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Viable Sweetpotato Technologies in Africa (VISTA) Tanzania Project

In its final year (2017), VISTA Tanzania conducted an endline survey to assess the impact of its interventions. Evidence from this impact assessment indicated that VISTA–Tanzania generally resulted in increased production and consumption of nutritious OFSP; significantly increased caregiver knowledge on vitamin A, nutrition, health-seeking, and childcare; and significantly improved dietary vitamin A intake, dietary diversity, and food security among beneficiary households.



Fig 1. Training on OFSP seed multiplication by SRI-Kibaha (Credit J.Maru)

What is the problem?

Over a quarter of the Tanzanian population fall below the basic needs poverty line. An estimated 33% of children aged 6–59 months and 37% of women aged 15–49 years suffer from vitamin A deficiency (VAD). In this context, nutrition-sensitive agricultural development can play a crucial role in rural communities for which farming is the main source of food and income. Food-based approaches are highly complementary to other interventions to tackle VAD, especially in rural communities where it is difficult to reach beneficiaries consistently with alternative interventions.

Sweetpotato is ranked highly as a food security crop in Tanzania, and is known as the crop that makes it when grain crops like maize and rice fail. However, sweetpotato virus disease (SPVD) can lead to yield losses of up to 50% of total production. Tanzania currently has ten orange-fleshed sweetpotato (OFSP) varieties that have either been released or are in the pipeline for release. Provision of sufficient quantities of high quality planting material of these improved, beta-carotene rich varieties, especially during critical periods of planting, can improve production. To date, the focus of International Potato Center's dissemination work has been in the Lake Zone, but experience has shown considerable unmet demand in central, southern and coastal zones.

Partners

- Sugarcane Research Institute, Kibaha (SRI Kibaha)
- Agriculture Research Institute, Uyolet (ARI Uyolet)
- Sokoine University of Agriculture (SUA)
- Farm Concern International (FCI)
- District Local Government Agriculture, Nutrition and Health Extension offices



🌿 What do we want to achieve?

The Feed the Future Viable Sweetpotato Technologies in Africa (VISTA) Tanzania project, designed and implemented by the International Potato Center (CIP) and its partners from 2014 to 2017, set out to contribute to improved nutrition, food security, and incomes in rural Tanzania by expanding the production and utilization of nutritious orange-fleshed sweetpotato (OFSP). Using proven implementation approaches from related projects that combine agricultural, nutrition, and marketing interventions, VISTA's goal was to extend the production, consumption, and marketing of OFSP products among 21,000 smallholder farmers with children under 5 years and 20 medium-sized farmers. Of these, 17,500 households (HH) were to participate in a fully integrated agriculture–nutrition intervention package, and 28 entrepreneurs were to be supported to become financially viable sweetpotato seed and root enterprises (SREs).

🌿 Where did we work?

The project is being implemented in seven districts in Mbeya, Iringa and Morogoro Regions which are part of USAID's Feed the Future zones of influence.

🌿 How did we make it happen?

VISTA–Tanzania pursued the following four specific objectives and outputs:

- **Objective 1:** Increased production and consumption of nutritious OFSP varieties through an integrated agriculture–nutrition technology set

Output 1.1: Agro-ecologically adapted OFSP varieties with market attributes available for uptake by root producers.

This output was delivered through Mother–Baby trials conducted by the project's national partner, the Sugarcane Research Institute (SRI)–Kibaha and the agricultural research institute (ARI)–Uyole. It was recommended that out of the 11 OFSP clones tested for 2 years under different agro-ecological zones of Tanzania, 8 clones be moved to the next phases of the varietal release process: (1) distinctiveness, uniformity, and stability and (2) national performance trials.

Output 1.2: Entrepreneurs establish financially sustainable medium-scale SREs linked to upstream source of quality pre-basic OFSP planting material and downstream to individuals and community groups demanding planting material.

This output was delivered through the establishment of 30 viable SREs in the seven project intervention districts.

Output 1.3: Smallholder and medium-scale farmers grow OFSP and realize increased productivity through accessing quality planting material and applying improved agronomic practices.

This output was delivered by the established SREs under output 1.2.

- **Objective 2:** Improved nutrition knowledge and practices
Output 2.1: Households receive social and behavior change communication (SBCC), including knowledge on OFSP utilization and consumption.
Output delivered as planned with 21,876 primary caregivers



Fig. 2 Training of trainers session in Babati, Tanzania (Credit J. Maru)

of children under 5 from smallholder farm HH receiving SBCC through monthly nutrition group meetings.

Output 2.2: Staff from target districts trained in improved nutrition counseling.

Output delivered with 831 community leaders, including community health workers (CHWs), trained (and refresher-trained) on improved nutrition counseling.

Output 2.3: Various nutrition messages and counseling, including on vitamin A-rich foods and OFSP, implemented in target districts.

Output delivered with eight different nutrition counseling messages including on vitamin A-rich foods and OFSP, in the counseling cards used for training community leaders and stepped down to caregivers from beneficiary HH.

- **Objective 3:** Root producers and traders use improved storage and marketing of fresh OFSP roots

Output 3.1: Technologies for improved storage and marketing practices of fresh roots disseminated.

Output delivered through the implementation of adaptive storage technologies for OFSP roots in all seven intervention districts.

Output 3.2: Selected fresh OFSP root market chains improved.

Output delivered through establishment of SREs who were introduced to various market chains by the project implementation partner, Farm Concern International.

