



Case study

Kenya

Improving livelihoods through sustainable livestock husbandry and farming

The Livelihoods-Mount Elgon project aims at improving the livelihoods of 30,000 smallholder farmers by empowering them with sustainable livestock husbandry and farming practices. Local value chains are strengthened through 15 dairy cooperatives supported by the non-governmental organisation, Vi Agroforestry, and Brookside dairy, a Kenyan milk processing company. The Livelihoods Carbon Fund (managed by French social business Livelihoods Venture) finances the project. Carbon credits from the project serve as repayments to the private investors.

Initial situation and landscape

The Mount Elgon project covers the Bungoma and Trans Nzoia counties on the foothills of Mount Elgon National Park in Western Kenya. The hilly landscape is largely characterised by smallholder farms cultivating maize, beans and sweet potatoes as subsistence crops, while sugar cane, coffee and tea are produced for the commercial market. Most farmers integrate livestock such as cattle, goats and poultry into their farming. Farm sizes are quite small, averaging less than one hectare, and dairy farming takes place on a small scale with one to three cows.

Although the climatic and soil conditions of the region are favourable for farming, agricultural productivity is generally low due to inefficient farm management. In addition, deforestation and uncontrolled grazing have a direct impact on local biodiversity and soil fertility. These circumstances have a negative effect not only on local smallholders, their crop yields and milk production, but also on the watersheds and ecosystem of Lake Victoria.

Nevertheless, smallholder farmers have the potential to improve their economic situation significantly. The demand for milk is very high in the region and in addition to local markets, milk-processing companies could purchase milk. The existing smallholder cooperatives, however, are characterised by poor organisation and a lack of personnel. In addition, the varying quality and quantity of milk makes it difficult

to ensure a consistent supply of milk. The role of women is also weakened by traditional structures, although they bear the biggest burden of the farm and household work. This largely hinders their economic independence, access to education and influence on decision-making.

Overview

Country: Kenya

Implementing partner: Vi Agroforestry

Target group: 30,000 smallholder farmers and 15 cooperatives

Sustainable agriculture: 35,000 ha

Carbon sequestration: 1 million tonnes of CO₂ over 10 years

Duration: 2016 - 2026

Investment: EUR 3,5 from the Livelihoods Carbon Fund and Brookside Dairy.

Investors: Danone, SAP, Firmenich, Crédit Agricole S.A., Hermès, La Poste, Mars Inc., Groupe Caisse des Dépôts, Michelin, Veolia, Schneider Electric, Voyageurs du Monde.

With sustainable agricultural practices and tree planting, the project aims to restore degraded land and improve the living conditions of local smallholder families. By the end of the second project year, 1.3 million trees had been planted for carbon sequestration and forest restoration purposes as well as a total of 690,000 metres of trees for short-term use, such as firewood. The project thus contributes to national and global targets for forest and landscape restoration.

