

INNOVATION FUND

Retaining next-generation farmers in agribusiness through enhanced knowledge-sharing platforms along with the dairy and selected grain value chains in Uganda

Parent project: Strengthening agricultural knowledge and the innovation ecosystem for inclusive rural transformation and livelihoods in Eastern Africa (AIRTEA)

PROJECT COORDINATOR



Agriculture, Environment, and Ecosystems (AGRENES), Uganda

PARTENAIRES



National Agricultural Research Organization (NARO), Uganda
Makerere University, Uganda
Agriculture, Environment, and Livelihood (AGRILIV), Uganda
Fleed Tech Ltd, Uganda
Agri-Tech Advanced Systems Ltd., Uganda

LOCATION



Uganda

PERIOD



March 2022 – August 2024

EU FUNDING



EUR 200,000

SECTOR

Agriculture

KEYWORDS

Dairy value chain, dairy innovation centre, multi-stakeholder platform

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CHALLENGE

Africa faces acute food insecurity and will struggle to feed a population of 2 billion by 2050 while coping with adverse climate change and a socio-economic transition towards open markets. Although intensive livestock production is increasing, productivity is impeded by scarcity of feeds, with livestock feeding taking up 60% of expenses. Regrettably, livestock produces waste streams that pollute ecosystems.

In Uganda, for instance, 80% of agricultural waste (1.2 million tons/day) remains uncollected, emitting greenhouse gases (GHG): 3.2 million tons of CO₂-equivalent, and it is projected to hit 6.3 million tons by 2025. Yet, most Ugandans are still trapped in an energy-poverty nexus, living without electricity and surviving below US\$1 daily. Most households solely depend on charcoal and firewood for home energy, accelerating deforestation, amplifying GHG emissions and causing biodiversity loss.

PERSPECTIVES

A circular bio-economy approach suggests recycling all waste in livestock production into low-cost animal feed and clean energy. Progress towards increased circularity and waste conversion is impeded by limited technical capacity and insufficient financing to stimulate investment in circular agro-technologies.

Hence, this project introduces a zero-waste circular green dairying model to train farmers, the youth and women, and help them in the transition from subsistence farming to commercial farming systems.



Training of smallholder farmers, youth and women in circular dairy farming systems with crop-livestock integration in Mityana district, Uganda.

JUSTIFICATION

The project engages the youth and women in establishing and managing zero-waste, circular and green Dairy Innovation Centres (DICs) as profitable farmer-led multi-stakeholder platforms that act as vehicles for mitigating the scarcity of animal feed, food and energy insecurity, but also for developing the dairy value chain in Uganda.

The DICs are piloted as a novel multi-stakeholder platform to increase the production and productivity of livestock and enhance farm incomes, and food and energy security.





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METHOD

Development and operationalisation of a digital multi-stakeholder platform for smallholder farmers, in particular the youth and women, and other dairy value chain actors to facilitate information sharing, e-training, and trade in dairy products and services

Establishment of three youth and farmer-led DICs to co-create and produce value-added products (milk, biogas, feeding and water facilities, feed/crops) under a zero-waste, circular and green dairying model.

Installation of support facilities at the DICs, including: cattle housing infrastructure; feed processing machinery and equipment, feed production and conservation unit, water-for-production facilities - hydroponic units; biogas production unit; forage/fodder seed bank and horticulture nursery; and organic horticulture gardens.

Production of:

- low-cost and nutrient-dense bio-feeds (Azolla, urea molasses mineral blocks), Black Soldier Fly larvae, animal pellets and mosquito fern; and
- low-cost and nutrient-dense conserved feeds (hay, silage, animal press cake, dry green protein concentrate).

Training of 500 farmers, in particular the youth and women, and other value chain actors on:



Training of smallholder farmers, youth and women in feed production, processing, and hay conservation at the pilot Dairy Innovation Centre in Mityana district, Uganda.

- the set-up and management of green dairy farms and agribusiness along the different nodes of animal feeds, water-for-production, biogas and horticulture value chains; and
- the use of the digital multi-stakeholder platform.

Evaluation of the production and productivity of the DICs.

INNOVATIVENESS

A novel, zero-waste circular and green dairying model with a low-cost and self-sustaining bio-economy technology supports the smallholder farmers and other dairy value chain actors in the transition from subsistence farming systems to the commercial farming systems.

The key innovative components of the model are a digital multi-stakeholder platform and dairy innovation centres with value-added products and support facilities.

EXPECTED RESULTS

Impact

- Improved livelihoods of green dairying farmers and value chain actors in the districts of Wakiso, Mityana and Sembabule of Uganda

Outcomes

- Dairy value-added products (milk, biogas, feeds, crops) co-created by green dairying farmers and value chain actors.

Outputs

- A farmer-led digital tool operational for green dairying farmers and value chain actors to co-create, develop and disseminate innovative and contextually relevant solutions from the user perspective.
- Dairy innovation centres established to produce and co-create value-added products (e.g., milk, biogas, feeds/crops).

AIRTEA is implemented by FARA in partnership with ASARECA and EAFF. AIRTEA fosters an inclusive research and innovation environment towards sustainable agrarian livelihoods and rural transformation, through: strengthening the production, processing and marketing capacities of youth and women in East Africa's multi-stakeholder value chain innovation platforms and women in East Africa's multi-stakeholder value chain innovation platforms and linking them to practical solutions within national, regional and global food systems; facilitating the transfer of technologies, knowledge and innovations, and their uptake through multi-stakeholder learning routes; and improving profitability and employment opportunities along agricultural commodity value chains by establishing national and regional Agricultural Business Learning Alliance (ABLA) platforms, business development services and mentorship.

AIRTEA supports 11 projects in Kenya, Rwanda and Uganda that focus on agricultural production, processing, marketing, agricultural digital application development, and extension (mainly aquaculture, dairy, and horticulture).

