



Photo: H. Nsubuga

HarvestPlus *in Africa*

Breeding Crops for Better Nutrition

Why Breed for Nutrition?

In Africa nearly 200 million people are malnourished and at risk of disease, blindness, stunting, and other illnesses due to micronutrient malnutrition. Hunger and poverty in developing countries are closely linked; 75% percent of the world's ultra poor (those living on less than 50 cents a day) are in Africa. Most poor Africans rely on diets consisting largely of micronutrient-poor staple foods. HarvestPlus seeks to improve nutrition by breeding new varieties of staple food crops that are rich in missing critical micronutrients such as vitamin A, zinc, and iron.

Africa—Target Crops

Beans
Cassava
Maize
Sweet Potato

“HarvestPlus focuses on staple food crops consumed by most of of the world's poor living in Africa, Asia, and Latin America.”



- More than 30% of preschool age African children are vitamin A-deficient. This impairs growth and increases the risk of childhood infections such as diarrheal diseases. It also can lead to eye damage, and even blindness.
- Most of sub-Saharan Africa's population is at risk of moderate to high zinc deficiency with serious health consequences, including increased risk and severity of infectious diseases (such as pneumonia) and stunting in children.
- The prevalence of anemia among pregnant women in Africa is almost 60% and almost 70% among preschool age children. This is mostly due to iron deficiency, which impairs ability to do physical work, mental development, and learning capacity. Severe anemia increases the risk of mortality in women during childbirth.



HarvestPlus
Breeding Crops for Better Nutrition

HarvestPlus is a global alliance of research institutions and implementing agencies that are working together to breed and disseminate crops for better nutrition. It is coordinated by the International Center for Tropical Agriculture (CIAT) and the International Food Policy Research Institute (IFPRI). HarvestPlus is an initiative of the Consultative Group on International Agricultural Research (CGIAR).

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Increasing Micronutrients in Staple Foods

The HarvestPlus strategy has three main advantages:

- It targets the poorest people who live mostly in rural or remote regions of the world, where it complements urban-based strategies such as supplementation and/or fortification.
- It is a cost-effective approach with low recurrent expenditures. Once biofortified crops are developed, they can be distributed and grown by farmers, year after year, and adapted to other regions at low cost.
- It is sustainable. By improving the nutritional content of the staple foods that poor people already grow and eat, biofortification delivers micronutrients using familiar foods.

HarvestPlus envisions that in 15 years, millions of people in poor countries suffering from micronutrient malnutrition will be eating biofortified micronutrient-rich crops.

Products

HarvestPlus crops will first be released by national agricultural research systems in selected countries under pilot programs that i) support seeds systems that make these new varieties available to farmers, ii) secure markets for biofortified products, and iii) generate consumer demand via community engagement.

Lessons learned from first-release countries will be applied to scale up delivery of micronutrient-rich crops in spillover countries with similar agroecologies, and where the crop can also improve nutrition.



Photo: CIAT

Beans with Iron

First planned release: D.R. Congo, Rwanda.
Spillover countries: Burundi, Ethiopia, Kenya, Malawi, Mozambique, Tanzania, Uganda, Zambia, Zimbabwe.

Cassava with Provitamin A

First planned release: D.R. Congo, Nigeria.
Spillover countries: Angola, Benin, Republic of Congo, Burkina Faso, Cameroon, Central Africa Republic, Côte d'Ivoire, Ghana, Guinea Bissau, Guinea Conakry, Liberia, Sierra Leone, Togo.

Maize with Provitamin A

First planned release: Zambia.
Spillover countries: Angola, Ethiopia, Kenya, Tanzania, Malawi, Uganda, Zimbabwe.

Sweet Potato with Provitamin A

First planned release: Uganda, Mozambique.
Spillover countries: Rwanda, Burundi, Ethiopia, Ghana, Kenya, Malawi, Mali, Nigeria, South Africa, Tanzania, Zambia, Zimbabwe.

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