

## HarvestPlus

### Who Decides to Grow Orange Sweet Potatoes? Bargaining Power and Adoption of Biofortified Crops in Uganda

**COUNTRIES:** Uganda

**YEAR(S) OF PROJECT/STUDY:** 2007 - 2009

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#### BACKGROUND

The goal of the HarvestPlus reaching end users (REU) orange sweet potato (OSP) project is to increase vitamin A intake and improve vitamin A status among vulnerable populations (women and children) in rural Uganda by introducing beta-carotene-rich OSP, as well as related messages concerning agronomy, nutrition, and marketing. Most households obtain planting material for these crops through interaction with other households. This raises a number of important questions about the roles of social interaction, intrahousehold division of labor, and gender in determining the rates at which these biofortified crops are adopted and spread. As part of the Gender, Agriculture, and Assets Project (GAAP), this study examines the effect of women's bargaining power, as revealed in gender-based patterns of ownership and control of land and assets, on adoption of OSP and vitamin A intake among children.

#### METHODOLOGY

Data collection for the evaluation survey was conducted in REU project areas in two survey rounds: a baseline survey in 2007 and an endline survey in 2009. Each survey round included a detailed socioeconomic survey and a nutrition survey, including a detailed 24-hour dietary recall module. Each survey round also included a farmer group survey conducted with the farmer group chairperson or other leader, a community survey, and a price survey. In addition to these survey rounds, a qualitative study on gender and asset ownership and control was undertaken in project sites in Kamuli and Bukedea districts in 2011, which guided the hypotheses tested in this study.

Measures of intrahousehold bargaining power were constructed using gender-differentiated data from the survey's modules on asset ownership and control over land. These data were used to create estimates of the share of land and nonland assets exclusively owned by women, exclusively owned by men, or jointly owned. Similarly, respondents were asked which household member made the crop choice decisions on each plot, allowing up to two responses.

#### FINDINGS

Results of the project showed that REU led to OSP adoption by 65 percent of project households, compared to just 4 percent in the control group (de Brauw et al. 2012). The project also significantly increased the prevalence of adequate dietary intake of vitamin A by children under 3 years and reduced the prevalence of low serum retinol among children ages 3–5 years (Hotz et al. 2012). Specifically, results regarding gendered bargaining power include the following:

- There were clear gender differences in decisions to plant OSP on specific parcels. On nearly 60 percent of parcels, men and women jointly made the crop choice, but men took the lead in making this decision. On 20 percent of parcels, women alone made crop choices, partly reflecting the number of single-head households headed by females. Only 4.5 percent of parcels were reported to be under exclusive male control, while the remaining 16.5 percent of parcels were under joint control, with a woman taking the lead in the decisionmaking.

- The relationship between female bargaining power and control over household assets and the OSP biofortification program's impact on adoption and diffusion as well as dietary intakes of vitamin A was complex. The probability of OSP adoption was highest for parcels over which there was joint control, but where women took the lead in deciding which crops were grown, and lowest for parcels exclusively controlled by men. Although crop choice decisions were correlated across parcels, the evidence indicated that women played an important, and often leading, role in the decision to adopt OSP, but that this decision was often jointly made with their husbands.
- Households in which women had a lower share of nonland assets were more likely to grow OSP on joint plots with women in primary control. Where women had a higher share of nonland assets, decisionmaking on joint plots appeared more egalitarian, but OSP adoption was significantly less likely on plots under exclusive male control.
- The share of nonland assets exclusively controlled by women had a large, significant effect on child dietary intake of vitamin A. On average, the more nonland assets women controlled, the higher their children's vitamin A consumption tended to be. This effect was independent of the REU project's impact on vitamin A consumption, though. Women with relatively higher control of nonland assets did not necessarily have an advantage in using their bargaining power to increase the REU project's impact on child vitamin A consumption. Instead, the project was able to increase children's vitamin A consumption regardless of the mother's share of nonland assets.
- Although the project had a large impact on vitamin A consumption, our other research on this project showed that this impact did not apparently derive from lessons learned during the project's nutrition training. These studies found no signs that the REU had an impact on fathers' knowledge of child feeding practices in Uganda, while nutrition messages received by women appear to have had a relatively small effect on OSP adoption and dietary intakes of vitamin A (de Brauw et al. 2010, 2012).

