

Rwanda Sweetpotato Super Foods Market Chains that Work for Women and for the Poor

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The Golden Power Biscuit, with 43% of wheat flour replaced by orange-fleshed sweetpotato puree, was successfully launched by Urwibutso (SINA) Enterprises in November 2012, with sales worth \$51,000 USD in the first 7 months.



■ Women's group promoting OFSP roots and doughnuts (credit K. Sindi).

❖ What is the problem?

Per capita sweetpotato production in Rwanda is among the highest in SSA—over 80 kgs per capita. Major growing areas have bi-modal rainfall regimes and year-round consumption of the crop. However, market chains are poorly developed; roots are bulky and costly to transport long distances. There are seasonal gluts when prices plummet with farmers complaining of lack of markets. Processing of sweetpotato into products offers the opportunity to increase demand for the crop and create value-addition, thereby expanding the incomes of smallholder producers.

The population of already densely-populated Rwanda is expected to double by 2020 and the rate of urbanization to increase to 30%. Urban consumers demand more processed, faster cooking foods than their rural counterparts. There is expanding demand for wheat-based products, but wheat flour is relatively expensive and its world price steadily increasing. Pilot research in other countries found that boiled and mashed sweetpotato (puree) can profitably substitute significant percentages (30-50%) of wheat flour in bakery products and contribute nutritionally significant amounts of pro-vitamin A.

What has been lacking is getting the appropriate research-public-private partnership to move from small-scale efforts to marketing sweetpotato products on a commercial scale. Solid evidence regarding which organizational structure actually would benefit poorer smaller farmers and in particular women farmers in such a partnership is minimal. There is also concern that as sweetpotato is increasingly commercialized, men will dominate and control the proceeds from sales of this crop.

❖ What do we want to achieve?

This project seeks to build an effective public-private sector partnership. We will provide solid evidence that sweetpotato processed products are profitable and acceptable to urban African consumers. Expected impacts also include understanding how to develop efficient and/or gender-equitable organizational model(s) for sweetpotato value chains and enhanced revenues for 500 participant households within 3 years. The project is testing whether:

1. The development of a value-chain for processed products with a private sector actor leads to improved returns to rural smallholder sweetpotato growers.
2. Partial or full processing of roots into final products by farmers in organizations (farmers in model 2) prior to delivery to market outlets or direct fresh root sales results in greater participation and increased revenues for women and young farmers than contract growing schemes managed by the private sector processor (farmers in model 1), in which all value addition occurs at the factory.
3. Sweetpotato will become a high value crop in target areas through effective marketing of sweetpotato processed products among urban and semi-urban consumers.

❖ Where are we working?

We are working in four districts in Rwanda: Rulinda, Gakenke, Muhanga, and Kamonyi.



Partners include:

- Rwanda Agricultural Board (RAB), co-lead
- International Potato Center (CIP), co-lead
- Urwibutso (SINA) Enterprises, private sector agro-processor
- Catholic Relief Services (CRS) Rwanda, international NGO
- Imbaraga, local NGO specializing in agricultural produce marketing
- Young Women Christian Association of Rwanda (YWCA), local NGO
- Kigali Institute of Science and Technology, Food Science & Technology

❖ What we have achieved so far

The Sweetpotato Super Foods component began in SASHA's year 2 (August 2010). In year 1, research concluded that puree (boiled and mashed sweetpotato) was superior to flour in terms of product quality and profitability. Puree can substitute at least 30% of wheat flour in bread and up to 45% in other bakery products and the resultant products are acceptable to Rwandese consumers. Recipes were developed and test marketed for four initial products: biscuits, doughnuts, bread, and queen cakes. Golden Power Biscuits, made with orange-fleshed sweetpotato, were officially launched in November, 2012 with sales of US \$ 51,000 in the first 7 months.

To enable consistent root supply, farmers need high enough yields and staggered production plans. Provision of disease-free or "clean" planting material and training farmers on proper vine maintenance has increased the yield of sweetpotato roots by project farmers from 4 ton per ha at the start of the project to 11.2 and 12.6 tons per ha in the northern and southern regions, respectively. RAB's tissue culture and screen house technicians have led the building up supplies of clean planting material, producing over 3.5 million cuttings of virus-free planting material in the last three years. Key farmer multipliers were trained on how to maintain quality planting material. So far, 35 vine conservation tunnels using anti-vector netting have been constructed with multipliers to ensure continued access to the clean planting material after the project phase out.

Between July 2012 and June 2013, farmers in the project produced 122 tons of sweetpotato and supplied 31.5 tons of roots to SINA's factory with over 70% of the roots meeting stipulated quality standards and sold 51 tons to the local market. The factory used these sweetpotatoes to produce fried doughnuts, 3 bread types, Akarabo Golden Power biscuits, and cakes, with total gross sales valued at US \$ 160,313 ---an increase of 150% compared to the previous year when the new products were being tested. The number of model two farmer groups has now expanded to 20 (80% women). SINA has 45 (65% women) model one individuals directly contracted to supply its factory.

The project is aggressively implementing a marketing and communication plan alongside of the launch of the Power Biscuits. During the past year, we launched and published 12 issues of a project newsletter; there have been 4 radio shows, 26 radio programs in 11 different radio stations countrywide, 5 TV programs on the two TV stations, 4 news articles



■ Launch of golden power biscuits

in two hardcopy newspapers and 12 online media articles in 5 different media outlets. Radio talk shows and agricultural fairs appear to be among the best ways to generate interest in the new products. These efforts have raised interest among policy makers concerning the potential of sweetpotato products to provide market opportunities for smallholders and there is interest in expanding this effort to other districts. Moreover, the special nutritional value of OFSP is now being explicitly recognized by authorities.

❖ What are the next steps?

We are working with Urwibutso (SINA) Enterprises to develop an economically viable OFSP-based juice product before the end of 2013. We have identified two additional private sector processors to work with in the coming months, and will be investigating the feasibility of model 2 farmer organizations delivering partially processed roots to one of those processors. Some farmer multipliers are now commercializing their quality planting materials and recording their sales. We are testing different forms of fresh root storage to enable farmers to store their roots in times of excess production. We are also working with food scientists to improve OFSP puree storage.

Efforts are underway to create specially branded shelf spaces displaying sweetpotato-based products in stores. We are also developing an Orange label for products containing OFSP, noting its health benefits. We will actively encourage all agro-processors to use this label as part of a unified marketing campaign as the number of OFSP-based products expands. We intend to further test consumer acceptance of formally launched products.

In early 2014, we will conduct an endline survey among participating and non-participating farmers in the project that we will compare to equivalent baseline data collected in 2011. This will enable us to evaluate how farmers linked to fresh sweetpotato and processed product markets benefited compared to those not linked.

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