

HarvestPlus Uganda Counting the Gains: Accelerating Nutrition and Public Health with Biofortified Crops

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We have built the capacity of over 30 vine suppliers to manage their businesses, and supply NGOs, government and local communities. Through partnership with local governments, women and caregivers have accessed planting material through demonstration gardens managed by health centres. Masindi district has developed a district nutrition action plan and ordinance requiring each household to grow orange sweetpotato on a quarter of the home garden.

■ Fig. 1 Children from Mr Waliwango's family in Nabbale Sub-county in Uganda enjoy a meal of OFSP. (credit L. Kyazike)



✦ What is the problem?

Micronutrient malnutrition is one of Uganda's biggest health concerns. Thousands of children die annually due to vitamin A-related causes and most childhood blindness is caused by vitamin A deficiency (WHO Updates 2015). Studies have shown that improving the vitamin A status of children would significantly decrease overall child mortality rates, measles death rates, and death caused by diarrhoea (WHO Updates 2015). According to the Uganda Demographic Household Survey 2011, 38% of children under five years of age have vitamin A deficiency (VAD), and the prevalence of anaemia among children under five is estimated at 49%, a proportion of which is due to iron deficiency. Coverage of vitamin A supplementation is 57% among children. Coverage of iron supplementation for pregnant mothers for at least 90 days is about 4% (UBOS 2011). These approaches do not reach the whole population, therefore food based interventions, such as the use of biofortified micronutrient-dense staples, can complement efforts by the Government of Uganda to address micronutrient malnutrition.

✦ What do we want to achieve?

We want to contribute to the reduction of micronutrient malnutrition and improve dietary intakes of vitamin A and iron among 3,000,000 vulnerable households by 2021, by increasing the production and consumption of orange sweetpotato (OSP) and high iron beans in Uganda (Fig. 1). Our objectives are to:

- Build a self-sustaining system for provision of OSP clean planting material to local communities.
- Build the capacity of local farmers to add value to biofortified crops to generate income from them.
- Mainstream biofortification into agriculture, education and health systems so that the crops can reach more children and mothers.
- Lobby for strong national and local government support for biofortification leading to inclusion of biofortification in the nutrition action plan and national development plan.
- Support enactment of laws and ordinances providing for biofortification at local government level.
- Actively engage private sector, local and international NGOs to integrate biofortified crops into their projects.

✦ Where are we working?

We work with seven partner NGOs to disseminate biofortified crops to different districts in Uganda including: Gulu, Isingiro, Kabale, Kamwenge, Kamuli, Kisoro, Kole, Lira, Mukono, Oyam, Rakai, and Masaka, Mbarara, Masindi, Kibaale, Namayingo, Namutumba, Bugiri, Buyende, Kaliro, Mayuge, Jinja, Iganga, Bushenyi and Kanungu (Fig. 2). NGO field extension workers (FEWs) are assigned by sub-county governments to serve the selected beneficiaries.



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It is the mission of **HarvestPlus** to develop and scale up the delivery of biofortified nutritious crops around the world, so that every child, woman, and man who needs them can have access. We also strive to provide global leadership on biofortification evidence and technology.

❖ How are we making it happen?

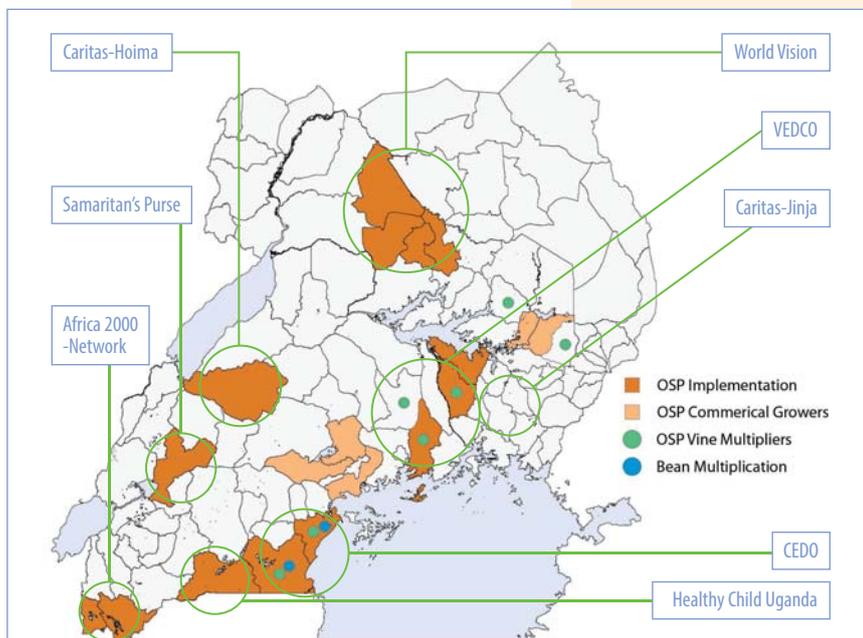
We support the National Agricultural Research Organisations (NARO) to test OSP varieties developed in partnership with the International Potato Center (CIP) and iron beans developed in partnership with the International Centre for Tropical Agriculture (CIAT).

