Evidences

Study #4075

Contributing Projects:

- P335 - Monitoring and learning for biofortification

Part I: Public communications

Type: OICR: Outcome Impact Case Report

Status: New

Year: 2020

Title: itamin A Orange sweet potato and Iron beans grown and consumed respectively by 960,000 and 695,000 households in Uganda

Short outcome/impact statement:
2020 marked 15 years of HarvestPlus activities in Uganda. The latest monitoring data shows that 960,000 smallholder households – more than 10% of the Ugandan population – were growing vitamin A orange sweet potato (OSP) varieties and 695,000 households were growing iron beans. Ensuring the supply of clean planting material, payback and pay forward delivery systems, digital technologies, and a multi-stakeholder technical working group are some of the innovative approaches that have been used successfully to sustain and scale-up biofortification.

Outcome story for communications use:
About 30 percent of Ugandan children under 5 suffer from vitamin A deficiency, while half of them are anaemic. Besides improving the livelihood outcomes for farmers, regular consumption of iron beans provided 80 percent of daily iron needs, and vitamin A orange sweet potato (OSP) provided up to 100 percent of daily vitamin A needs, leading to better nutrition and health outcomes for women and children.

The year 2020 marked 15 years of HarvestPlus activities in Uganda. HarvestPlus bred numerous collaborations and partnerships, such as with the International Potato Center, Uganda's National Agricultural Research Organization, the Alliance of Bioversity International and CIAT to develop the biofortified varieties. Between 2006 and 2020, various collaborations allowed for the release of five iron bean varieties and six vitamin A OSP which are also bred to be early-maturing, high-yielding, while some are drought-tolerant.

By the end of 2019, around 960,000 smallholder farming households – more than 10% of the Ugandan population – were growing vitamin A OSP varieties, while 695,000 – nearly 3.4 million people – were growing iron beans.

HarvestPlus continued to deliver efficiently even amidst COVID-19. Critical in catalysing cost-efficient and sustainable scale-up of biofortification in Uganda, HarvestPlus introduced and championed several innovations. These include i) supply of clean (virus-free) vitamin A OSP planting material, enhancing vine multipliers' capacity to grow certified vines at scale; ii) payback and pay forward systems, increasing the number of farmers reached; iii) leveraging digital technologies benefiting smallholder farmers for easy and timely access to certified vines, and linking suppliers and buyers; and media (e.g., My Children serial drama) to raise awareness; iv) women empowerment (e.g., Lead Mothers Initiative enabling training 970 women champions on nutrition and health); v) reaching marginalized communities through initiatives such as Self Help Africa to improve nutrition and income for refugees ; vi) distributing biofortified crops in 1500 Ugandan schools.

The Ugandan government has embraced biofortification. HarvestPlus and the Ministry of Agriculture, Animal Industry and Fisheries co-established the National Biofortification Technical Working Group consisting of multiple stakeholders from the public, private, and civil society with a mission of sustaining and scaling up biofortification. Biofortified ingredients even ended up in several food products along the whole value chain, such as Mama Care Foundation's, SESACO's instant porridge. Continued engagement with the private sector is a necessary next step to make sure the scale-up phase keeps its pace.

Links to any communications materials relating to this outcome:

- https://tinyurl.com/yzm2342p
- https://tinyurl.com/yel5hcof
- https://tinyurl.com/yggtmtj9

Part II: CGIAR system level reporting

Link to Common Results Reporting Indicator of Policies : No

Stage of maturity of change reported: Stage 1

Links to the Strategic Results Framework:
Sub-IDOs:
- Increased availability of diverse nutrient-rich foods
- Optimized consumption of diverse nutrient-rich foods

Is this OICR linked to some SRF 2022/2030 target?: Yes

SRF 2022/2030 targets:
- # of more people, of which 50% are women, without deficiencies of one or more of the following essentials micronutrients: iron, zinc, iodine, vitamin A, folate and vitamin B12
- # of more farm households have adopted improved varieties, breeds or trees

Description of activity / study: According to the HarvestPlus Biofortification Priority Index, Uganda is ranked fifth out of 123 countries for suitability to invest in iron beans and is ranked fifth out of 119 countries for investment in vitamin A orange sweet potato. This means such investments in Uganda present a relatively high probability of generating nutritional impact, based on how much the biofortifiable crop is already produced and consumed, and what proportion of the population is suffering from a given micronutrient deficiency.

Geographic scope:
- National

Country(ies):
- Uganda

Comments: <Not Defined>

Key Contributors:
Contributing CRPs/Platforms:
- A4NH - Agriculture for Nutrition and Health

Contributing Flagships:
- F2: Biofortification

Contributing Regional programs: <Not Defined>
Contributing external partners:
- CIP - Centro Internacional de la Papa
- Bioversity (Alliance) - Alliance of Bioversity and CIAT - Headquarter (Bioversity International)
- NARO - National Agricultural Research Organisation (Uganda)
- USAID - U.S. Agency for International Development

CGIAR innovation(s) or findings that have resulted in this outcome or impact:
The CGIAR innovations include the OSP and iron bean varieties released in Uganda.

