

Info Note

Finance for on-farm investments in dairy production in Kenya

Financial support to low-emission dairy development should support farmers' ability to save, access value chain credit and link with financial institutions

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Key messages

- Low-emission dairy development by smallholder farmers requires investment and operating finance.
- Survey results show that farmers who are member of a cooperative, have a long-term marketing relationship and a payment account, or income from both dairy and non-agricultural income sources, are more likely to invest in practices that increase dairy productivity.
- Most households finance investments and operating costs from current income and savings. Use of credit is limited and mostly comes from input suppliers and milk buyers.
- Cash loans are rarely used to finance dairy development.
- Financial support should support farmers' ability to save and improve access to credit by enhancing financial linkages in the dairy supply chain.

Background

About 2 million rural households in Kenya produce milk. With about 1800 liters per cow and year, average annual milk production per cow on smallholder dairy farms is low. As a result, production costs per kilogram of milk are high, and profit margins for many farmers are slim. Low cow productivity is also associated with high greenhouse gas (GHG) emission intensity. In 2010, Kenya's livestock emitted about 16.6 million tonnes of carbon dioxide

equivalents (CO₂e), of which about 20% was from dairy cattle.

Poor management of the cow's lactation cycle, limited availability and poor quality of feed, and poor cow welfare cause low productivity. Measures to increase cow productivity thus include increasing fodder production and improved feeding practices, improving animal health and welfare through better housing and preventive veterinary practices, and the use of higher yielding breeds.

Adoption of practices that increase cow productivity can reduce the GHG intensity of dairy production. Fodder production and improved feeding practices, for example, require expenditures for seed, fertilizer, tillage services, concentrate feed, labor and machine hire costs for harvesting and chopping. Although adoption of these practices is financially profitable, farmers need to access finance for upfront investments and operating expenses. Promotion of productivity-enhancing mitigation measures will thus require financial support.

A household survey covering 429 milk-producing households across eight counties in central Kenya was conducted in 2018. The questionnaire covered a variety of topics related to dairy production, including farmer characteristics, sources of funds for investment and operational costs of household dairy enterprises. Dairy farmers' use of credit finance was also analyzed.¹

Who invests?

Analysis of the household survey reveals that farmers² who are **members of a cooperative** are more likely to

¹ Analysis of sources of finance in the broader context of dairy sector financing in Kenya has been analyzed in Odhong' et al. 2019.

² Analysis of the association of gender variables with farmer investments and expenditures did not reveal any significant results.

invest in fodder processing machinery and spend funds on fodder and fodder production, purchasing feed supplements and veterinary services. Cooperative membership most likely improves access to inputs and services, supports mutual learning among cooperative members, and provides access to input finance from the cooperative.

A **long-term marketing relationship** with cooperatives, chilling plants, dairy processors or catering companies also increases the likelihood of farmers investing in cattle housing and machinery, and making expenditures on fodder, supplements and veterinary services. Farmers probably see investment and expenditure decisions as less risky when a long-term marketing relationship exists.

Other factors positively contributing to investment and expenditures for dairy management include both **dairy and non-agricultural income** sources and having a **payment account**.

Sources of finance among smallholder dairy farmers in Kenya

The sources of finance used by dairy farmers to make investments and finance operating costs are summarized in Table 1. Household income and savings are the most common sources of finance for both investments and operating expenses. Profits from the dairy enterprise are used as a source of funding for investments by about 22% of households making those investments and by 33% of households with operating expenses. Many households also rely on non-dairy agricultural and non-agricultural income sources.

Credit was used by about 18% of households making investments and 14% of households with operating expenses. Among households using credit for investments in cattle, cattle housing or machinery, about 50% made the investment on credit and repaid in cash, a third made the investment on credit and repaid in milk, and less than 20% made the investment with a cash loan. Similarly, for operating expenses made on credit, about 85% repaid inputs on credit using cash or milk, and cash loans were only used by about 15% of households. Input credit was more common for veterinary services and artificial insemination, but was also used for fodder and feed, and inputs for fodder production. These results indicate that credit from input suppliers or facilitated through dairy cooperatives' check-off systems can be an important source of financing for some dairy farmers.