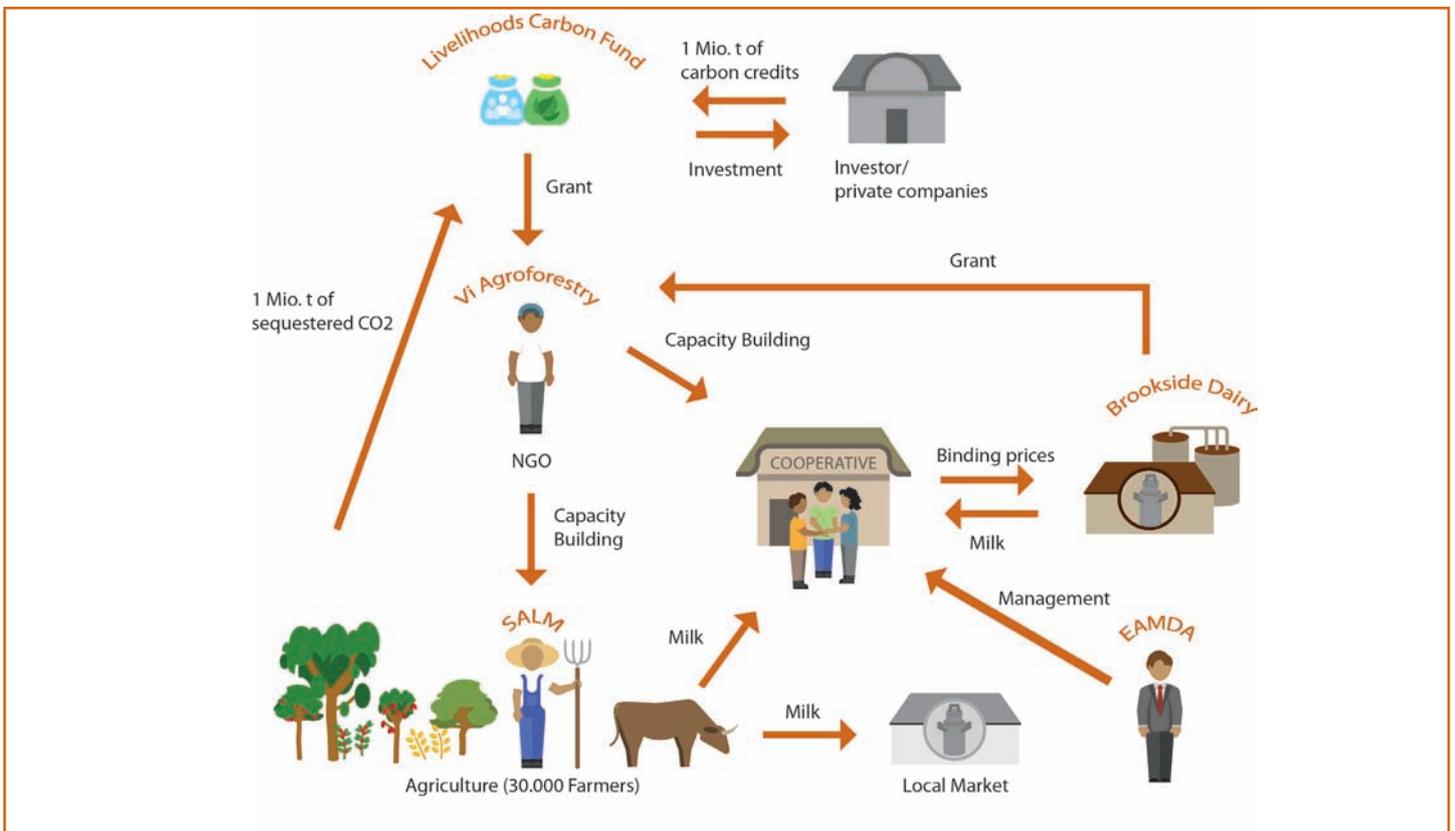
Main stakeholders and their challenges in the landscape

Most farmers and dairy farmers in the project area face the challenge of ensuring a balanced diet for their families. They are also impacted by irregular income due to a lack of access to varied food, nutritious feed and water for the animals and productive breeds. Improving their livelihoods is therefore the primary objective of the project.

In order to increase the efficiency of milk production and crop yields, the Swedish development organisation that combines environmental preservation and the fight against poverty through agroforestry, Vi Agroforestry, trains the farmers in sustainable agricultural management practices in the project area. Vi Agroforestry also supports the organisation and management of the cooperatives to help the farmers gain better access to the market. Fifteen cooperatives are being provided with training to improve the organisation of the milk supply chain and strengthen their negotiating power towards milk processors. Vi Agroforestry has offices in sever-

al African countries and has been working in the region since 1983. This has enabled Vi Agroforestry to establish a relationship of trust with the smallholder farmers and cooperatives. The East Africa Marketing Development Associates (EAMDA) advises the dairy cooperatives on business development and marketing in order to strengthen them in the long term and make them more attractive for their members. EAMDA is an external consultancy firm commissioned by Vi Agroforestry. One milk processor involved in the project as a partner and an investor is Brookside Dairy Ltd. Brookside is a Kenyan milk processor leading the dairy market in East Africa and has agreed to purchase the overall quantity of milk distributed by the 15 cooperatives over a period of 10 years. The entire project is pre-financed through a grant from the Livelihoods Carbon Fund, an impact fund advised by Livelihoods Venture, a social business located in Paris, France. The Livelihoods Carbon Funds are impact funds supported by private companies committed to generating an impact while offsetting their carbon emissions. The Livelihoods Carbon Fund provides the upfront financing for large-scale projects over a period of 10 to 20 years. It was launched by 10 corporate investor companies in 2011: Danone, Schneider Electric, Crédit Agricole SA, Michelin, Hermès, SAP, Groupe Caisse des Dépôts, La Poste, Firmenich and Voyageurs du Monde. In return for their investment, the investors receive carbon credits (CO₂ certificates), which they can use to offset part of their unavoidable carbon emissions generated by their activities. Carbon credits are certified under the Gold Standard and Verra scheme and are generated through sustainable agricultural practices that improve carbon storage in soil and trees and the efficiency of livestock farming (avoided methane emission per litre of milk produced).

