The impact of school nutritional campaigns on OFSP adoption and food security among smallholder farming households in Tigray region, Ethiopia

Norman Kwikiriza[1], Wellington Jogo[2], Julius J Okello *[1] Haile Tesfay[2] & Frezer Asfaw[2]

1 International Potato Center, Uganda Office, Kampala, Uganda

2 International Potato Center, Addis Ababa Office, Ethiopia

Introduction & Justification

- Malnutrition is a major problem in the Tigray region of Ethiopia. Vitamin A deficiency (VAD) is widespread in the region. Stunting among children is 44.4%, which is above the national average (CSA 2014). Heavy dependence on starchy cereals, low dietary diversity and limited consumption of vitamin A-rich foods are the major contributors to VAD and malnutrition.
- Integrating locally adapted, drought tolerant and nutritious crops into local farming systems can potentially address these problems. Production and consumption of orange-fleshed sweetpotato (OFSP) has proved effective in addressing VAD (Low et al 2007; Hotz et al 2012).
- In Ethiopia, the International Potato Center (CIP) and regional partners piloted a 2-year project that promoted production and consumption of vitamin A-rich OFSP as part of diversified diets. The project adopted school-based nutritional campaigns wherein school gardens and school feeding were piloted in 11 schools between 2011 to 2013. The schools served centres for the dissemination of planting material (vines) and transfer of information on benefits of OFSP and its production practices to parents.

Research Questions

This study addresses two research questions:

1. How effective are school-based nutritional campaigns in transferring knowledge on nutritional benefits of OFSP and its agronomy?
2. What is the impact of such campaigns on household food security and knowledge of OFSP benefits among the participating households?

Methods

- A random sample of 139 farmers were interviewed: 51 from around the 4 participating schools with school garden and school feeding pilots (participants) and 88 from villages without (non-participants).
- In addition, 25 children from each of the 4 participating schools were interviewed. Quantitative data collected was complemented with focus group discussions with parents and teachers.
- Data was analyzed using descriptive and econometric analyses. Differences in knowledge of benefits of OFSP between participants and non-participants were tested using tests of difference in means. Impact of the campaigns was assessed using propensity score matching (PSM) technique.

School garden with OFSP sweetpotato crop

School child taking sweetpotato vines home

OFSP feeding campaign

School feeding event involving OFSP

References

Central Statistical Agency [CSA Ethiopia]. 2014. Ethiopia Mini Demographic and Health Survey 2014. Addis Ababa, Ethiopia.

Low J W, Arimond M, Osman N, Cunguara B, Zano F, Tschirley D. 2007. Orange-fleshed sweet potatoes increased vitamin A intake and serum retinol concentrations in young children in rural Mozambique. *The Journal of Nutrition* 137:1320–7.

Hotz, C, Loechl, C., Abdelrahman L., Tumwine, J., Ndeezi G., Masawi A., Baingana, R., Carriquiry, A., Brauw, A., Meenakshi J and Gilligan D. 2012. Introduction of b-carotene–rich orange sweetpotato in rural Uganda resulted in increased vitamin A intakes among children and women and improved vitamin A status among children 1–3 years. The *Journal of Nutrition* pp 1871-1880

Corresponding author: email – j.okello@cgiar.org. The authors acknowledge funding for this study from Irish Aid

Results

- The campaigns significantly increased knowledge of OFSP as vitamin A source.
  - ✓ 42% more participants knew about OFSP as vitamin A source than non-participants .
  - ✓ 96% of the school children from the participating schools shared the knowledge about OFSP with their parents, friends and neighbors.
- Knowledge sharing led to a change in farmers' perceptions of OFSP resulting in increase in demand for OFSP vines and roots.
  - ✓ More than 75% of the families with children in the participating schools planted OFSP, and 70% of the vines they planted were brought by their children from the school gardens.
  - ✓ Their main reasons for growing OFSP were its nutritional value and popularity of OFSP among children.
- Results of the PSM analysis, however, found no impact of school-based nutritional campaigns on household food security and dietary diversity.
  - ✓ This may be due to short duration between the implementation of the campaigns and this study.

Conclusion & Implications

- School-based nutritional campaigns are effective in disseminating knowledge about OFSP and their nutritional value.
- There are no detectable changes in food security and household dietary diversity.

- Two major implications emerge from this study:
  - ✓ School children and teachers are key agents of change in rural communities.
  - ✓ More time and a comprehensive study is needed to detect changes of school-based nutritional campaigns on household dietary changes and food security.

The impact of school nutritional campaigns on OFSP adoption and food security among smallholder farming households in Tigray region, Ethiopia

Norman Kwikiriza[1], Wellington Jogo[2], Julius J Okello [1] Haile Tesfay[2] , Frezer Asfaw[2]and Kennedy Pambo[3]

1 International Potato Center, Uganda Office, Kampala, Uganda

2 International Potato Center, Addis Ababa Office, Ethiopia

3 Jomo Kenyatta University of Agriculture and Technology, Juja, Kenya

Selected Poster prepared for presentation at the Agricultural & Applied Economics Association's

2015 AAEA Annual Meeting, San Francisco, CA, July 26-29, 2015.