Flagship 2: Biofortification

Highlight 3: Reaching the Most Vulnerable

The fundamental objective of biofortification programs is to make essential micronutrients readily available to smallholder farming families and other populations who cannot afford or access foods that contribute to a nutritious diet. HarvestPlus and its hundreds of partners worldwide ensure that the reach of biofortification extends to those in extremely challenging circumstances that exacerbate their vulnerability to malnutrition.

One such group is refugees, who are forced to leave their homes and often end up in unfamiliar and sometimes inhospitable environments with few resources at their disposal. Zambia, a HarvestPlus focus country, has been a refugee destination for more than 50 years, primarily for refugees from Angola, the Democratic Republic of Congo, Rwanda, and Burundi. The three major refugee settlements are Meheba in Northwestern Province, Mayukwayukwa in Western Province, and Kala in Luapula Province. The Mutwales, a family of seven from the Democratic Republic of Congo, live in the Meheba refugee camp. They are also one of 105 refugee families who have participated in an initiative during the 2019/20 growing season to help them cultivate nutritious vitamin A–biofortified orange maize that was developed by the International Maize and Wheat Improvement Center (CIMMYT) in partnership with HarvestPlus. The initiative is part of a livelihoods project supported by the United Nations High Commission for Refugees (UNHCR) and implemented by Caritas, a Catholic humanitarian organization. HarvestPlus provides technical assistance, including demonstrations and training on growing biofortified orange maize, as well as nutrition education. “My family and I are most grateful to UNHCR for providing us with inputs to grow a half hectare of orange maize,” said Luvunzu Mutwale, the father. “I have heard of the many nutrition and health benefits and I’m very delighted that after harvest, my family will experience them when we start consuming the maize.” Similarly, in partnership with Self Help Africa, more than 1,000 households in eight refugee settlements in northern Uganda are being introduced to cultivation of vitamin A orange sweet potato and iron-biofortified beans. A refugee in Uganda’s Mungulo refugee settlement said, “I am so happy with the performance of the early-maturing iron bean varieties. I will increase the size of my garden so I can harvest more next season.”

Reaching people who live in the most challenging conditions also means reaching the poorest communities in a country or region. Bihar State in India is one such location, with the lowest per-capita income and highest rate of stunting of any Indian state. The good news is that two varieties of zinc-biofortified wheat were launched commercially in Bihar in late 2019, thanks to strong commitments by public and private partners and a significant investment by the Bill & Melinda Gates Foundation. Zinc deficiency is a major cause of stunting, as well as child illnesses and mortality, in places like Bihar where families cannot easily afford or access zinc-rich foods such as eggs, dairy, or meat. Thanks to these and other efforts, zinc wheat is expected to reach more than one million farming households in Bihar over the next five years.

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