Figure 1: Key stakeholder of this study.



Forest Landscape Restoration

So far there is no generally accepted definition for Forest Landscape Restoration, although there are various global initiatives, such as the Bonn Challenge, which aims to restore 150 million hectares of degraded land by 2020. In our work, however, the following characteristics of FLR projects have proven to be relevant:

- ✓ Contribution to the conservation and regeneration of natural ecosystems.
- ✓ Restoration of ecological, social and economic functions for humans and nature.
- ✓ Stakeholder involvement, participatory planning and decision-making processes.
- ✓ Adaptation of measures to the local context.
- ✓ Focus on a whole landscape with different forms of land use.

Implementation and measures on a landscape level

Sustainable farming practices and livestock husbandry

Widespread overgrazing, cultivation in monocultures, mostly with maize, and burning of crop residues after harvesting lead to decreasing soil fertility, soil erosion and reduced water uptake and storage. The project's partners are tackling these challenges with sustainable farming practices and integrated livestock husbandry.

Vi Agroforestry has therefore developed a Sustainable Agricultural Land Management (SALM) methodology. SALM involves relatively simple but effective land management practices such as agroforestry, soil and water conservation, soil nutrient management and integrated pest control. The project aims at bringing 35,000 hectares of land under SALM, resulting in a 30% increase in crop production and thus improving food security and smallholder farmers' incomes. On agricultural land surfaces, smallholders cultivate a wider variety of foods by applying crop rotation and intercropping. Farmers plant trees along the fields, and some wood lots, within the farm boundaries. Most of them are native species; fodder, fruit, trees for long-term use such as construction and short-term trees for firewood. In order to improve soil quality and fertility, farmers are provided with training in using straw or crop residues for mulching, composting, slurry utilisation and the proper use of inorganic fertilisers. Water and soil conservation practices include water retention pitches, ditches and grass strips.



Improved soil quality through mulching in tomato cultivation.
Photo: Michael Schwarz

In addition, Vi Agroforestry supports farmers in improving their livestock husbandry. Training modules provide the farmers with key information about feed management, dairy cow breeding, milk hygiene and specific measures to deal with common diseases and parasites. Overall, these measures are intended to increase the daily production of milk from an average of four to about nine litres. The advantage of this is that the dairy management practices are closely linked and complementary to SALM practices. For instance, planting fodder trees is a prerequisite for keeping cows in stables, while cows provide organic fertiliser for the fields. Furthermore, stable farming avoids further overgrazing of land and rehabilitation of grazing land.



The construction of stables and the cultivation of napier grass as fodder halt the overgrazing of the land.
Photo: Michael Schwarz

Strengthening cooperatives and local value chains

In recent years, most cooperatives have lacked adequate democratic and participatory structures. In addition, the cooperatives have been in a weak position due to inadequate management and bad governance, resulting in low revenues and declining memberships. Despite high demand from commercial buyers, dairy farmers have difficulties in tapping into this market due to low milk production, lack of storage and cooling capacities, and inefficient transport. These are key challenges that the Livelihoods-Mont Elgon project is helping to address. Vi Agroforestry supports 15 dairy cooperatives in milk collection, cooling and providing new services, such as veterinary care and artificial insemination. Some cooperatives now offer their members short-term advances that can be paid back with milk. Such advances help the farmers, who do not have access to loans from the commercial finance sector, to invest in their farm facilities, such as water holes, cow stables and storage facilities. EAMDA has conducted an assessment to identify the existing challenges the cooperatives need to deal with and, together with Vi Agroforestry, it supports and advises the cooperatives in carrying out their business plans, improving their governance and management structures, and establishing proper accounting systems. The definition of a democratic framework enables women to actively participate in the dairy value chain as well as in decision-making at both household and cooperative levels. EAMDA and Vi Agroforestry also support the cooperatives in negotiating prices with commercial customers. The commitment of the milk processor, Brookside, to purchase all the milk provided by the cooperatives at a binding annual price further strengthens the cooperatives and farmers' income.

