PO but the PO does not own or manage collecting and chilling the milk. Rather, the processor manages these activities. The farmers (through their PO) therefore do not have a say as to where the bulked and chilled milk is sold, since, by delivering their milk to the CP, they sell solely to the processor. Consequently, the processor can dictate to the farmers the price at which the milk is bought. However, the farmers do not have to raise the equity to purchase the chilling equipment.

3. Rented CP

The farmers through their POs can opt to rent a CP, usually from a processor. This would mean that the farmers would not have to take whatever price the processor would give, as they could sell their bulked and chilled milk to whoever offered the best terms.

4. Rent-to-own CP

Farmers (through their POs) can rent a CP with the aim of ultimately owning it. It is different from the rented CP system in which farmers pay rent until the end of the CP's lease period and then the CP reverts to the owner. In the rent-to-own option, the farmers ultimately own the CP because the rental payments contribute to the cost of buying the CP.

In addition to successfully setting up the technical and operative aspects of a hub, POs can use other incentives to encourage farmers to gain access to milk markets through a farmer-owned CP. Incentives include quality-based payments i.e. payment on quality, and setting up satellite milk coolers which are often of smaller volumes to improve quality (lessen the time and distances covered by farmers while delivering milk to the CP) and increase the amount of milk collected, hence better bargaining position for higher prices from bulk buyers and processors.

Take note:

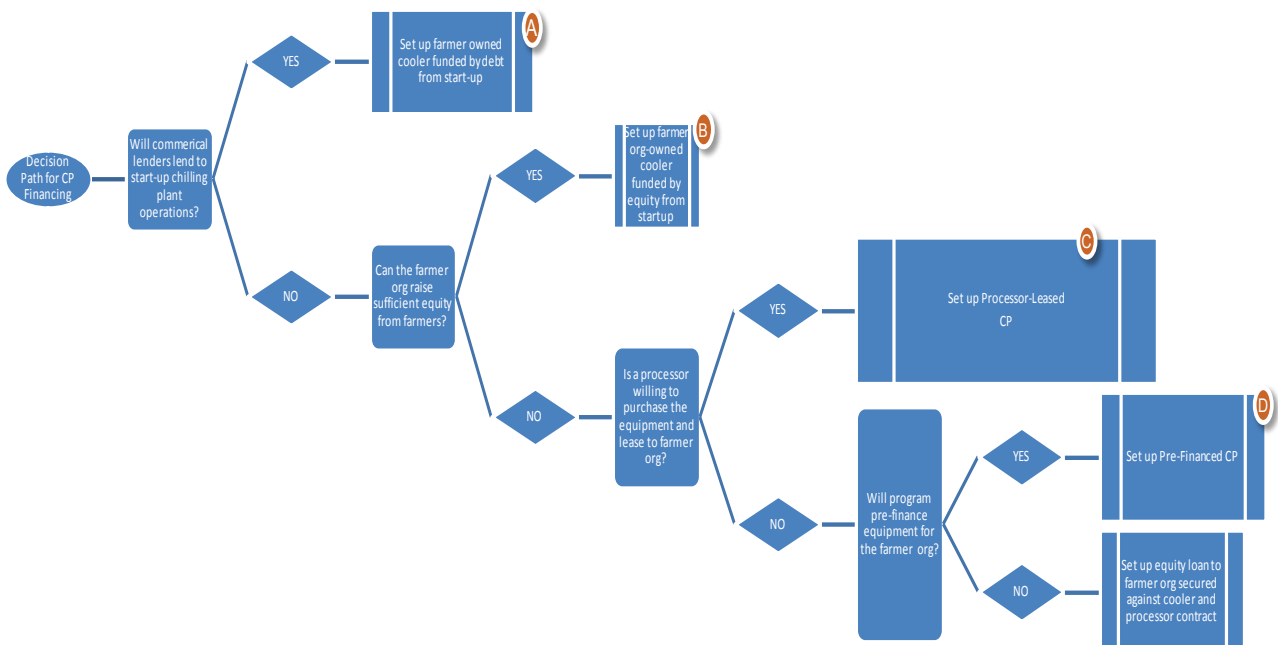
1. A hub may move from one hub type to another:
 - a. Some types could be transitional as they develop and grow. For example, a pre-bulking hub would be desirable at the initial stages but with improvement in production, it may evolve from pre-bulking to bulking and chilling. Under a CP hub, a hub could move from the rent-to-own option to a farmer-owned CP.

b. In response to shocks and instability, a hub with a processor-leased CP can temporarily drift to a bulking mode upon experiencing some shocks.

- To secure more milk supply and thus market access for more farmers, the growth path of a hub could entail establishing additional mini-milk collecting, bulking and cooling centres (satellite coolers) within the hubs' catchment areas to reach more farmers by reducing the distance to a milk collecting centre. Whichever the case, the decision-making process remains more or less the same as for the 'main' centre.

Figure 2 illustrates the decision tree for selecting the type of CP hubs. The figure contains information on factors to consider when assessing the financing options and the various sources of financing that can be considered for the different types of CPs.

Figure 2: Decision paths on types of CP hubs



(Source: EADD, TechnoServe)

Chapter 3: Facilitating the establishment of a producer organization

3.1 Why producer organizations are crucial

Government and development facilitators promote POs and the collective enterprise model as an approach that connects smallholder farmers to input and output markets. With mixed results, POs have demonstrated that they are capable of stimulating rural-based business hubs centred on dairy-related interests. Within a hub, a PO is able to efficiently organize access to input and to information and advisory services as well as to bulk and market milk. From the hub approach perspective, the shortage of capable POs makes a case for agribusiness and public sector partners to invest in mobilizing farmers and strengthening PO capacity.

Supporting a PO is also an investment in social capital, building a 'social infrastructure' that, besides providing services to members, provides a framework for sharing information, coordinating activities, and making collective decisions. It could also be a mechanism to increase gender equity and increase youth employment in the communities, as detailed in Chapter 7.

Aggregating smallholder dairy farmers' businesses is both critical and challenging. To stimulate a rural-based dairy business hub, aggregation is inevitable since input dealers, business and advisory services providers, and agro-processors cannot deal individually with the thousands of dispersed dairy farmers producing 2–10 litres of milk daily. It is challenging because the uniqueness of the collective enterprise business model fits uncomfortably in the dominant corporate business structure characterized by individualism and profit maximization. Most dairy farmer groups in East Africa are weak, with limited capacity. Mobilizing new ones and strengthening the capacity of existing ones is expensive, time consuming and yet is a proven pathway to improve smallholders' income.

3.2. Facilitating the establishment of producer organizations— key steps

EADD employed principles and steps practised in both social action models and participatory community driven development approaches in mobilizing and strengthening pre-selected POs. The program anticipated two scenarios: 1) selected sites where a targeted PO already existed (pre-existing sites) and 2) selected sites where no targeted PO existed (new sites). Though the steps taken in the two scenarios differed, there were significant similarities. In each site, a mobilization team was constituted, comprising EADD staff and representatives from relevant government departments.

Step 1. Understanding the community

Besides the pre-hub assessment work done during the site selection phase, the first step, understanding the community, focuses more on understanding recurring community dynamics, understanding community power structures, and challenges and opportunities for sustainable development. An understanding must be developed of how the poor, the marginalized, women and youth participate in existing social and economic opportunities. A rapid understanding of who owns the resources and the prevailing norms and practices on ownership and access to resources related to dairy production and assets, is critical. Gaining a historical perspective of community experience with collective action and previous efforts to develop dairy and other agricultural enterprises will help a great deal in setting priorities. Participatory appraisal tools and techniques are recommended.

Step 2. Identifying potential leaders

Although it is a common tendency to approach formal leaders—local administrators, existing farmer group leaders, widely accepted community leaders, etc.—it is advisable to deliberately expand the group by sensitively starting to bring in new, potential leaders. Look at middle-aged to youthful community members and capable women engaged in dairying. Working with the community, it is possible to develop criteria for selecting such leaders.

Step 3. Mobilizing community leadership and brokering cooperation from other agencies

Well-organized meetings and seminars with appropriately selected community leaders can be effective in pointing out how livelihoods in the community can be boosted by improving the productivity of their dairy enterprise and the crucial role a PO can play. It is important to provide facts and figures to convince potential leaders of the possibilities and approaches for increasing the income of a sizeable number of farmers and for contributing to the economic development of the region. Examples from other successful POs in the region can be used to pitch the case. If a PO has existed, a historical review of its performance could identify the way forward. Community leaders can share ideas on the need for a strong PO and its role. Invited agencies—livestock and veterinary departments, cooperative development officers, local authority administrators, public and private sector actors—can provide encouragement and relevant support. As a way forward, the leaders are assigned to consult among themselves; if they are still interested, they should channel their expression of interest to the program.

Step 4. Community and farmer mobilization meetings

Especially when there is no pre-existing dairy farmer group, a series of community mobilization meetings needs to be held. The facilitating agency can help community leaders organize these meetings to discuss the emerging idea of establishing a PO and its role in enhancing dairy productivity and profitability. Leaders from successful POs in neighbouring villages can be invited as guest speakers and some community members can be selected for exchange visits to successful POs so as to emphasize the power of farmer-to-farmer information exchange in triggering local collective action. Sometimes, depending on the community dynamics, it might be necessary to hold additional smaller meetings targeting marginalized community groups such the poor, women and youth. They may prefer separate sessions to articulate their specific needs and seek reassurance that measures to accommodate them would be given priority. Prospective members need to be assured that they all stand to benefit proportionately to their contributions and that the PO is not just for large-scale producers, that it is the collective action that will make enterprise prosper and stimulate a rural-based business hub.

Step 5. Nominating interim boards

From the community meetings a core group of interim board or committee is elected or nominated to spearhead the process of formally designing and registering the PO. As they work, they should consult closely with the community, who are the prospective members. Often they can co-opt relevant government officers to board membership, but only in advisory roles.

To avoid electing or nominating interim leaders unable to cope with the complexities of a PO, it is critical to outline a mutually agreed criterion of desired leadership qualities and attributes. This process requires time and patience; the promoting agencies should help in providing advice and commit to strengthening the capacity of appointed interim leaders to execute their mandate.

Step 6. Developing an organizational structure for POs

With the assistance of the promoting agencies, the interim board is supported in choosing an organizational model for the PO. Hopefully, prospective members will have expressed their desired organizational model during the community meetings in steps 3–4, and this should be taken into consideration. It is important to support the interim team in understanding the various organizational types and models, their advantages and disadvantages. Options include SHGs, cooperatives, private companies, public companies, federations and unions. Blueprint procedures exist under each organizational type as established by the respective governments in East Africa. Promoting agencies should support the interim team not only in carrying out the registration requirements but further in internalizing the provisions, and in understanding how the functions and roles envisioned in the structure influence the performance of the PO. The promoting agencies should play a facilitative role at this stage, mentoring and supporting the leaders to take over the role of building the PO.

Box 3: Steps in developing an organizational structure

The interim board's main goal is to understand the appropriate organizational structure, composition and working rules for efficient management of their PO.

Stage 1. Leaders should secure the relevant guidelines of other POs and study them carefully. Leaders should obtain copies of guidelines and rules of the potential types of organizations; they should talk to other POs and get their guidelines and constitution. A seminar can be organized to study them carefully and discuss how they fit into their community needs.

Stage 2. Leaders should then draw up a tentative organizational structure and working rules for their PO. They should consider the structure of various models or types of organization that serve the special needs of agricultural development and discuss them with experienced leaders from POs and agencies. Roles, responsibilities and rewards for the people who perform tasks in the PO should be clearly described, as well as punishments for those who abuse their position. Other operational decisions also need to start taking shape: locating premises, negotiating for land and infrastructure services, hiring key personnel, etc.

Step 7. Developing an interim action plan and farmer mobilization

Once an interim team has been constituted to oversee the establishment of the PO, it needs to draw up an interim action plan, typically for 3–6 months. The plan should identify critical actions needed to meet the registration requirements and kick off initial operations. Items in the action plan will likely vary from community to community. However, some items should be given priority, such as pursuing the registration process and identifying and placing vital staff members. Methods for doing the latter will vary based on the size of the PO. In some instances, voluntary interim leaders can play staff roles; or staff can be hired if resources allow, or the promoting agencies can be requested to support with seed resources, part of which go to hiring initial key staff. Also necessary are office premises, capacity development interventions (trainings, exposure visits, etc.) for the interim team, and most importantly, farmer mobilization.

Farmer mobilization is the lifeline of collective action enterprises, in that the greater the number of active members in a PO, the more the resources that will be available to the PO. This is in terms of farmer equity contributions, access to other sources of funds such as bank loans, and maximum use of the hubs in bulking milk and making use of the services offered.

Before a new board is elected, directors in the interim board are in charge of mobilizing farmers. After the hub set-up has progressed and a new board is formed, the new board takes over the running of the organization, including mobilizing farmers, which is a continuous process, both in forming the hub and in its future operation.

Box 4: The mobilization approach used by EADD-I in Kenya

The elected interim board members, provincial administration and the government livestock production officers led the mobilization effort, which involved:

Identifying existing dairy farmer groups

The entry point to a community was by establishing which dairy-related groups and interventions already existed. Government and local authority officials were involved in providing this information. This task identified potential farmer groups.

Identifying stakeholders

Potential stakeholders were organizations, cooperatives, individuals, service providers and prominent dairy farmers within the catchment area. A stakeholder inventory listed all stakeholders in their respective sites.

Holding stakeholder meetings (local administration, farmer group leaders, NGOs, CBOs, relevant government officers-livestock production, veterinary, cooperative development, social development etc.).

The one-day stakeholder meeting was held where participants were made aware of the EADD project. The objective was to inform the community of the benefits of EADD's intervention and get the local community to buy in to the project. Private sector actors should as well be consulted and involved at this early stage.

Whereas there are numerous channels for spearheading farmer mobilization drives, a uniform and simple communication package for mobilizing farmers needs to be developed beforehand. It is important to maintain a common message on the benefits of the PO to avoid raising misplaced expectations that cause misunderstanding during operations. During the initial mobilization phase, it is very likely that the PO does not yet have a concrete commonly shared vision and mission statements since strategic planning has not been done. Such a situation calls for the team coordinating mobilization to develop standard communication content that all the mobilization teams share. Such content could highlight the goal, benefits to membership, membership obligations, membership requirements—fees and shares, where to sign up, important contacts, etc. If possible information, education, communication materials such as flyers and posters can be developed, complemented by well-organized radio talk shows or programs for effective kick off.

3.3 Formulating strategic and operational plans

Over the years, strategic planning practice has gained importance among POs as they strive to position themselves for the future in increasingly liberalized and globalized markets and changing structure of the agri-food sector. Setting strategic directions is one of most important role of the board of a PO. By dedicating efforts and resources in reviewing and formulating strategic directions, a board takes a bold step not only in defining where the PO ought to go and how to get there, but most importantly lays the foundation for entrenching a strategic planning practice within the PO. The board should commit to making this a continual process, which must never end but, rather, expanded and deepened. In this regard, the management (CEO) should be required to develop a strategic planning calendar and tools that will guide the periodic analysis and updating of the current conditions and future outlook of the PO. Such analysis should include a review of the PO's internal and external environment, strengths and weaknesses, and opportunities and threats.

Envisioning and goal setting for a PO

Goal setting is important as it provides direction for the operations of the PO by setting targets. Goals help motivate members by clarifying and communicating what the organization is striving to achieve. Members work better if they know the goals of the PO. Goals form the basis of recognizing and measuring the PO's accomplishments and successes as they facilitate monitoring and evaluation.

Envisioning

The first goal to set is the vision statement. It is critical in developing a strategic plan, which in turn is important in achieving the goals of the PO. The statement is developed out of deep reflection by the members and leaders of the PO, and represents their hopes, expectations and the aspirations for their organization. It describes a perception of the ideal situation towards which they are striving. A vision for a collective enterprise-based organization should place the interests of the members at the centre. It should define success, motivate commitment among members and create a concerted focus.

Formulating a mission statement

The mission statement puts forth the fundamental reason for the PO to exist. It is more immediate than the vision since it details what the PO will do to attain the set-out vision; it comes out of shared values and inspired vision of the members and lives in the context of set priorities. It should be SMART (specific, measurable, attainable, relevant, time-bound), capable of communicating clearly the objectives of the PO to other stakeholders. It should guide members to work towards a common end and influence staff actions and attitudes.

Box 5: Pertinent questions to ask when developing a PO mission statement

- Why does the PO exist?
- What business is it in?
- What value does it offer to its members and community?
- What improvements will it bring to the members?
- How will it affect the future of its members?

Example: To strive and become the most efficient dairy cooperative in Morogoro district; that responds effectively to its members' needs and aspirations, offering them quality services at a competitive cost; and fully committed to improving livelihoods and reducing poverty among the members and the community at large.

Box 6: Importance of participatory planning

Formulating an organization's goals, mission and vision requires working at all levels of the PO. Often, the tendency is to let the top, that is, the board and management, set these goals with the expectation that member commitment will follow. This approach results in a weak sense of ownership and members' resistance in implementing the goals. It is recommended that participatory methods are used to set goals so that all members are involved in all stages of the process. This will create a sense of ownership and smooth implementation. A workshop with representatives from all organs (members, board and staff can be put in place to develop a shared vision and common understanding of the PO's mission).

To best achieve this participatory practice the promoting agencies can sponsor a 3–5-day seminar, where representatives of members, board, staff and some invited non-members with certain expertise are moderated by an experienced organizational development facilitator (with PO experience) to concretize or review the PO's vision and mission statements, and identify the key elements of the strategic plan (objectives, strategies and principal interventions). From there a small technical working group can be mandated to finalize the strategic plan and draw up the annual operating plan.

Defining objectives and formulating strategies

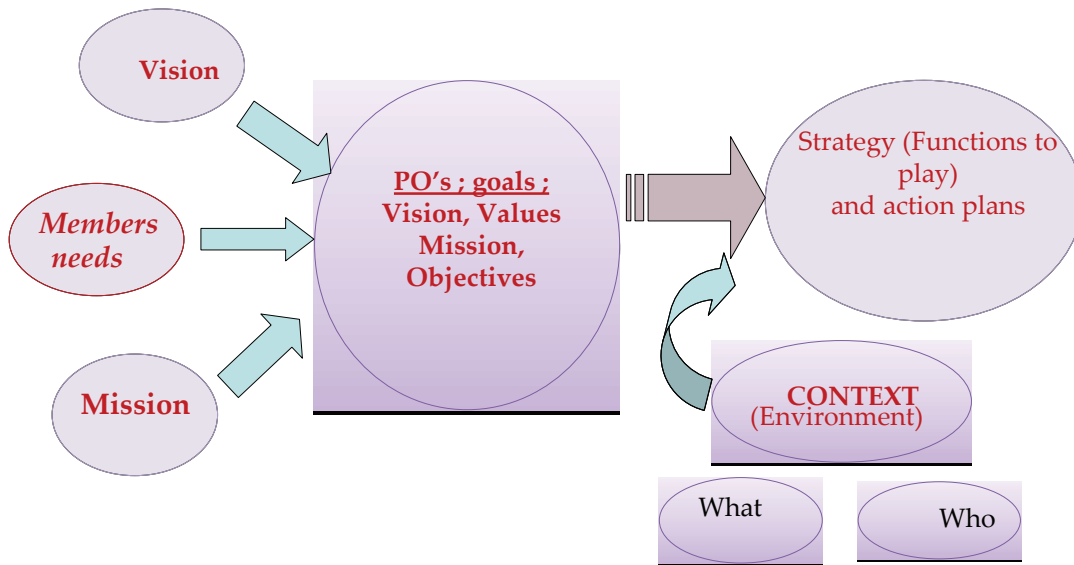
To fulfil the vision, mission and goal set out through a participatory process, the PO will need to set priorities of specific steps and milestones (objectives) that will enable accomplishing the vision and the mission. This process is continuous, though reviewed periodically during the review of strategic plans, and is backed by analysis and decision-making. Once the PO has set priorities on these medium- to long-term (3–5 years) objectives, it will need to define a way of doing things (strategies) to achieve those objectives. The strategies are plans of action that essentially answer the ‘how’ questions and call for an analysis of the methods and the activities that will help the PO get where it intends to be. They provide general direction as opposed to immediate actions (operational plans) and are the link between objectives and resources. Changes in objectives tend to require changes in strategies.

In developing a strategy and an action plan, the PO should seriously consider the conditions in which it operates. Once the PO has clear and feasible goals, their context needs to be taken into consideration when defining the strategy and action plan needed to reach those goals.

