HarvestPlus is developing and promoting biofortified staple crops to improve human health and nutrition, and providing global leadership on biofortification evidence and technology.

Hidden Hunger
More than two billion people in the world—roughly one person in three—do not get enough essential vitamins and minerals, such as vitamin A, zinc, and iron, in their daily diets. Their condition is known as “hidden hunger” because those suffering from this type of undernutrition often appear healthy, but are actually more vulnerable to illness and infections. The impact of vitamin and mineral deficiencies is as follows:

IRON DEFICIENCY
• Impairs mental development and learning capacity
• Increases weakness and fatigue
• May increase risk of women dying in childbirth

VITAMIN A DEFICIENCY
• Impairs growth
• Causes eye damage leading to blindness
• Increases risk of infection such as diarrheal disease

ZINC DEFICIENCY
• Contributes to stunting
• Lowers immunity
• Increases risk of diarrheal disease and respiratory infection

Dear Friends,
2016 was a truly impactful year for biofortification. Thanks to the extraordinary efforts of our partners, we reached more than 25 million people with nutritious biofortified crops. Our founder and ambassador-at-large Howarth “Howdy” Bouis won the World Food Prize for his pioneering work in biofortification. Peer-reviewed studies continued to validate the nutritional and health impact of biofortified crops. And accolades from influential actors solidified the growing momentum behind our program, including TIME magazine’s listing of vitamin A-enriched orange sweet potato as one of the 25 best inventions of the year.

Since joining this visionary and dynamic team as CEO, I have been constantly amazed and inspired by the energies and passions of those involved. From Bangladesh to Zambia, our staff and partners are driving real impact by working innovatively and industriously to deliver immeasurable health benefits to rural households who rely on staple crops for their daily nutrition.

Last year’s successes strengthen our resolve to reach a billion people with biofortified foods by 2030 as part of our contribution to achieve Zero Hunger. Many challenges lie ahead, but our achievements to date and a new strategic plan give me confidence that we can take biofortification to scale, ensuring that hundreds of millions of people can benefit from this simple but vital technology.

We cannot do this alone. I am particularly grateful to our donors and partners for their unwavering faith in our mission to enrich the world through better crops and nutrition. Together, we can end the global scourge of hidden hunger.

Bev Postma
CEO, HarvestPlus

Biofortification
Biofortification is the process of increasing the density of vitamins and minerals in a crop, through plant breeding or agronomic practices, so that when consumed regularly will generate measurable improvement in nutritional status.

2016 AT A GLANCE
We work with... 

...more than 440 partners from the public and private sectors to develop and deliver biofortified crops, educate farmers and consumers on the benefits of these foods, and build inclusive, sustainable markets.

**COUNTRIES**

**GUATEMALA**
- 2 ORANGE SWEET POTATO varieties released
- 30 organizations (NGOs, UN, government) participating in "Plataforma BioFort"

**COLOMBIA**
- 4,000 households reached with biofortified crops
- 2 IRON BEAN varieties released

**NIGERIA**
- 800,000+ households reached with
  - 1.3 million households now benefiting
- 60,000+ households reached with
  - 5,000 reached with IRON BEANS messaging and products at the first Nutritious Food Fair
- 300+ sales points distributed and sold
- 3,300+ trained on investment opportunities in the biofortified food sector

**BRAZIL**
- 4,000 households reached with biofortified crops

**DEMOCRATIC REPUBLIC OF CONGO**
- 270,000+ farming households reached with
  - 615,000+ households now benefiting
- 260,000+ households reached with
  - 455,000+ households now benefiting
- Nearly 100 farmers and partners trained on
- 2,000+ people reached with vitamin A cassava messaging through promotional events

**ZAMBIA**
- 175,000+ households reached with
  - 205,000+ households now benefiting
- 8 of 10 provinces growing
- 1,200 students experienced the benefits of biofortified maize through a competition to get schools growing and eating
- 100+ agrodealers trained

**MEXICO**
- 22 IRON BEAN varieties released

**INDIA**
- 75,000+ households reached with
- 2 potential new zinc wheat varieties (NR-443 and NR-488) developed and under testing
- 300+ private companies partnered in zinc rice seed production
- 4,000 farmers trained on zinc rice cultivation, seed production, and preservation

**PAKISTAN**
- 40,000 households reached with
- 40,000+ households now benefiting

**UGANDA**
- 110,000+ households reached with
  - 58,000 households now benefiting from biofortified crops
- 5 IRON BEAN varieties developed, released, bulked and disseminated
- 280 lead mothers and 375 community resource persons trained
- Nearly 100 agrodealers, cooperatives, and agronomists trained

**BANGLADESH**
- 125,000+ households reached with
  - ORANGE SWEET POTATO

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Our impact is underpinned by...

...a rigorous evidence-based approach and the world-class expertise of our researchers and specialists. We bank on the knowledge and skills of our crop development, nutrition, impact, advocacy, marketing, and communications experts.

