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## RTB-ENDURE: Expanding Utilization through Research

Expanding utilization of roots, tubers and bananas and reducing their postharvest losses

### Ware potato storage: A key innovation to improve access to more profitable markets for small-scale farmers and traders?

Currently the potato market is characterized by high seasonality and price fluctuations. This project aims to test and validate storage facilities and improved postharvest management practices to even out market supplies, reduce price spikes, and ensure higher and more stable income for producers and other value chain actors.

#### What is the problem?

In eastern Uganda, potatoes are produced twice a year. The limited access to storage facilities and other shelf-life extension technologies to store tubers without sprouting, rotting and loss of water leads to physical and economic losses. In order to limit these postharvest losses, producers tend to sell the potatoes immediately after harvesting. This results in a glut during the harvest period and scarcity during the growing season. Considering that 95% of ware potato is traded as fresh tubers, the inconsistent supplies cause seasonal price fluctuations which have a negative impact on farmers, traders and consumers. During harvest, farm gate prices fall to as low as UGX 200 per Kg (\$ 0.06)\* while the supply shortage in the growing period pushes prices to as high as UGX 1,100 per Kg (\$ 0.31). Farm gate prices during gluts hardly cover the production costs and several farmers rush to harvest prematurely, before prices drastically drop due to increased harvests. This practice determines both preharvest and postharvest losses: the former due to lower yield and the latter due to shorter shelf-life of the tubers. During the harvest

seasons, due to the abundant supplies, traders are also forced to lower their prices. Consumers gain some short-lived benefits when prices drop but once the glut is over, scarcity of potatoes sets in again pushing wholesale prices up which, in turns, impacts negatively on consumers. When wholesale prices rise, traders are forced to lower their margins in order to sell since demand is quite elastic. Overall, the seasonality impacts negatively on the functioning of the existing potato value chain that is characterized by limited capacity to ensure consistent supplies of quality potatoes, high postharvest losses and scarce opportunities for value addition.

\* 1 USD = Uganda shillings 3,500 as at August 2015.

#### What do we want to achieve?

Current practices result in a two marketing windows over the year, of about two to three months each. Introduction of storage technologies can extend the marketing period to 9 to 10 months, depending on the storability of the potato. We will test, validate and promote storage innovations at the individual farmer, farmers



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[www.rtb.cgiar.org/endure](http://www.rtb.cgiar.org/endure)

The CGIAR Research Program on Roots, Tubers and Bananas (RTB) is a broad alliance led by the International Potato Center (CIP) jointly with Bioversity International, the International Center for Tropical Agriculture (CIAT), the International Institute for Tropical Agriculture (IITA), and CIRAD in collaboration with research and development partners. Our shared purpose is to tap the underutilized potential of root, tuber and banana crops for improving nutrition and food security, increasing incomes and fostering greater gender equity, especially among the world's poorest and most vulnerable populations.

**Contacts**

**Monica Parker (CIP)**  
[m.parker@cgiar.org](mailto:m.parker@cgiar.org)

**Arthur Wasukira (BugiZARDI)**  
[awasukira@gmail.com](mailto:awasukira@gmail.com)

**Where are we working and who are we working with?**

We are working in Mbale, Kapchorwa and Kween districts in eastern Uganda, with firm contacts with traders in Kampala. The project is led by the International Potato Center (CIP) and implemented in collaboration with NARO-Buginyanya (BugiZARDI), Self-Help Africa, Makerere University, farmers associations in Wanale (WASWAPA), Kapchorwa (KACOFA) and Benet (MIFA), one traders association in Mbale (MPODA) as well as other private sector players.

**What have we achieved so far?**

Construction of the four ambient stores is now complete, and they will soon be launched to the research and development community, and the wider audience including private sector, donors and other stakeholders. Association store management committees have been formed and sensitised on selecting and maintaining quality potato for storage. The individual traditional ambient stores are under construction, and protocols to assess varieties best suited for storage in the different agro-ecologies have been developed. On-station trials on the performance of selected candidate varieties are underway. Our marketing and gender mainstreaming strategies will be finalized in the coming months based on the findings of the on-going value chain and gender baseline studies. Three Master's students have been enrolled for conducting their research under this project.

**What's next?**

Trials to test the performance of the first batch of potatoes in the ambient stores are nearly set to begin. This will set the pace for second season storage trials. Results of the market and value chain research as well as the gender baseline will be available soon. Training on stores' use as well as on entrepreneurship and agribusiness skills are planned for the next months and this will go hand-in-hand with developing market linkages and institutional innovations aimed at improved supply of ware potato to the market. Opportunities for establishing a potato multi-stakeholder platform in eastern Uganda will be further evaluated.



Ambient store unit in Mbale (credit S. Namanda)

association and wholesale levels to prolong the shelf-life of potatoes in order to enable farmers to obtain higher and more stable income and ensure steady supply of potatoes to the market. Consistent buyers of potatoes (e.g., retailers, processors, operators of fast food outlets and hoteliers) shall benefit from more regular supplies while traders will be able to stock up in seasons of plenty and even out market supplies throughout the year hence increasing their gains.

**How are we going to make it happen?**

We are supporting the construction of four ambient stores in the Mt Elgon region (three at farmer association level and one for traders), each having a 40 to 60 tonne capacity, as well as a number of improved traditional stores that will allow individual farmer to store 2 to 6 tonnes of tubers. Potato varieties will be evaluated for their storability under different conditions. Economic feasibility and social acceptability of the proposed innovations will be assessed, taking into account gender differences. The project will strengthen the capacities of farmers, traders, researchers and extension agents in ware potato preharvest and storage practices. Furthermore, the skills in entrepreneurship, agribusiness and collective marketing of selected value chain actors will be developed in order to improve the quality and consistency in supply of ware potato from the region.



Meeting at the traders association (credit D. Naziri)