

Sweetpotato Super Foods in Rwanda

Market Chains that Work for Women and for the Poor

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■ A cooperative member standing in front of their young sweetpotato plot (credit: K. Sindi)

❖ What is the problem?

Per capita sweetpotato production in Rwanda is among the highest in SSA—over 80 kgs per capita. Grown mainly by women, sweetpotato is an increasingly important food security crop in light of serious disease problems currently affecting cassava and banana. Major growing areas have bi-modal rainfall regimes and year-round consumption of the crop. Market chains are poorly developed; roots are bulky and costly to transport long distances. Sweetpotato cannot be stored for a long time without proper curing or processing. Reliance on rain-fed agriculture means there are seasonal gluts. Prices plummet during these periods of abundance and farmers complain 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 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. Lab analysis conducted in South Africa demonstrated that when medium intensity orange-fleshed varieties are used, “golden” bread can be marketed as an excellent source of vitamin A.

What has been lacking to date is getting the appropriate research-public-private sector partnership to move from small-scale efforts to marketing sweetpotato products on a commercial scale. Private firms require reliable supply chains. Farmers need markets. But, while the need for value chains to enhance farm incomes is widely recognized, solid evidence regarding which organizational structure actually benefits poorer smaller farmers and in particular women farmers is minimal. There is also legitimate concern that as sweetpotato is increasingly commercialized, men will dominate the control of proceeds from sales of this crop.

❖ What do we want to achieve in the first five years?

This project seeks to build an effective public-private sector partnership. We want to provide solid evidence that sweetpotato processed products are profitable and acceptable to urban African consumers. We will also document farmer welfare outcomes, particularly for women farmers and poorer farmers. Expected impacts include the identification of an efficient and/or gender-equitable organizational model(s) for sweetpotato value chains and enhanced revenues for 500 participant households over a 3 year implementation period.

Key lessons will be learned in how to re-position sweetpotatoes and their products in the urban consumer market. The project will test whether:



Partners include:

- Rwanda Agricultural Board (RAB)/Research, formerly Institut des Sciences Agronomiques du Rwanda (ISAR), 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 marketing
- Young Women Christian Association of Rwanda, local NGO
- Kigali Institute of Science and Technology (KIST), Department of Food Science and Technology

1. The development of value-chain for processed products with a private sector actor leads to improved returns to sweetpotato cultivation for growers.
2. Farmer organization based pre-processing of roots or full processing into final products prior to delivery to market outlets results in greater participation and increased revenues for women farmers than contract growing schemes managed by the private sector processor, in which all value addition occurs at the factory.
3. Sweetpotato will become high value crop in target areas through effective marketing of sweetpotato processed products among urban consumers.

❖ Where are we working?

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

❖ 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, KIST and the Rwanda Bureau of Standards to develop 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 farmers to produce a desired crop and doing all the processing at their factory. In Model two (farmer group value addition), CRS and their partners organize farmers into groups. All groups will produce roots and in some cases prepare the puree to be sold to processors to turn into finished products. Other groups will market their own processed products. We will study the cost of establishing each model, their differential impact on returns to women versus men cultivating sweetpotato and the comparative product quality and profitability for the agro-processors.

❖ What we have achieved so far

The Sweetpotato Super Foods component of the SASHA project began in year 2 (August 2010). To date, joint research done by ISAR, SINA and CIP, comparing the use of sweetpotato flour versus puree, revealed that puree was superior in terms of product quality and profitability. Technical and consumer tests indicate that sweetpotato puree can

substitute at least 30% of imported wheat flour in bread and 40% in other bakery products and the resultant products are acceptable to Rwandese consumers. Recipes have been developed and refined for four initial products: biscuits, doughnuts, bread, and queen cakes. Golden Power Biscuits, made with orange-fleshed sweetpotatoes, will be the first product launched by September 2011.

ISAR's technicians at tissue culture facilities in Rubona have multiplied and hardened over 20,000 plantlets of virus-free planting material. ISAR has trained extension partners on how to identify and train farmer vine multipliers to maintain quality planting material by removing any diseased vines as soon as they see them. SINA has already directly contracted 15 individuals (14 of whom are women) to grow sweetpotato for its factory. Three farmers groups participated in the test phase through April 2011, and the number of groups has now expanded to 20. A market survey conducted in May 2011 indicates that opportunities exist to work with at least 10 other agro-processors.

❖ What's next?

In September 2011, a survey will be undertaken among randomly selected farmers in the 20 groups and all of the existing and proposed contracted farmers for the coming year, as well as among growers not linked to these marketing opportunities. This will enable us to more fully assess the benefits of the intervention. Over the next year, we expect for at least 2 additional Sweetpotato Super Foods to be launched.



❖ Examining test sweetpotato product (cake) at SINA factory (credit K. Sindi)