An independent assessment of the evidence on biofortification's effectiveness resulted in a special issue on biofortification in the venerable ANNALS of THE NEW YORK ACADEMY OF SCIENCES.

An impact assessment in Rwanda confirmed that farmers are willing to grow iron beans, and that adopters increased the proportion of their bean-growing land area to iron bean varieties over time. Iron beans constituted up to 12% of national bean output among smallholder bean farmers, and growers used up to 80% of their iron bean harvests for home consumption.

The Codex Committee on Nutrition and Foods for Special Dietary Uses (CCNFSDU) agreed to re-establish the electronic Working Group (eWG) led by Zimbabwe and South Africa to further develop the proposed draft definition of biofortification.

We collaborated with more than 440 partners to develop, deliver, and promote biofortified crops.

Results of an efficacy trial in Rwanda revealed that daily consumption of iron beans helped to prevent and reverse iron deficiency among university women within four-and-a-half months. Further analysis showed significant cognitive performance improvements among the same women.

Breakthrough findings on zinc biomarkers showed that a modest increase in dietary zinc, such as provided by biofortified crops like iron beans, helps reduce DNA wear and tear and positively impacts chemical reactions in cells.

An efficacy study in rural Zambia revealed that consumption of iron beans resulted in improved night vision among school-aged children within six months.

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In 2016, we registered nearly 400 hits in the media, including in the most popular and influential news outlets globally. Our experts showcased biofortification at more than 30 major conferences and events.

2016 HarvestPlus Disbursements by Category (In thousand US dollars)

- CROP DEVELOPMENT: 12,544 (33%)
- NUTRITION: 2,658 (7%)
- IMPACT & POLICY ANALYSIS: 2,375 (6%)
- DELIVERY: 13,154 (35%)
- STRATEGIC ALLIANCES & COMMUNICATIONS: 3,383 (9%)
- ADMINISTRATION: 3,365 (10%)

2016 Donor Contributions

- Canadian Department of Foreign Affairs, Trade and Development (DFATD)
- Zinc Project Group
- Canadian Department of Foreign Affairs, Trade and Development (DFATD)
- Syngenta Foundation
- A4NH
- Bill & Melinda Gates Foundation
- United States Agency for International Development (USAID)
- German Federal Ministry for Economic Cooperation and Development (BMZ) - GIZ
- UK Department for International Development (DFID)
GOVERNANCE

HarvestPlus is a joint venture between the International Center for Tropical Agriculture (CIAT) and International Food Policy Research Institute (IFPRI). The Boards of Trustees of CIAT and IFPRI have delegated the responsibility for oversight of HarvestPlus to a Program Advisory Committee (PAC), which acts in effect as a Board of Trustees for HarvestPlus:

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ANDREW M. PRENTICE
Head, MRC International Nutrition Group, London School of Hygiene & Tropical Medicine, United Kingdom

CREDITS

Concept & Content: Denis Okolo
Graphic Design: Maria Montas
Photos: HarvestPlus staff and partners

CONGRATULATIONS TO THE BIOFORTIFICATION CHAMPIONS

We support countries globally to test and release biofortified nutritious crops so that farmers and consumers can enjoy the benefits of these crops.

BEANS
Provide: Iron
Other Benefits: High yielding, virus resistant, heat and drought tolerant
Countries: Bolivia, Brazil, Colombia, Democratic Republic of Congo, El Salvador, Guatemala, Haiti, Honduras, Nicaragua, Rwanda, Uganda, Zimbabwe

CASSAVA
Provides: Vitamin A
Other Benefits: High yielding, virus resistant
Countries: Brazil, Colombia, Democratic Republic of Congo, Guatemala, Haiti, Nigeria, Panama

MAIZE
Provides: Vitamin A
Other Benefits: High yielding, disease and virus resistant, drought tolerant
Countries: Brazil, Colombia, Haiti, Mexico, Nigeria, Panama, Zambia, Zimbabwe

RICE
Provides: Zinc
Other Benefits: High yielding, disease and pest resistant
Countries: Bolivia, Brazil, Bangladesh, Colombia, Guatemala, Haiti, India, Nicaragua, Panama

WHEAT
Provides: Zinc
Other Benefits: High yielding, disease resistant
Countries: Bolivia, Brazil, India, Pakistan
HarvestPlus improves nutrition and public health by developing and promoting biofortified food crops that are rich in vitamins and minerals, and providing global leadership on biofortification evidence and technology. HarvestPlus is part of the CGIAR Research Program on Agriculture for Nutrition and Health (A4NH). CGIAR is a global agriculture research partnership for a food secure future. Its science is carried out by its 15 research centers in collaboration with hundreds of partner organizations. The HarvestPlus program is coordinated by two of these centers, the International Center for Tropical Agriculture (CIAT) and the International Food Policy Research Institute (IFPRI).

HarvestPlus' principal donors are the UK Government; the Bill & Melinda Gates Foundation; the US Government's Feed the Future initiative; the European Commission; and donors to the CGIAR Research Program on Agriculture for Nutrition and Health.