

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

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By explicitly targeting women's participation from the outset, the number of women supplying roots for processing is significantly larger than the number of men.



■ RAB has produced thousands of disease-free plantlets, driving yield increases (credit J. Low)

## ❖ 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 sweetpotato consumption. 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 sweetpotato into products offers the opportunity to increase demand for the crop and create value-addition, thereby expanding producer incomes.

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 most wheat flour is imported and its world price steadily increasing. 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 sector 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 demonstrate that sweetpotato processed products are profitable and acceptable to urban 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 prior to delivery to market outlets results in greater participation and increased revenues for women and young farmers than contract growing schemes managed by the private sector processor, 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: Rulindo, Gakenke, Muhanga, and Kamonyi.



### Partners include:

- Rwanda Agricultural Board (RAB), co-lead
- International Potato Center (CIP), co-lead
- Urubwitso (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

### ✦ How are we going to make it happen?

Urwibutso (SINA) Enterprise, a juice and bakery products processor in Rulindo, is collaborating with RAB, CIP, CRS, Imbaraga, YWCA, and KIST to develop high quality sweetpotato-based processed products and profitable value chains.

Two organizational models will be tested. Model one (*contract farming*) builds on SINA's current practice of contracting individual farmers to produce their raw material (desired crops) and doing all the processing at their factory. In Model two (*farmer group value addition*), CRS and its implementing partners (YWCA and IMBARAGA) organize farmers into groups. All groups will produce roots and in some cases prepare the puree to be sold to SINA and other processors to turn it into finished products. Other groups will market their own processed products. We will study the costs for each model, their differential impact on returns to women versus men cultivating sweetpotato and the comparative product quality and profitability.

### ✦ What we have achieved so far

This component began in SASHA's year 2 (August 2010). In year 1, research concluded that puree 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 50% in other bakery products. Recipes have been developed and test marketed for four initial products: biscuits, doughnuts, bread, and queen cakes. Golden Power Biscuits, made with orange-fleshed sweetpotatoes (OFSP), will be the first product launched by October 2012.

To enable consistent supply, farmers need high enough yields and staggered production plans. Provision of clean planting material and training farmers on proper vine maintenance has increased root yields 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. Building up supplies of disease-free or "clean" planting material has been a major effort led by RAB's tissue culture and screen house technicians, who produced over 875,800 cuttings of virus-free planting material. Key farmer multipliers were trained on how to maintain quality planting material.

Between July 2011 and June 2012, farmers supplied 8.2 tons of roots to SINA's factory with over 70% of the roots meeting quality standards. The factory used these sweetpotatoes to produce fried doughnuts, 3 bread types, biscuits, and cakes, with total sales valued at US \$ 33,359 ---an increase of

178% compared to the first project year. Pilot radio talk shows and agricultural fairs have effectively raised interest in the new products.

A new biscuit and cookie making machine was installed at the SINA factory in June 2012 and test products produced with 45% sweetpotato puree and 55% wheat flour are of very high quality. These will be marketed once outstanding packaging issues are resolved.

The number of *model two* farmer groups has now expanded to 20 (80% women). SINA has directly contracted 37 (65% women) *model one* individuals to supply its factory. A market survey conducted in May 2011 indicates that opportunities exist to work with at least 10 additional agro-processors.

### What's next?

✦ Implementation of the marketing and communication plan will accompany the launching of selected products. This includes expanded use of radio talk shows and having all shelf space displaying sweetpotato-based products to have attractive packaging, with each OFSP product having an **Orange label**, noting its health benefits. We will further test consumer acceptance of formally launched products. The project will also link at least two additional processors to farmer organizations, with at least one processor receiving some partially processed roots. Production levels will continue to expand, and we will also test improved root storage methods in the coming year.

Baseline data collected in November 2011 will enable project impact to be evaluated after endline data are collected in 2014.



■ Testing new biscuit machine at SINA (credit K. Sindi)

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