Table 1: Example of a PO’s strategic plan

	Objectives	Strategies
1	Milk intake increased by 50% by end of 2017	Mobilize youth and others to engage in milk transportation business (boda boda, carts) Establish satellite milk coolers or mini collection centres Target evening milk and women suppliers Secure enhanced milk market contracts with bulk buyers
2	Member equity increased by 40% by end of 2017	Launch equity mobilization campaigns Capitalize unallocated capital assets (e.g. acquired through grants) Implement flexible pro-poor equity payment mechanisms e.g. instalments, deduction from milk sales Enrich incentives for equity (offer equity based dividends, offer services at different terms to non-shareholders)

Figure 3: Illustrating the consideration of the environment in formulating strategies



The PO should undertake scanning by using the strengths weaknesses opportunities threats (SWOT) (see table 2) analysis tool or another relevant tool. The SWOT analysis basically involves looking at the PO's own strengths and weakness, and external opportunities and threats.

After identifying and analysing the SWOT, the PO should capitalize on its strengths and make use of its unique characteristics to make a difference and perform impressively.

Solutions must be found to weaknesses and obstacles, while opportunities must be taken advantage of, and threats reduced. SWOT analysis is the method to analyse the relationship between the capacities of the PO and the environment in which it operates.

Table 2: Features of the SWOT analysis tool

Feature	Explanation
Strengths	Internal positive factors such as high viability of dairying, existence of smaller dairy farmer SHGs, existence of model dairy farmers willing to provide committed leadership to pursue collective action
Weaknesses	Negative internal factors that could hinder the PO from effectively providing services to its members such as inadequate finance, inadequate number of skilled staff, poor member participation, weak board of directors
Opportunities	External positive factors that the PO could use to strengthen its capacity such as favourable government policies, existence of research institutions, existence of a secondary PO or federation, adequate infrastructural features such as roads, market centres
Threats	External factors that have negative effects on the PO such as unfavourable national policies, natural disasters, tribal conflicts, political instability, poor infrastructure

Formulating annual operating plans

The strategies will not be implemented if the PO does not generate and put into operation the semi-annual and annual action plans from the 3–5-year strategic plans. Under each action plan, a realistic semi-annual or annual target is set—

often as a proportion of the overall strategic plan target—roles and responsibility are assigned, and a timeframe and required resources set.

This last and very important stage of goal setting involves formulating necessary actions to enhance achieving the goals. It involves identifying activities to be undertaken to achieve the goals and ultimately fulfilling the mission and vision of the PO. Towards the end of every planning period (year) the PO reviews its performance vis-à-vis the set annual operating plan, makes reference to the strategic plan and draws up the operating plan for the coming year. The action plan could include the following components: Specific objectives; activities; resources; timeframe; responsible persons; and performance indicators.

3.4 Developing management and governance practices

Governance is the way in which controls, rights, responsibilities and obligations are shared among parties or sub organs in an organization—in this case members/shareholders board and staff/management. It is the process through which decisions are made and by which decisions are implemented. Good governance means competent management of decision-making and implementation processes in a manner that is transparent, effective and efficient, participatory, accountable; observant of the regulating laws and PO's constitution, policies and guidelines and equitable and responsive to people's needs.

Governance in POs

Like companies, POs are also 'corporate bodies' (legal persons). To that extent, therefore, main corporate governance principles, guidelines, policies and practices generally apply to both companies and POs. For example, *transparency* (openness and disclosure of information), *integrity* (straightforward dealing), *accountability* (taking responsibility for one's actions) and *fairness* are some of the fundamental pillars of effective corporate governance, applicable to both companies and POs.

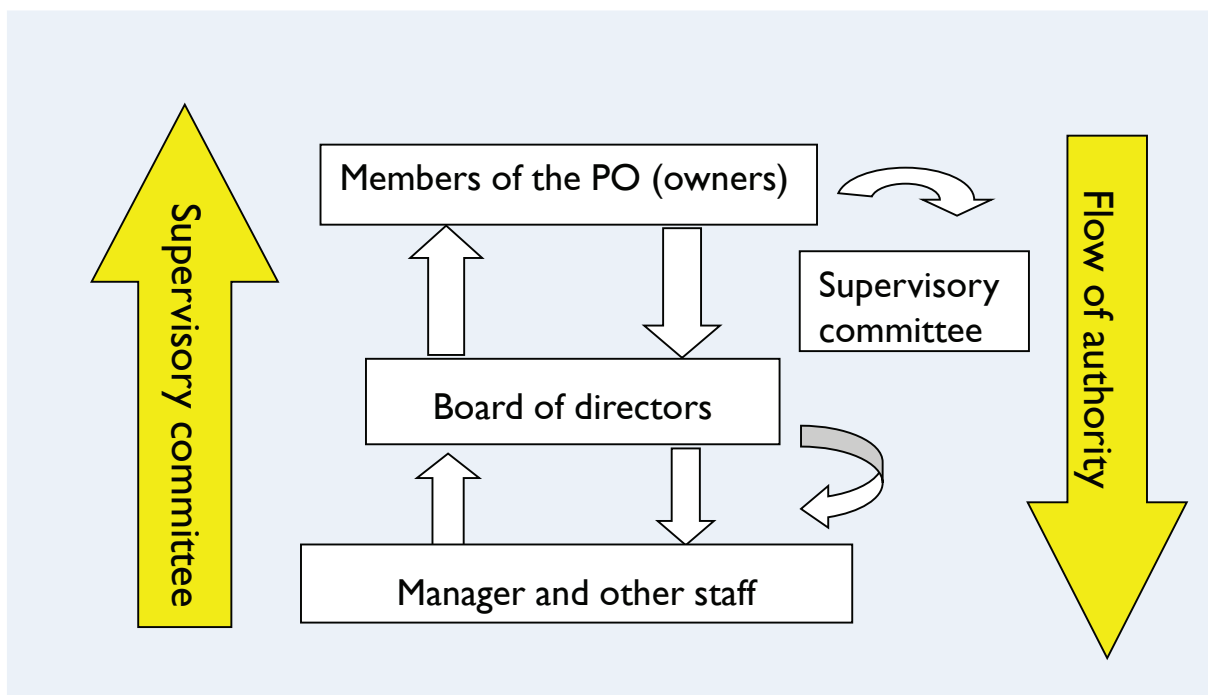
Even though there are similarities between POs and companies, there are critical differences between the two that account for the variations in their corporate governance practices. Some of the differences are detailed in Box 7.

Box 7: Uniqueness of governance in Pos

- In POs members are **owners, investors** (shareholders) and '**customers**' or the 'suppliers' of their PO's collective business. PO businesses, therefore, depend on the economic participation of the members (loyalty).
- Boards in companies are often *selected* on the basis of their shareholding or their specific expertise in a given business activity. However, PO board members are *elected*, while managers and other management staff are *recruited*. In small POs that cannot yet afford to employ staff, member volunteers, irrespective of the number of their shares, take up management functions.
- The board in a PO is directly accountable to members and implements the decisions, resolution and policies approved by the members. The board is expected to provide regular financial and progress reports and members can hold board members responsible for any failure of the PO resulting from their decisions or actions.
- A PO's main motive is maximizing quality service and satisfaction to members while the motive of corporations is maximizing profit. Governance of POs will focus on satisfaction of member needs while corporation governance will focus on maximizing profits.
- In a PO, the supreme authority resides with the members. They exercise that authority at the annual general meeting by making policies and decisions that the board and management are to implement.

The governance of a PO is democratic and is done by three groups: members, board of directors and management. The supreme organ of governance is the members. All members, acting in the general meeting democratically make the main decisions and policies. The members elect a few people to form a board of directors, who supervise the activities of the PO and the board is fully accountable to the members. The board hires a manager and other staff, who perform the day-to-day activities of the PO (Figure 4).

Figure 4: Typical governance structure in a PO



Box 8: Youth and women's participation in leadership and decision-making structures

Women's and other disadvantaged groups should not be left out. In most POs, women undertake a lot of farming activities. It is therefore important that they get involved in the leadership roles of the PO at all stages and are encouraged to participate in meetings so as to be involved in making decisions. The PO can develop a gender policy, making a commitment and giving guidelines on how to involve women and other vulnerable groups. With support from EADD-I, some POs managed to put in practice the one-third gender rule entrenched in national laws of most countries in East Africa.

Youth are the future generation, the ones who will perpetuate the dairying business, hence the need to encourage them to join and participate in dairying, providing continuity and innovation. In some instances, EADD-I encouraged youth to form dairy interest groups affiliated to the POs. Other POs were persuaded to reserve a seat for a youth representative on the board of directors.

Mitigating generic governance problems in POs

Members in a PO expect to get quality services at reasonable prices. This can be a challenge—the PO must meet the expectations of members but at the same time maintain economy in running the collective enterprise. In addition, laymen without adequate knowledge and experience in running a collective enterprise often get elected to the board. Often members do not understand their rights nor their responsibilities and obligations, and they may not be in a position to hold managers and leaders accountable for their actions.

Member education and training is critical to equip members with the necessary knowledge and skills to play their rightful role of participating in decision-making and elections and of holding the board accountable to them. Often POs do not set a priority on informing and educating members about their strategies and action plans and thus do not

allocate resources for doing this. A complementary strategy employed by EADD-I was to encourage the POs to have farmers group themselves into smaller dairy groups based on geographical convenience. These groups were useful in fast-tracking cohesion, communicating and getting members to participate in the affairs of the PO.

Holding training and mentorship programs for board members is another important intervention, to equip them with the requisite knowledge, skills and experience. Non-training interventions include support to develop and implement crucial governance and management laws, policies, guidelines and procedures (financial, human resource management). Governance charters or code of conduct agreements for board members and senior management staff have also proved to be useful, especially when introduced during the induction phase.

Agencies supporting a PO should make it clear in engagement agreements that flouting statutory and principal governance practices will be considered a breach of the partnership agreement. Promoting agencies should support the PO to implement these governance practices effectively, such as running well-organized annual general meetings, ensuring that elections are held when due; that annual reports, work plans and budgets are presented to membership for approval; and that audits are conducted.

To better structure a partnership with a PO, the dialogue between the PO and the promoting agency should be informed by organizational assessment findings. A PO capacity development program should be accompanied by a progress and sustainability assessment tool that categorizes the growth and development of the PO into distinct phases. This proved useful in EADD-I where the 'stage-gate tool' (now referred to as the PO sustainability assessment tool) was applied to structure and chart progress for POs towards sustainability and exit. Promoting agencies should also ensure that they retain organization development expertise conversant with producer organizations within their team.

Box 9: Obligations and responsibilities of PO members

- Attend meetings, participate actively in the proceedings of the meeting, contributing ideas and voting when required, and offering self for electable positions
- Participate in the activities and services of the PO-the PO can set and incorporate thresholds in the by-laws
- Pay shares and all contributions as resolved in the by-laws and also as a result of a unanimous decision by the general meeting
- Bulk and market the surplus milk produced through the PO
- Repay loans and other credit services offered diligently
- Patronize the products and services the PO offers

Meetings are a major governance tool in POs: Duties of members at general meetings

- Elect board members as due
- Approve work plans, budgets and set targets
- Approve or amend policies on major issues
- Appoint an auditor or auditors
- Consider the reports of the board for the previous year
- Decide on the purchase and disposal of fixed assets
- Approve credits i.e. the maximum liability of the PO
- Approve new members and terminate membership of some members

3.5 Managing the PO business

The responsibility of providing strategic direction and of ensuring that planning takes place rests with the board of directors. However, the abilities of the manager and the senior management team are often relied upon in establishing strategic objectives, a draft of which is presented to the board for final modification, approval or rejection.

During the strategic planning the PO critically reviews its past performance, assesses where it is, and determines where it wants to be in the future. It is an opportunity for the board and management to reflect on the larger picture, to think more globally, and to reflect on the institution's mission, vision and desired results.

The strategic plan becomes a working document, defining the specific targets and goals for the next three to five years. Management creates detailed master project plans and a budget to implement the business strategies and initiatives, including financial projections. Management reports back to the board the status of the operations and financial projections outlined in the strategic plan and budget. See Table 3.

Table 3: Principal responsibilities of the board of directors and the manager

Principal responsibilities of the board of directors	Principal responsibilities of the manager
Sets PO goals (vision, mission, objectives) and strategic plans	Acts as in charge of day-to-day management of operations
Appoints qualified manager (CEO)	Hires other staff members in collaboration with the board and as per human resource procedures
Delegates day-to-day management authority to manager/ CEO	Develops operational plans (ensuring they are aligned with the strategic plan) for board approval
Ensures compliance with the laws	Prepares and submits operational and financial reports to board
Monitors and reports on performance (financial and operations)	Advises the board on financial, strategic and operational matters
Formulates and reviews policies	Leads in development of business plans for PO business units
Ensures auditing of PO operations is done	Ensure positive public relations, networks and partnerships
Ensures general meetings are convened and managed effectively	

The success or failure of a PO depends on how well or poorly it is managed. The members' main interest is to get maximum benefits from their PO. To achieve this, they engage the services of professional managers to run the day-to-day affairs of the PO. Management is all about 'getting it done'. Proper management of a PO must be based on set policies, which have to be consistent with its set goals. The main issues facing a PO is how to deal with the inevitable tension between engaging in new entrepreneurial relations while remaining an organization that is truly controlled by its members and works for their benefit.

In this regard EADD-I experienced a few challenges:

- i. The pool of agribusiness managers with training and experience in running collective enterprise business models is limited. These critically important positions are challenging; they require a combination of agricultural, business and cooperative action know-how, laced with a flare of innovativeness.
- ii. By drawing the board from the membership, POs often end up with laymen and women as their board of directors, who may have little competence in managing the complexities of a PO business.
- iii. Many upcoming POs are unable to attract and remunerate competitive managers in the market.
- iv. POs have been slow in ICT that could enhance information management and decision-making. Computerized applications capable of integrating and supporting membership, financial management, marketing and uptake of services data have been a challenge, leading POs to managing separate applications that are not interlinked.

Chapter 4: Supporting farmers to access inputs and services to improve milk productivity

Introduction

Linking producers to gainful milk market outlets is a major aspiration of most POs. However, to be attractive to reliable milk buyers (traders and processors) the PO should show that it is able to sustain adequate volume (and sometimes quality) of milk. Improving and sustaining milk production should therefore be at the core of a PO's mission.

To increase milk production, the producers within the hub ought to adopt appropriate methods of dairy cattle farming. An increase in milk supply can be achieved through increasing the number of animals or through increasing the production per animal. The latter method is recommended as it is cost effective and affects the environment less negatively. Increasing production per animal can be achieved with improved breeds, management and feeding.

Box 10: Why is it critical for a PO to coordinate training and extension services?

- To ensure that more effective communication strategies are implemented, that relay reliable information to farmers and ensure feedback.
- To ensure that extension messages and training address farmers' needs, are based on an understanding of local context and relate to farmers' concerns.
- To provide effective and sustainable mechanisms for motivating adoption and monitoring.
- To provide a platform for coordination of other complementary advisory and training programs/services offered by other public and private players.

The first section of this chapter discusses how a PO can integrate the functions of extension services within its structures (i.e. how to structure the extension 'department'). It describes various delivery methods and approaches through which extension can be provided. The second section deals with how to design and coordinate an education and training program for dairy farmers. The last section deals with options for facilitating farmers' access to other productivity-enhancing services and inputs.

4.1 How the PO can facilitate farmers' access to extension and advisory services



(Photo: EADD/ David Karamagi)

In the recent years, there have been renewed interests on the role POs can play in driving agricultural transformation processes, especially in sub-Saharan Africa. It has been advanced that POs can be effective mechanisms for facilitating smallholders' access to productivity enhancing services, including extension and technical training. EADD-I ventured to pursue this proposition and this sub-section provides some options based experiences and lessons learned related to facilitating extension and training services.

Options for integrating extension services as an integral part of the PO's core business

EADD-I experienced three different ways of integrating extension functions within a dairy PO, largely determined by the state of development and growth of the PO. In a new (young) or weak PO, training and other extension services can be coordinated by a board sub-committee or an appointed liaison officer who could be an existing member of staff, the board or even a volunteering member with a relevant background in dairying. Under this approach, their role is not to provide extension services per se, but to coordinate and work with public and private organizations already offering extension services so as to enhance collaboration and ensure that their services are addressing the felt needs of the farmers. In this model, the PO is financially weak and its technical capacity is limited. The hub promoter or facilitator will bear much of the costs, which support the PO to gradually entrench the function of facilitating extension services within its organizational structure for enhanced sustainability. Often this will be a transitional stage as the PO develops.

The second approach applies to POs that are still weak or young but have established most of the start-up structures and have been in operation for over a year, stage 1 to 2 according to EADD-I's PO sustainability assessment (POSA) tool. Under this approach the hub facilitator supports the PO financially and technically to embed an extension function in the organizational structures. Depending on its plans, the PO is provided with grants to establish a modest extension unit that recruits extension representatives and develops farmer education and training programs, work plans and performance management plans. The facilitator meets most of the costs through funds (grants) that the facilitator channels directly to the PO based on an agreed upon work plan. This approach empowers the PO to take an active role in facilitating extension services and creating sustainable relationships with other financiers and providers of extension services—public and private players—while strengthening the accountability of the extension services to farmers and the PO. The financial support is best if it is provided gradually—the facilitator's contribution declines as the PO meets productivity and milk bulking targets and thus realizes more revenue, part of which it allocates to extension activities.

For a relatively advanced and organized PO (for instance, a PO in stage 3 of hub development), a PO staff member is tasked to liaise on and coordinate extension services. Depending on the cash flow, the PO starts meeting some of the costs relative to extension, such as extension representative fees. The rest of the costs are borne by the facilitator although no payment is made directly from the facilitator to extension agents: all payments are made by the PO, using project subsidies agreed on annually. It is important for the facilitator to assess the PO's level of commitment to extension or priority given to it, such as assessing whether the PO is envisioning strategies for attracting resources and partnerships for extension services from other players to ensure sustainability in the medium- to long-term perspective.

Box 1 I.: Desired qualifications and useful skills set for extension workers

- Degree or diploma in livestock sciences
- Practical experience in dairying
- Experience working with smallholder farmers
- Good communication skills including being conversant with the local dialect
- Dynamic personality with positive attitude and problem-solving facilitation skills
- Willingness to live and work in rural areas

Capacity development options

Recruited extension workers would benefit from capacity-development programs targeting non-technical areas such as business management and production economics skills, communication and facilitation skills, monitoring and evaluation skills, and how to target women and youth.

For mature POs (stages 4 and 5 of hub development), the facilitator should recommend hiring full-time qualified staff to coordinate extension services. The facilitator may bear some of the costs, but increasingly, the PO is expected to finance from own revenue some aspects of extension services, as well as attract resources and partnerships from other public and private players. An example on how the organization of extension services and sources of funding based on hub's level of development is shown in Table 4.

Table 4: Organization of extension services and sources of funding based on hub's level of development (stages based on POSA tool)

Stages	Person in charge of extension services	Sources of funding
Stages 1, 2	Liaison officer, possibly a board member, volunteer farmer or PO key staff coordinates extension services (such appointees are explicitly given that responsibility and facilitators' support increases their capacity accordingly)	Training and other extension services are fully paid by the facilitator and other players but are organized and coordinated by the PO's liaison person. The facilitator and other public and private sources provide much of the funding but build the PO's capacity and thus the promoter plays a facilitative role
Stage 3	A PO staff member coordinates extension services along with other duties, such as the CP manager or milk quality technician if they have the basic competence	PO starts cost sharing for extension services, and it's advisable the PO positions itself a reputable coordinator for extension services to an extent of attracting resources/partnerships from other public and private sectors providers and financiers of extension.
Stages 4, 5	Full-time qualified staff(s) depending on the set up. More so to coordinate, and aggregate farmer's needs and provision of services and feed backing to public and private sectors providers and financiers of extension services.	Extension costs partly or fully paid by PO. It's advisable the PO positions itself a reputable coordinator for extension services to an extent of attracting resources from other public and private sectors providers and financiers of extension.

