

Transforming smallholder dairy farms

The role of lead farms in Ethiopia

Asaah Ndambi, Jan van der Lee, Gerko Wassink, Degu Tolera, Chala Merera, Ulfina Galmessu, and Karin Andeweg



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Lead farms provide services and advice to smallholders and are assumed to play a supportive role in the transformation from smallholder subsistence farming to more commercial, market-oriented farming. The lead farm approach has been a successful tool for agricultural extension services in African countries such as Malawi and Rwanda, and it is assumed that if the same success rates would be achieved in Ethiopia, there would be a rapid growth of the Ethiopian dairy sector. This practice brief examines the functioning and effectiveness of lead farms in both rural and urban milk producing districts in Ethiopia and makes recommendations on how their impact could be enlarged.

Ethiopian dairy production

Dairy production has been envisaged as a main source of livelihood that can provide animal protein on a daily basis to rural families in Ethiopia. However, the dairy sector of Ethiopia is still lagging behind and the sector is mainly informal, where less than 2% of the total milk goes through the formal chain. This is associated with a number of factors such as inadequate feed and fodder, widespread diseases, poor genetic dairy potential of local breeds, marketing problems and inefficiency of livestock support services. Provision of adequate extension / advisory services has been proven to be the best means of driving innovation and addressing major challenges of tropical smallholder dairy systems, thereby improving their productivity.

The lead farm approach

"Lead farm" refers to a relatively large, developed farm, as compared to the neighbouring smallholder farms that it provides services to. In Ethiopia, these are mainly large farms established and managed by government agencies, Ethiopian entrepreneurs or foreign entrepreneurs. Lead farms are financially independent from smallholders and have access to resources, knowledge and markets not accessible to smallholders.. These farms aim at supporting smallholders in various ways, such as offering them access to farm inputs (i.e. quality feed, AI), technology, technical assistance and a market for produce. Offering smallholders access to these markets is a promising model for commercialisation, market orientation and production enhancement (da Silva et al., 2008; Vorley et al., 2009).

Key messages

- When well-functioning, lead farms in Ethiopia have recorded good success rates in providing services and showing 'good practice' to smallholder dairy farmers in Ethiopia. In some cases this has shown to improve cow productivity and farmer income.
- Despite their positive intentions, in practice it appears to be quite challenging for lead farms to realise their assumed transformative function.
- To be more effective, lead farms need to clearly define their services. In areas with a low number of services offered (mostly rural areas), lead farms with a broad range of services are more effective. In areas with a high density of services offered (i.e. urban areas), a more focused service provision is more useful to smallholders, including giving them the option to select a lead farm to cover their full needs for inputs and services.
- Lead farms show a gradual drop in the number and quality of services provided over time since their starting phase. Being consistent in providing services would benefit smallholders.
- The emerging 'lead farm model of infrastructural inclusion' is an important tool for lead farms to foster smallholder commercialisation.

Lead farms in Ethiopia

Lead farms are considered to be an effective means of advisory services to farmers. By offering these services, lead farms play a certain coordinating role in the support of the value chain for smallholders. Specific services offered by lead farms are production inputs (AI, feed supply), animal health services (prevention as well as treatment) and market services (market information, access to market).

In Ethiopia we distinguish four main models for lead farms and a fifth, new model, which' contours are currently appearing:

1) *Master farmer model*: Where selected smallholders are trained by the lead farmer to perform a leadership role in the community and support other smallholders in dairy practices.

2) *Demonstration and training model*: Where smallholders come to the lead farm and learn how to use new equipment and practices. These farmers learn in groups and the group work gives farmers the opportunity to exchange ideas. They are usually very practical, but could sometimes have a school-like setting with theoretical knowledge.

3) *Retailing farm model*: Where farmers are advised to be more market oriented and enter the dairy value chain via the milk marketing infrastructure of the lead farm.

