



Addressing malnutrition and improving public health in Nigeria

HarvestPlus presence in Nigeria

HarvestPlus coordinates Nigeria's staple crop biofortification program, which launched in 2010 as a complementary strategy to address micronutrient deficiency—particularly vitamin A deficiency.

So far, six vitamin A-biofortified varieties of cassava, eight varieties of maize, and three varieties of orange sweet potato have been released in Nigeria. Development of iron/zinc sorghum and iron pearl millet are in advanced stages.

Since 2013, an estimated 4 million-plus farmers have been reached with biofortified planting material (seeds and vines), and are provided technical and marketing support.

HarvestPlus Nigeria's country office is at the International Institute of Tropical Agriculture (IITA) with a sub-office in Kano House in Abuja.



Biofortified Crops In Nigeria



VIT. A CASSAVA

- *Nutritional benefits:* Provides up to 40% of daily vitamin A needs
- *Farmer benefits:* High yielding & virus resistant
- *Varieties available:*
 - NR 07/0220 – UMUCASS 44
 - TMS 07/0593 – UMUCASS 45
 - TMS 07/0539 – UMUCASS 46
 - TMS 01/1368 – UMUCASS 36
 - TMS 01/1412 – UMUCASS 37
 - TMS 01/1371 – UMUCASS 38
- *Seeding Rate:* 65 bundles Per/Ha
- *Maturity Period:* 9-15 Months

VIT. A ORANGE MAIZE

- *Nutritional benefits:* Provides up to 50% of daily iron needs
- *Farmer benefits:* High yielding, disease-resistant, and drought tolerant
- *Varieties available:*
 - Ife Hybrid 4 (Oba Super 6)
 - Sammaz 37, 38, 39, 43, 44, 52
 - SC 510 - Ife Hybrid 3
- *Seeding Rate:* 20kg Per/Ha
- *Maturity Period:* 80 -110 days

VIT. A SWEET POTATO







- *Nutritional benefits:* Provides up to 100% of vitamin A needs
- *Farmer benefits:* High yielding, virus resistant and drought tolerant
- *Varieties available:*
 - UMUSPO₃ - Mothers Delight'
 - UMUSPO₁- King J'. Mothers Delight
 - UMUSPO₄ - Solo Gold
- *Seeding Rate:* 5 ton Per/Ha
- *Maturity Period:* 4-5 Months

The Cost of Micronutrient Deficiency

- **Vitamin A:** 29.5% of children under five years old in Nigeria are deficient in vitamin A which impairs growth, causes eye damage leading to blindness, and increases the risk of infections such as diarrheal disease.
- **Zinc:** 47% of pregnant women and 20% of children under five are deficient in zinc, which contributes to stunting and a loss of appetite, lowers immunity, and increases the risk of diarrheal disease and respiratory infections.
- **Iron:** Reports show 76.1% of pre-school age children and 66.7% of pregnant women suffer from anemia, often caused by iron deficiency, which affects mental development and learning capacity, increases weakness and fatigue, and may increase the risk of women dying in childbirth.

Building biofortified seed and crop value chains

In addition to reaching and empowering farmers, HarvestPlus provides technical, logistical, training, and marketing support to a wide array of partners in seed and food value chains to build strong biofortified food systems.

-  **Crop Development:** We breed, test and release biofortified varieties of cassava and maize in partnership with IITA, the National Root Crops Research Institute (NRCRI-Umudike), the Institute of Agricultural Research (IAR-Zaria), and the International Maize and Wheat Improvement Center (CIMMYT). We are in advanced development stages for biofortified varieties of sorghum and pearl millet with the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), and banana with IITA.
-  **Seed Multiplication:** HarvestPlus works with over 50 public and private sector partners to multiply and deliver these varieties to farmers using sustainable value chain platforms.
-  **Seed and Grain Distribution:** Our network of extension agents, aggregators, and rural facilitators receive periodic training on best agronomic and cost-saving practices to achieve maximum yield. They pass along this knowledge to farmers at the household level.
-  **Consumer Engagement:** We create public awareness campaigns and leverage the power of media and advocacy platforms (including Nollywood) to increase consumers' knowledge of biofortified foods and their benefits.
-  **Market Development:** We create and strengthen consumer demand by supporting commercial processing of vitamin A cassava and maize into popularly consumed products such as gari, fufu, tuwo, and custard that are marketed nationwide. Innovative strategies to promote adoption and consumption include model one-stop shops and an online market (Agroshop) where consumers can buy vitamin A cassava stems, tubers, and ready-to-eat products such as pies, cakes, and fufu.
-  **Policy Engagement:** HarvestPlus strengthens national ownership of biofortification through effective advocacy for its integration in national nutrition and agricultural policies.

Innovations and Projects

Nutritious Food Fair: A commercial platform to promote breeding, production, marketing, and consumption of nutritious foods in Nigeria. Three-day annual event with stakeholders in the nutritious food sector to showcase and market innovations, share updates, and discuss topical issues.

NutriQuiz: A platform for secondary school students to learn about biofortification, nutrition, and related topics. Embedded in the Nutritious Food Fair, aims to spur student interest to learn about and champion nutrition.