Box 12: Why it makes sense to support POs to integrate an extension function in their core business

At the initial stages of EADD-I, the project adopted the training-of-trainers (ToT) approach: local extension agents, who were relatively youthful agricultural graduates, were recruited by the project on short-term, 3–6-month contracts. They were attached to the POs and supported by EADD staff. Along the way, this approach experienced three main shortcomings:

- Extension agents were not accountable to the farmers and the PO but to the facilitator-EADD; yet they were meant to support the PO in addressing farmer needs
- It was difficult or impossible for the project-EADD to monitor the activities and performance of these agents unless the PO owned the initiative and took over such a role
- This system was not sustainable as withdrawal of EADD support meant collapse of the delivery system

Flexibility in choosing different delivery approaches and strategies

Because delivery of extension services is still perceived as a public good, farmers are usually not ready to pay for these services when they start their PO. It is therefore important to look for various ways to deliver and finance the provision of these services. Several options are available. A PO can also apply mixed approaches, meaning using two or more at any given time. The facilitator plays a supportive and demonstrative role, by providing tools and approaches such as the FEAST tool (Feed assessment tool) for feed interventions or by supporting design of breeding plans, as well as by advising the appropriate extension approach to follow. The various approaches are listed here:

- **Individual private:** Business development service (BDS) providers would provide extension services to the PO members at a fee. In most cases, the BDS providers bundle advisory services with inputs such as drugs and AI and other services. By offering more than one service (bundling of services), the agent is able to provide extension services cost effectively. This approach will apply where the hub is not yet strong enough financially to support all the expenses for extension, and where the private input sector sees opportunities to promote key solutions. In this model, the role of the project is to promote opportunities for extension services and for agribusinesses to provide BDS inputs—AI, animal feeds, agrovet supplies, water solutions, etc. The selling point to the entrepreneurs is access to a large input market as presented by organized farmers making a profit.
- **Institutional agribusiness partners:** These are value-chain enterprises including financial institutions and equipment and input suppliers who provide extension services to PO members with the objective of increasing the overall uptake of good dairy husbandry and sometimes general development practices. The facilitator assists the POs by identifying these institutional suppliers and forging strong relationships. They often organize field days and promotion campaigns that provide education and information.

Box 13: PO-agribusiness partnerships for extension services—a case study

In Kenya, POs supported by EADD attempted to broker innovative relationships with agribusiness partners once they appreciated the value of the PO playing a more active role in extension, and the opportunity this presents to input suppliers and milk buyers. For example, a PO entered into a deal with Coopers, a veterinary inputs company, to second an extension staff to the PO to support animal health efforts, while a Commercial Bank's relationship with two POs led to an arrangement whereby the bank financed an additional extension staff in each PO to boost milk production and suppliers base. In both instances, the extension agents were fully paid by the enterprises (Coopers and the Bank) to provide extension services to the farmers.

- **Public extension staff:** The public extension services machinery where it exists portends huge potential if POs can actively engage it. Through the PO extension function, the working relationship with public extension agencies can be synergized and leveraged, from harmonizing farmer training programs to coordinating stakeholder forums that discuss prioritized issues, to lobbying for enforcement of inputs quality and standards. In Kenya and Uganda, EADD-supported POs entered into a working relationship with government livestock and veterinary officers, giving them the task of supporting extension agents, especially on animal health matters where the law requires that animal health assistants are supervised by a qualified veterinarian. The project or facilitator can also enhance PO access to other training providers in the area, such as other development partners. It is important to recognize that

public extension staff may not be available in all countries or sites. The POs may not be able to rely on the public sector extension staff as they have their own work plans that may not relate to dairy or to PO activities.

- **PO-contracted extension agents:** Well-resourced POs with more business know-how can run and manage their own fully resourced extension departments. Based on EADD experience, this model will likely evolve over time as the profitability and volume of business increases. It will likely begin with basic extension trainings and will progressively add on more elements as demand increases. Extension agents are regularly contracted to train PO members. These agents organize formal training on specific topics (feeding, breeding, milking and hygiene etc.) as well as support and monitor the activities farmer trainers and model farmers perform. Extension agents are trained personnel, the type of their qualification depending on the country. They provide extension services to the PO members at a fee. Different contractual arrangements between extension agents and POs can be either on a per task basis or on retainer fees or salary, depending on contexts and circumstances.
- **Farmers:** Can perform key functions in providing extension services to fellow farmers. This strategy is based on building farmers' capacity as peer extension services providers. The facilitator, through the PO, can partner with such farmers to reach more farmers and more efficiently. It is also a way to build on the community social capital. EADD experiences indicate that different farmers have different levels of expertise. For this model to work, all must show clear willingness to share their experiences and knowledge with other farmers. Two main types of farmers as trainers and a summary are provided in Box 14.
 - **Farmer trainers** are volunteer farmers who provide basic training, especially on feed. They also disseminate information on basic practices in animal health and breeding, such as heat detection, selection of appropriate breeds, tick control, and housing. However, they cannot handle technical topics like disease treatment or drug management. They are a complement to public, NGO and private sector extension services, not a substitute for them. Their mode of training is mainly through farmer groups. Female farmer trainers are just as effective as their male counterparts in terms of their knowledge but they tend to cover fewer villages than men. Farmer trainers are particularly effective in areas of high population density, where travel is minimal. In low population density areas, farmer trainers would need transport facilities, such as bicycles to reach more farmers.

Box 14: Farmer trainers

This approach has been successfully used in EADD with 2676 farmer trainers (38% of them women) being recruited and trained between June 2008 and 2012. Volunteer farmer trainers undertook disseminating information on feeds and feeding. Selecting farmer trainers is a participatory process that involves farmers, local representatives, and the PO management and board of directors. These volunteers are typically good communicators and networkers interested in sharing their knowledge. They are skilled dairy farmers in their own right and active members of a dairy group who are willing to allocate some of their land for demonstration purposes. They are motivated by a desire to gain early access to knowledge and technology, improve their social status, increase their social networks, earn cash from the sale of seeds and services, and respond to farmer demand for training.

- **Model dairy farmers** are early adopters and more advanced in their expertise in feed production and dairy management. Some farmer trainers become model farmers over time through a 'graduation' process that was tested in EADD. To encourage farmers to increase milk production, POs are encouraged to create a 'three-tonne club' for farmers producing at least 10 litres/ cow per day for 305 days per year, with benefits such as privileged and personalized extension and advisory package—just like the prestige bank account concept in which holders receive privileged services (Box 15).

Box 15: The 'three-tonne club'

The approach is to select progressive innovator farmers who will be given incentive to showcase stellar performance on family dairy enterprises and to motivate and recruit other early adopters who will also rise in status according to the number of farmers they recruit from among the less advanced. All farmers are working towards achieving a set volume of milk, such as in three-tonne or six-tonne clubs where farmers achieve 10 or 20 litres/ cow per day for over 305 days. These club members receive services from qualified service providers at a fee, enabled by strong market access, check-off payment system, asset and input financing, and franchise programs. Inputs and services would be continuously monitored for quality.

Usually farmer trainers and model farmers train on their own farm or at other trainee farms. Clear complementarities exist between the two types of farmers. Model farmers provide pre-commercial and partially commercial farmers with an ideal that they can attain. Model farmers effectively train other commercial farmers and perhaps some partially commercial farmers. In contrast, farmer trainers are most effective training pre-commercial and partially commercial farmers. As farmer trainers improve their milk productivity, some may become model farmers as others become PO extension agents. The exact criteria for becoming a model farmer are to be defined and approved depending on context (Table 5).

Table 5: Farmer trainers and model farmers

Qualification	Farmer trainer	Model farmer
Level of expertise	1 or 2 topics only, such as feeds, milking procedure	Conversant in all topics, a well-rounded farmer with abilities, experience and achievements in a wide and balanced variety of fields
Level of milk productivity	Medium	High milk production (at least 10 litres/ cow per day for 305 days per year)
Farmer incentives to train others	Social recognition and wider social networks	Social recognition and wider social networks
	Extra training	Training fees as the farm becomes a centre of learning
	Early access to new technology	Early access to new technology
	Sale of seeds or other materials	Sale of seeds or other materials
	Altruism	Altruism
Level of support from the facilitator	Mainly technical assistance with minimum resources	
	Cash is never to be provided but if resources such as seedlings are needed, they should be provided so the farmer can multiply and provide seeds to fellow farmers as per the pass-on-the-gift approach	
	These farmers would receive extra training from the project	

From EADD 1's experience, the facilitator should be cautious about investing direct resources on farmer trainers or model farmers; otherwise their progress is seen as 'artificial'—they are seen as over-subsidized and other farmers may not learn from them. Indeed, there is evidence that people learn best from people who are slightly above them rather than people far above them. There is also the risk that subsidized technologies will not be appropriate for the area, if farmers are unwilling to pay for them on their own.

When there is need to promote a technology that is resource intensive, such as use of a pulveriser or of brush-cutters to manage bush and weeds in grazing areas, the facilitator should work with the PO and not with individual farmers. EADD in Kenya and Rwanda provided pulverizers to some POs. Another option is for the project to facilitate links with banks; a youth group for example may develop a business, centred on commercial fodder production and conservation such as silage making.

4.2 Extension methods to consider

Extension is a process of working with rural people in order to improve their livelihoods. This involves helping farmers to improve the productivity of their agriculture and also developing their abilities to direct their own future development.—FAO (2013), Farm Management Extension Guide.

In addition to economic factors, social and cultural factors affect the receptivity and adoption of extension services. Farmers and their families are members of the society in which they live. In all societies there are expected ways of doing things and these ways are directly related to the culture of the society. Farmers' attitudes and desires are influenced by their society's culture. If it is customary in a certain community to keep local breeds of cattle, people will be socialized to believe that that is the only correct way. Even if the benefits of other improved breeds are explained to them, their strongly held beliefs may make it difficult for them to change quickly.

The role of an extension agent is thus to accompany farmers in a continuous educational process, supporting them and preparing them to confront their challenges more successfully. Yet the agent cannot make decisions on the farmers' behalf. It therefore becomes critical that extension programs employ the different extension methods purposefully.

This section describes various extension methods, distinguishing between three main types: 1) individual, one-to-one personalized advisory and training; 2) group method, in which the agent brings the farmers together in one form or another in order to deliver extension services; and 3) mass methods, which involve applying channels of communication that expose a large number of people to the same information at more or less the same time. Inevitably, the PO will use one or more of these methods based on costs and farmer needs. Each method demands different approaches and techniques on the part of the agent, as highlighted in this section.

When deciding on methods to apply it is important to remember to target female and young dairy farmers.

Individual or face-to-face method

In an individual method, the extension agent meets the farmer at home or on the farm; in discussion, the agent provides the farmer with both information and advice. In an informal and relaxed atmosphere, the farmer is able to benefit from the agent's individual attention. These individual meetings are probably the most important aspect of all extension work and invaluable for building confidence between the agent and the farmer. Under this method the extension agent can inculcate the household approach by targeting the farm as a family business, supporting family members to envision and draw up a family dairy farm business plan.

The personal influence of the extension worker is a critical factor in helping the family to make informed decisions. Given the expanded role of extension workers—from technical dairy production to solving related challenges such as marketing—individual methods require highly experienced extension agents. As the method is quite expensive, it is suited for well-advanced hubs or POs (in stages 4 and 5) under which a prestigious program for the most progressive farmers could be considered (say, those producing 20 litres and above per day), just as banks or airlines provide elite customers with privileged services.

Whereas the downside of this approach is that it can be viewed as discriminating against poor farmers, women and youth, it can be a justifiable tactic for securing a reliable supply of quality milk and patronage, based on the 80:20 Pareto rule.¹ Making the PO more attractive to agribusiness partners serves as a lifeline for developing other less-productive farmers.

This individual contact between the extension agent and the farmer can take a number of forms. Among them are farm visits, office visits, telephone calls, letters and emails, and informal contacts. Refer to farm management extension guide by FAO (www.fao.org/docrep/018/i3227e/i3227e.pdf) on how to organize them.

Group method

A PO-coordinated extension program should consider and invest in the group approach. The use of groups in extension has remained important and common throughout the evolution of extension approaches in Africa. Indeed, new ideas keep emerging on how groups can be used most effectively. For example, in EADD-I, dairy interest groups (ideally 15–30 farmers), besides forming a convenient way of facilitating access to extension services, were in some cases further entrenched in the PO's formal structures to ease communication and feedback mechanisms between the PO and the membership—members could secure milk supply bases and sometimes draw electoral zones for board representation.

¹ The Pareto principle, named after economist Vilfredo Pareto, states that roughly 80% of the effects of an event come from 20% of the causes.

A number of farmer study group methods have been institutionalized and up-scaled, largely supported by development programs, governments and POs, such as farmer field schools and study circles.

Unlike the individual method, the group method reaches out for greater coverage and thus is considered more cost-effective and pro-poor, as the individual method tends to emphasize on the well-off and often the progressive farmer. EADD-I also used this method to more deliberately target youth and women by supporting communities to form youth- and women-dominated groups in cases where it was a feasible strategy.

This method provides a reflective learning environment in which farmers listen, discuss and share experiences in a manner likely to support individual farmers in their decisions and in determining their course of action. The group provides a supportive atmosphere, and individual farmers may gain the self-confidence to discuss and try new practices, and may even enhance the skills that will enable them to take up PO leadership roles.

Before implementing the group extension method, the PO and the facilitator must be aware that forming, structuring and developing a farmer group is a complex process that takes time and effort. It is therefore important to address these issues:

- The group should be composed of farmers with a common interest and problems that they feel can to a great extent be solved through joint action. They should be practising or aspiring dairy farmers.
- The group should not be too large—15 to 30 farmers is ideal. Geographical location is a key organizing principle, as it takes into account communication and transport challenges.
- Group members should see their interests and participation in the group as a long-term fellowship.

There are several types of group extension methods, for instance, group meetings, demonstrations, field days, classroom-like training sessions, exchange visits. Refer to farm management extension guide by FAO (www.fao.org/docrep/018/i3227e/i3227e.pdf) on how to organize group extension activities.

Mass methods

Mass methods involve using channels of communication that can expose large numbers of people to the same information at the same time. They include audio media (radio, audio cassettes), audio-visual (television, film, video), and print (posters, newspapers, leaflets). The attraction of mass methods to extension services is the high speed and low cost with which information can be communicated to many people over a wide area. Although the cost of producing and transmitting radio and video programs may seem high, the outreach makes them cost effective. With the proliferation of FM radio stations in rural East Africa, POs can partner with such stations to tailor extension messages and farmer mobilization incentives, and even attract agribusiness partners to advertise during such shows to reduce the costs of airing the extension messages.

However, mass methods cannot do all the jobs of an extension agent. They are constrained when it comes to offering personal advice and support, imparting practical skills, or answer questions immediately. However advances in information communication technologies (ICT), have provided opportunities to innovate and overcome such shortcomings, e.g in interactive radio shows where listeners can call in or send SMSs.

4.3 Designing and coordinating farmer education and training programs

This section covers the content of the education and training program of a dairy farmer. Improved milk production per cow is anchored on three pillars: improved feeding, better management (housing, fertility, disease control, calf management) and improved breeds. Another important element is for farmers to see dairy as a business, and as a

family business for that matter, rather than as a side activity or a hobby. To achieve these goals, it is recommended that the PO develops a customized farmer training and education program, covering the pillars outlined here. Farmers should be encouraged to ensure they have covered and understood the required training topics and keep on refreshing their knowledge, as doing so will give them the skills ideal for any committed dairy farmer. When the farmers acquire such knowledge, the extension staff will use various techniques and opportunities to support and accompany them in translating this knowledge into skills and change of attitude that will lead to uptake of recommended practices, eventually increasing their productivity.

To ensure the training program addresses farmers' needs and gaps in dairy management skills, farmer skills need to be analysed and the training needs determined. Then the program should be tailored to fill in those gaps. It is likely that the farmers in a PO will have different skills and not all have the same gaps and training needs, making it a challenge to devise a standard training program, but generally, the key topics to be covered will include the following topics elaborated under this sub-section

Box 16: Banks adapt farmer training as a key criterion for evaluating loan applications

In Kenya, EADD-I had supported POs to draw up a generic training program covering key topics for dairy management. Along the way, when farmers started seeking loans to re-invest in their dairy enterprises, the banks recognized that some farmers were citing the training they had undergone as a motivation for seeking a loan. Almost naturally, the banks incorporated training in dairy management as a key criterion for appraising the farmers seeking loans.

Smallholder dairying as a family business

Among all agricultural enterprises that smallholder households can engage in to raise incomes and reduce poverty, dairy farming provides a unique case for guaranteeing a steady income stream to families throughout the year.

A foundation education and training program for farmers to attune their attitude to this possibility is instrumental. Training should cover aspects such as why dairy farming can be a family business, like any other business; how to envision and plan a dairy farm business including projecting income; how to increase profits, reduce costs and manage risks; potential benefits of activating collective action through POs; financial literacy in savings and credit and operational efficiency.

To accord this foundation the attention it deserves it is advisable for the facilitator to support the POs to develop a practical guide or manual on farming as a business, tailored to guide extension agents. Posters and other information, education and communication materials could also be promoted.

Improving breeds

As stated earlier, PO members should aim at improving milk production per cow rather than increasing the number of their cows. One of the main determinants of milk yield is the genetic capability of the cow. As improvement is made on feeding and other managerial aspects, it becomes necessary to improve the genetics.

A 'showcase' dairy cow of a Kenyan smallholder dairy farmer in Ol Kalou, Kenya, already in calf at 18 months



(photo: ILRI/EADD)

Breed can be improved by introducing superior animals (by buying heifers or adult cows) or by upgrading the existing cows. Though the former achieves faster progress, it can be expensive. If the farmer opts to buy an adult cow, a cow should be selected for its good characteristics.

The alternative is to upgrade the farmers' cows through breeding using superior semen, either by using artificial insemination or selected superior bulls. Community bull schemes have not been very successful due to the costs of maintaining the bull and treating associated reproductive diseases. The most sustainable method of upgrading is therefore a community-based breed improvement scheme that taps into technologies such as AI.

Addressing feeds and feeding challenges

The superior genetics achieved (above) must be supported by better feeds and feeding methods to fully exploit the cow's potential. Farmers must therefore be trained on how to produce quality feeds on the farm, how to conserve excess feeds, and how to gauge the quality of purchased concentrates. In addition, training on feeding methods is necessary to ensure that growth and production targets are met. Training on feed budgeting is critical to enable the farmers to estimate the amount of feeds required and compare it with what is available.

Feeds

Feed resources for cattle can be broadly classified as roughages (includes fodders) and concentrates. The roughages are mostly produced on farm and include the most common feedstuffs (grasses, fodders and legumes). Examples include Napier grass, Rhodes grass, Kikuyu grass, fodder maize, fodder sorghum and Lucerne.

How to produce these roughages, including establishing and harvesting them, and assure their quality are documented by Lukuyu et al. (<https://cgspace.cgiar.org/bitstream/handle/10568/16873/EADDDairyManual.pdf>). Locally available concentrates used to supplement the roughages are also described in the same reference.

Feed conservation

The quantity of available feeds on farm is seasonal as fodder production relies on rainfall. As such, availability of fodder will be based on the rainy seasons with gaps during the dry season and excesses during the wet season. It is thus necessary to conserve the excess forage during the rainy season for use in times of scarcity. Also the material must be conserved during the right stage of growth as quality of forage deteriorates with age.

Feed conservation can be either in dry form as hay (mostly for grasses, such as Rhodes grass, and legumes, such as Lucerne) or in wet form as silage (mostly for fodders like maize, sorghum and Napier grass).

Feed budgeting

Feed production may be seasonal, but feeding is a year-round exercise. Feeding also involves offering the animal its requirements not only in quantity of materials but also in the right quantity of nutrients.

The farmer therefore needs to be able to estimate the amount of feed (that is, nutrients) required over a period. Doing this is possible when information is available on the animal to be fed and its potential for milk production. The procedure is outlined in Appendix 3, as SOP 3 standard operating procedure on feeds and feeding.

Feeding

'Feeding' is mixing different feedstuffs to make a balanced ration for a particular animal. The feeding should be such that the materials consumed will meet the requirements of the animal being fed.

Feeding dairy cattle can be described in three stages, based on the aim of feeding:

- *Calves:* The aim is to achieve fast growth to allow weaning and to develop the rumen early so that calf can be weaned to other feeds, allowing the farmer to sell more milk. Details of calf feeding are summarized in Lukuyu et al. Feeding dairy cattle in East Africa (<https://cgspace.cgiar.org/bitstream/handle/10568/16873/EADDDairyManual.pdf>). Further, for female calves, a faster growth enables early maturity, hence quickening their production and reproduction roles in the herd i.e. the female one's can be served early while the male ones can mature to serve as sires or as income for the farmer.
- *Cows:* The aim is to maximize milk production, increase lactation length and shorten the calving interval (i.e. ensure a calving period of one year).

Details on feeding all classes of animals can be found in Lukuyu et al. (<https://cgspace.cgiar.org/bitstream/handle/10568/16873/EADDDairyManual.pdf>)

Herd health and management practices (health, fertility, housing)

Training to improve animal health

Improved cattle are more susceptible to disease than the local breeds. It is necessary to provide capacity to diagnose and treat common health problems and also to prevent diseases. This can be done by training community animal health practitioners and farmers on these skills.

Training to improve herd fertility

To achieve a calving interval of one year, proper management of herd fertility is crucial. Fertility is based on heat detection when AI is used and on timely service when either bull or AI is used. Heat detection can be done through the behavioural or physical changes of the animal or through oestrous detection aids.

