

# Optimising smallholder dairy production in Ethiopia

## The role of improved calf feed

SNV-EDGET  
Practice Brief 3  
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The demand for milk products far outstrips supply in urban and peri-urban areas of Ethiopia, making milk production an attractive livelihood option for many smallholder farmers. Rising demand is driven by a combination of factors including population growth, urbanisation and increased awareness of the nutritional benefits of milk. The steady economic growth in the country over the past decade has also contributed to a growing middle class with a higher disposable income.

Despite these positive trends, a combination of supply- and demand-side challenges continue to hamper the further growth of the dairy sector. On the production side, the mixed farming systems practiced by most smallholders are characterised by low productivity of dairy animals and limited access to high quality livestock feed. Dairy farmers currently spend up to 60% of their production costs on (often poor quality) livestock feed.

### Why did we focus on calf feed?

It is for these reasons that EDGET chose calf management as a core entry point in its livestock extension strategy. The project adopted the motto “today’s calf is tomorrow’s cow” to convey the message that good calf management results in lower mortality, and faster growth and maturity of heifers. This in turn leads to quicker replacement of the milking stock and overall genetic improvement of the herd. In collaboration with the regional and district offices of the Ministry of Livestock and Fisheries Resources Development, EDGET developed a tailor-made calf management extension package to address the identified knowledge gaps. The package aimed to build the requisite capacities among both extension workers and farmers. Another important component of the intervention was developing links with commercial agro-input suppliers and dealers to ensure a sustainable source of high quality feed to meet the expected rise in demand.

“Before I was introduced to the calf feed programme I focused all my attention on my cow because she gave me milk every day. But after I learnt how to look after my calf I realised that it is my future. Since my free supply of feed ran out, I have bought calf feed two times and I will continue buy it so I can earn a better income from my cows.”

Shumi Bena, Dairy Farmer Adama woreda, Oromia region

The genetic make up of dairy cattle, as well as their management, are among the most important factors in optimal dairy production and productivity. A steady supply of healthy replacements for culled cows is a prerequisite for maximising dairy productivity and income. Providing calves with sufficient nutrients right from birth ensures optimal rumen development, fast growth and minimal stress and diseases.

Good calf management enables farmers to fully utilise the genetic potential of their cattle stock, which is critical in achieving optimal milk production. However, many traditional livestock production systems paid little attention to calf management, which presents a critical knowledge gap for smallholder dairy farmers today. This gap is further aggravated by the limited availability of good quality calf feed and advisory services on optimal calf management.

The project adopted the motto “today’s calf is tomorrow’s cow”

## What did EDGET do?

EDGET's calf feeding programme was targeted at smallholder dairy farmers meeting the following criteria:

- Own one to three female calves aged two months to one year;
- Calves are healthy (weigh between 80-105 kg);
- Preferably own crossbreed or exotic dairy cattle.

In order to ensure successful uptake of good calf feeding practices, participating farmers were fully involved at all steps of the intervention.

Farmers received training on how to feed and manage new-borne calves. They also learnt how to keep accurate records, in order to determine the appropriate amount of feed and adjust it accordingly as the calves matured.

Local extension agents and project staff received additional training to enable them to advise farmers on specific management techniques, including how to carry out heart girth measurements and ear tag applications.