Benefits for the stakeholders involved

The project is characterised by balanced cost and benefit sharing between all project partners. SALM practices improve balanced nutrition, sustainable land management and income generation through the production of surpluses. In addition, the **smallholder families maintain their independence** by developing management plans jointly with Vi Agroforestry and being financially independent in their farming activities. The strengthening of the cooperatives also benefits smallholder farmers, who receive stable prices, transport and other services, and have the opportunity to participate in decision-making and management. The **cooperatives are strengthened** through professional advice in their management and negotiating power and are therefore again attractive for members. **Commercial milk buyers**, such as Brookside, can better meet the constant demand through a **stable milk supply**. The cooperation with Brookside, therefore, has many advantages for local farmers and their income situation. However, looking at the Kenyan dairy market as a whole, there is a risk that Brookside will continue to drive small and medium-sized milk processing companies out of the market due to its increasing market power. Vi Agroforestry's project work contributes to improving people's livelihoods and supports smallholder farmers in **countering the consequences of climate change and other ecological risks**. Through the project, **investors receive CO₂ certificates**, which they can use to offset the unavoidable carbon emissions generated by their business activities.



Cooperative Meeboot collects the milk of the smallholder farmers and takes care of the onward transport.

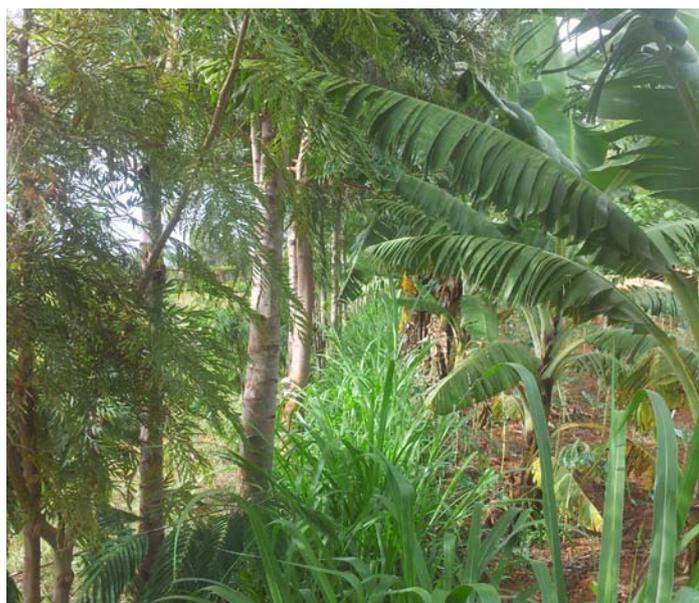
Photo: Michael Schwarz

Challenges and solutions of the Mount Elgon Project for Forest and Landscape Restoration (FLR)

On a landscape level

Capacity building is the core activity of the project. The primary target group for the training modules and sensitisation campaigns are farmers' groups and dairy cooperatives. Capacity building with 30,000 smallholder farmers is a major challenge that is undertaken with the financial support of the Livelihoods Carbon Fund. Capacity building takes place through an intelligent structure of trainers on three levels. In addition to the seven Field Coordinators employed by Vi Agroforestry, 30 Field Officers have been employed by the cooperatives with support from the project, as well as Community Facilitators, who are volunteers from participating communities. This makes cost efficiency possible and has a positive effect on anchoring and acceptance within the communities. In total, almost 2,000 farmer groups composed of 10 to 20 members each, can be provided with SALM training and dairy farming through this structure. Capacity is thus built up via a train-the-trainer system.

Vi Agroforestry has developed several training modules for this purpose, which also include practical demonstrations on model farms and a SALM manual. In addition, the smallholder farmers put the sustainable farming measures into practice independently after the training, but they can still be provided with support by the project team via local group leaders and Community Facilitators who help them keep in contact. In order to enable smallholder farmers and especially women to participate, the schedule and training locations are planned together with the participants. In addition, the individual training modules do not last longer than two hours.