Housing

Housing of all dairy animals—calves, heifer, cows, bulls—is recommended for several reasons including protection of animals from the environment (wind, rain, direct sunlight), ease of management (especially feeding) and protection from predators. The building should be spacious to allow free movement, well lighted and ventilated, with floors that are easy to clean. For details of different types of structures required for the different classes of cows refer to <http://www.fao.org/docrep/s1250e/S1250E11.htm#Cattle housing>

Clean milk production and post-handling

‘Milking’ is extracting milk from the mammary gland of the cow. When expressed out of the udder, milk has minimal microbes in it, unless it is from a mastitic cow. After it is extracted, milk can become contaminated and spoiled. Clean milk production thus entails ensuring that milk is exposed to minimal environmental contamination.

Contamination can arise from the udder surface, the milker’s hands, dirty towels and dirty milking equipment. To minimize contamination, proper milking procedure should be adopted. See Part 2 SOP 4 on hygienic milk production and milk handling at farm level.

4.4 Options for facilitating farmers’ access to dairy production inputs and services

This section looks at ways by which the PO can facilitate farmers’ access to inputs and other services that will complement the knowledge and skills the farmers acquire from their training and ultimately achieve increased yields, including possibly reducing seasonality in milk production when relevant. Inputs required for dairy farming include feed (fresh and dry fodder; commercial feeds including minerals and salt; fodder seeds; equipment for growing, processing and storing feed, for example silage-making equipment and pulveriser); veterinary inputs (preventives like dewormers or vaccines, and curatives); semen for breeding services; and any other equipment like buckets. Services include feed-related services, like access to a pulveriser; breeding services (AI or bull schemes), veterinary and other animal health services, as well as extension and advisory services covered earlier.

Some of the inputs and services can be obtained on farm (e.g. fodder or bull services), while others need to be purchased. With the objective of raising cow productivity and production at low cost, and of decreasing the seasonality in milk production, the PO has the opportunity to improve the availability and affordability of inputs and services to its members.

Box 17: What are the advantages of the PO facilitating access to inputs and services?

- Ease of physical access to farmers, especially given transport and communication challenges of availability and affordability
- Benefits from economies of scale and thus the ability to take advantage of affordable inputs and services
- Inbuilt credit arrangements for affordable input and services—such as the check-off system
- Guarantee of quality

This section lays out the rationale for the PO to be involved in facilitating access to such inputs and services to its members; in other words, what is the value proposition? It then explains the two main provision mechanisms: in-house or outsourced. The third subsection deals with the important issue of forging partnerships with local BDS providers such as training and facilitating access to necessary kits, tools and equipment for their work/business including for mobility.

4.5 Delivery mechanisms: Outsource or in-house?



(Photo: Heifer International/ Russell Powell)

There are different business models for farmers to access inputs and services: free services, subsidized services and fully paid services. The business approach promoted by EADD-I to ensure sustainability was either subsidized or fully paid services. Subsidized services occur when a government, a private company or a donor provide part payment, for example when the public extension services department provides training to the PO members.

One important point to note is that there are two main ways for a PO to facilitate access to inputs and services: in-house or outsourced. In-house services are services obtained when the PO owns and manages the inputs and services business, such as an agro-vet shop or AI services as part of the PO activities. Outsourced means that a privately owned agro-vet shop or AI service provider has entered into an arrangement with the PO to provide inputs and services to members on special terms that have been agreed upon, such as bargained prices or payment on credit. The decision to outsource or provide in-house services depends on 1) availability of services in the neighbourhood, 2) willingness for BDS providers to enter into agreement with the PO, 3) the PO's ability to manage the services, etc.

4.6 Forging partnerships with local BDS providers—kitting and capacity development

To realize improvement in genetics, PO members will need to be provided with reliable AI service. The service can be run by the PO or by private service providers. As discussed earlier, the first step towards sustainability might be to develop the capacity of locally based AI providers (technical as well as entrepreneurship and business management) and facilitate them to be equipped with the necessary tools for the trade.

Likewise, community animal health practitioners (CAHPS) will require additional training and access to basic tools of the trade such as transport (bicycle or motorcycle) and a drug box and tools such as a thermometer.

Farmers with large landholdings could also be approached by the PO to grow feeds on a commercial basis with an upfront agreement to sell to the PO. The PO may intervene to ensure that such farmers have access to high-quality fodder seeds and the opportunity to practise good harvesting and conservation measures. Innovative youth groups can be encouraged to enter into the business of feed processing and conservation, or hay baling and ensiling, or improving the poor quality of feed materials that are available at the farms like reducing the size of the fibrous stovers, leading to higher intake and less wastage.

Chapter 5: Supporting farmers' access to gainful milk markets

Introduction



(Photo: ILRI/Ben Lukuyu)

One of the most important benefits a dairy hub provides to its members is market access. Market access motivates members to increase their production and their productivity. The collective milk marketing business is the major source of revenue in a hub. It is capable of bringing in substantial revenue to the PO and the farmers. It acts as the engine for driving the evolution of the hub into a fully functioning and dynamic cluster of services and activities. As described in Chapter 2, in a broad sense there are three hub options:

- Pre-bulking hub—the PO does not engage in collective marketing of the milk produced by members or other producers.
- Bulking only hub—the PO engages in collective marketing of milk from members and other suppliers but does not invest in a chilling facility for adding value. This option is less capital intensive and therefore easy to start up. The milk is often bulked, boiled and marketed as warm milk. However, this option may be limited in handling huge volumes of milk
- Chilling hub—the PO bulks and adds value by chilling the bulked milk for members and other producers/suppliers. This option is capital intensive as it requires setting up a chilling plant/facility that relies on power and other utilities. It however can handle larger volumes of milk and enable access to hitherto inaccessible market outlets owing to its ability to address perishability and quality challenges.

This chapter describes how a PO can start up a collective milk marketing business using either the bulking-only option or with the chilling process. It describes critical start-up requirements such as pre-investment and business planning, setting up required facilities and utilities, mobilizing and securing milk suppliers, identifying the best possible market outlets, negotiating for better terms, and managing the milk marketing business.

5.1 Milk marketing business start-up

Pre-investment and business plans

Based on the feasibility study on assessing hub options described in Chapter 2, the PO is now well informed as to which is the most appropriate hub option to implement, or to start at. For the menu of options, refer to Chapter 2 on pre-hub assessment. As observed, EADD-I experiences showed that POs can start collecting, bulking and marketing farmers' milk without chilling. Such a low investment approach enables the collective business to start up without much strain on resources and also enables the PO to gain milk marketing management experience, the confidence of members and establish a trading experience that other agribusiness partners can rely on to develop deeper business relationships, even before setting up a capital intensive chilling plant hub option.

In addition, more details on establishing a PO in the form of strategic and operational business plans will have been generated as outlined in Chapter 3. The business start-up plan should outline, in detail, the financing (capital requirements), operational plan, milk production and marketing strategy, development, organizational and management strategy, financial strategy, and profit and loss projections.

Though consultative and participatory methods are used throughout the feasibility and planning processes, ensuring members and other stakeholders are adequately represented, the final plans must also be extensively communicated and shared with farmers and stakeholders for them to validate and buy in to them.

At this stage the pre-investment or financing plan needs to be thoroughly outlined. Though farmer equity will be a critical source of financing, experiences from EADD-I indicate that this might not be adequate up front. Other options could entail a mixture of loans from lending institutions, equity from interested investors, and grants from local governments and donor-funded programs.

Setting up required facilities and staffing

Once financing arrangements have been addressed, the PO proceeds to set up the necessary facilities and structures as per the laid-out plan. This process includes acquiring of the necessary equipment. Business premises will be required; they could be constructed or rented; they need to meet the standards of public health and environmental regulatory authorities. Utilities needed include water power and waste management facilities.

With the pre-investment business plan as a guide, staff recruitment should begin as the milk bulking or chilling facilities are being set up. Indeed, the key staff such as the manager should be on board during this process to ensure standards and requirements are adhered to. Other staff members can be brought on board a few weeks (at best, two) before operations commence to provide time to induct and orient them. Recruitment should be guided by the PO's human resource management guidelines (part of the management systems and policies discussed in Chapter 3). Should the facilitator choose to provide financial support for business start-up such as paying for staff salaries for a specific period as business picks up, this should be provided as a grant to the PO, just as the case of extension staff discussed in Chapter 4.

Some of the key personnel, depending on the scale of operation and available resources, could include the plant manager or supervisor, accountant, milk recorder, milk grader, security guard and a general hand. With time and as milk supply levels increase, additional staff may be hired to match the workload.

Obtaining business permits and licenses

One of the most important steps in organizing and establishing a business is obtaining the necessary business licences and legal documents. The PO should prepare for these along with safety and environmental regulations from

government-mandated authorities, which may include the dairy board, the National Environmental Management Authority (NEMA), the local municipality, and occupational safety and health.

5.2 Mobilizing and securing a milk suppliers base

Mobilizing farmers is essential to the success of collective businesses of this nature. The viability of this business is directly determined by the volume of milk intake. Therefore, the hub must continuously maintain its high priority during and after the time it is established. At this stage farmer mobilization should move to another level, to encourage farmers who are already signed up to become active milk suppliers—they should even indicate the minimum deliveries they anticipate to make per day in the first 3 – 6 months. The board of directors and the manager are responsible for mobilizing farmers, recruiting new suppliers and shareholders, calling and attending farmer meetings, continuing contact with the suppliers, and sensitizing suppliers about new business planning opportunities. They should send farmers in the PO catchment area a consistent message.

Recruiting and registering milk suppliers

As per EADD-I experience, milk suppliers can be categorized into three groups: farmers (PO members or non-members); transporters, vendors/traders; and group or institutional accounts. Farmer supply accounts are for the registered farmers and producers who deliver their milk directly to the milk collection centres the PO has organized.

Transporter accounts are managed for situations in which some farmers are far away from the milk collection centres and their only option is to contract bulk transporters to collect their milk, check that it meets quality standards, and bulk it for delivery to the main bulking centre or chilling plant. The PO may pay the transporters when releases payments to farmers, based on agreed-upon rates. It is important for the PO to institute a robust recording system to ensure that the milk the transporter delivers is eventually recorded to the individual farmer's account. Inadequate record keeping can distort data on milk deliveries per farmer, especially when averages are calculated, to get an indication of households' milk marketing behaviour. Poor record keeping can also deny farmers the opportunity to participate in check-off systems if they are not recognized as bona fide milk suppliers based on the records from their respective supplier accounts.

Box 18: Milk transportation business attracts the youth

From EADD-I experience, the business of transporting milk for farmers proved a good employment opportunity for youth who could own a motorcycle or a donkey or cart or both. It also emerged that the PO should play a proactive role in ensuring that transporters are recruited and their concerns addressed rather than letting them deal solely with individual farmers, as some farmers could evade paying them, which would eventually lead to a decline in milk that is subsequently delivered. Transporters were also encouraged to join the savings and credit program stimulated by the PO's milk business. They would thus benefit from the financial services offered and the program would provide a convenient way of paying them. As it emerged during EADD-I, the PO's ability to proactively organize milk transportation mechanisms is key to meeting optimal capacity utilization and the overall viability of the collective milk marketing business.

In other cases, a small group of farmers open a group milk supply account in which they bulk a portion of their individual/household produce and deliver it to the group account. In EADD-I this was one strategy employed in the attempt to get women to participate in the milk bulking business. Institutions like schools and church that manage dairy projects and even large-scale farms could also join the PO as milk suppliers so as to market their milk through the existing collective action. Such suppliers of big volumes can boost the viability of the milk marketing business.

In all these cases, the PO should establish a robust register and data management system. Indeed, it is desirable that the suppliers sign milk supply contracts with the PO, indicating minimum delivery amounts and prices that the PO

intends to offer. Supplier data should be updated regularly and analysed to give the PO a good picture of milk supply bases and trends.

A flexible share-contribution mechanism can be instituted based on milk supplier records, in which interested farmers authorize the PO to deduct a certain amount for member equity before being paid for the milk.

Organizing milk collection and transportation logistics

The milk supplier registration indicates the geographic location of the farmers and transporters. On this basis, the PO through the recruited manager and perhaps the extension/production unit develops and maps out milk collection routes. The PO communicates routes to farmers and seeks their opinion, puts in place the necessary logistics including recruiting transporters, assigning them to farmers, and assigning milk collection and quality clerks.

Subsequent analysis of milk deliveries provides the PO leadership and management with trends and intelligence on milk supply bases and locations within the PO catchment area. This information is used to devise strategies to ensure securing and guaranteeing more milk. Increasing milk collection centres and even investing in satellite coolers should be informed by such analyses.

Using smaller farmer groups to develop and secure milk supply

Extension units should play a key role in activating and securing milk supply bases. This role should be incorporated in their functions and performance management plans. One attempt that was made by POs in EADD-I was to rely on the farmer dairy interest groups (mobilized primarily to facilitate cost effectiveness in the provision of training and extension services) to map and project potential milk supply that can be mobilized per group (as an aggregate from individual farmers in the group). Extension staff would thus work with the groups to understand and address members' challenges to supplying milk. Farmer groups that do not deliver an optimal supply of milk would thus become of concern to the PO, and the extension staff would seek more information and craft appropriate strategies.

5.3 Brokering milk market outlets

The assumption behind aggregation is that smallholder producers mobilized into collective action become more attractive to processors and bulk milk traders, who can in return secure a market for substantial volumes of produce, more conveniently and at lower transaction costs. Engagement with the dynamic milk markets is therefore a core objective and a success factor for most dairy POs. POs walk a tight rope striving to mobilize a critical mass of reliable milk suppliers (mainly from membership and also non-members), establish competitive and reliable business relationships with bulk milk buyers, and sustain such relationships by meeting requirements—in terms of quantity and quality. This sub-section provides some critical steps in walking this tight rope and why they require a sensitive and committed support from facilitators.

Securing agreements and contracts with bulk milk buyers

A PO that has shown capacity to bulk large volumes of good quality milk can negotiate with processors and milk traders for binding contractual agreements, ensuring smooth planned business operations including farmer payment systems. Before signing such contracts, the PO should:

- Know the quantity of milk that the dairy bulking centre or plant can procure throughout the year.
- Consider the financial stability of the buyer or processor.
- Always consider the wet and dry season milk supply trends.

- Be sure to get the best price possible under the prevailing supply and demand circumstance that will ensure farmers are paid competitive prices and the PO retains reasonable revenue. PO business should plan for a pricing system that will suit the type of farmers supplying the plant. Farmers who produce almost constant quantities of milk may prefer a fixed price throughout the year, whereas farmers whose production and supply fluctuates seasonally may be given a different pricing system.
- Consider the dates of the supplier payment schedule.
- Agree on terms for termination. If the term is open-ended, agree on termination provisions, which should include a dispute resolution clause.

Negotiating milk buying and selling prices

The PO management (including the board of directors) should set the milk prices and communicate them to the farmers (i.e. milk suppliers) several days before the effective date. Prices are to be decided by two factors: the unit price set forth by the processor/buyer and the amount of margin the PO needs per unit for business revenue. The unit price the processor sets forth is to be outlined in the written contract. The commission (margin) should be based on the operating costs per unit of milk delivered.

As much as possible, the manager should work in consultation with key management staff as well as the board of directors in setting milk prices. The milk procurement report should always guide the prices to be paid to the farmers. Ideally, prices should be reasonable; that is, they should attract suppliers while at the same time the margin between buyer price and supplier price should be enough to meet operating expenses and provide some profit for future business expansion plans and dividends to shareholders.

Box 19: POs collaborate into a federation in pursuit of creating a brand

POs can collaborate into federations to create a collective brand and explore niche markets

The Kenya POs supported by EADD-I established the Kenya Dairy Farmers Federation (KDFF) to bolster their advocacy, lobbying and negotiation voice.

By aggregating the projected volume of milk bulked by each PO they were able to attract New KCC—one of the largest milk processors—to sign an enhanced milk supply contract, securing large volumes of milk and guaranteeing good prices and long-term duration of the contract.

5.4 Managing the operations of the milk bulking or chilling business

Often, managing and sustaining a business relationship with a bulk buyer of milk is a bigger challenge to POs. Especially those which might have benefitted from external facilitative start up support and therefore with limited management experience. This sub-section describes as critical tasks that ought to be considered and provides some case study on how to manage related challenges based on EADD-I experiences.

Milk testing, reception and traceability mechanisms

Milk is tested for quality control, which is essential to maintain a good market outlet. The dairy bulking or chilling plant sets its own milk quality requirements for the milk it receives, which may be the same or higher than those the milk buyer requires. Quality assurance is key to successful operations and all efforts should be made to ensure that the quality standards are enforced at all times. It is also feasible for the PO to entrench traceability mechanisms within its milk collection, bulking and testing systems.

Milk market research and intelligence reports

The bulking or chilling business manager, working with the extension unit, should regularly generate a report analysing the milk market, trends among the milk suppliers and competitors' activities. Such a report will be instrumental in informing judgements and decisions the board and management must make regarding the bulking or chilling business, such as milk pricing, collection routes, need for satellite coolers, transporter network, incentives to suppliers and overall value proposition to the market.

Incentive-centred supplier payment systems

Procedures such as the frequency of paying suppliers for milk delivered to the dairy should address the realities the farmers face as much as possible. The PO should design a system based on the suppliers' needs, negotiations with the processor and the cash flow position of the business.

Establishing a savings and credit program or linking farmers with an existing program within the catchment could be useful in exploiting a variety of flexible financial services, such as cash advances or check-off system. Doing so can greatly address some of the drivers for side-selling and preference for other market outlets that capitalize on payment-on-delivery to attract farmer supplies.

Box 20: Managing milk marketing challenges—experiences from EADD-I

1. Price fluctuations

Farmers want price stability and do not understand price fluctuations well. To address this concern, EADD-I advisers in consultation with milk processors in Kenya advised POs to consider managing price variation by paying farmers 25% less during the high season and using the reserves generated to even out price variation during the low season. One of the biggest processors, New KCC, offered to sponsor workshops for interested POs to carry out cost-benefit ratio analysis jointly as a way of raising the understanding of such pricing system.

2. Seasonality in milk production and milk competition

EADD-I developed two hypotheses: 1) during droughts or dry seasons since most farmers rely on rain for feed, the effect on household milk production is negative, which means a decline in milk intake at the PO; 2) with such a decline, informal market traders are quick to adjust milk buying prices upwards, giving farmers the incentive to direct more milk through their channels. A survey conducted by EADD in 2012 in Kenya to a great extent confirmed this fact: 66% of the farmer respondents registered a decrease in milk production during the drought period (Jan–June 2012) compared with the same period in the previous year (2011). While they reported a decrease in the amount of milk marketed via the PO for various reasons, key of which was due to a decline in milk produced (90%), other reasons were lower prices offered by the PO and delayed payments.

Mitigation measures recommended:

- Paying farmers less during the high season and paying out the reserve during the low season
- Developing feeds strategies based on locally available feed resources so as to smoothen milk production
- Facilitating investment in domestic water collection systems
- Managing milk competition by making the hub more attractive: 1) ensuring timely payments to milk suppliers and service providers, especially milk transporters, 2) increasing the number of collection centres or satellite chillers, 3) building loyalty by embedding more services available to milk suppliers.

An integrated information management system

To manage the bulking or chilling business and auxiliary businesses effectively, the PO will need to embrace a simple and robust information management system, which could be manual but a recommended simple computer program like Excel would do. Whatever the system, it should be able to interlink the different operations of the PO to the business: for example, membership with participation in milk supply, share contribution, patronage of a check-off system, training, as well as to analyse the overall business performance of the PO.

Chapter 6: Financing

Introduction

Although interest is growing among governments, donors and agribusiness private firms to invest in smallholder agriculture, not many financing institutions have experimented with innovative financial products that target producer organizations (POs) and smallholder farmers. The smallholder financing market future is nevertheless brightening; however, it is still young, underdeveloped, fragmented and undercapitalized.

This chapter discusses the need for financing among hub-level actors (PO, farmers, BDS providers), and the different options for accessing and raising finances. It also shares some of the EADD-I experiences in catalysing hub financing.

6.1 Producer organizations' options for raising capital

The need for financing

Newly formed POs or existing ones that plan to expand their portfolio of business and services offered to members will find financing a critical deciding factor. It will require premises from which to operate, equipment, utilities and capital with which to manage operations. The need for financing will be dictated by the hub option the PO plans to implement and vice versa. The chilling option is likely to be the most capital intensive especially if farmers adopt the farmer-owned chilling plant sub-option. Other chilling sub-options could be less capital intensive (in the short run) such as processor owned or leased CPs. Pre-bulking is the least capital intensive, unless the members aspire to invest in other productivity enhancing business services such as a feed mill.

Box 21: Need for financing

Expenses required in setting up a PO, such as start-up for milk collection, bulking, chilling and marketing activities such as:

- i. Business and office premises could be bought, constructed or rented so that members can bulk their milk in a collective place. The PO will also require an office where it can address administrative and member affairs.
- ii. The PO will need equipment such as milk storage tanks, coolers, milk reception equipment, and office equipment.
- iii. The PO may require cash to make advance payments to members for milk supplied but not yet paid for by the buyers.
- iv. The PO may consider setting up input stores to facilitate farmer access to inputs, or it may need funds to sponsor farmer training and access to advisory services.
- v. To improve dairy production, farmers will require access to credit to make productivity-enhancing on-farm investments.