4) *Business hub model*: where a cluster of businesses supply inputs and provides services in a specific geographic area serving smallholders' needs.

5) *Model of infrastructural inclusion*: A new lead farm model that aims to open the existing infrastructure of a lead farm for smallholders to provide access to improved inputs or new output markets. The lead farmer acts as a broker between existing input and/or output market players and smallholders. This leads to more and stronger linkages between actors in the dairy value chain. This model requires relatively low investments and time from the lead farmer, which makes it attractive for lead farmers from a business perspective.

Lead farms may use a combination of models in order to enhance the value chain for smallholders by offering services. For example, smallholders trained in the master farmer model may get their knowledge via demonstrations on the lead farm (demonstration & training farm model).

Key Facts about the Ethiopian Dairy Sector

- **Dairy herd:** 14 million cattle
- **Milk production:** 3.8 million tonnes/year
- **National production share:**
 - 63% Rural smallholders
 - 22% Pastoral & agro-pastoral
 - 14% Peri-urban and urban
- **Species:** Cattle milk >90% of total milk; 97% indigenous breeds; <10% camels and goats
- **Consumption:** 19 kg per capita per year

Methodology behind this Practice Brief

This Practice Brief is based on case studies carried out on five lead farms covering both rural and urban milk producing districts in Ethiopia: Mara, Ambo and Ada'a in Oromia region. These districts were selected due to their high milk production density and the existence of various lead farm models in the districts.

The case studies consisted of observations and in-depth interviews with key stakeholders on a) five major lead farms, b) the surrounding smallholder farms, and c) key informants.

These case studies were carried out by two MSc students and aimed to identify and assess the different types of services offered and mechanisms used by lead farms and to evaluate their effectiveness.

Information on the case studies and the experiences on the lead farms are summarised on the next page.



Case Studies

Alfa farm

"One cow needs 25 kg of feed per day. Our feed is a complete ration for a cow, so our farmers do not need to worry about balancing their ration."

Over the past years, Alfa farm has served over 400 smallholders. These smallholders received a balanced cow ration in 25kg bags and a leaflet with information about additional ingredients required during the different development phases of calves/cows. Using this high-quality feed, the farmers reported that milk yields increased and health of the cows improved as a result of the use of the feed from Alfa farm.

Cowgrow

"With us, a beginner dairy farmer does not need much capital to start his business; he only needs to provide a guarantee that he will be able to feed the cow for the first couple of months."

Cowgrow leases one cow each to smallholders, who payback progressively through milk sales to Cowgrow. The over 50 farmers who benefit from this program do not only get a cow, but also have a guaranteed market for their milk with a facilitated collection system. Benefiting farmers were particularly thankful for the opportunity given by Cowgrow especially as they complained about the weak governance in the area. Smallholder Terafa (22 years old) leased one cow from Cowgrow and now has 5 crossbreed cows, two of which are calves from the leased cow, while the others were bought. He learned about handling the crossbreed cows by working on the Cowgrow farm. In the future, he will stop working at Cowgrow to be an independent farmer.

Farmer Service Center at Ambo

"We have trained smallholders to handle most of the veterinary issues on their farms and they now train other farmers. We also provided them with veterinary medicines and AI services at an affordable cost."

The Farmer Service Centre training room, demonstration plot for improved forage seeds and veterinary shop are open to all farmers in the area. These services reach about 200 smallholder farmers in a radius of 6 km from the centre. Legesse, one of the smallholders, found the training to be very helpful.

Genesis farm

"Over the last 14 years, we have offered courses on cattle breeding, animal husbandry and farm management to over 200 smallholder farmers. All farmers delivering milk to us also get training on milk handling until it gets to the collection point."

Genesis farm also provides feed, veterinary services, artificial insemination and bull services to farmers. Smallholders were happy with the good quality and punctuality of the milk collection service. One of the smallholders is Tafasatsin. She has been involved in the service delivery of Genesis farm since the beginning. Since she is a long-term client, Genesis still collects the milk daily from her home, while new customers have to bring the milk to Genesis themselves. The biggest advantage is of course the money she gets from the milk. While there currently is a delay in payment for some months, she remains a loyal supplier to Genesis farm due to trust and connections.