### FEEDBACK ON STUDY BASED ON INTERVIEWS WITH DAN GILLIGAN AND JULIA BEHRMAN:

1. What are the unique gender-asset questions and indicators you collected in your survey instrument that were particularly valuable or reflective of methodologies you would like to see replicated in future work and why?
  - We asked two plot level questions regarding land ownership and decision-making in which we collected data on up to two household members. Besides providing a rich understanding regarding which household members owned and managed land, this allows us to see specialization occurring within the household and the associated efficiencies that come from that. We also collected a detailed agricultural decision making module that attempted to get at different levels of asset ownership and use, including not only who owns an asset, but who makes decisions about the type and quantity of crop to grow, the sale of crops and so on.
2. What are the unique gender-asset questions/indicators you either collected in your survey instrument that you would have implemented differently or you were not able to collect, but which you would have liked to collect and why?
  - We ended up collecting data retrospectively regarding joint/male/female asset ownership. During the endline survey, we first asked respondents who owned the asset at present and also asked respondents to think retrospectively to two years prior (the time of the baseline) about who owned each asset.
  - It would have been great to ask more detailed questions about land ownership dynamics, however this was not the focus of this project.
3. Asset-gender dynamics are heterogeneous, complex and rooted in social, economic and institutional factors—are there any background factors that relate strongly to gender-asset dynamics that you either collected or wish you had collected?
  - This may be easier said than done, but it is so important to be thoughtful beforehand in designing a questionnaire that provides gender perspective. As mentioned, we didn't initially collect sex disaggregated data on asset ownership, and while we later collected it retrospectively, it would have been ideal to have collected it during the baseline. Another aspect which we could have explored a bit more, is additional decision-making questions and measures of control regarding various household activities. On a related note, we could have done some additional experimentation on behavior change. We had one behavior change targeted exclusively at women. However, involving men or having additional behavior change programs would have been an interesting experiment.

4. Are there any particularities about the region or country of implementation which you think are important to recognize in relation to the gender-asset indicators you collected which are important for other researchers to be aware of? Did any of these context- or country-specific factors influence your survey implementation methodology, and how?
  - Initially we thought of interviewing either the primary male or female of a household through random assignment. However, our field partner pushed back against this approach indicating that it would cause tension within the household if a woman was selected to be interviewed instead of the husband and asked questions about asset ownership. Ultimately we ended up asking whoever was best suited in the household (self-identified) to answer the questions pertaining to a given module. While it may have been advantageous to interview both the primary male and primary female within a household, our budget didn't support two surveys per household. Regarding the qualitative work, we found that it was important to do male and female focus group discussion surveys separately.
5. What do you see as the largest methodological challenges in collecting gender-asset data in general and how can we as a research community work towards filling this gap?
  - Related to the previous question, I think finding a method by which you can collect gender-asset data using one enumerator, either male or female, would be ideal. Conducting two surveys per household (for the primary male and female) is more costly and oftentimes not affordable. Additionally, using all male or female enumerators is oftentimes impractical so strategies to be able to use either sex regardless of the sex of the respondent are helpful for field logistics.
6. Did everything go smoothly? Were there any unexpected challenges that came up?
  - During the fieldwork interviewers encountered a number of difficulties. For example, in some areas, the popularity of OFSP meant that it was difficult to get nonmembers of farmers groups who had not been to at least a few OFSP trainings. Nonetheless, the interviewers strived to ensure that those people who attended the non-farmers group focus group discussions had truly not been to OFSP trainings or farmers group meetings before. In addition, due to the fact that many more women than men were members of farmers groups, focus group discussions with men tended to be smaller than those held with women. Another difficulty encountered by the field team was that interviewers sometimes had trouble getting focus group discussion participants to conceptually understand questions that involved ranking of OFSP traits. A final difficulty was the fact that in some cases there did not appear to be major differences in adoption rates between the areas designated as "high adopters" and those designated as "low adopters" by the extension agents who were involved in sample selection.
7. What qualitative tools worked well for getting at gender and asset dynamics? What qualitative tools did not work well?
  - It was important for us not to make assumptions about how things currently worked and to instead get at these responses inductively. For example, first by probing about how households access land, and then following up by asking if men and women farm plots together or separately and what factors men and women consider when deciding what to grow on a given plot. This gave us a detailed picture about the gender dynamics of farming that built upon the respondents own answers to questions about how things worked in their communities.

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**For more information about the HarvestPlus project please see** Gilligan, D. O., N. Kumar, S. McNiven, J. V. Meenakshi, and A. R. Quisumbing, 2014. Bargaining Power and Biofortification: The Role of Gender in Adoption of Orange Sweet Potato in Uganda. IFPRI Discussion Paper 01353. Washington, DC: International Food Policy Research Institute. <http://www.ifpri.org/sites/default/files/publications/ifpridp01353.pdf>  
**For questionnaire(s) and survey instrument(s), please visit** <http://gaap.ifpri.info/tools-used-by-gaap/harvest-plus-tools/>  
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