



Micro-Irrigation and Horticulture Production in Karamoja

The TOPS Agriculture and Natural Resource Management Case Study Series
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ACDI/VOCA RWANU Program

ACDI/VOCA is the prime organization for the USAID Food for Peace-funded Resiliency through Wealth, Agriculture, and Nutrition (RWANU) Program. RWANU aims to reduce stunting and increase resiliency in the Southern Karamoja region in Uganda. Karamoja is a semi-arid and traditionally pastoralist region. Increasingly however, through a strong government initiative¹, participants are learning how to contribute to their livelihoods through crop production (in addition to livestock-keeping). Karamoja is the only region in Uganda that has only one main harvest annually from rain-fed agriculture; therefore, increasing production throughout the year has great potential for bolstering food security.



At the beginning of the program, there were few existing agriculture input dealers in Karamoja to support crop production. Throughout the life of RWANU, ACDI/VOCA has established agriculture input

¹ *Karamoja Integrated Development Plan*. Ministry of Karamoja Affairs. Government of Uganda, Office of the Prime Minister

dealers to help build a self-sustaining market and an agriculture system where crop production can grow.

Pilot Micro-Irrigation Activities

Since the rain patterns only allow one cropping season in Karamoja, RWANU recognized the importance of increasing access to irrigation. In late 2015, the program piloted 15 micro-irrigation kits through community groups of up to 25 farmers, or through lead farmers. Each group or lead farmer established a demonstration plot using the technology in their community. Within the initial community groups piloting the technology, 43% of participants were women. The kits, which were given as in-kind grants with a community match of 30% of the market value, contained all of the necessary equipment to set up the system including the tank, drip lines, and treadle pump.

RWANU staff and extension workers led a series of agricultural trainings with the community groups and farmers who piloted the kits focused on:

- [Farming as a Business](#)
- Village Savings and Loans Associations
- Agronomic best practices—including spacing, row planting, etc.

Demonstration sites were chosen based on community interest and the proximity to a year-round natural water source. Extension workers supported the community groups and lead farmers throughout the production cycle and into the marketing phase.

As a result of the demonstration plots, the community groups are now producing cowpeas, kale, tomatoes, cabbage, onion, and eggplant on land which was not regularly cultivated. Farmers are expecting 3-4 harvests each year under the irrigation system, which will continue to supply nutritious vegetables and additional income into the dry and lean seasons. A program review after the first season indicated a 24% annual rate of return for farmers using the technology based on the current cost of the irrigation kit.

Simon Icuro, a RWANU lead farmer, led one of the demonstration sites in Nakapiripirit. During the first season, after saving 75,000 Ugandan shillings (equivalent to \$22 USD) worth of cabbage and tomatoes for consumption, he was able to sell the remaining produce in the market for 480,000 Ugandan shillings (\$143 USD) to a wholesale buyer. Simon reinvested a portion of these earnings into two additional acres on his farm, where he planted maize and beans and purchased seeds for a second season under the drip irrigation system.



Doreen Asingwire, A RWANU Horticulture Officer, explains the production from the first season.

Photo credit: Eric Carlberg, The TOPS Program.

Facilitating Scaling and Adoption

The RWANU Program is now turning its attention to innovate and scale up the micro-irrigation system in the region through a market-based approach. Before the project can achieve high adoption in the open market, RWANU identified a few challenges:

- High initial investment for smallholder farmers
- Labor burden from treadle pumps
- Availability of micro-irrigation kits in input dealer shops

The team is identifying how to replace the treadle pump with a labor saving technology and working with agriculture input dealers to stock irrigation kits and replacement parts for purchase. During the program review, the team was able to find cheaper parts in the irrigation system which will reduce the initial investment and change the average annual rate of return from 24% to an estimated 166%.

As the scaling up of the micro-irrigation technology progresses, the demonstration plots are also being used to share agronomic best practices. Moving from the first season to the next, the community groups are seeing their neighbors emulate them by planting in rows and using appropriate spacing techniques. RWANU sees these extra benefits from the visibility of the technology in the field, allowing community groups and lead farmers to share good agronomic practices with others and leveraging other RWANU activities with farmers.

The TOPS Program

The Technical and Operational Performance Support (TOPS) Program is the USAID/Food for Peace-funded learning mechanism that generates, captures, disseminates, and applies the highest quality information, knowledge, and promising practices in development food assistance programming, to ensure that more communities and households benefit from the U.S. Government's investment in fighting global hunger. Through technical capacity building, a small grants program to fund research, documentation and innovation, and an in-person and online community of practice (the Food Security and Nutrition [FSN] Network), The TOPS Program empowers food security implementers and the donor community to make lasting impact for millions of the world's most vulnerable people.

Contact Information

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Led by Save the Children, The TOPS Program is a consortium program drawing on the expertise of its partners: CORE Group (knowledge management), Food for the Hungry (social and behavioral change), Mercy Corps (agriculture and natural resource management), and TANGO International (monitoring and evaluation). Save the Children brings its experience and expertise in commodity management, gender, and nutrition and food technology, as well as the management of this seven year (2010–2017) US\$30 million award.