Holeta Agricultural Research Centre

"We provide heifers to smallholder farmers at less than 5% of their market value. These are the cheapest high value crossbred heifers you would get in the country."

Holeta Agricultural Research Centre (HARC) breeds heifers and offers them to farmers. It also offers trainings and demonstrations on animal husbandry, feed preparation, production techniques, milk handling and milk hygiene. The smallholders appreciate the quality and speed of their services and the low price of the heifers. One of the smallholders, Hurisa, is having three crossbred cows at the moment. The biggest advantage is the low price of the heifers: 400 ETB for a 6 months' old calf. The employees of the research centre come twice a month to his farm to give him advice. He also gets seeds for a discount price. Because of his good experiences with the crossbred cows, his neighbours also bought crossbred cows on the regular market, because they saw the long term benefits.





Main results

The case studies recorded good success rates in providing support services, including showcasing good dairy practices to smallholders. Smallholders often were satisfied with specific services provided by lead farms, especially during initial phases.

Remarkable are the differences between lead farms in rural areas on the one hand and lead farms in urban areas at the other hand. It was noticeable that lead farms and other services are concentrated around urban areas, and had a tendency to compete with one another, meanwhile smallholders in rural areas didn't have sufficient services. The research showed that lead farms in the rural area use an open approach with a wide range of services, based on a cost covering or donor-recipient relationship. The lead farms in the (relatively) urbanised area use a cost recovery or commercial relationship, especially in areas with multiple service providers.

The case studies showed differences in demand articulation. A good match between smallholder demand and lead farm supply is important for effectiveness. This starts with intensive and continuing demand articulation, which is challenging in a culture of 'not asking'. Organising regular meetings between smallholders is a good opportunity for sharing experiences on farmer level and is important for the inclusion of new smallholders. It also activates available demand for services.

With respect to the lead farm models, it is observed that focussing on one model or mechanism may not work. Every new lead farm has to consider the different lead farm models and mechanisms discussed before, in order to make a choice for the combination useful in its situation.

The lead farm approach also has challenges!

Despite the successes obtained, some challenges were experienced in running the lead farm approach. A number of smallholders were not satisfied with the

services provided by lead farms, for various reasons:

- Lead farms did not always provide the required services and in other cases these services were too expensive for smallholders.
- Some smallholders complained that the lead farmers were too business-oriented and solving smallholders' problems was not their priority.
- Some farmers got long delays in milk payments that disrupted their plans; others were not satisfied with the breeding services offered.

How could lead farms work better?

For a smooth functioning of lead farms, it is recommended that policymakers support the spread of lead farms to also cover rural areas with limited infrastructure. Additionally, lead farms should clearly define the services they offer, the conditions that farmers need to fulfil in order to benefit from these services, and the benefits that farmers would get from them. They should employ dedicated and competent staff and ensure that they are able to sustainably provide the promised services. Subsidised lead farms should develop a model that will generate the resources needed to maintain the services even after external support is finished.

Smallholders should have a clear production objective before selecting a lead farm for services. They should also understand that under the current lead farm models, they might need more than one lead farm to completely satisfy their service demand.

Policy-makers and development agents can facilitate the establishment of lead farms and ensure that they provide satisfactory and reliable services to farmers. Government extension services should establish win-win relationships with private lead farms in order to reduce costs and expand the coverage of their extension services.

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Photos: Gerko Wassink

Contact

Wageningen Livestock Research
P.O.Box 338
6701 AH Wageningen
The Netherlands

Asaah Ndambi
E asaah.ndambi@wur.nl

www.wur.nl/livestock-research

Jan van der Lee
E jan.vanderlee@wur.nl