Once the selected farmers had completed the EDGET

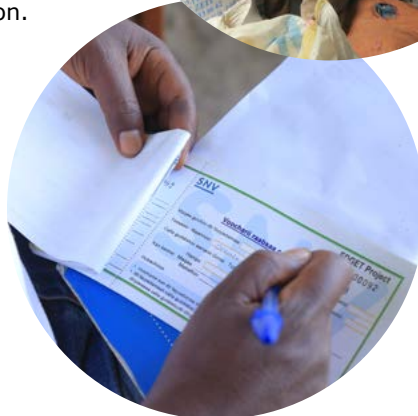
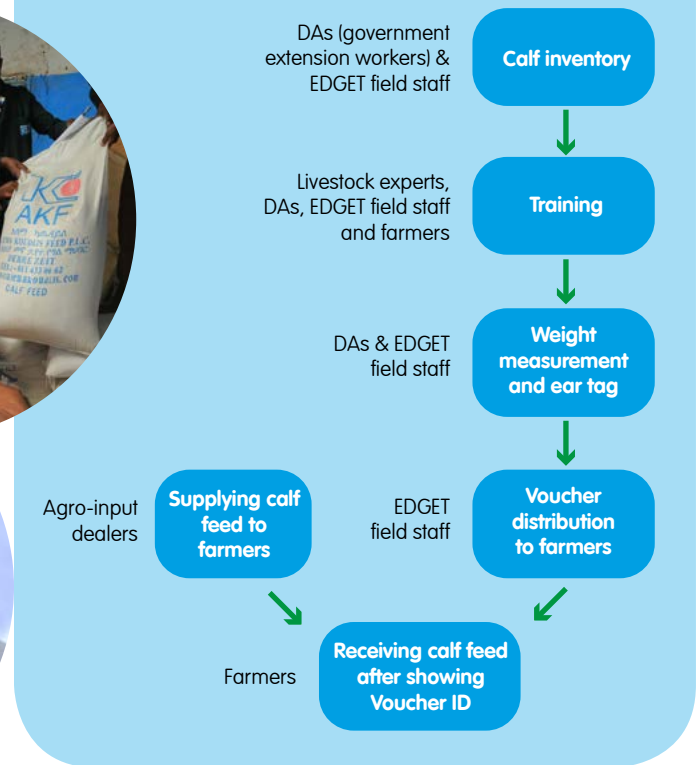


Figure 1: Graphic illustration of the calf feed distribution chain



training programme, they were eligible to receive an initial stock of supplementary calf feed for free. Depending on the initial weight of the calf, this subsidy ranged from 70 to 100 kg of feed, supplied over a three-month period. To ensure that the farmers continued to receive support, EDGET set up a network of agro-input dealers as shown in Figure 1.

## The EDGET Project

Enhancing Dairy Sector Growth in Ethiopia (EDGET) is a five-year dairy development project implemented in 51 woredas (districts) in the three regional states of Oromia, Amhara, and the Southern Nations, Nationalities and Peoples' Region (SNNPR). The overall goal of the project is to contribute to enhance the livelihood of 65,000 smallholder farmer households through improved dairy production and marketing. The specific goals of the project are to: (i) to double the income of smallholder households from dairy production, and (ii) improve the nutritional status of children, particularly in the first 1,000 days of their lives, through consumption of milk products.

EDGET also seeks to complement the significant investments made by the Government of Ethiopia to promote the contribution of the dairy sector to the country's economic development.

EDGET is implemented by SNV-Netherlands Development Organisation, Ethiopia, and funded by the Embassy of the Kingdom of the Netherlands. It builds on the work of previous Dutch-funded dairy sector programmes, including the Business Organisations and Access to Markets (BOAM) programme (2005-2011) and the Market-linked Innovation for Dairy Development (MIDD) programme (2011-2012).

For more information, please visit the project website at: [www.snv.org/project/enhancing-dairy-sector-growth-ethiopia](http://www.snv.org/project/enhancing-dairy-sector-growth-ethiopia)

EDGET introduced an open bidding process to identify reliable feed suppliers in the project areas. In order to qualify, suppliers were expected to have the capacity to deliver high quality calf feed to meet the nutrient requirements of crossbred calves. To verify this, EDGET contracted accredited laboratories in each of the three regions to analyse and certify samples submitted by prospective suppliers.

The project adopted a similarly rigorous selection process to establish a network of agro-input dealers at the woreda level who would stock and distribute improved calf feed to farmers. In order to ensure that smallholder dairy farmers had continuous access to dairy inputs, EDGET provided additional support and advice to the selected dealers. This included an initial incentive of 60 ETB for every quintal (100 kg) of feed delivered to project households. It was expected that following this introduction, the farmers would continue to buy calf feed at the market price, enabling the agro-input dealers to achieve a reasonable profit margin.

In order to collect free calf feed from their local dealer, eligible farmers had to present a voucher from the EDGET project as well as a copy of their identification.

The calf feed intervention worked with 13,755 households and provided improved feed for 16,492 calves

## Key results

### Improved calf health and development

According to the data collected by the project field staff, calves that received supplementary feed showed clear progress in terms of two key indicators: weight gain and age at first insemination service (for heifers).

