

# Orange-fleshed sweetpotato has become a common dish in SUSTAIN Kenya intervention sites

By the end of year 4, the project has reached 90% of its five-year direct beneficiary target, providing households with improved orange-fleshed sweetpotato (OFSP) planting material and nutrition education. This far, OFSP has moved in the target areas from being not utilized at all in most households to being consumed at least twice a week when the roots are in season. Behavior change is starting to happen and now OFSP is part of complementary feeding practices for young children, due to a strong collaborative effort with the Ministry of Health.

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Fig 1 County inter-departmental self review discussions (credit E. Odeny)

## What is the problem?

Vitamin A deficiency (VAD) is the leading cause of preventable blindness in children and increases the risk of illness and death from severe infections. VAD is a significant public health problem in Kenya that affects 84% of children and 39% of women (particularly pregnant women). In pregnant women, VAD causes night blindness and may increase the risk of maternal mortality. Orange-fleshed sweetpotato (OFSP) has the potential to contribute to reduction of VAD. Only 125 grams of most OFSP varieties supply the recommended daily allowance of vitamin A for children under five years of age. In addition, the short maturity (3-4months), low input requirement and ease of integration into kitchen gardens makes OFSP an excellent food based approach to reduce the high prevalence of VAD.

At the commercial level, however, sweetpotato in Kenya faces underutilization due to undiversified market avenues, a strong existing value chain for white-fleshed, red skinned roots, the bulky nature

of the roots and planting material (vines), poor harvest and post-harvest handling of roots and lack of postharvest storage facilities.

## What do we want to achieve?

SUSTAIN Kenya (2013-2018) uses an integrated approach that appreciates the critical role that good nutrition within the first 1000 days of life plays in assuring good health. SUSTAIN Kenya has a goal of reaching 35,000 households with children under five years of age with OFSP planting material and nutrition education by 2018. We expect that these households will produce OFSP at least twice a year and consume OFSP at least twice per week when it is in season. We would like to reach at least 100,000 consumers with a commercially traded product that uses OFSP as a major ingredient, developed with a commercial partner.

## Who do we work with?

SUSTAIN is a partnership between agricultural and health institutions (Fig. 1). The Programme for Appropriate Technologies in Health (PATH), was a critical partner in year one and two. SUSTAIN is also working with Tusksys chain of supermarkets on the production and promotion of production of commercial OFSP baked products and marketing strategies, with additional technical inputs from a private sector food technology firm Euro Ingredients Limited (EIL). Organi Limited is a private company that processes OFSP purée and delivers it to Tusksys for development of bakery products. In collaboration with other projects at CIP and other partners, progress has also



SUSTAIN is a 5-year program (2013-2018), coordinated by the International Potato Center (CIP) with support from UKAid, to scale up the nutrition benefits of biofortified orange-fleshed sweetpotato (OFSP) to 1.2 million households with children under five years of age in children in Kenya, Malawi, Mozambique, Rwanda, and Bangladesh. SUSTAIN supports an integrated set of interventions in agriculture, nutrition, and marketing to increase production and consumption of OFSP. SUSTAIN emphasizes rigorous monitoring, operational research, and independent evaluation to assess the scalability of these interventions and contribute to global evidence on achieving large scale nutrition outcomes through biofortified crops.



**Fig. 2** Participation of both women and men in vine dissemination is fostering behaviour change towards consumption of OFSP as baby and family diet (credit M. Wamalwa)

been made in fresh root storage, with an aim to support commercialization of OFSP.

We are working in Homa Bay, Migori, Nyamira, Kisumu and Siaya counties in the former Nyanza province, the leading sweetpotato producing area in Kenya. The project is strongly anchored in the community strategy approach developed by the Ministry of Health. This approach allocates about 100 households for the constant follow-up by one community health worker regarding the adoption of key public health interventions. Initial contact with project beneficiaries is made at the health facility while attending ante-natal care or post-natal care. This integrated agriculture-nutrition-health approach is being undertaken in 28 health facilities.

### What have we achieved?

A total of 31,403 households have been reached with vines and nutrition messages since the project started (Fig. 2). Over time, farmers have been more interested in conserving their start-up planting material provided by the project. A follow-up survey has indicated about 70% of households are either expanding their plots of OFSP or maintaining the initial area using planting material from their own farms. Adoption of OFSP is clearly driven by an understanding of its nutritional value. A total of 86% farmers interviewed in a survey last year associated OFSP with vitamin A, of these, 60% correctly described the role of vitamin A in humans.

The SUSTAIN baseline survey of 2014 showed insignificant levels of consumption of OFSP as a complementary food, in part due to social cultural practices that inhibited use of sweetpotato as a complementary food. Working closely with county government during these past four years, these cultural barriers have been broken down and OFSP is now a common food in most intervention areas with 86% of endline respondents appreciating OFSP dishes.

The interactive training material focus on several aspects. In part, the holistic approach has enhanced behavior control among lactating mothers and are more and 56% are now exclusively breastfeeding. Implementation of the integrated agriculture-health approach has also registered earlier initiation of ante-natal care as well as enhanced completion



**Fig. 3** Demand for OFSP bread in Homa Bay prompted Organi Ltd to produce bakery products alongside the OFSP purée

rate for post-natal care. This has been possible due to persistent nutrition education efforts, particularly extended to households with either pregnant women or a child under 5 years of age. Furthermore, the integrated approach is synergistic with the objectives of the county, thus allowing for inclusion of OFSP in regular county activities.

Progress has been made towards reaching at least 100,000 consumers with a processed product that utilizes substantial amounts of OFSP. This has resulted in increased number of farmers taking up OFSP as a commercial crop. The purée and bakery value chains (Fig. 3) have steadily maintained their presence in the market since 2015, when they started. Business working relationships between the Tuskys Supermarket and Organi Limited, the OFSP purée processor has been enhanced. A market for OFSP fresh roots is being consolidated. More than ever before, farmers in Homa Bay County believe there is a market for their roots. Sales of \$36,624 for OFSP purée and \$136,400 for OFSP bakery products were obtained during January- May, 2017.

The seed systems part of the OFSP value chain has demonstrated resilience these past 3 years. Over 70% of the vine multipliers remain committed to producing substantial quantities of quality planting material. Gradually, willingness to buy vines is increasing, especially among medium-size root producers.

### What next?

In the coming year, we expect to reach 10,000 households with agro-nutrition-health service intervention. This will be led by a team of 264 community health workers that have been trained on selected 7 key thematic areas on integration of OFSP in complementary feeding as well as in family diet. During this last year of SUSTAIN, these beneficiaries will mainly be reached by county governments, through integrated field activities as part of the SUSTAIN exit strategy.

Regarding marketing, through collaboration with other projects, post-harvest storage of roots will be pursued to assure both bakery and purée value chains do not experience supply shortages as the fresh root demand for OFSP continues to increase.