Innovations: <Not Defined>

Elaboration of Outcome/Impact Statement:
HarvestPlus celebrated its 15th year in Uganda in 2020. This collaborative program has involved actors all along the bean and sweet potato value chains, from farmers to NGOs, retail food companies, and consumers. The most recent monitoring and evaluation data suggest that 960,000 smallholder households – over 10% of the Ugandan population – were growing vitamin A orange sweet potato (OSP) varieties and 695,000 households were growing iron beans [1].

A number of features have made the biofortification program in Uganda successful and resilient, even when tested during the global pandemic. One has been a payback (farmers agree to distribute biofortified seeds or vines conditional on giving back a previously agreed-upon portion of their harvest to the program) and pay forward (sharing a portion with other farmers upon harvest) scheme. In another, farmers purchase seeds and vines directly from multipliers and in other cases access seed and vines through NGOs, seed entrepreneurs, government programs or humanitarian efforts through the World Food Programme. Digital technologies, government designation of OSP as a food security crop, and local collaborations ensured successful delivery during the pandemic.

Other promising strategies that have been implemented with partners in Uganda have included supply of clean (virus-free) vitamin A OSP planting material, which enhances vine multipliers' capacity to grow certified vines. Digital solutions, like an information and communication technology (ICT) platform for certifying vitamin A OSP vines, were leveraged to reach farmers and link them more efficiently to certified planting material and multipliers/markets [2]. Lastly, media like radio dramas has been used to raise awareness [3]. Inclusiveness has been central to the Uganda program's efforts and strategies have been used to empower women, engage youth, work through school meal programs, and reach marginalized communities.

Studies in rural Uganda showed that especially when nutrition information is provided, consumers value the vitamin A OSP varieties over the conventional ones [4]. A 2020 study on the adoption of vitamin A OSP in Uganda suggested that engaging both male and female adult household members is a useful adoption strategy [5].

The multi-stakeholder National Biofortification Technical Working Group, which was co-established in 2019, showed a significant commitment to scaling up [6]. Comprised of members of relevant government ministries, departments, and agencies; development partners; civil society organizations; academia; and the private sector, this group is expected to leverage more partnerships with the private sector.

References cited:
[1] Foley, Jennifer K.; Michaux, Kristina D.; Mudyahoto, Bho; Kyazike, Laira; Cherian, Binu; Kalejaiye, Olatundun; Ifeoma, Okonkwo; Ilona, Paul; Reinberg, Chelsea; Mavindidze, Donald; and Boy, Erick. Scaling up delivery of biofortified staple food crops globally: Paths to nourishing millions. Food and Nutrition Bulletin. Article in press. First published online on February 17, 2021. https://doi.org/10.1177/0379572120982501.
[2] HarvestPlus. (25 October 2019). HarvestPlus Supports Sweet Potato Mobile App Project. https://www.harvestplus.org/knowledge-market/in-the-news/harvestplus-supports-sweet-potato-mobile-app-project
[3] HarvestPlus (21 January 2016). A Little Drama Can Be Good for You. https://www.harvestplus.org/knowledge-market/in-the-news/little-drama-can-be-good-you
[4] Low JW, Arimond M, Osman N, Cunguara B, Zano F, Tschirley D. A food-based approach introducing orange-fleshed sweet potatoes increased vitamin A intake and serum retinol concentrations in young children in rural Mozambique. The Journal of Nutrition. 2007 May;137(5):1320-7. https://doi.org/10.1093/jn/137.5.1320.
[5] Gilligan, Daniel O.; Kumar, Neha; McNiven, Scott; Meenakshi, J. V.; and Quisumbing, Agnes R. 2020. Bargaining power, decision making, and biofortification: The role of gender in adoption of orange sweet potato in Uganda. Food Policy 95(August 2020): 101909. https://doi.org/10.1016/j.foodpol.2020.101909.
[6] HarvestPlus (31 July 2019). Uganda Working Group to Promote Scale Up of Biofortification. https://www.harvestplus.org/knowledge-market/in-the-news/uganda-working-group-promote-scale-biofortification

Quantification: <Not Defined>

Gender, Youth, Capacity Development and Climate Change:
Gender relevance: 1 - Significant
Main achievements with specific **Gender** relevance: A recently completed evaluation looked at gender aspects of intrahousehold bargaining power in adoption of OSP in Uganda. Results suggest that the probability of household OSP adoption was not affected by exclusive/joint control of assets by women. Within households, OSP was more likely to be planted on jointly owned parcels where the woman was the primary decisionmaker. Women who controlled a higher share of household nonland resources were more likely to share OPS vines. There was no impact of women's bargaining power on children's dietary intakes of vitamin A.
Youth relevance: 0 - Not Targeted
CapDev relevance: 1 - Significant
Main achievements with specific **CapDev** relevance: The National Biofortification Technical Working Group is composed of members of relevant government ministries, departments, and agencies; development partners; civil society organizations; academia; and the private sector. It focuses on providing technical advice; supporting development, review, and dissemination of enabling frameworks for scaling up biofortification; and supporting capacity development to improve biofortification initiatives. More generally, the group serves as a platform to increase advocacy for the promotion and consumption of biofortified crop varieties in Uganda.
Climate Change relevance: 0 - Not Targeted

Other cross-cutting dimensions: NA

Other cross-cutting dimensions description: <Not Defined>

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Contact person:
Destan Aytekin
Program Manager
HarvestPlus
A4NH
IFPRI
d.aytekin@cgiar.org