How can the PO facilitate?

A PO needs to gain access to various sources of funds for capital to support its operations, without which it may not be in a position to serve its members. The following are options for raising capital.

Share capital and equity mobilization from the membership

A long-standing practice is that all PO members are obligated to contribute some amount of money to the PO to fulfil their '*member as an investor role*'. This is called 'share capital' or 'equity'. The amount members pay as share capital will be stipulated in the PO constitution or bylaws and will be reviewed from time to time.

Box 22: Mobilizing members' equity, a 'wait and see attitude'

EADD-I experience showed that farmers were reluctant to mobilize upfront the required start-up capital for establishing the hub, especially under a farmer-owned option for a chilling plant hub, which is a capital intensive option by its nature. It showed that farmers are not easily persuaded by projections for a high rate of return, especially at the PO level, as simulated in strategic business plans and spreadsheets. They are rather more motivated and willing to invest or contribute equity once they see the PO in operation and benefiting them. It's a 'wait and see' attitude.

Membership fee

It is also common practice for a PO, just like other member-based organizations, to charge a one-off membership fee. This is one way of raising money to run the PO's day to day operations. Sometimes this fee is referred to as an entrance fee and *is not considered a member investment*. It is mostly used to defray small operational and administrative costs, not significant investments. Members cannot demand refund of membership fees in case they intend to withdraw their membership as is the case for shares.

Loans

Smallholder farmers may not be able to contribute the funds needed to establish their PO, with capital for starting up milk bulking, chilling and other businesses. It is therefore inevitable for POs to look for funds from other profit-making or social-impact lenders such as development funds and commercial banks. No matter where a PO obtains its capital, it must have enough money to start up its business and keep it going.

According to EADD-I experience in mechanisms for POs to access bank loans, most lenders tended to prefer mature POs that have some years of experience doing business and also have some credit history. This makes it hard for a PO that is starting up. New POs experience severe challenges in gaining access to start-up capital and tend as a result to suffer acute member attrition in the initial years after registration as farmers feel no tangible benefits if aggregation has not properly begun.

But POs that had established market links—like a milk supply contract with processors—were proving attractive to lenders since the market links had mitigated some of the risks.

It is recommended that facilitators supporting smallholder farmers also put in place interventions aiming at attracting banks and other lenders to view and target agriculture as portfolio with immense opportunities. Hub development facilitators should expand efforts to track market spill-overs, multipliers and benefits, including employment, and the dynamics of change in the market system. That way the hub is likely to illustrate the greater economic benefits and returns accrued to those engaging (actively or passively) with the hubs and to provide a better illustration of value to players. This illustration is crucial in giving more financiers incentive to consider funding POs and local value chain service providers.

Another way to link POs to financiers is to support credit-accrediting programs that are hopefully run by independent agencies. EADD-I went into partnership with Scopelnsight, an accredited Dutch credit-rating agency that has contextualized a conventional credit-worthiness rating tool for producer organizations (see <http://www.scopeinsight.com/>). This can give a fair and independent sense of evaluation to engage lenders and also to inform what capacity-development priorities the PO and the hub facilitators can support.

Another option is to start with less capital-intensive hub options such as pre-bulking and transition to bulking (as discussed in Chapter 5). In EADD-I, equity mobilization took longer than anticipated. Slow farmer equity mobilization, coupled with the lead-time taken to bring other financial partners on board, delayed CP establishment. The lesson learned is that to elicit wider participation farmers needed sufficient time to conceptualize the overall business strategy, including the benefits they expect. Lenders tended to prefer mature POs that have some years of experience doing business and have some credit history as well. Starting with bulking only (without chilling and the resulting high amount of capital required) provides the PO with the experience and cash flow that banks may need before they offer a loan.

Accumulated revenue and surplus

The business units of a PO may generate a surplus. This money can also be used to expand the capital base of the PO. The dilemmas the POs face in this case: to make or retain profits from the collective business or to provide services to members; to pay back surpluses to members as bonuses or to plough the profit back into the PO's collective investments.

Grants

Renewed attention and commitment among donors and African governments on agriculture implies that more and more resources have been allocated to smallholder development and thus grants are more available than before. Unlike loans, grants seek to address market failures and grantors are motivated by intent for social impact rather than financial returns. It is largely grants that drive technical assistance that goes into mobilizing smallholder farmers into collective action and PO capacity development, while social lender and commercial banks are best financing business units.

Engaging public sector agencies as a deliberate strategy can yield tremendous results as more and more agencies are committing to improving the local conditions under which smallholders are operating. In Kenya, the devolved county government system is under pressure to stimulate local economies, while the National Agricultural Advisory Services (NAADS) program and local authorities in Uganda have demonstrated keenness in supporting hubs that EADD-I supported—by creating enabling environment in terms of infrastructure (for instance, providing electricity, improving rural roads and investing in communal water systems) and direct investment (for instance, providing grants in the form of satellite coolers, allocating public land to set PO premises, providing implements and equipment such as hay bailers and pulverizers for feed processing and conservation). It is however recommended that such capital investments made available through grants and donations are valued and the value allocated to individual shareholders (capitalized) based on a formula. This should be done to avoid a situation in which the PO has a high proportion of unallocated capital, lest public resources mentality evolves to undermine member ownership and conviction to exercise governance obligations, such as supervision and control governance.

Other options for capital subsidy

As evident from EADD-I, smallholder farmers are unlikely to raise the required capital to start up the milk bulking and chilling business. Yet most lenders impose PO equity participation as a requirement for investment lending. It is therefore inevitable that most POs would require some sort of capital subsidy, especially when the goal is to improve the livelihoods of the rural poor through linking them to produce markets. Capital subsidy is thus necessary to enable initial investments that would unlock farmers' participation in equity mobilization. From EADD-I's experience, there are a number of innovative ways of gaining capital subsidy:

Implementing a hybrid of hub options—requires lower investments (at least initially) by the POs, such as investing in processor-owned CPs, rent-to-own CPs, or running a bulking business without chilling. These can serve as transitional mechanisms to achieving a farmer-owned CP hub in the long-term if that is the most desirable long term option. Besides bulking being a low-investment business venture, it proved, in EADD-I, to be a good starting and learning point for POs as well as an opportunity to build social capital before moving into a CP option, which is more capital intensive and requires higher management skills.

Private-public partnerships—As milk processors and large traders struggle to secure milk supply bases, they are increasingly acknowledging the business potential of smallholders aggregating their production and marketing efforts. EADD-I observed a positive trend among milk processors preferring to enter into stronger (mostly contractual) milk supply agreements with POs. Such trends would open new mechanisms for funding working and investment capital for the POs. Renting a CP and the processor-owned CP hub options are good examples of what EADD-I observed as mechanisms that POs can exploit.

Emerging venture capitalism—EADD-I's experience in Kenya showed that although POs had greatly demonstrated their credit worthiness and attracted interest from commercial banks and other financiers, they were running into high possibilities of incurring a huge debt burden. Most POs were recording low net profit margins compared with their counterparts in Uganda and Rwanda due to high loan repayment obligations, while others were becoming perpetual borrowers, holding more than one loan at a time in order to expand hub services. To lower such business risk for POs, future financing models need to consider emerging non-traditional options, such as venture capital and social lenders.

Investment fund by a hub facilitator: Lessons from the EADD's investment fund

Should a hub promoter implement an investment fund to catalyse member equity mobilization, attract other financiers, or both? The following are lessons learned from the EADD-I investment fund:

About the investment fund

EADD-I anticipated that most of the POs targeted for support were at start-up point, and banks were not willing to grant them loans. This was partly because it was hard for banks to evaluate the risks involved and also because there were many cases of farmer cooperative societies in the region being mismanaged. Therefore, a portion of the EADD grant was set aside as an investment fund that would be used as a revolving fund to hasten the establishment of CPs by securing financing for the POs.

It primarily had two objectives:

- i. A guarantee fund to facilitate equity loans from socially motivated lenders. The guarantee fund would allow lenders to make loans to the POs to obtain the 30% bit of the desired equity that was a necessary criteria for the equity investment fund. The remaining 70% would then be secured through commercial loans.
- ii. Pre-financing that allow EADD-I to immediately procure the CP equipment at the start of the project, avoiding delays in procurement and providing savings from bulk purchasing. Funds would be repaid to the investment fund when financing from institutional lenders was secured.

Financing models

One approach was for EADD-I to procure CPs and supply them to POs that had already been pre-qualified to enable them to commence a milk marketing business and generate cash flow on the understanding that the POs will reimburse the investment fund by refinancing this component to independent financial institutions contracted to manage the fund. This approach had the objective of 'hand-holding' the start-up hubs/POs and gradually turning them over to financial institutions for commercial funding once they attained a sustainable cash flow. EADD in a later review

found out that start-up CPs in the East African context that did not receive pre-financed equipment in Kenya were slower to set up than those that did.

Another financing model required that the PO raise 10% of the total CP establishment costs through member equity. This amount would be used to facilitate registration and initial running costs. On meeting this requirement, the PO would receive a further 30% as an interest-free loan (from the EADD investment fund) to establish the CP building. The remaining 60% for the CP equipment was to be covered through a commercial loan that EADD pre-financed. Thirteen hubs were established following this model. From this experience, EADD-I realized that farmers/ POs did not take the 30% and 60% loans seriously and were not in a hurry to repay. Consequently, EADD shifted to a different financing model with an initial contribution from farmers of 20% and an interest-free loan for 30% allowing a PO to establish building and premises and start operations without chilling (bulking option). Once they established a running business they were expected to approach a bank for a loan to purchase the CP.

Experiences

Overall, in Kenya the banks were willing to lend POs money as long as EADD granted the guarantees to the bank. The loans would be used to purchase CP equipment, the benefits of which are huge. Without guarantees, the banks were reluctant to offer loans to start-up POs.

Conversion of the pre-finance into commercial loans remained a big challenge due to lack of collateral or POs being unwilling to commit themselves to loans that come with high and unpredictable interest regimes. Inability by banks to evaluate the real value of the POs or CPs, the fact that they were not insured and the top-down approach used in the procurement process had all a negative effect in working to convert these pre-finance arrangements to commercial loans.

A financial service consultant hired by EADD-I to carry out a review on financing agreements with counterpart banks or financial institutions, made some recommendations: the need to renegotiate with banks to release deposits securing current advances in view of overall reduced risks, and the need for EADD to be sensitive to the market by allowing market-determined interest rates rather than fixed rates.

Box 23: Case study on capital mobilization and collective business start-up—EADD Kenya

A month after a newly formed EADD-supported PO had established a cooler and milk bulking business in June 2009, an EADD team from the regional office visited the hub to review progress and interact with emerging experiences. The PO, newly established, was about 30km from Eldoret town. The team found out that the 10,000 litres cooler (acquired through an EADD mediated funding arrangement, whereby the PO was to raise 10% upfront from member equity, 30% from EADD investment fund managed by a financial intermediary and 60% as bank loan partially guaranteed by the investment fund portion) had been installed like a week before but was not yet operational because water had not yet been connected. And also not all other required equipment had been delivered. The PO had though commenced milk bulking business without chilling.

By the third day of bulking, milk collection had increased to 3,000 litres/day. Temporary arrangements had been made to sell the un-chilled milk to New KCC in Eldoret, one of the major processors in Kenya. According to the arrangement, the processor was offering KES 27/litre to the PO at the end of a month, while the PO was paying farmers KES 23/litre. A private bulk transporter had been identified to take the bulked milk to NKCC's factory in Eldoret and costs met by the processor. The farmers were meeting their transport costs from the farm to bulking centre, costs ranged from KES 0.5-2, based on the distance. The team met five members of the PO board, all men in their 60s. The board of directors' secretary was very articulate. The board team shared their experiences and the challenges they were tackling as follows:

- i. Water—They had received a quotation of KES 300,000 to get water connection from nearby river.
- ii. Land for offices and chilling plant- two plots had been identified in the emerging shopping centre but not fully paid for: one belonged to a women's group and the second plot is owned by a farmer (who's also a registered farmer). The owners were putting pressure on the PO for the full amount to be paid, although there was a leasing agreement (though not formally documented and counter signed). The farmer-owner had started increasing the price that had been agreed previously, but not formally documented.
- iii. Salaries—Key staff members had been recruited way ahead in April 2009 and the PO has started running into salary arrears.
- iv. Other operating costs—Milk suppliers (farmers and traders) were demanding to be paid at the end of each week, the PO was also in dire need of other supplies and office equipment such as computers. The PO also wanted to establish an agrovet shop as soon as possible.

Lessons learned from this visit

Farmers' equity mobilization should be continuous and guided by a clear strategy and promotional messaging. Discussions revealed that although farmers had started contributing to the cost of the cooler and installation via buying shares, the member equity target of 10% of total cost to unlock other financing options had not been met. The cooler had been paid for upfront through EADD's investment fund as a tactic to hasten start-up and then the PO would convert the investment fund's portion into a loan by acquiring a commercial loan. The farmer's equity target of 10% of the investment was earmarked to support setting up office premises and managing the initial operational capital.

To address these challenges, the meeting identified strategies as:

- i. PO to organize (with support from EADD's field team) road show to raise farmers' awareness on the hub project, its benefits and the need for the farmers to make their contributions (including financing).
- ii. Messaging about shares to be well packaged and focused on the immediate need of 'buying land and fixing water' and not just buying shares for the ordinary sake.
- iii. The maximum shareholding per farmer to be raised from KES 5000 to 05% of the total value of the projected investment.
- iv. Formalize the agreements made with different suppliers and providers of services and inputs (land owners, traders).
- v. Put in place a simple accounting system for farmers to trust the PO with their contributions and the banks to be able to easily assess the POs credit worthiness.

Adapted from field visit Notes June 2009-Taken by Isabelle Baltenweck

Conclusion

Chilling plant financing in EADD was conceived to be a mix of farmer equity, the EADD's non-interest loan (from the investment fund) and commercial loan financing. Delays in raising equity therefore caused major interruptions to the roll-out plans, especially in Rwanda and Uganda. Given the mixed results this approach has yielded, EADD has had to reflect on whether as a catalyst/hub promoter, a program like EADD should engage so directly in CP/hub financing through facilities like investment fund or should restrict itself to business services advisory and facilitation.

6.2 Local BDS providers

Besides the financing that the PO requires directly, hub promoters should recognize that other hub actors will also require access to finance if the hub concept is to be realized. Local BDS providers such as those providing AI and animal health services and private input stockists will, besides developing their capacity, need to be reasonably capitalized, kitted and equipped with basic work tools, such as motorcycles and AI kits.

BDS market diagnosis and business opportunity and investment forums

To be best placed to catalyse existing and potential BDS providers in the dairy hubs, a hub facilitator can consider supporting hub-level market actor surveys and BDS market diagnostic assessments. The objective would be to contextualize the BDS and market actors' environment and identify opportunities and challenges on the demand and the supply sides of services in the hubs. Informed by the findings, interventions such as business opportunity seminars with themes on existing opportunities could be facilitated to guide the BDS entrepreneurs and link them to potential sources of financing. They can also be supported with training on business management and development of business plans.

Linking BDS

In other cases, the BDS providers were linked to the PO-run check-off system and also ended up joining the financial services programs (saving and credit cooperatives (SACCOs)/FSAs) run by the PO for ease of transacting business and access to financial services. As a spill-over, they could benefit from financial services offered by the FSA and the SACCO, such as loans and advances. This helped a lot in not only stimulating demand for services but also bridging the supply gaps.

Linking BDS providers to banks

In some cases, EADD supported POs to establish stronger relationships with 'pre-qualified' BDS providers to the extent that they entered into an agreement to provide services to members on credit and get payments via the check-off systems. In other cases the PO guaranteed the BDS provider for loans in commercial banks to purchase the tools necessary for their work such as motorcycles, AI and animal health kits. This was a tripartite agreement in which the PO would retain a motorcycle logbook until the BDS provider cleared payments.

Youth and women development funds

In Kenya, where youth- and women-focused development fund programs existed, and given that most BDS providers are likely to be young, such funds then become a special opportunity for these providers to gain access to financing.

6.3 Smallholder dairy farmers

Because dairy production cycles are short and can be smoothed more easily than crop-related enterprises, dairy farmers should have lesser cash-flow challenges. However, according to EADD-I experience, the reality is to the contrary—smallholder dairy farmers in East Africa experience dire cash flow challenges, largely because they are stuck in a cycle of low production. Production on average ranges from 1.5 to 3.5 litres/cow per day, which is extremely low compared to the average of a crossbred cow, conservatively 10–13 litres/cow per day.

Smallholder dairy farmers' self-organization and participation in collective action is instrumental in assessing training and advisory services and to a great extent in raising capacity to access gainful milk markets and production enhancing inputs. However, limited access to lending products for on-farm investments constrains their ability to optimize on their dairy enterprises.

Affordable financing could easily ramp up household milk production. In particular, it would enable smallholder households to establish grazing fields and sources of supplementary feeds that would improve cow nutrition and milk production. It would enable the smallholders to improve the breeds of their cows. With financing, smallholders can increase the number, quality and productivity of their cows, improve milk quality and earn higher prices.

In addition, the smallholders need to gain financial literacy. Improved farm management skills enhance their capacity to make sound on-farm investments, adopt recommended practices and strengthen their ability to manage finances and access financial services, such as savings or insurance. With such skills, they are in a better position to analyse their records and demonstrate their creditworthiness.

Options for accessing financing

FSA and SACCOs² programs

POs are encouraged either to initiate savings and credit programs for their members or to link them to existing programs where they can access various financial services, such as credit, savings, advances, check-offs and financial literacy.

Check-off system

In EADD terminology, a check-off system is a pre-negotiated arrangement in which farmers buy inputs and other services on credit. The eligibility and amount is based on the value of milk supplied to the dairy hubs that serve as a guarantee for payment at a later date. Mostly, the payments are deducted from the supplier's monthly payments for milk delivered. The PO, through its milk chilling or bulking business, establishes a link with a financial services provider to act as the point of payments and the place where the farmers open savings accounts. The financial services provider could be a FSA, more common in Kenya, or a SACCO. The financial services provider could be integrated within the PO as part of its activities and services (regarded as in-house). In other cases it could be an autonomous entity operating within the same catchment as the PO and often sharing or overlapping in membership. In such a case, the two organizations enter into an agreement to implement the check-off system with farmer members who sign in.

The next step is to enlist and contract input and service providers willing to participate in the credit program. They could be in-house agro-vet and AI service businesses or privately owned businesses within easy reach by the farmers.

Normally, the types of inputs and services that can be accessed by credit via the check-off system is determined and communicated to members, as well as the criteria for accessing and eligibility. In many cases, a limit is imposed on the amount of credit a farmer can access in a month vis-a-vis the total value of milk supplied. Often, they are not allowed to access credit exceeding two-thirds of the value of milk supplied so as to discourage side-selling in a bid to evade excessive deductions by POs to cater for POs' operating costs, since the deductions deprive the farmer of the much-needed cash to meet other household needs.

2. SACCOs are savings and credit cooperatives and operate very similar to FSAs.

Inputs and services offered through check-off range from livestock drugs, vet services, feeds (including concentrates), AI, to dairy equipment such as milk cans. In advanced POs, household and food stuffs such as cooking oil, flour and washing powder are included, especially items to address women's practical needs. Ideally, such innovations are backed by a PO's gender policy and strategy.

To effect implementation, the PO regularly shares milk supply records for individual farmers with the FSA or SACCO, often daily using a linked database, especially when the FSA or SACCO is in-house. In this case, the farmer seeking input or service on check-off gets a voucher from the FSA or SACCO describing the need and presents it to the input provider, who then offers the input or service and generates an invoice in triplicate: a copy for each farmer, the FSA or SACCO and the input provider. In cases where the PO does not share milk supply records with the FSA or SACCO, especially for non-in-house cases, the farmer gets a voucher from the PO's milk chilling or bulking manager, which is presented to the designated input provider.

Other FSA and SACCO operations

In addition to the check-off system, the FSAs and SACCOs provide other financial services to farmers, mainly savings through deposits or purchase of shares and payments accounts for milk supplies, but also for other service providers such as milk aggregators and transporters, and private AI providers contracted by the farmers in the villages, and for loans. In most cases, membership is open to other members of the community such as teachers and local traders.

For one to be eligible for a loan, a farmer must 1) be a shareholder, 2) have a milk supply history that demonstrates ability to repay the applied amount, 3) have an active milk payment account with the FSA or SACCO and 4) get enough guarantors to cover the amount applied for from their shares. The maximum loan amount is three times the value of the shares; loan interest in Kenya's POs has normally been 18%.