The cultivation of fodder crops for the animals and various foods enables the generation of income and a more balanced diet.

Photo: Michael Schwarz

Fast visible improvements and manageable risks are crucial aspects for smallholder farmers. The great advantage of SALM practices is that they require only manual work and limited financial investments (e.g. cow stables). Therefore, the risks for smallholder families are relatively low. The initially high workload for farmers is usually overcompensated by its benefits (increased crop yields and milk production) after a short time and this is an important factor in encouraging farmers to participate. Even if the complete transformation from conventional to sustainable agriculture takes about three years, farmers benefit quite fast from the increased efficiency of SALM practices and receive support from the project team whenever needed.

The use of native tree and plant species as well as measures to improve soil quality and erosion control contribute to the ecological **sustainability of the activities**. In addition, SALM practices increase resistance to extreme weather events such as droughts and heavy rains, thereby reducing risks for smallholder farmers. More stable farmer income also makes investments in better education for children, sanitation and farming activities development possible. This development potential increases the likelihood that SALM practices and sustainable livestock husbandry will be maintained independently after project completion. If EAMDA also manages to maintain stable structures in the cooperatives, it will also be possible for them to continue operating on their own. However, the work with the cooperatives has not yet been completed and needs to be addressed with particular attention to ensure its continuity. The ongoing collaboration of the cooperatives with Brookside is also likely to be positive due to the constant demand for milk. It is an important component for the stability of the project and its long-term success.



The cooperation with the milk processor Brookside enables the establishment of stable value chains.

Photo: Michael Schwarz

On an international level

Private investments in nature conservation are a relevant building block to achieve global goals such as the restoration of 150 million hectares of degraded land by 2020 under the Bonn Challenge. Private investors are increasingly interested in restoring forests and landscapes, but are often looking for **large-scale projects** with low transaction costs. The Livelihoods-Mount Elgon project, involving the empowerment of 30,000 smallholder farmers and sequestration of 1 million tonnes of CO₂, is a promising large-scale project. The decisive factor for the large scope is, on the one hand, that sustainable land practices have shown a rapid improvement and that farmers can implement them independently without additional investment of their own. On the other hand, the involvement of Community Facilitators and Field officers with the train-the-trainer structure is crucial for the project's success. These approaches are well **transferable** and thus applicable in other regions of the world. In addition, the risks for smallholder farmers are reduced, which should be taken into account in other FLR projects.

However, **local partners with the appropriate capacities** for implementation are also decisive for transferability. In addition, the necessary ecological and socio-economic conditions, such as the living conditions of local people, the existence of cooperatives, transport routes and local markets, must be suitable. When financing such projects, it is also important to keep in mind that several years often pass between the project idea, the matching of investor and project implementer, and the implementation of measures. These time and human resources have to be financed and are often a challenge for FLR projects. The project design and implementation of the Mount Elgon project took almost two years. Vi Agroforestry's experiences with SALM, the existing relationship of trust with the communities and the already established cooperatives have positively impacted the project launch. Other costs were covered by the Livelihoods Carbon Fund and Vi Agroforestry. Financial support for the development of the project concept would have been helpful for both.

A special feature of the Livelihoods Carbon Fund is the **complete financing from the private sector**. Many other funds also contain public capital as a risk buffer for private investors. The Livelihoods Carbon Fund generates repayment and returns in the form of **CO₂ certificates**. This seems to be an appealing approach in considering the increasing commitments of companies and governments to achieve carbon neutrality in the coming decades. What is decisive for local people in such projects, however, is that project funding does not depend on the success of carbon certification or the value or volume of carbon credits generated. **Risks related to the quantity of carbon credits generated by the project should be with the investors**, as it is the case with the Livelihoods Mount Elgon project. This is particularly important when smallholder farmers are changing their traditional way of doing business and are already willing to accept the temporary loss of income that this may entail. In the Mount Elgon project, it is therefore positively viewed that smallholder farmers do not suffer any income losses.



On 35,000 hectares, the 30,000 smallholder farmers intend to implement measures for sustainable land use.

Photo: Michael Schwarz

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