We engage local laboratories to micro-propagate clean vines and establish and train local vine multipliers. Small holder farmers receive planting material that they “pay forward” by sharing with other farmers upon harvest. To increase the volume of marketed vines, roots, and seed, we target commercial farmers to increase production and link them to markets. NGO partners train farm households in seed production and processing, nutrition, post-harvest handling, product development and marketing.

Our outreach and public awareness campaigns leverage extension services and mass media to disseminate information on micronutrient deficiencies and benefits of OSP and high iron beans. We also raise demand for biofortified crops through dialogue with stakeholders, including schools and local governments. Through the “Lead Mother” approach, community lead mothers share information, recommended feeding, hygiene and sanitation practices in their communities.

❖ What have we achieved so far?

- Increased the proportion of children aged 6-23 months receiving a Minimum Acceptable Diet in project areas from 6.9% to 16% among breastfed children and 4.7% to 11% in non-breastfed children.
- Built the technical and business capacity of over 30 vine multipliers to manage their businesses through selling high quality planting material to NGOs, government and local communities.
- Supported development of inspection protocols in partnership with Ministry of Agriculture, Animal Industry and Fisheries (MAAIF), CIP, NARO and Makerere University
- Increased the cultivation and consumption of OSP and high iron beans among 600,000 vulnerable households over the last 10 years.
- Increased volumes of OSP roots and products marketed resulting in improved livelihoods.
- Built the capacity of seven local and international NGOs to integrate biofortified crops into their agriculture-nutrition projects.



❖ Fig. 2 A map depicting the geographical areas and types of interventions by HarvestPlus partners in Uganda

❖ How are we working towards sustainability?

The government has included biofortification in the Uganda Nutrition Action Plan 2011-2016 and the Uganda National Nutrition Policy, 2016 (draft). Linkages and partnerships have been built with local governments. As a result, demonstration gardens managed by health centres have been set-up to provide OSP planting material to women and caregivers who come for services. Masindi district has developed a district nutrition action plan and ordinance requiring each household to grow OSP on a quarter of the home garden. Oyam district has developed a five-year district nutrition action plan and committed to the dissemination of nutritious crops, including biofortified crops. Other organisations such as World Vision, Save the Children, and Finnish Refugee Council, have integrated biofortified crops in to their livelihood and child support programs.

❖ What's next?

We will engage public and private sector so as to increase their involvement in biofortification all the way from production of seed, dissemination, processing and promotion. This will help to integrate biofortified crops into programs, and in processed products to improve food and nutrition security.

Partners

CGIAR

- International Food Policy Research Institute (IFPRI)
- International Potato Center (CIP)

Local

- BioCrops Ltd.
- Senai Labs Ltd.
- Caritas - Hoima Diocese
- Caritas - Jinja Diocese
- Community Enterprise Development Organisation
- Kigarama Cooperative and Marketing Society
- Africa 2000 Network
- Farm Radio International
- Samaritan's Purse
- Volunteer Efforts for Development Concerns (VEDCO) and World Vision

Academia

- Makerere University
- Departments of Food Technology and Nutrition and Crop Science
- Mbarara University - Healthy Child Uganda Project
- National Crops Resources Research Institute/National Agricultural Research Organisation (NaCRRI) – Sweetpotato and Bean Program.

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