Major loan products are made to meet health-related emergencies, school fees, housing improvements, installation of biogas and on-farm investments. However, most FSAs and SACCOs have indicated that they experience capital constraints and are unable to meet members' needs, especially for substantial on-farm investments. Another challenge is that farmers are not able to qualify for larger loans since ability to repay is solely pegged on milk incomes yet they might have other sources of incomes that could be made eligible in assessing their credit worthiness.

However, FSA managers and farmers reported that the FSAs and SACCOs were unable to meet farmers' demand for on-farm investment loans because they were undercapitalized and unable to clear a backlog of loan applications.

The other challenge experienced in EADD was that farmers' capacity to access financing to enhance their investment options through credit leverage was limited by the fact that the only measure of farmers' credit-worthiness was milk delivered to the PO. It has been difficult to judge farmers' credit worthiness beyond participation in dairy, yet the same farmers have other income-generating enterprises, such as maize and horticulture. Embracing the POs as platforms on which farmers can commercially participate in other value chains will enhance their visibility and therefore enable a wider scope of leveraging.

A loan from a commercial bank or other financial institution is another option farmers have. This option is however constrained by a number of challenges: high interest rates and terms that are not tailored to agricultural projects.

Box 24: Frequently asked questions about check-off systems

When is the input or service provider's invoice settled?

It might vary, but the most common practice is to pay once the milk buyer (processor or big trader) has advanced payments to the PO for milk delivered. Sometimes the PO has a contract with the processor or trader that indicates when payments will be made, such as every 10th day of the month, but the payment is for milk delivered up to the end of the previous month. So it could be agreed that invoices will be settled after the end of the month, or a specific date agreed upon in advance.

What is the maximum loan a farmer could get if the farmer delivers say 50 litres of milk a day to the PO at KES 40/litre? Does the farmer have to settle the loan at the end of the first month?

The maximum amount of loan to which a farmer is entitled is determined by two factors: 1) the value of shares the farmer has in the FSA or SACCO. Often, loan policies allow up to a maximum of three times the share value held by the farmer; 2) the next consideration is whether the farmer's milk supply trends (volume and consistency) are adequate to ensure repayments without exceeding two-thirds of the total value of milk delivered, inclusive of other liabilities the farmer might be servicing such as check-off.

Yes, repayment commences at the end of the first month after the loan has been advanced. Repayment periods vary based on the type of loan product; for example, emergency loans are generally repaid in a shorter time.

Can a farmer use more than one credit product simultaneously, such as check-off for inputs at the same time as a loan?

FSAs and SACCOs offer a number of products, such as check-off, loans and milk payment accounts. So a farmer can have access to check-off services and simultaneously have access to a loan, but that depends on the farmer's credit worthiness (share value and a milk supply adequate to meet the repayment obligation). It is important that when a loan application is being evaluated, share value and outstanding debt obligations are also considered.

Chapter 7. Engaging women and youth in dairy business hubs

Introduction

Hub development is never neutral in its effects and impact on community members. Like any development, different members and categories in the society are likely to experience its effects differently, depending on their level in the hub and the extent of their engagement in it. It is also likely to affect the management, either positively or negatively, and affect the use and sustainability of other livelihood resources the society relies on. It is important to pay attention to how participation in hub activities and services exposes different actors to different opportunities and risks, particularly the poor, women and youth.

This section aims to raise awareness of the important role women play in smallholder pro-poor dairy production, and the employment opportunities that a dairy hub presents to skilled and unskilled youths. It presents the major constraints faced and the business rationale for addressing them and some field tested strategies.

7.1 Engaging women

This sub-section presents some of the constraints that women face in smallholder dairying communities and the business case of engaging women in hub promotion. It further presents critical approaches and strategies that can be applied to ensure women's engagement is successful. It finally presents some real life experiences of how EADD-I applied existing program data to identify key gender-based constraints, strategies and some lessons emanating from implementation.

The constraints women face

Dairy production serves various crucial roles in the livelihoods of smallholder households. It contributes to local diets, provides cash, draught power and organic fertilizer. Women especially play an essential role in dairy production. However, they are often less likely to benefit from more formalized market-oriented dairy production. (Box: 25)

The business rationale

Evidence is growing that increasing women's participation in agricultural value chains can lead to significant improvements in productivity, quality, and sustainability. Productivity rises and supply chains are strengthened when women participate in and benefit from agricultural market opportunities. (Box: 26)

Box 25: Why women are less likely than men to benefit from dairy business hubs?

Women are less likely to benefit from more formalized dairy business hubs and support programs than men, as the following trends and statistics show:

Fewer women than men are members of producer organizations. For example, at the start of EADD-I program (baseline in 2008, women constituted 13.8% of membership in POs participating in the program. Through program-targeted interventions, this proportion changed to 31.5% by the end of the program in 2013.

On male-owned farms, female family members do much of the work in small-scale dairying, yet their access to benefits and control of income from dairy has not been commensurate with their contribution. EADD-I observed experiences where female household members reported sabotaging dairy production in resentment—a scientific study also provided evidence of this observation (<http://www.slideshare.net/ILRI/sstropentag-omondi-sep2014>).

Women are much less likely than men to benefit from technical training and extension programs on dairy production and management.

Most value-chain actors who provide input services, such as milk traders and processors, remain unconvinced about the merit of addressing gender issues as they develop their supply chain, nor do they have well-developed practical guidelines on how they can deliver such support.

Box 26: Increasing women's participation in dairy business hubs makes a strong business case

Their participation leads to:

Improved and sustained quality: Studies have shown that women bear greater diligence and willingness to invest in long-term interests for their families. This attribute has been connected with their likelihood to maintain high quality standards and post-harvest handling practices.

Increased productivity: Female family members perform most of the field labour in dairying. Including women in farmer training strengthens their skills and improves productivity. Ensuring that a household's resources are shared more equally between women and men is an incentive, likely to increase women's interest in improving productivity as opposed to resentment and sabotage.

Strengthened number and loyalty of suppliers: Research shows that successfully attracting women producers into outgrower schemes and producer groups can help grow or at least secure the supply base in both the long and the short term. Targeting female-headed households can expand the number of suppliers in a catchment area.

Improved brand and image: Highlighting a hub's achievements in improving the role of women in the dairy business can strengthen the brand and image of the PO or hub to a point of attracting enhanced business relationships with input and output market-service providers.

Reducing management and coordination costs: Anecdotal studies show that having female representation on smallholder management committees can help reduce management costs. Having women in management positions can improve communications between farmers and hub actors, and can help resolve disputes more quickly.

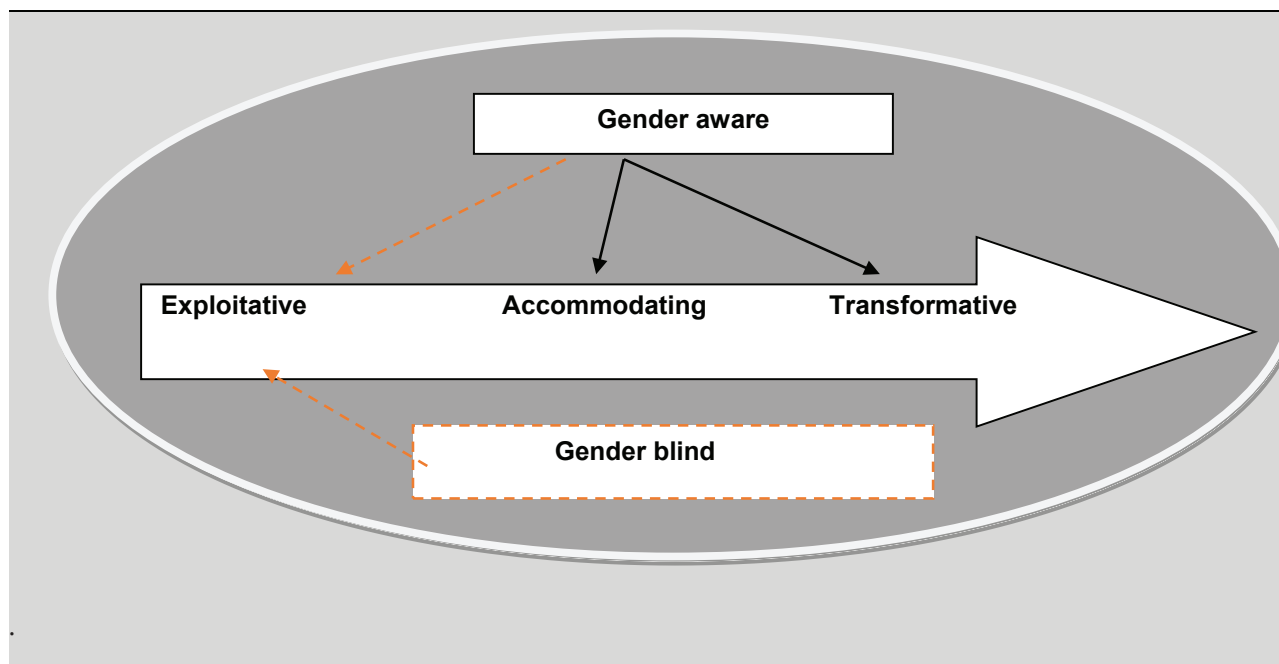
Finlay's, Kenya: Finlay's' outgrower management team has found that female committee representatives tend to be better at 'leadership' than men. If there is a problem or dispute with an outgrower member, female representatives are more likely to reveal information about the sources of the problem and to help resolve the dispute. In contrast, male representatives are often reluctant to share too much information with a 'company'.

How to ensure women are engaged—a process approach

Ensuring that women and men participate and benefit from the hub services and activities equitably requires conscious planning, implementation and evaluation—what is called a 'gender aware' approach. Such an approach requires a commitment to ensure that:

- *Gender analysis* (evaluating gender roles and norms) is integrated in the planning and design of the proposed hub approach options
- *Major gender-based constraints* to equitable participation of women and men are identified and targeted strategies and interventions are proposed
- prioritized strategies and interventions are *implemented and monitored* evaluation of the hub performance incorporates benefits to all—men, women and youth

Figure 5: Stratification of gender strategies



A Stratification of strategies

- *Gender exploitative*: Take advantage of rigid gender norms and existing imbalances in power to achieve program objectives. May be expeditious in the short run but unlikely to be sustainable. Can result in harmful consequences and undermine the program's intended objective.
- *Gender accommodating*: Acknowledge the role of gender norms and inequities and seek to develop actions that adjust to and often compensate for them. Develop an active strategy to seek to change the norms and inequities. Focus on limiting any harmful impact on gender relations.
- *Gender transformative*: Actively examine, question, and change rigid gender norms and power imbalances. Encourage critical awareness among men and women of gender roles and norms. Challenge and address the distribution of resources and power relationships between women and others in the community.

Planning to address the role of women in dairy hubs

The design phase of the program or project for promoting the hub approach is informed by analysing the needs and constraints that the key actors in a hub experience: farmers, POs, input suppliers, transporters, milk traders, processors, and providers of financial and other business development services. Gender analysis should be integrated in these analyses; incorporating 'gender lenses' in such analyses provides insights into men's and women's roles at different levels: household, community, PO and wider hub.

Tools for such analyses include surveys, key informant interviews, analysis of PO membership and participation data. Qualitative surveys such as some of the participatory rural appraisal tools that are particularly useful in understanding men's and women's roles in agricultural production and marketing, and in the division of labour and demands on time on a daily basis. Consulting men and women separately can ensure that participants feel comfortable in sharing their priorities, needs and motivations without fear of reprisal. Stakeholder consultations on key issues, potential strategies and local knowledge of issues and context, are also crucial in complementing and triangulating primary data.

Key questions to consider when mainstreaming gender components in the hub approach include:

- i. What impact could hub development have on women's and men's time, access to resources, access to and control of milk income, financial independence and relationship among family members?
- ii. What impact could hub development have on family decision-making regarding resource allocation, including use of time of women and children, and allocation of milk for household consumption?

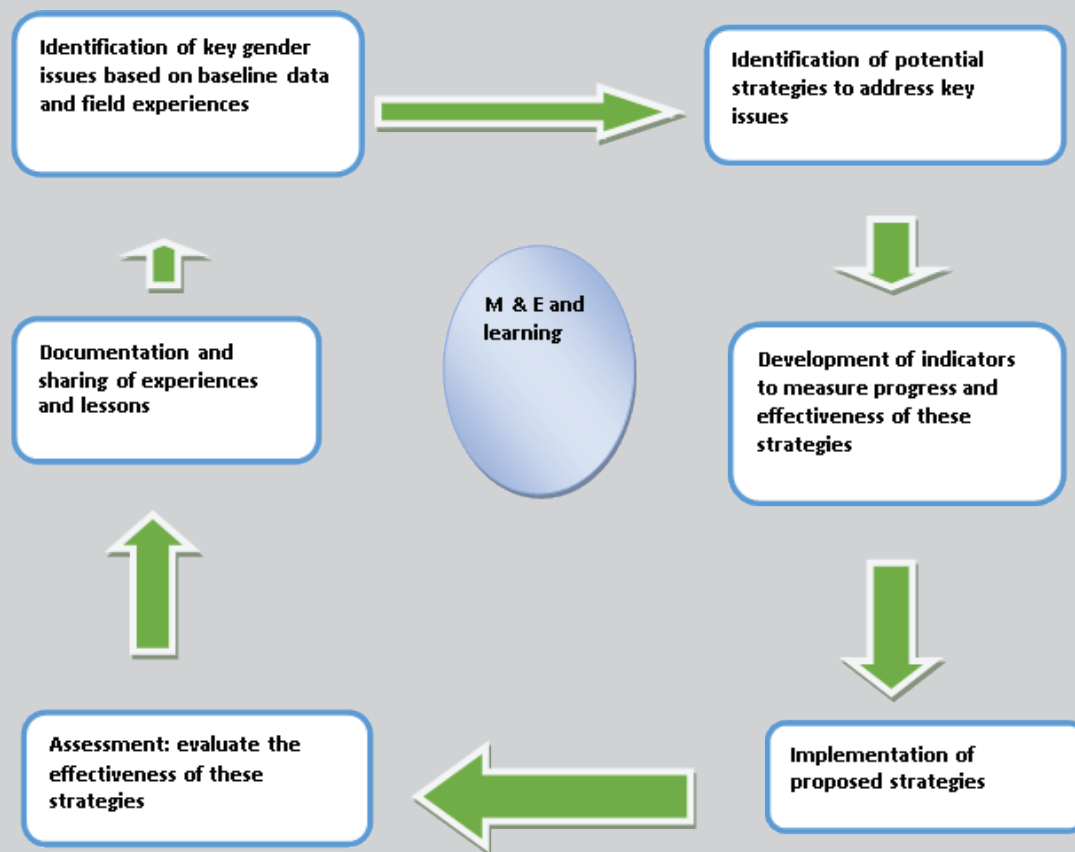
Box 27: From data to gender strategies—experiences from EADD-I

Gender strategies were informed by:

- i. A gendered analysis of a baseline report carried out in Kenya, Rwanda and Uganda
- ii. Consultative meetings between the EADD gender focal persons from the three countries and ILRI
- iii. Consultations and discussions with staff and partners in EADD ...

... which led to identifying real gender issues and prioritizing specific strategies that project stakeholders and partners believed in. These strategies were further integrated into annual work plans.

A process approach



Key gender issues identified in EADD-1:

- i. Low participation of women in marketing cooperatives and POs—women composition in membership at baseline was 13.8%
- ii. Low access to and use of improved technologies, inputs and services by women and female-headed households
- iii. Low and ineffective participation by women in cooperative and farmer group meetings
- iv. Low ownership of shares by women in farmer-managed cooperatives and infrastructure
- v. Limited skills of most EADD staff on how to deal with the gender issues and how to integrate gender in their work
- vi. Women deliver milk to CPs but payments is made through formalized means—bank accounts that are mostly owned by men. The more the hub formalizes milk marketing the more women are likely to lose control over a traditional women controlled income stream.

Integrating gender in hub promotion—some key strategies

The results of the gender analysis will determine the role and importance of men and women in dairying and related activities. These activities include intra-household dynamics, participation in collective action, and participation in hub leadership and management structures. The results inform the design of interventions—strategies and approaches that the hub promoter could prioritize for implementation.

Often multiple strategies will be necessary to address an issue. It is also important to note that a mixture of training and non-training interventions would be necessary to make an impact. It is acknowledged that training is a necessary intervention, but it is not sufficient to achieve the changes desired.

Table 6: Some recommended/ generic strategies

Strategy	Rationale
Training for capacity building	Gender trainings create an awareness of gender inequalities in women's status, access and control over resources. A transformative approach should be embraced to ensure gender training is not perceived as a stand-alone approach but as a means to an end.
Targeting approaches	Targeting resources, activities or services to specific groups of individuals, anticipating changes in their situation relative to that of others. Targeting does not apply just to women (e.g. woman-dominated groups); it can also apply to men with an objective of enabling them to become more conscious about the situation of women. Be aware that engaging women in both mixed and woman-specific groups has both advantages and limitations.
Using participatory approaches	Involve women (as well as men) in designing technologies, products and services that the hub intends to offer or facilitate. Doing so helps assure that those responsible are gender responsive and increases the chances of adoption.
Increasing women's membership and participation in POs	The hub promoter and the PO leadership need to proactively recruit women into the PO since women (and men) may often assume it is difficult or not beneficial to recruit women. Strategies may include: <ul style="list-style-type: none"> • Encouraging men to allow their wives to register as bona fide members—especially in cases where men live away from home or are engaged in off-farm employment, such that it is the women who, in practice, are the farm managers. • Ensuring membership criteria offer equal opportunities to men and women. • Introducing quotas for women's representation on PO's leadership and management structures. • Encouraging and building women's capacity and confidence to offer themselves for elections. • Explaining the importance and benefits of women's representation to men.

Table 6: Some recommended/ generic strategies

Strategy	Rationale
Ensuring women benefit from technical training, extension services and production inputs	<p>Fewer women than men benefit from agricultural training and extension programs due to their greater domestic responsibilities, lower education levels and other factors. In addition, women can lose out from credit and input provision schemes due to their lack of collateral and poor access to information.</p> <ul style="list-style-type: none"> • Ensure that women as well as men are directly targeted as clients of training and extension services (set targets for men and women farmers, with location and times set for the training). • Make sure that the training methods used are appropriate for women as well as men (facilitated discussions, visual tools). • Ensure that staff and extension workers acquire skills on gender issues and are held accountable for promotion of gender inclusiveness in the hub. • Ensure that entry and guarantee requirements for credit schemes are women friendly (group guarantee mechanisms as substitute for collateral).
Ensuring hub promoter's staff promote gender inclusiveness in the hub	<p>Staff and extension agents are critical for ensuring that women feel safe, welcome and valued in developing a dairy business hub.</p> <p>Train hub promoters' field staff, PO staff and third party service providers on gender:</p> <ul style="list-style-type: none"> • to appreciate gender-based constraints, concerns and opportunities. • to acquire skills for promoting and nurturing women's participation. • to increase likelihood of success by hiring a balanced team of women and men.
Dealing with social norms and cultural contexts	<p>Working with POs and their communities is an opportunity for development promoters to facilitate development of new 'spaces' (e.g. dairy hubs) that provide opportunities for change, on which women can capitalize.</p> <p>However, in communities where cultural practices unfriendly to women are deeply rooted, abruptly engaging women actively may prove counterproductive.</p> <p>Working with woman-dominated groups can be an alternative to promoting women's participation and leadership in established POs. Being more socially accepted in such space, women find it safer to voice their opinion and needs and hence develop leadership skills. The flip side is that men can feel discriminated against and show their resentment by sabotaging activities. Besides, women-only groups miss out on vertical links that men often control.</p>
Monitoring, evaluating and learning	<p>How do we know these strategies work? This critical question needs to be answered. The hub performance plan should incorporate adequate gendered outcome and impact indicators. The indicators should be able to measure how the strategies have contributed to addressing the identified issues and how cost effective their implementation has been.</p> <p>The indicators should also capture changes and evolution in gender-related norms, other than capturing just absolute numbers. For example, an indicator that captures only the number of women joining a PO tells less than one that captures the percentage change in women's membership in the PO.</p>

7.2 Engaging youth in dairy business hubs

This sub-section describes how a hub promotion process can ensure youth participation is integrated in the overall objectives of the hub development and how youth-related constraints and opportunities can be identified to inform strategies and interventions. It also presents practical examples from EADD-I work.

Making youth participation integral dairy hubs promotion

Hub development should provide opportunities for young people to find income and employment, and to develop employable skills and careers. Engaging both unskilled and skilled youth could be made part of the objectives driving

the promotion of a dairy business hub. Doing so would open up avenues for synergies and would present prospects of integrating training, education and youth-targeted strategies and activities in the wider development context of the evolving hub.

