



## Speaker Summary Note

**Session:** Learning from Evaluations

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**Title:** Learning from the Evaluation of the HarvestPlus Orange Flesh Sweet Potato Project

Impact evaluations have emerged as a leading tool in development economics and international health for learning what types of interventions are most effective and why. When based on carefully designed field experiments, evaluations can be beneficial in studying agricultural interventions that have explicit nutrition and health objectives, where attribution of causal effects from agriculture to health can be murky in the absence of a structured evaluation. This presentation summarizes the findings of a four-year evaluation study of the impact and cost-effectiveness of a project that introduced provitamin-A-rich orange-fleshed sweet potatoes (OFSP) to more than 24,000 households in Mozambique and Uganda as a strategy to reduce vitamin A deficiency among children and women.

From 2007 to 2009, HarvestPlus collaborated with the International Potato Center (CIP); Natural Resources Institute (NRI) at University of Greenwich; World Vision and Helen Keller International (HKI) in Mozambique; and PRAPACE, VEDCO and FADEP in Uganda to disseminate conventionally bred OFSP vines to farmers and to encourage adoption, consumption and marketing of the crop. The project strategy involved a coordinated three-pronged approach to encourage adoption and consumption of OFSP including: (i) vine distribution and agricultural extension (seed systems), (ii) demand creation through nutrition trainings; and (iii) trainings in marketing and product development.

HarvestPlus collaborated with the International Food Policy Research Institute (IFPRI) and CIP to design and implement a randomized-controlled evaluation of the OFSP project in each country. Baseline surveys were conducted in Mozambique in 2006 and in Uganda in 2007. The baseline included a detailed socioeconomic and agricultural survey as well as a nutrition and dietary intake survey. The dietary intake survey included 24-hour dietary recall interviews to measure intakes of vitamin A and other nutrients by young children and women. As a basis for identifying impact and learning about cost-effective dissemination strategies, sampled church groups (in Mozambique) and farmer groups (in Uganda) were randomly assigned into one of three intervention arms: an intensive 2–3 year intervention (Model 1), a less intensive intervention with reduced activity after the first year (Model 2) and a Control group. In 2009, endline surveys were conducted in both countries.

The results of the impact evaluation<sup>1</sup> showed that the project was very successful at fostering OFSP adoption and consumption of the crop by women and young children. The project caused a 68 percentage point increase in the probability of OFSP adoption in Mozambique and a 61 percentage point increase in Uganda. The project led to substantial substitution of OFSP for traditional white-fleshed or yellow-fleshed sweet potato (WFSP/YFSP) varieties: the share of OFSP in total sweet potato area cultivated increased by 56 percentage points in Mozambique and by 44 percentage points in Uganda. OFSP also became an established part of the diet in project households. For example, the project increased average OFSP intakes of children age 6–35 months by 36–45 g/day in Mozambique and by 37–52 g/day in Uganda. As a result of this increased consumption of OFSP, the project caused significant increases in vitamin A intakes, equal to roughly 100 percent of age-specific daily requirements for young children (age 6–35 months), older children (age 3–5 years) and adult women. Notably, for children age 6–35 months, OFSP contributed 78 percent of their total vitamin A intake in Mozambique and 53 percent in Uganda by the end of the project.

For most of these outcomes, there was no significant difference in impact between the interventions in Model 1 and Model 2, although the less intensive Model 2 was nearly 30 percent less costly in each country. As a result, Model 2 was considerably more cost-effective as a strategy to disseminate OFSP. The average cost of Model 2 per targeted household was \$65 in Mozambique and \$48 in Uganda. However, factoring in additional cost savings and observed diffusion of the crop to neighboring households, the marginal cost of reaching new households in a scaled-up program are estimated to be \$17 in Mozambique and \$14 in Uganda. With greater encouragement of diffusion, these costs fall to \$5 per household in Mozambique and \$6 per household in Uganda. These results suggest that OFSP could be an important component of a national strategy to increase vitamin A intakes and reduce vitamin A deficiency in Mozambique and Uganda.

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<sup>1</sup> Alan de Brauw, Patrick Eozenou, Daniel O. Gilligan, Christine Hotz, Neha Kumar, Cornelia Loechl, Scott McNiven, J.V. Meenakshi, and Mourad Moursi. 2010. “The Impact of the HarvestPlus Reaching End Users Orange-Fleshed Sweet Potato Project in Mozambique and Uganda.” Washington, D.C.: International Food Policy Research Institute.