- **Objective 4:** Improved evidence base and policy support for OFSP production and utilization

Output 4.1: Staff from government of Tanzania and non-governmental organizations (NGOs) trained in sweetpotato (SP) training of trainers (ToTs).

Output delivered through training of 674 community and NGO agriculture and health/nutrition officers on OFSP production agronomy and utilization (including nutrition) through the ToTs course “Everything you ever wanted to know about sweetpotato.” (Fig. 2)

Output 4.2: Evidence for OFSP production and nutrition support in target districts strengthened.

Output delivered through increased production of OFSP roots (792 ha) and establishment of 140 nutrition clubs in all seven intervention districts.

Output 4.3: Learning events for stakeholders at district and national levels conducted.

Output delivered through various field days held in all seven intervention districts that were attended by various stakeholders in the sweetpotato value chain.

What did we achieve?

To monitor and assess the project’s effectiveness in achieving these objectives, the VISTA monitoring and evaluation strategy included regular community-level monitoring as well as a two-round cross-sectional household survey of 512 target beneficiary HH. The baseline survey was conducted from September to December 2015, and the endline survey from August to October 2017. In addition, a qualitative formative gender evaluation study was used to assess the influence of gender on the project’s implementation. A rapid market assessment study was carried out to determine the commercial potential of OFSP in the project intervention areas and beyond. Finally, a Mother–Baby trial involving 11 clones and five varieties was carried out in seven selected sites of three agro-ecological zones of eastern and southern highlands of Tanzania.

Evidence generated through these surveys and studies suggests that VISTA–Tanzania generally resulted in increased production and consumption of nutritious OFSP; significantly increased caregiver knowledge on vitamin A, nutrition, health-seeking, and childcare; and significantly improved dietary vitamin A intake, dietary diversity, and food security among beneficiary HH. Specific key changes that can be attributed to VISTA are presented below.

Production and food security:

- OFSP become the preferred choice of sweetpotato for many HH after 3 years of project intervention, with 42% of the respondents producing OFSP by 2017. This contrasts with baseline data when SP was dominated by white-fleshed (73%) and yellow-fleshed varieties (26%), with OFSP at 0.8%. By the end of the project, the cultivation incidence of white- and yellow-fleshed varieties had declined to 33% and 25%, respectively.
- HH food security improved between baseline and endline studies, with HH categorized as having “high” food insecurity being reduced from 34% at baseline to 16% by the endline survey.

Dietary changes:

- 46% of the HH consumed OFSP in the past 24 hours before the endline survey, with 42% of the reference children also consuming OFSP. This contrasted sharply with the baseline study, when only 0.4% of HH had consumed OFSP 24 hours before the survey interview.
- HH nutrition knowledge in general, and vitamin A knowledge in particular, among caregivers increased by 63% between the baseline to endline surveys. Further, the average health- and childcare-knowledge score of caregivers at endline improved by 27% compared to the baseline.



Fig. 3 OFSP farm of a Seed and Root Entrepreneur (SRE) (Credit F. Grant)

- HH dietary diversity increased by 72% between baseline and endline whereas young child dietary diversity increased by 18% at endline.
- The consumption of vitamin A-rich foods increased by 63% between baseline and endline. These improvements could be attributed to project nutrition activities at the village run by CHWs.

VISTA–Tanzania took a deliberate “results-based management” approach and carefully documented and analyzed the planning, implementing, and evaluating process. This has enabled CIP and partners to extract lessons and develop recommendations for designing future multi-sectoral programs. Some of the main lessons are:

- To support the design and stakeholder ownership of innovative approaches, a thorough diagnosis of institutional and market systems is instrumental. Substantial time is needed for the diagnostic phase and redesigning the implementation activities based on findings from that phase.
- Thinking through the program theory of change and updating the impact pathway or logical framework can ensure integration of the various sectors and disciplines. It can provide guidance for appropriate combination of both qualitative and quantitative monitoring.
- Because of the multisectoral nature of such interventions, multiple evaluation components may be required to respond to the different models and disciplines of evidence present in the different sectors.
- Integration across the multiple sectors required substantial coordination, networking, and organizational and local government authority support.
- There is need for integrated cross-disciplinary trainings and refresher trainings (e.g., on agriculture, nutrition/health, marketing, gender integration, and data management) for the various implementing partners to ensure that all key stakeholders adequately understood all components of the intervention.
- Regular quarterly partners’ meetings for the implementation team and broader network of stakeholders of the project were necessary to continuously review, plan, and update key stakeholders of the project progress. This emphasizes the importance of allocating sufficient resources to critical organizational and management meetings that are essential for supporting integrated approaches to ensure sustainable impact.
- Community-level implementing staff such as ward and village agricultural extension officers and CHWs was critical to the success of the project.
- Establishment and training of community-based vine multipliers or decentralized vine multipliers and SREs are critical to ensure adequate availability of clean source of



Fig. 4 Endline survey data collection of VISTA-Tz project (Credit F. Grant)

planting materials for downstream uptake by farmers and other root producers. (Fig. 3)

VISTA–Tanzania was effective in integrating OFSP into local farming and food systems and thus achieved its goal. There were improvements in food security and diet quality at HH level and among young children.

Significant changes were observed in OFSP production and farming from baseline to endline among intervention HH with children under 5. The positive agricultural and nutrition outcomes documented throughout the intervention periods came about because HH members had been empowered to adopt OFSP technologies and management practices. Evidence abounds that the project approach adopted was potentially conducive to longer term sustainability due to the high-level of buy-in and engagement it encouraged from the onset, particularly in terms of its capacity to mobilize community members and engage with key stakeholders.