



The AgriTT programme is an innovative trilateral initiative between the UK Department for International Development (DFID), the Chinese Government, the Governments of Malawi and Uganda and the Forum for Agricultural Research in Africa (FARA). The programme facilitates the sharing of successful experiences in agricultural development with developing countries to improve agricultural productivity and food security.

AgriTT Pilot Development Projects work with small farmers, agricultural outreach agencies and policy-makers in Malawi and Uganda to introduce agricultural technology innovations from China and embed these in a value chain, of which farming communities will be the primary beneficiaries. **The Uganda PDP** supports the development of cassava value chains.

New cassava-based food products for Uganda

Cassava is a staple crop in Uganda and is important for food security. But it also has the potential for a wide range of additional uses – as an industrial raw material for producing starch, ethanol and sweeteners, and for processing into high-quality food products such as snacks and biscuits to meet increasing demand from urban consumers.

By facilitating partnerships between Chinese and local experts, the Uganda Pilot Development Project has provided support to the entire cassava value chain in Uganda, from improving crop yields and post-harvest management to processing and market development. The component described here focused on value addition through the production of high-quality cassava-based food products.

Cassava processing experts from Guangxi University visited Uganda to support the School of Food Technology, Nutrition and Bioengineering at Makerere University in identifying suitable products and technologies with potential for commercialisation, and a decision was reached to focus on cassava snacks and high-energy biscuits. This was followed by a jointly conducted product development exercise. Two production lines – an extruded snack-processing line and a biscuit-processing line – were chosen during a Ugandan study tour to China. The equipment was installed at the Makerere University incubation unit by Chinese technicians.

Due to the detailed procedure used to identify, procure and install the equipment, little adaptation has been required. This demonstrates that future

technology transfer projects should invest upfront time and resources to understand technical requirements; assess the exporter's capacity to supply equipment suited to local needs; and ensure that equipment is installed and commissioned by skilled company technicians.

The success of this work was driven by the partners' shared interest in getting the best from cassava as a food ingredient by understanding its properties and developing products that are attractive to consumers.

Both partners are looking forward to developing more cassava-based food products in the future that will act as a driving force for commercialisation of the cassava subsector.

Lasting outcomes include:

- **Development of cassava-based food products:** Following a competitive application process, two Ugandan entrepreneurs – House of Rusa and Family Diet – have each been provided with research and development support to develop a cassava-based product with potential for commercialisation. House of Rusa has developed a high-energy biscuit, Maxima; and Family Diet developed two brands of extruded snack food (Cassava Pops and Cassava Snackies). The products have so far received excellent feedback from target consumers.
- **Technical capacity to support cassava food product entrepreneurs:** To enable small-scale commercial production, the processing lines installed at Makerere University are being used by the selected entrepreneurs to fine-tune their products. They will then

begin small-scale production and marketing. The university will also use the equipment to undertake further research in cassava value addition as well as capacity building for entrepreneurs and students. The equipment will also be used for demonstration to entrepreneurs interested in investing in lines of their own. Knowledge about effective technology sourcing will also be shared with potential investors.

- **Network building:** Strong links have been forged between staff at Makerere University and Guangxi University in China. Both teams have rich experience in different aspects of food technology research and have worked together effectively to tackle product development challenges. Ugandan entrepreneurs have also built links with their Chinese counterparts. These networks offer potential for future research collaboration, technology sourcing and transfer.



Policy recommendations

This work demonstrates cassava's great potential to enhance the livelihoods of Ugandans through adding value, creating employment opportunities and generating income. The following steps will be needed to realise that potential.

- **A strong cross-government cassava strategy is needed to bring together key stakeholders, including Uganda's MAAIF, research institutions, local government, development partners, farmers and entrepreneurs.** Robust links between sectors will ensure the different levels of the value chain (production, processing, value addition) are coordinated, sharing information on market demand and supply, and reducing risks at different links in the chain.
- **MAAIF should promote cassava as a cash crop to complement its traditional role as a food crop.** This will create opportunities for increased investment in production, which in turn will catalyse the value addition component. Different cassava varieties may need to be promoted to suit different purposes, for example varieties with high starch content for processing, and sweet varieties where the crop is consumed directly.
- Cassava can be processed into a number of food products including snacks, baked products and baby foods. **A detailed situation analysis by a market research organisation is needed to identify the most popular products with potential for commercialisation.** This will ensure that investment in technologies is demand-driven and therefore more likely to succeed.
- **Importing machinery is risky – what works in one context may not be suitable for another. A lot of background work is needed to ensure a good choice is made and that the technologies to be imported are appropriate to the needs of the target country.** It is also necessary to plan for the supply of spare parts and technical support. Donors and government have a role to play in supporting information exchanges and platforms, including tools for robust analysis of different options.
- **Investment in technologies that can drive innovation in a value chain such as cassava requires access to finance.** The Government of Uganda and development partners will benefit from information sharing about investment opportunities in cassava, for example through round-table events that connect investors, technical experts and equipment suppliers.
- **A conducive policy environment** will be needed to support technology transfer, for example through tax exemptions on imported equipment and other appropriate tax breaks.



The project has installed production lines at Makerere University that will support incubation of future entrepreneurs.



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