| Expenditure item | Household making expenditure (%) | Sources of finance (% of households mentioning each source) | | | | | | |
|---------------------------|----------------------------------|---|-------------------------|------------------------------|------------------------|--------------------------------------|-------------------------------------|-----------|
| | | General household savings or cash | Dairy enterprise income | Non-dairy agriculture income | Non-agriculture income | Credit from supplier, repaid in cash | Credit from supplier repaid in milk | Cash loan |
| Investments | | | | | | | | |
| Cattle | 16 | 37 | 18 | 27 | 17 | 7 | 0 | 7 |
| Cattle housing | 38 | 52 | 20 | 12 | 12 | 16 | 11 | 4 |
| Machinery | 29 | 55 | 26 | 6 | 11 | 2 | 0 | 2 |
| Operating expenses | | | | | | | | |
| Fodder: | | | | | | | | |
| Wet season | 26 | 41 | 41 | 11 | 8 | 2 | 1 | 0 |
| Dry season | 36 | 46 | 37 | 10 | 10 | 4 | 2 | 0 |
| Feed: | | | | | | | | |
| Wet season | 60 | 44 | 45 | 6 | 9 | 9 | 7 | 0 |
| Dry season | 59 | 49 | 40 | 6 | 9 | 4 | 8 | 1 |
| Breeding: | | | | | | | | |
| Bull service | 15 | 47 | 42 | 2 | 8 | 6 | 3 | 0 |
| AI | 76 | 51 | 37 | 11 | 9 | 17 | 10 | 1 |
| Deworming | 86 | 62 | 28 | 6 | 5 | 2 | 0 | 0 |
| Tick control | 69 | 62 | 30 | 5 | 2 | 0 | 0 | 0 |
| Vaccination | 59 | 53 | 26 | 4 | 2 | 1 | 1 | 0 |
| Curative treatment | 48 | 72 | 18 | 6 | 5 | 27 | 40 | 3 |
| Fodder production inputs: | | | | | | | | |
| Fertilizer | 29 | 50 | 28 | 19 | 5 | 2 | 0 | 1 |
| Seed | 25 | 39 | 28 | 21 | 11 | 5 | 1 | 2 |

Table 1. Sources of finance for household dairy enterprise investment and operating costs (2017-2018)*

* Sources of finance for investments were in the last 5 years; for operating expenses in the last year.

Barriers to the use of credit finance

Overall, dairy farmers rarely use credit from financial institutions to finance dairy operations or investments. This finding is consistent with other studies on access to finance in rural areas of Kenya. Most rural households do not see the need for a loan, fear the loss of assets or fear their inability to repay the loan. Between 40 and 60% of rural household applications for a loan from a formal financial institution are refused. Males tend to have higher chances of success than females, as do households with a higher annual income and those owning land.

Low trust in financial institutions and unreliable services influence people's willingness to save with formal financial institutions. So, farmers are more likely to use informal institutions for both savings and loans, with more than 50% of rural households belonging to an informal savings group (CBK, FSD and KNBS 2016). However, the size of loans from informal sources is mostly very small. Among formal financial institutions, savings and credit cooperatives—many of which are linked to farmer cooperatives—are the most commonly used source of loans.

How can farmers be supported to invest more?

Interventions to support smallholder dairy development should support farmers' ability to save and improve access to credit in ways that strengthen farmers' own financial strategies. Existing institutions, such as dairy cooperatives, should be supported to enhance access to inputs, services and finance needed for investments and operating expenditures.

Various approaches that have been piloted in Kenya include:

- Linking input suppliers and dairy cooperatives to financial institutions to increase their ability to provide inputs and services on credit to dairy farmers.
- Linking technical extension and dairy service provision to credit to increase cow productivity and household incomes, thereby improving farmers' ability to repay loans.
- Dairy advisory services and other forms of extension to increase farmers' knowledge of appropriate farming practices as well as financial literacy.
- Linking informal savings groups with formal financial institutions. Digitizing savings groups' records can help farmers make their finances visible to formal institutions.
- Group lending models to overcome the barrier of a lack of collateral. Group members guarantee each other's loans so no collateral is required.
- Use farmers' milk payment records from dairy cooperatives and processors to enable farmers to demonstrate their financial track record to financial institutions. Financial institutions are thus able to more accurately assess any credit risks.
- Providing finance to Savings and Credit Cooperatives (SACCOs) to strengthen their services and reach to farmers.

These approaches demonstrate that numerous options exist to overcome farmers' barriers to the access and use of finance for investments and operating expenses. Financial support will be needed to enable upscaling of these innovations and to support dairy farmers' access to financial resources for low-emission dairy development.

Conclusions

Increasing adoption of farming practices that can increase milk yields will require upfront investment in items such as better housing, fodder cultivation and fodder processing machinery, or animals with higher yield potentials. Working capital is also needed to cover ongoing farm costs, such as hired labor, feed and animal health interventions. The vast majority of dairy farmers currently

finance investments and working capital from current income and savings. A significant proportion of farmers take part in informal savings and credit groups, but few make use of financial services from formal financial institutions. Farmers who are cooperative members or who have other long-term marketing relationships are more likely to make investments and expenditures in the household dairy enterprise. Credit from dairy cooperatives and input suppliers can be important sources of finance for some dairy farmers. However, the use of input credit is still limited.

For projects that aim to support low-emission dairy development (e.g., Nationally Appropriate Mitigation Actions (NAMAs)), our findings suggest that supply of credit finance through financial institutions will not immediately enable dairy farmers to use this credit. Strengthening farmers' own financial strategies—by supporting savings groups, dairy cooperatives and input suppliers—can increase farmers' access to finance and willingness to invest in for productivity-enhancing measures.

Further Reading

For further reading and references on financing in Kenya's dairy sector can be found in Odhong' et al. (2019).

- Central Bank of Kenya, FSD Kenya and Kenya National Bureau of Statistics. 2016. FinAccess Household Survey 2015. Harvard Dataverse.
- Odhong' C, Wilkes A, van Dijk S, Vorlaufer M, Ndonga S, Sing'ora B and Kenyanito L. 2019. Financing Large-Scale Mitigation by Smallholder Farmers: What Roles for Public Climate Finance? *Frontiers in Sustainable Food Systems* 3.

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