Box 28: Making youth an integral part of dairy business hub development: The guiding questions

How can young people become dynamic entrepreneurs in the hub?

How can they find jobs in the hub?

How can they be tapped to provide innovative solutions and new ideas?

Analysing barriers and opportunities

It is worthwhile to examine the current situation in terms of how youth are engaged in dairy production and marketing. Analysing youth specific constraints and opportunities at each node in the dairy value chain can easily be integrated during value chain analyses, baseline/progress surveys and evaluations. Such analyses lead to identification and prioritization of specific nodes and activities that are more attractive to youth and the challenges they face. For example, EADD-I realized that the transportation of producers' milk from farms to mini-collection and cooling centres, and the provision of advisory and input services such as AI, drugs and training, as some of the nodes/services were most attractive to unskilled and skilled youth. The barriers that existed related to limited skills, motivation, attitude and limited access to required assets such as capital, tool kits, motor cycles, carts and donkeys.

It is also critical to find out whether development programs targeting youth entrepreneurship already exist in the community. If the hub synergizes with such programs, its promotion can be designed to improve the situation of young people and actively engage them in the key activities and services the hub requires.

Box 29: Identifying constraints and opportunities to inform interventions that enhance benefits for youth in dairy hubs: Using existing data sets in EADD-I

To shed light on participation of youth in dairy activities in the EADD project hubs, EADD revisited existing project data sets (baseline, market agent survey and mid-term evaluation—MTE). Based on these data sets, a comparative analysis was conducted between households headed by youth (described as those whose age is 35 years and below) and non-youth household (aged above 35 years). The market agent survey analysis was meant to understand the services that youth in the dairy sector provided as well as the performance of youth-run enterprises vis-à-vis those run by non-youth. The analysis of household surveys in baseline and mid-term evaluation shed light on participation of youth in the dairy activities undertaken under the hubs.

A number of variables in the household surveys were selected to run the analyses, including ownership of land and other assets, poverty, livestock feeding, access to improved technologies and literacy. These factors were identified as some that could affect youth participation in dairy activities and performance of their enterprises. The surveys were conducted in Kenya, Rwanda and Uganda.

Findings and their implications for engaging youth:

- MTE data showed clearly that young farmers were less likely than older farmers to be involved in EADD activities as primary dairy producers even though youth was a target population for the project.
- Not all youth are resource poor. Indeed, household heads below 35 had more assets than those older, including land and cows, especially in Uganda. They also had higher incomes from various sources as seen in the baseline.
- Youth-headed households in Kenya were also found to own more mobile phones and landlines, and fewer were in the poor household category (less than USD 2/day).

- They were also found to have attended business training, implying that they have the necessary skills to run dairy farming as a business if it is promoted as a lucrative venture.
- Households that were headed by female youth were significantly fewer in Uganda and Kenya.
- In terms of collective action, the mid-term evaluation findings concurred with the baseline, showing that fewer households headed by youth participate in collective action.
- Generally the participation of young people in dairy-affiliated businesses was low.

Implications:

- Dairy has to be very profitable to attract young farmers and EADD activities may need to provide information on the profitability of dairy farming to boost young farmers' participation.
- However, once young farmers take up dairy as a business, they are more likely to succeed given their large landholdings for production, especially in Uganda, high level of education and literacy necessary for adopting improved technology, and better access to communication technologies.
- Appropriate strategies are needed to target young female-headed households so as to increase the participation of women in dairy activities, especially given the important role they play.

The project needs to come up with interventions targeting youth, encouraging their participation in group activities to ensure they benefit. Their participation is important for technology flow given the drastic rise in the proportion of young people using improved dairy production technology across all countries with reference to the baseline survey.

The project also needs to create awareness among youth regarding services they could provide, such as post-production opportunities, which should attract more young people, especially given that they have a higher level of education and some training in business. MTE data indicate a significantly high proportion of youth-headed households in Kenya own assets in transportation and the project can encourage young people to offer transport services to dairy farmers.

Identify key issues and intervention strategies

The analysis should bear in mind that it may not be easy to identify areas in the hub activities and services to engage young people. Youth are known to jump quickly on profiled opportunities, but if there are no immediate profits, they tend to lose interest and divert their attention to other businesses. The analysis needs to consider whether the risk profile of young people may render them particularly vulnerable to exploitative employment conditions, or to running into debt, or to taking business risks they are not able to assess properly. Another challenge is the limitations related to lack of age-disaggregated data within the hub businesses.

Informed by the output of analysis of barriers and opportunities, EADD-I organized a four-day regional workshop for the country gender and youth working groups in the three countries (Kenya, Rwanda, Uganda) to craft strategies and action plans to engage youth in the hubs. A representative from the Youth Entrepreneurship Facility (YEF) of the International Labour Organisation (ILO) in Uganda was invited to appraise the team on the guiding principles of the youth-to-youth fund and explore ways EADD-supported hubs could take advantage of the fund to engage youth in the dairy value chains.

Table 7: Key issues identified and strategies proposed

Key issues and barriers	Proposed strategies and opportunities
Limited access to and/or ownership of key dairy-related assets for most youth	<p>Promote intensive production technologies such as zero-grazing.</p> <p>Link young people to youth-enterprise funds and programs.</p> <p>Promote youth participation in post-production activities.</p> <p>Encourage household approach and family enterprise.</p>
Limited access to financial services (financial literacy, credit/loans, savings)	<p>Encourage youth to self-organize and participate in popular savings programs.</p> <p>Scout and link youth to financial institutions and other stakeholders that target youth such as ILO, the youth enterprise fund in Kenya, and banks.</p>
Negative attitude, perceptions about youth participation in dairy and farming generally—among both youth and the community	<p>Promote household and family farming approach to dairying.</p> <p>Encourage school outreach programs, 'catch them while young' (e.g. essay writing competitions in secondary schools within the hubs catchments on topics related to youth and dairying).</p> <p>Profile successful young dairy farmers (EADD-I newsletter issue No. 8 was dedicated to young people engaged in the dairy hubs).</p>
Inadequate entrepreneurial capacity	<p>Organize hub-specific business opportunity seminars that promote business opportunities amenable to youth. Such forums could be informed by BDS diagnostics surveys and form a platform for strengthening links with wider hub networks of actors.</p> <p>Tailor or adapt practical entrepreneurship training modules informed by an assessment of training needs and an analysis of skills gap.</p> <p>Link and partner with other stakeholders specializing in entrepreneurship development programs (ILO, Technoserve, Making Cents International, Youth Enterprise Fund).</p>
Weak self-organizing and collective action among youth	<p>Package dairy information as a lucrative venture.</p> <p>Increase elaborate effort to strengthen self-organizational capacity of youth (leadership, governance, networking, group dynamics, strategic planning).</p> <p>Link and partner with relevant stakeholders.</p>
Limited capacity within EADD to mainstream and target youth participation (staff skills, youth-related outcomes, approaches and strategies)	<p>Develop staff capacity in designing and executing youth interventions.</p> <p>Integrate youth-specific outcomes in overall hub performance framework.</p>

Chapter 8. Evidence-based management

Introduction

Just as with any investment, establishing smallholder dairy business hub requires robust analysis and assessment of progress and outcomes vis-à-vis the costs. Monitoring, learning and evaluation (MLE) therefore becomes an integral part of programs and partner organizations seeking to facilitate the development of smallholder dairy hubs. An MLE system provides powerful tools for informing hub promoters and facilitators, PO management and leadership, and other stakeholders about the outcomes and cost-effectiveness of the dairy hub initiative. Not all tools have the same ability to measure and evaluate outcomes. Choosing which tools are the most appropriate depends on how the hub facilitator intends to use the MLE results.

Hub development programs that successfully demonstrate their effectiveness with smallholders and other greater benefits such as market spill-overs with a convincing evaluation component will encourage more and more financial and technical assistance for smallholder development. Such programs are also critical for triggering up-scaling and replication. A robust MLE system can test, and sometimes demystify, assumptions about the nature of assistance dairy smallholder farmers require. Such discernment can increase the cost-effectiveness of future investments.

8.1 Choice of MLE methods

POs and hub facilitators have several options for measuring the effects of the dairy business hub on smallholder farmers and other local value-chain actors. One option is to establish mechanisms for observing and tracking change in the behaviour of targeted participants (smallholder farmers, PO management and leadership, local value-chain actors) using *process evaluation-oriented methodologies*. This option can be ideal for hub promoters planning to share stories and case studies about the hub approach and their work with smallholder dairy farmers. Another option is to employ impact evaluation methodologies such as experimental or randomized control trials and quasi-experimental data to measure and draw conclusions on the dairy hub's development and its effects on smallholder farmers, POs and other local value-chain actors. *Impact evaluation methodologies* measure the value of the dairy hub promotion interventions and highly inform top management decision-making regarding future similar efforts, by government agencies, donors and other investors.

Impact evaluations are costlier than process evaluations. It is therefore important for the hub development promoters and partners to determine the levels of rigour they require for their evidence-based management functions.

Table 8: Comparison of process and impact evaluations

Process evaluation	Impact evaluation
Uses data taken before and after intervention to measure change in behaviour or outcome for project participants.	Uses data from participants and non-participant (or control) farmers, POs, BDS providers taken before and after intervention.
Ideal for case studies and human interest stories that demonstrate outcomes of the hub approach.	Capable of attributing hub results and outcomes of the interventions.
Identifies which aspects of hub implementation are successful and which are less successful.	Useful in measuring cost-effectiveness of the hub development interventions.
Weaker in providing feedback on cost-effectiveness.	Costlier but generates information of greater value.

Depending on these considerations, a hub development promoter can adopt both methods. EADD-I's experience shows that process evaluation is needed when the promoter is supporting hub development via a PO—mainly because the PO becomes an important entity or actor in the hub that needs to be supported to play a key role in managing data and information to inform own decision making. In that case some of the data and information needs of the PO overlap with those of the promoters, and it is empowering for the promoter to support the PO in collecting and managing such data and information.

Box 30: The hub approach and importance of a quality information management system

'Accompanying the hub development is the necessity for much better quality information during the pre-hub establishment assessment phases of a particular hub, and during the implementation. A tracking system that is owned/patronized by the PO management and leadership (in relation to routine business performance metrics) and by EADD managers (at the level of M&E) is of necessity. Especially to inform effective targeting of smallholder farmers, by analysing the social and economic returns at farmer and hub levels. In addition, a workable and easily appreciable progress and sustainability assessment (like the POSA tool, also known as the 'stage-gate assessment tool') system can be a meaningful tool in identifying the conditions under which different hubs make progress towards sustainability, as well as identifying eventual graduation or exit strategies to be considered by EADD. Without an emphasis on learning, the hub management may not develop the capacity to manage these hubs into the future'.

Edited excerpt from EADD Hub Assessment Report 2013 (Firetail Limited, London)

Box 31: The overlap of PO and hub promoter data and information needs

For instance both the hub promoter (facilitator) and the PO will be interested in tracking the percentage of farmers who are:

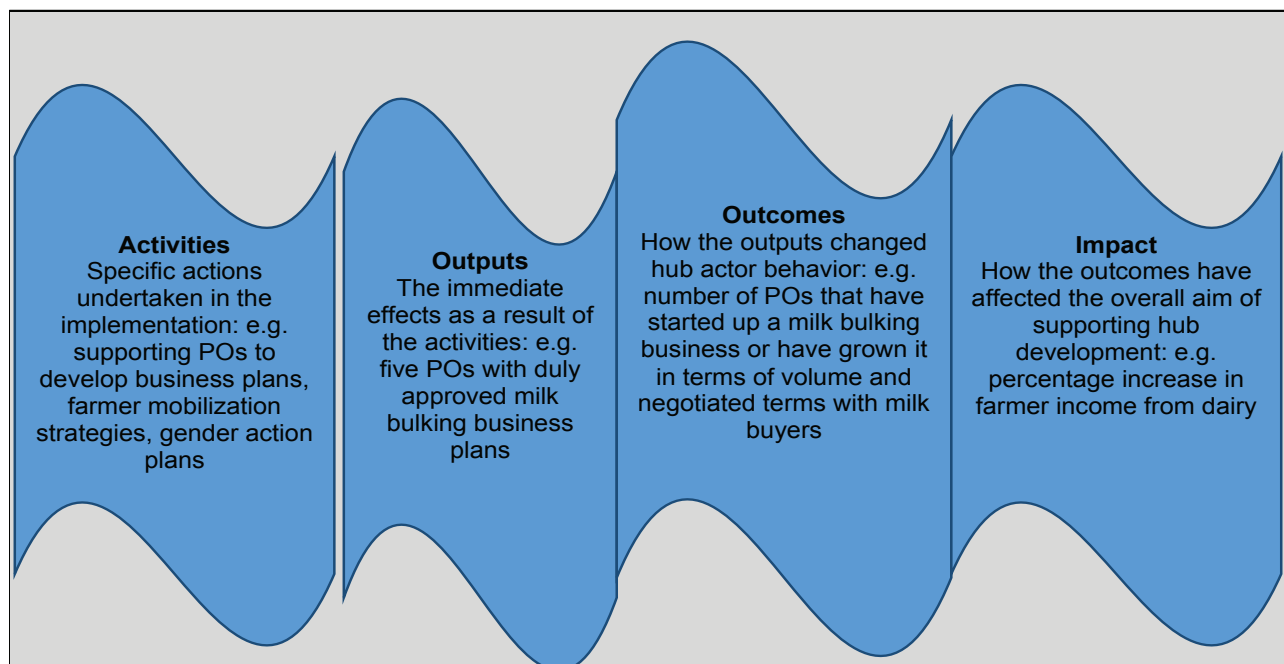
- Using recommended breed improvement practices such as AI.
- Using input credit (check-off) system.
- Supplying milk (marketing milk via the PO bulking/chilling business).
- Women, as opposed to men, who are participating and benefiting from the hub.

Such data and information needs require an assessment of the implementation of the hub development interventions, but that does not explain how the results have been achieved, nor can the results be generalized beyond the direct participants evaluated.

8.2 Setting key dairy hub performance metrics (business and social change)

'Metrics' simply refers to what needs to be measured (indicators) to assess the progress and effectiveness of the hub development efforts. The selection of metrics is derived from the hub development planning framework used (logical framework or theory of change). It analyses the cause–effect relationship and assumptions linking hub development interventions with anticipated results. Based on the results chain, metrics can be categorized into outputs, outcomes and impact (Figure 6).

Figure 6: Deriving metrics from the results chain



The acronym 'SMART' is commonly used to remind us that good metrics should be specific, measurable, attainable, realistic and time-bound.

Besides categorizing metrics based on the results chain, it is also important to ensure that a judicious mix of metrics is capturing data at farm, household and PO levels, as well as at the broader hub-wide level, looking at BDS providers and other value-chain actors.

Main categories of the farm-level metrics EADD employs are the following:

- General farmer and household socio-economic characteristics
- Dairy production and assets turnover
- Income from dairy
- Cost of producing one litre of milk
- Dairy management practices
- Human nutrition and health
- Livelihood diversification

Reliably tracking changes in farmer income is challenging. However, it is critical to understand farmer income because if new practices or inputs do not increase household income, they will not be sustainable. In almost all cases, farmers do not keep track of all the costs associated with farming activities but at a minimum the PO and the facilitator can monitor the costs of milk production using a sample of farmers and simple recording sheets, as was tested in EADD-I.

PO level (main categories)

- Farmers reached and patronage level
- Business performance of milk bulking
- Services offered to members
- Social change (participation of women, youth, poor farmers)
- Relationships with agribusiness and public partners
- Governance practices

At the broader hub level

- Value chain actors engaged and benefit
- Market links established
- Hub growth, sustainability and maturity

8.3 Data collection and management

A well-thought-out data collection system is vital to ensure the reliability of information being generated from data analysis. According to EADD-I experiences, on-farm data are the most challenging to collect, and to do so require innovative MLE mechanisms. Such mechanisms include strengthening PO capacity to play some key roles, developing collaborative simple and attractive user-friendly tools for collecting, analysing and presenting data, and crafting incentives for producers to contribute data. Integrating randomized control trials with robust (baseline) surveys can lay a solid framework for subsequent evaluations such as mid-term, end-of-program and impact evaluations.

The deliberate collection and maintenance of gender-disaggregated data (and if possible age-disaggregated data) and analysing it will be important in monitoring and in learning whether and how men, women and youth perceive and participate in hub-stimulated opportunities and benefits.

Data at farm level

The main data collection method on the farm is household surveys complemented by qualitative assessment using focus group discussions.

A robust understanding of the targeted smallholders and members of the PO, including demographics, farming practices and access to inputs and services, and community aspects such as landholding, education, social capital, and gender roles are important in putting the hub development intervention and strategies in context. A good baseline survey can further aid in identifying and categorizing farmers based on their various capacity levels and constraints.

Smallholder development programs tend to view farmers as a homogeneous group with similar socio-economic characteristics. A more sophisticated approach categorizes farmers and informs the different approaches that are suitable for targeting them. For instance, some farmers operating at subsistence level may not have enough surplus

milk to market but may aspire to improve their dairy enterprise to be able to achieve a marketable surplus in the future. Such farmers would be willing to join the PO; however, if the PO services and activities don't recognize their realities, they may feel disappointed and drop out.

Data at PO level

A number of metrics at PO level are business-related indicators that can be collected routinely. As highlighted, the PO should be supported to put in place a simple and robust data and information management system, hopefully computerized. This support should be complemented with training and capacity development of key staff and managers, as well as support to develop required tools of templates and report formats. The data management system should integrate PO business-related metrics with related farmer-participation data. EADD-I observed that POs find it easy to use business management information systems such as Quick Books but they rarely link collective business performance with related membership participation data like patronage on services offered, shares and equity contribution, and participation in activities such as annual general meetings, trainings, and exchange visits.

Data at the broader hub level

Data and information related to broader metrics in the hub can best be collected through periodic surveys and analysis of the dairy sector at meso and macro levels. One challenge is that value-chain actors may not be willing to share business information for fear of disclosing their business strategies. To address these challenges, EADD-I commissioned additional surveys to complement on-farm and PO data: market agent and local BDS providers' diagnostic surveys.

8.4 PO level organizational self-assessment tools

To guide the PO in assessing progress in a more comprehensive manner and long-term perspective, EADD-I designed and piloted a POSA tool aimed at guiding POs to annually assess progress towards sustainability—the likelihood of survival and of sustaining progress upon withdrawal of external and intensive promoter support by:

- i. Identifying and prioritizing gaps that threaten the likelihood of sustaining progress.
- ii. Crafting informed and realistic action plans to address sustainability weaknesses.
- iii. Guiding the partnership dialogue between the PO and EADD or any other partners.
- iv. Guiding EADD program management and decision-making, especially regarding ongoing facilitative support to the POs, and graduation and exit strategies.

Box 32: EADD-developed producer organization assessment tool—POSA

'The sustainability assessment tool is designed to guide dairy POs in undertaking periodic self-assessments to: gauge/predict their progress towards sustainability, and identify and prioritize gaps that need to be addressed in order for the PO to gradually grow into a mature and sustainable collective business. In case the PO is benefiting from externally funded capacity strengthening support, the tool can also be used to structure partnership dialogue between the PO and the implementing agency. The implementing agency can also use the tool for program monitoring, management and decision making, especially on graduation and exit strategies'.

EADD-POSA Manual 2014

The tool was customized based on EADD's extensive experience of interacting with and supporting capacity development of over 80 dairy POs in Kenya, Rwanda and Uganda. It was dubbed 'the stage-gate assessment tool' as it envisions POs and hubs in five linear stages of growth and maturity.

Table 9: Stage-gate assessment (POSA) tool

Stage no.	Stage	Score range
Stage I	POs at the start-up phase	0–20
Stage II	POs emerging from the start-up phase	21–40
Stage III	Maturing POs that require further but targeted capacity strengthening	41–60
Stage IV	Stable POs experiencing good performance—threshold for graduation, but follow-up responsibility encouraged	61–80
Stage V	Considered as fully mature hubs—promoter advised to apply follow-up responsibility	81–100

The tool is made up of seven dimensions of sustainability for smallholder dairy producer-like organizations in East Africa: Governance, financial health, access to output markets, access to dairy inputs and services, on-farm impact, member loyalty and relations with the external environment. Each dimension is organized into sub-dimensions and specific priority indicators. Under each dimension, indicators are allocated weighted scores based on their importance in driving sustainability. Aggregating the scores of all the dimensions gives an overall score, with a maximum of 100.

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Appendices

Appendix I: A summary of main characteristics of the common types of dairy producer organizations in East Africa.