The positive results also highlight the successful adoption of good calf management practices by farmers who attended the EDGET training sessions. Follow up visits have confirmed that farmers are prepared to keep buying calf feed. Farmers have also learnt that calf feed is only one factor that needs to be addressed. To get good results they should also improve the overall management of their dairy stock.

Age at first insemination, age at first calving and calving intervals are important indicators of the quality of young stock management. A survey of

farmers providing supplementary calf feed found that the age at which female calves were ready for their first AI service has gone down significantly, from around 24-36 months to 14-18 months.



## The benefits of improved calf feed management

Before being introduced to the SNV EDGET project, Ato Abu did not provide supplementary feed to his calves. He managed his livestock according to traditional practice, where calves are fed crop residues two times a day and watered once every three days. The calves are tethered to a tree and are only allowed access to their mother after milking. As a result, female calves develop slowly take up to four years to get their first calve.

In 2014, Ato joined the local Dairy Farmers Extension Group set up by the EDGET project in Adama woreda of Oromia region, where he received initial training on good management of cow and calf management. As part of the training package, Ato received a free 70 kg starter pack for his two calves. After following the recommended feeding method based on the calves' body weight and age, his calves grew rapidly, gaining 22 and 25 kg respectively in just one month.

Due to his use of improved feeding techniques, Ato now expects his female calves to mature within 14 to 16 months.

Before the training, Ato's milk yields were barely enough to meet his household needs. Soon after introducing the new feeding regime, his first crossbred cow produced enough milk to sell, which earned about 13,000 ETB in just one year. Ato also sold his first calf for about 3,000 ETB (about US\$130) and started to supplement his income by purchasing calf starter feed in bulk to sell to other farmers. He plans to increase his stock of crossbred heifers in future by continuing to follow good livestock management practices.

Through the continuous training given to his farmers' group, Ato is also learning about other steps that he can take to maximise his income from dairy production. Like other farmers in the woreda, he plans to expand his backyard forage plot to ensure a constant supply of good quality feed for his cows and calves.

**Story prepared by Tesfaye Bekele, SNV EDGET Dairy Extension Promoter, Oromia**

## Perception change

Farmers and extension staff involved in the intervention have reported a marked change in their perceptions regarding calf feeding. Farmers now regard calves as valuable assets that will help generate additional income when they mature. They now pay as much attention to their young calves as the milking cows.

Likewise, government extension workers have incorporated calf feeding and management as a core strategy within the livestock extension system. During key informant interviews at woreda level, extension agents revealed that prior to the EDGET intervention they mostly focused on heifer management and milking techniques for improved dairy productivity.

## Increased market demand

In addition to promoting improved dairy management, the EDGET calf feed intervention has led to increased demand by smallholder producers for quality supplementary feed. Regular awareness raising events such as farmer field days and knowledge sharing through the Kebele Dairy Development Committees and Dairy Farmer Extension Groups have also opened up new market opportunities for agro-input

“In the past, I had a lot of business supplying supplementary feed for milking cows as well as poultry, but I did not have any experience in selling calf feed because there was no demand from customers. However, since I joined the EDGET programme, I have started to stock calf feed in my shop because of high demand, particularly from smallholder farmers. I have already sold 2,000 kg calf feed within a few months.”

Mesail Adamasu, Agro-input dealer, East Shoa zone, Oromia region

dealers as well as feed suppliers. Across the project implementation areas, a growing number of farmers, including those not covered by the project, have shown their willingness to pay for supplementary calf feed.

## Lessons learnt

One of the decisions made right from the onset of the intervention was to provide eligible smallholder farmers (owning young female crossbred calves) with a free supply high quality calf feed. The project team was aware that giving away any dairy inputs could send the wrong signals to farmers. However, as was the case with the EDGET forage intervention (see Practice Brief 2), we were convinced that this approach was the only way to demonstrate quick results and convince farmers to invest in good calf management.

The results highlighted above confirm the potential impact of combining calf feeding programmes with intensive training and a strong extension system. Among the economic benefits of faster development and improved health of calves, are reduced management costs for farmers and quicker and better replacement of milking stock. Meanwhile, improvements in the livestock extension system are creating new market opportunities for agro-input dealers and feed suppliers.



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