Smart Mother Platform: An advocacy platform for women to serve as change-makers by promoting the consumption of nutritious foods and healthy living in their communities.

EPE Cassava Enterprise Project (Dangote Group):

HarvestPlus in partnership with Dangote Group collaborated on an 18-month project to revolutionize the cassava sector and improve livelihoods in the Ibeju-Lekki area of Lagos State. The project deliverables included the training and set up of selected beneficiaries in four key agro-enterprises, namely commercial seed production, weed control, gari & fufu processing and combobite processing. Selected beneficiaries from five communities (Mojoda, Ejirin, Freezone, Ishala and Iba-oloja) were engaged in various activities geared towards building their capacities to ensure they are profitably engaged in the cassava sector. Some of the activities include the distribution of improved and nutritious cassava stems to farmers, training on best agronomic and value addition practices, a learning visit to model farms, and provision of tools and equipment to support beneficiaries.

“The Nigerian government is committed to improving the health of its citizens, therefore we encourage the consumption of biofortified foods.”

— Senator Bima Muhammed Enagi (Vice-Chairman, Senate Committee on Agriculture and Productivity)



Partner with us to make food systems more nutritious, inclusive, and sustainable.

“Our partnership with HarvestPlus has been fruitful. With their technical support, Cato Foods is now Nigeria’s No.1 producer of cassava custard, a cassava pudding made from vitamin A cassava.” — Pelumi Aribisala (Farmer & Co-founder, Cato Foods)

CURRENT PARTNERS IN NIGERIA

CGIAR: International Food Policy Research Institute (IFPRI), International Institute of Tropical Agriculture (IITA), International Maize and Wheat Improvement Center (CIMMYT)

Government: Federal Ministry of Agriculture and Rural Development (FMARD), Federal Ministry of Health (FMoH), Home Grown School Feeding Programme (HGSFP), National Directorate of Employment (NDE), National Orientation Agency (NOA) – Regional (North Central), Akwa Ibom State Agric Dev Programme (AKADEP), Benue State Agric Dev Programme (BNARDA), Imo State Agric Dev Programme (IMOADP), Oyo State Agric Dev Programme (OYSADEP), Anambra Agric Dev Programme (ANADEP), Kebbi State Agric and Rural Dev Authority (KARDA), Kebbi State Ministry of Agric, Zamfara Fadama Dev. Office, FCT Fadama Dev. Office, FCT Agric Secretariat, Kaduna State Agric Dev. Project, Gombe Fadama Dev. Office, Bauchi Fadama Dev. Office

NGOs: Development Dynamics, Dominican Centre for Human Resource Development (DCHRD) – Oyo State, ENVOY Agricultural Services – Ondo State, Forward Africa – Imo State, Human Empowerment and Development Project (HEMADEP), Justice Development and Peace Commission (JDPC) Ilorin, Justice Development and Peace Commission (JDPC) Uyo, Justice Development and Peace Commission (JDPC) Ibadan, Redeemed Aids Programme Action Committee (RAPAC) – Benue State, Justice Development and Peace Movement (JDPM) Oyo, Sen. Adeyemo Women Empowerment Coop (SAWEC), Green Sahel Agriculture and Rural Development Initiative (GSARDI), Anambra State

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Research Institutions: International Institute of Tropical Agriculture (IITA), Institute of Agricultural Research & Training (IAR&T), Moor Plantation, Institute for Agricultural Research (IAR), Zaria, National Root Crops Research Institute (NRCRI), Umudike, International Potatoe Center (CIP), International Center for Research in Semi Arid Tropics (ICRISAT)

Academia: Akwa Ibom State University (AKSU), Federal College of Agriculture, Akure (FECA) – Ondo State, Obafemi Awolowo University (OAU), Ile, University of Ibadan – Oyo State, Elizade University – Ondo State, IBB University Lapai, University of Abuja

International Development Organizations: Market Development in the Niger Delta (DfID MADE), IFAD Cassava Value Chain Development Project, IFAD CASP Project, Global Alliance for Improved Nutrition (GAIN SBN), Catholic Relief Services (CRS), Building Nutritious Food Basket (BNFB), USAID MARKETS II, West Africa Agricultural Productivity Programme (WAAPP), Japan International Cooperation Agency (JICA), British American Tobacco Nigeria Foundation (BATNF), Sasakiwa Global 2000, Media: Amuludun FM 99.1 Ibadan, Fresh FM 105.9 Ibadan, The Guardian, The Nations, ThisDay Newspaper, Greetings FM 105.7/Green Radio Abuja, Daily Independent, News Agency of Nigeria (NAN)

Other: Dangote Foundation, Value Seed, TechnoServe, Scaling Up Nutrition (SUN) Business Network, Premier Seed, Niji Lukas Nigeria Limited (Niji Foods), Nestle, Newage Solutions, Maize Growers, Processors and Marketers Association of Nigeria (MAGPAMAN)



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) and is based at the International Food Policy Research Institute (IFPRI).

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RESEARCH PROGRAM ON
Agriculture for
Nutrition
and Health

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