SHGs	Farmer companies	Cooperatives
<p>SHGs are less formal organizations formed by people with a common problem or situation, for the purpose of pooling resources, gathering information, and offering mutual support, services, or care.</p> <p>SHGs may be registered or unregistered.</p> <p>To register a SHG, in Kenya for instance, the group has to have 10 or more members who share the mission, vision and objectives of the group.</p> <p>While a registered SHG is recognized by law as a body that can transact business in its own name and own property on behalf of its members, the members are jointly liable to account for debts and obligations of the group. This is unlike the limited liability status of companies and cooperatives.</p>	<p>A company is a commercial business. It is a voluntary association formed to carry on business with a view of making profits. Companies could either be limited by shares, limited by guarantee or unlimited. With regards to smallholder dairy farmers' collective action, the most appropriate form of company would be companies limited by shares. Such companies operate on share capital contribution by members and are of two types: Public limited companies and private limited companies. These companies should be registered with the relevant government authorities. Private companies should have a minimum number of seven members.</p> <p>Public companies on the other hand:</p> <ul style="list-style-type: none"> • Should have a minimum of 50 members; • Restricts the right to transfer shares; • Prohibits any invitation to the public to subscribe to its shares. • When membership of a private company exceeds fifty, it must convert to a public company. <p>Forming companies should be a lucrative venture for resource-constrained smallholder dairy farmers because:</p> <ul style="list-style-type: none"> • These companies have many sources of capital like, for instance, sale of shares and acquisition of large amounts of bank loan. The farmers can raise large capital by involving many shareholders; • Farmers are assured of continuity even in case of death, bankruptcy or withdrawal of a shareholder; • Shareholders enjoy limited liabilities to the debts of the business; • Shareholders are safeguarded against fraud since they insure themselves and the business at large; • Better management, especially in public companies (i.e. they are able to employ or elect qualified directors); • Most public companies enjoy economies of scale since cost of production can be decreased by mass output. 	<p>A 'cooperative' is a member-owned, member controlled, and member benefits association. They bear both social and economic objectives. In agricultural cooperatives, the members are not only owners, but also they are customers of services offered by the cooperative and suppliers of produce to be bulked and marketed, as well as investors in the collective enterprise via shareholding.</p> <p>Farmer cooperatives have been promoted as an efficient mechanism for increasing market access and reducing poverty. There is evidence of the marketing performance of collective action as much as there are cases of failures.</p> <p>Farmers face commonly three levels of commitment to the cooperative organization, which are quite important for the performance of the cooperatives. The first level of commitment is about whether or not to become a member of the cooperative. Without sufficient membership, the cooperatives would not have the operational size to profit from potential economies of size and decrease the potential market power of their trading partners. The second level of commitment regards how much business the member decides to engage in with the cooperative and hence, whether or not to commit deeper. The cooperatives need their members to do substantial business with the cooperative channel for the sake of increased market share and financial performance. The third level of commitment concerns the member's involvement in the democratic process by attending meetings, voting at member meetings, becoming an elected representative, etc. The control of the cooperative business requires democratic governance for setting consensual price strategies and income distribution and obtaining better joint benefits.</p>

Appendix 2: SOP on site selection

The objective of this process is to guide the selection of sites where the hub centroid will eventually be located. The hub centroid can be defined as an agrovet shop for a pre-bulking hub type, for example; bulking centre for a bulking hub type and cooler for a chilling plant hub type.

1. Establishing a site selection work group

To ensure objectivity and uniformity in the assessment of potential sites, there is need to form a work group that would assess all the possible sites. This work group should comprise members from different interest groups within the implementing organization(s). In case of different implementing partners, the work group should consist of representation from each of the implementing partners. However, in the case of only one implementing organization, the work group should comprise persons of different disciplines or roles within the organization. The idea is to make the group as representative as possible, while ensuring the group is also lean (not having so many people—this is important for enhanced team work).

2. Identify potential sites using secondary information

Identifying potential sites would require assessing the areas under consideration on the basis of some necessary but basic factors. As a first step geographical targeting using existing GIS data could be a quicker way of objectively narrowing down the selection to particular high impact sites. Available GIS layers, such as access to roads, cattle density, and proximity to competing coolers (either planned or existing), would provide the first objective assessment and quickly generate a list of potential sites that could be assessed further.

- Based on the geographical targeting, identify potential sites in each project area earmarked for the implementation of the dairy improvement interventions. It is advisable to identify slightly more sites than the number planned for in the project targets as further feasibility assessment will be required and lead to dropping some pre-selected sites. For example, if the project intends to support 15 hubs, it might be wise to pre-select 20 at this stage. (Reference should be made to the project document when applicable to ensure that the pre-selection aligns with the project's targeted geographical coverage).
 - a. These prospective sites are known for high potential in milk production and poor access to milk market and/or to inputs and services. There may already be a PO in existence (though this should not necessarily be a requirement). In the case of existing POs, get information about their strengths and weaknesses.
 - b. Sources of information include official documents (e.g. census), studies, and experts' opinions. It is important to triangulate the information from different sources, i.e. using at least two sources of data for the same information.
 - c. Depending on data availability, this process takes between two to three weeks. It doesn't involve field work, unless no data are available.
 - d. The information is detailed in the table below.

Location/ district/region	Evidence for high potential in milk production	Evidence for low access to milk market and/or inputs and services	Is there an existing group for dairy producers or related? Give details (strengths and weaknesses)	Any other important information	Source of evidence

3. Data gathering for site selection to assess potential sites with a minimum checklist

The objective of this step is to collect data in each of the potential sites to validate the 'high potential in milk production' and the 'low access to milk market and/or to inputs and services'. Community willingness/readiness to use a hub approach (social capital and, therefore, collection action) to increase income through dairy intensification should also be assessed. It is also the moment to start diagnosing the status of the provision of business development services, and the availability private sector ag-ribusiness actors and their willingness to embrace the hub approach. In case of existing groups, a SWOT analysis will be conducted. Some additional information will be collected using key informants interviews with opinion leaders, local authorities and other important stakeholders. Indicators would include: i) Prior efforts to get farmers together and increase income using dairy; ii) Attitudes towards hand out etc.

Data collection takes one day per site. Experience from EADD-I shows that it is useful to have all partners represented in the teams so as to get required expertise.

At this stage, it is important not to raise the community expectations as to whether the project will be implemented in their locality/village or misconceptions on what the project can provide.

4. Rank and select the required number of sites

The data collected in step 3, should be subject to some sort of scoring in order to rank the sites. The information in the checklist should be given some weights based on their comparative level of importance in hub implementation. For consistency, a scorecard should be built on the checklist such that the data collected in step 3 is entered in the scorecard in order to derive the scores for each site. The scores are then used to rank the all sites in order of importance (from the site that exudes the highest comparative potential to the lowest). Depending on the desired number of hubs to be implemented, the top-most ranked sites are selected. This step generates a list of sites with the best minimum qualifications for hub implementation. Further assessment is necessary to ascertain the sites' viability. This is requires a feasibility study.

5. Conducting feasibility study

With step 4 generating a list of highly probable sites meeting the minimum qualification for implementation, the next step is to carry out a feasibility study to determine the economic viability of the proposed dairy hub business in the sites. From the list generated in step 4, feasibility study is to be carried out on the few most promising selected sites. A comprehensive feasibility study tool should be developed and used to gather all the necessary information for the feasibility study. Like in step 3, the site selection work group should visit all the earmarked sites (generated from step 4) and collect all the necessary data using the feasibility study checklist.

The results of the analysis and recommendations from the feasibility study findings should be presented by the site selection work group to the project management team. It is in this forum that the final decision is made on which sites are chosen for hub implementation and also what kind of hubs to implement. Mobilization and development activities in selected sites should commence after this step. Note that mobilization and other implementation activities should NOT start before formal decision has been made and the site contact persons/leaders express willingness to participate. A memorandum of understanding (MoU) should be jointly developed and mutually signed, setting out the terms of the partnership.

Appendix 3: Case study on feasibility assessment

Case study on feasibility study-EADD-I Site in Kenya

According to a feasibility study facilitated by EADD staff in a pre-selected Kenyan site (registered as a dairy producer private company) in 2009, the estimated required loan repayments and operating costs of a proposed chilling hub once operations commenced were KES 185,000 and KES 150,000 per month respectively. Based on these estimates, the chilling plant business needed to make at least a net profit of KES 11,500 per day to be able to meet its financial obligations. This meant an estimated breakeven point/volume of 4500 litres per day with a spread of KSH 2.60.

On the other hand, supply side estimated total milk production in the area at 122,000 litres per day. Market landscape analysis indicated that 50% of the (surplus) milk marketed went to the sugar and tea estates in the area at a higher price of KES 18 per litre. The nearest milk processor NKCC, was 72 kilometers away. Data obtained from the existing dairy PO showed that on average, only 18% (900 households) of the total dairying households (estimated at 5000) in the catchment were active in terms of marketing milk via the PO, delivering on average 2.5 litres per day. This translated into an estimated 2160 litres milk intake per day under the baseline circumstances compared to 4500 litres per day required to break even.

Given the market landscape, the chilling plant option was deemed unfeasible given that the neighbouring sugar and tea estates offered a significant market outlet that was more attractive to farmers (in terms of prices and more immediate payments) than the chilling option. Technically, the catchment was not a milk surplus area.

However, EADD field team consultations with the communities were in consensus that the PO could merge with neighbouring dairy PO and boost the viability of the chilling business.

While the former was registered as a private farmers company, the latter was a registered farmer's dairy cooperative. Due to compatibility challenges between the two organizations, cohesion challenges and leadership wrangles seized the merger and the two had to terminate the merger. Since the feasibility for the dairy cooperative was positive, it picked very well positing an average daily intake of 4521 litres per day against a break even volume of 1700 litres per day between January–October 2013. To catch up on the momentum lost during the merger period, EADD management considered to extend the support for additional two-three years in the second phase of the project. Mainly to support the hub in the planned establishment of other hub services, such as an FSA, agrovet, AI services and extension unit, as well as mentor the newly elected board of directors.

On the other hand the private farmers company faced operational challenges. Unable to break even it failed to attract external financing to meet operational obligations, it also could not align with EADD's interventions leading to poor cooperation and relationship. It was thus dropped from the program support. However, reflections among EADD team realized that by adapting the hub approach, tailor made context specific business options/models could be more suitable to a PO under such circumstance. Lesson learned was that non-bulking hub could have been more suitable since the site was milk deficit. By re-engineering the business model, the PO could have consolidated the milk business by strengthening business services linkages in certain areas; Financial services (FSA), access to inputs and services.

Sources: (EADD, 2009. Feasibility assessment report Meteitei); EADD, 2013. End of project report.

Appendix 4: SOP-strategic business planning process

Purpose

The objective of this SOP is to outline a process a PO can follow to ensure a robust strategic business plan is developed so as to guide the medium to long-term decision making of the PO.

Scope: The SOP describes how a PO can go about the task of developing a strategic business plan. It outlines how a PO can develop an interim business plan for startup purposes, and eventually develop a long-term strategic business plan after some six months into operation. It further suggests basic components for such plan.

Interim business plan vs strategic business plan

An interim business plan is generally used during the startup phase of a PO' business and operations, and it can last for 6-12 months as a more strategic plan 3-5 years is gradually developed. The strategic business plan is more advanced and benefits from a deeper analysis of the market, POs strengths and weaknesses, threats and opportunities and it makes projections over a longer time period.

Key steps

- i. Constitute a strategic plan working team with clear terms of reference. Make sure it's diverse (representatives from the board of directors, staff, and co-opted members, is desirable) and if possible identify an experienced external facilitator to guide the group;
- ii. The team guided by the external resource person/facilitator maps out the process, methodology, structure and timelines for the entire process;
- iii. The group should ensure it consults PO members to solicit their views, aspirations and dreams about their organization and the businesses it should engage in;
- iv. After consultations and review of existing data and information (the feasibility study report used during the site selection could also come in handy in informing the situation and the priorities). The team should retreat to finalize compiling the plan;
- v. Present the plan to the board of directors and later members for approval;
- vi. The board of directors approves the plan;
- vii. To make sure it guides implementation, ensure the generation of annual operating plans makes reference to the strategic plan, besides responding to foregoing experiences and changes in the business environment;
- viii. Ensure period review-mostly mid-way through the life of the plan.

Key components of a strategic business plan

- ix. Executive summary—providing a clear and concise overview of the entire plan.
- x. Organizational vision, mission, values, goals and objectives (outlining the purpose and why the PO exists)
- xi. SWOT analysis—highlighting how the PO's business strategy will build on its strengths, address weaknesses, mitigate threats and risks while tapping into opportunities in the business environment
- xii. An implementation plan, outlining priority activities required to achieve set objectives, how they will be executed, timelines, those responsible for ensuring it happens, resources required and indicators to tracking performance.
- xiii. Marketing plan. How the different businesses will be branded and communicated to members and customers.
- xiv. Financial projections. Required investments, projected cash flows and profitability.

Adapted from: Land O Lakes, 2014. Agricultural Producer Organization (AgPrO) manual: from first steps to profitability and growth; a field practitioners guide to cooperative development.

Appendix 5: SOP on feeds and feeding

Purpose: To ensure that feeds and feeding-related opportunities and challenges are addressed in a self-sustaining and systematic approach, embedded in the POs structures and operations, and leveraging on public and private sector partners.

Scope: The SOP is designed for POs interested in addressing the challenges faced by dairy farmers on feeds and feeding as an important component of dairy production and productivity. Its key aspects are:

- i. PO catchment-wide feed assessment and planning (guided by the FEAST tool).
- ii. Integrating a farmer trainer's element in the mainstream extension system, whereby model farmers volunteer to spearhead peer learning by demonstrating and disseminating information to fellow farmers on feeds and feeding technologies.
- iii. Enhancing farmers' capacity on feeds establishment and management.
- iv. Creating linkages with feeds and fodder seeds service providers.

Guidelines

I. Establishing the farmer trainers component

1. Raise awareness among young, male and female farmers on the importance of volunteer farmer trainers approach.
2. Develop the selection and recruitment criteria.
3. Identify potential young, male and female farmer trainers.
4. Develop a capacity building program.
5. Induct selected farmer trainers into the volunteer farmer trainers' program.
6. Develop relevant materials.
7. Equip the trained farmer trainers with resource materials and tools.
8. Integrate the farmer trainers into the PO and mainstream extension system and further link them to other stakeholders (government, private extension services; development partners, research and learning institutions) for sustainable technical support.

II Feed planning

Step 1: Engage stakeholders

- a. PO organizes meetings with key stakeholders in the dairy value chain. In the meeting ensure to:
 - Discuss synergies between different actors and how to exploit them to improve feed production
 - Share experiences on ways of assessing feed scarcity and developing feed options
 - Seek their buy into the process
- b. Obtain basic hub-wide data that is needed to estimate feed (demand) quantity. Such as:
 - Numbers of milking dairy cattle
 - Numbers of dry cattle
 - Average milk production per cow
 - Estimated cattle weights by category

Step 2: Appraise production systems using participatory approaches with farmers and stakeholders. The purpose is to assess the current feed inventories and develop feed calendars at the site/ hub.

- i. Assemble a group of 15-25 farmers for a focused group discussion using the FEAST tool (<https://sites.google.com/a/cgxchange.org/feast/home>).
- ii. Completion of short questionnaires by three key farmer representatives owning small, medium and large scale farms. The very small number of respondents for questionnaires means that the figures are only indicative. However, they are adequate to give a crude overall impression for the purposes of guiding thinking about constraints and interventions

Step 3: Estimate current site/hub feed availability and requirements in both wet and dry seasons using an Excel sheet template.

- i. Calculate feed in terms of metabolizable energy (ME) availability during the dry seasons when milk production is lowest (ME dry milk).
- ii. Calculate ME availability during the wet season when there is abundant feed availability and milk production is high (ME wet milk).
- iii. The difference between ME required for producing milk and maintaining cattle in the wet and dry seasons is the feed required to bridge the dry season feed deficit $[(ME \text{ wet milk} + ME \text{ wet cattle}) - (ME \text{ dry milk} + ME \text{ dry cattle})]$

Step 4: Develop potential site/hub specific dry season feed strategies (feed plans or options) for alleviating dry season feed shortages

- xv. Extract the available feed types and their estimated percentage contribution to feeding in the site/ hub
- xvi. Evaluate the most optimum feed options identified by the FEAST tool in step 2.

- xvii. Apply the percentage of the relative feed type identified above to the total feed gaps identified in Step 3 (iii). This gives an approximate amount of ME required to be raised from each option.
- xviii. Convert the ME in kg dry matter (DM) required
- xix. Propose practical options of producing the feed on DM basis

Step 5: Organize a feedback session with stakeholders to discuss the findings

- i. Evaluate the practical implications
- ii. Economic consequences of the suggested options.
- iii. Develop implementation work plans including timelines. Suggested approaches
 - Align work plans with existing stakeholders activities
 - Include work plan activities in strategic plans of dairy PO

III Capacity building in feed management

1. Informed by the feed plans, identify appropriate technologies for on-farm demonstrations.
2. Engage relevant stakeholders for demonstration methods and partnerships.
3. Develop a gender and socio-economic sensitive selection criteria for host farmers.
4. Select the demonstration host farmers and suitable on-farm sites.
5. Agree on a demonstration design.
6. Source for required demonstration materials.
7. Plan and conduct a demonstration with the target farmers.
8. Ensure feedback on demonstration activities.
9. Facilitate discussion on work plan and roles.
10. Where applicable label and protect the demonstration site to prevent destruction.
11. Monitor and backstop the demonstrations to ensure proper management and use.
12. Facilitate cross learning visits and assessments among different demo hosts.

IV Fodder seed production and access

1. Identify existing fodder seeds service providers and link them to fodder production farmers (The feed planning platforms would be a starting point for identifying providers).
2. Raise awareness among early adopter farmers on the opportunities for on-farm forage seed production.
3. Train farmers on forage seed production and handling.
4. Facilitate promotion of commercial production and marketing of the most preferred seeds.

5. Identify the adapted variety and conduct quality test of the seeds.
6. Organize the sourcing, distribution of seeds and supervision of planting.

V Feed mill business opportunities

1. Research and document feed business opportunities.
2. Facilitate a feed business opportunity workshop.
3. Sensitize and create demand for quality feed products.
4. Facilitate feed stakeholder cluster development.
 - a. Self-regulation
 - b. Quality control
 - c. Insurance
 - d. Financing
 - e. Technical equipment requirements

Monitoring

1. Ensure there are monitoring schedules and tools (checklist, data collection templates).
2. Ensure a reporting system is in place.

Corrective action

1. Review training curricula and organize regular refresher training programs for farmer trainers, seed producers, extension workers and demo hosts.
2. Ensure that there are incentive schemes such as grading and recognizing participants
3. Review and when applicable revise educational materials and tools.

-
- b. Partnerships with input market service providers such input and services suppliers, stock ists, agrovets, AI service providers willing to provided services on contracted terms and possibly payments via check off mechanisms.
 - c. Lobbying local governments to influence earmarked development grants and/or allocation of land to put up the POs premises.
 - d. Venture and social capitalists willing to co-invest with the farmers.
 4. Make a decision on which option(s) to pursue and draw up an action plan
 - a. Evaluate pros and cons of each option (develop criteria to guide).
 - b. Select the best option(s).
 - c. Implement and review the action plan regularly.

Appendix 6: SOP on the mobilization of capital

Purpose

The purpose of this SOP is to guide the collective enterprise in achieving the goal of capital mobilization through equity contribution from farmers, debt/loans and other sources.

Scope (process and structure) This SOP covers; determining total investment needs, confirming equity and debt ratio, mobilizing farmers to full capital requirement.

Key steps

1. **Determine the level of financing required (planned investments)**
 - i. Determine total investment needs (refer to business plan)
 - ii. Determine the appropriate debt to equity ratio (refer to business plan)
2. Project financing gap (Financing required minus member equity)
 - iii. Project the targeted amount members can raise-member equity (a realistic amount that members can raise and the schedule)
 - iv. Based on the set share value, determine the number of farmers/members needed to raise the required member equity portion
 - v. Develop and implement equity mobilization strategy
 - vi. Embrace pro-active strategies for mobilizing member equity
 - a. Transparent structures, regular updates for accountability
 - b. Well packaged and uniform communication-embrace ICT, radio talk shows, mobile telephone-promotional short messages (SMS) to membership and potential membership
 - c. Flexible payment mechanisms-payment in installments
 - d. Deductions from farmers milk payments based on their consent for the PO already bulking milk
3. Determine other sources of financing
 - vii. Develop a profile of banking/financing institutions and their requirements³
 - viii. Evaluate other financing options other than bank loans, such as;
 - a. Partnership with output market players such as a processor or large milk buyer willing to either lease a cooler or provide a cooler on other agreements to secure a milk supply base.

³ Based on EADD-I Experiences, most banks were reluctant to finance start-up investments for the POs and preferred established POs with not less than one year of business history where they could evaluate the viability of the business and its ability to meet repayment obligations.

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