

A Scaling Up Model for Multiple Biofortified Crops: the Building Nutritious Food Baskets Project

The Building Nutritious Food Baskets (BNFB) project has been testing biofortification scaling up model and the achievements so far demonstrate that effective scaling up is dependent on supportive policy environment, strong institutional capacities and proven technologies.

AUGUST 2018



Fig. 1: Mary Yongolo (SRI-Kibaha, left) and BNFB team advocating OFSP to Mama Salma Kikwete (center), former first lady of Tanzania. (credit J. Maru)

Since November 2015, the BNFB project has strengthened the capacity of 101 advocates and champions in Nigeria and Tanzania, who have been working closely with the BNFB staff and implementing partners to execute the jointly developed regional and national advocacy strategies (Fig. 1). BNFB has helped influence the inclusion and prioritization of biofortification in 11 policy documents (policies, strategies, plans) against a target of 10 (110%). Working closely with the advocates and champions, BNFB has supported the implementation of selected policy documents and, against a target of \$10,000,000 raised to support of programmes and initiatives on biofortification in Nigeria and Tanzania, has helped mobilize \$6,145,332 (61.5% achievement). The project has influenced the inclusion of biofortification in five programmes and incentivized and built the capacity of more than 40 national and community supportive agencies.

Four key learning toolkits have been developed: (1) updating of the ToT manual on Everything you ever wanted to know about sweetpotato; (2) Biofortification: a sustainable solution to hidden hunger; (3) High-iron and zinc beans: a biofortified solution for iron deficiency; and (4) Pro-vitamin A maize: a biofortified solution for vitamin A deficiency. These materials were used to train more than 6,405 (3,190 female) change agents (64% of the target), who have been equipped with the capacity to design and implement gender sensitive projects on orange-fleshed sweetpotato, pro-vitamin maize, and high-iron and zinc beans. BNFB has fast-tracked the release of 7 biofortified crop varieties (58.4% of the target) including UMUSPO4 'Solo Gold' – a new OFSP variety in Nigeria. More than 980,865 households have been recorded as growing biofortified crops in Tanzania and Nigeria.





With whom are we working?

The Building Nutritious Food Baskets (BNFB) project (November 2015 – October 2018) has been focusing on catalyzing sustainable investment for the utilization of biofortified crops at scale. BNFB is implemented through a consortium of partners (International Potato Center (CIP) – lead institution - orange-fleshed sweetpotato (OFSP), advocacy and capacity development; International Center for Tropical Agriculture (CIAT) - high iron beans; the International Maize and Wheat Improvement Center (CIMMYT) - pro-vitamin A (orange) maize; the International Institute of Tropical Agriculture (IITA) - vitamin A (yellow) cassava, pro-vitamin A (orange) maize; HarvestPlus - scaling up biofortification at country level; Forum for Agricultural Research in Africa (FARA) - responsible for policy engagement and advocacy at regional level; the Governments of Nigeria and Tanzania, and a range of national implementing partners from public, private and civil society organizations.



What have we achieved?

The project has leveraged other projects and on-going initiatives on biofortified crops which have been working on advocacy, policy development, nutrition education, and behavior change communication (BCC) for demand creation, capacity strengthening, and institutional learning to support the scaling up of multiple biofortified crops. Overall, the project has demonstrated an increase in policy action in the national arenas of food production and nutrition, increased access and intake of biofortified foods that are rich in vitamin A and iron, and increased food and nutrition security at the household level. BNFB has developed effective partnerships with multiple organizations and across different sectors within the public and private sector arenas as well as with civil society organizations. Synergies with complementary ongoing projects and initiatives were exploited to add value and fill critical gaps.



Key achievements under objective 1:

Supportive policy environment

BNFB has achieved a lot from advocacy efforts to catalyze policy change and help generate new investments – by governments, developmental partners, and the private sector - to scale up adoption and utilization of multiple biofortified crops. BNFB has:

- Identified and developed capacity of 101 (27 regional, 42 in Tanzania, and 32 in Nigeria) influential and respected advocates and champions from diverse backgrounds and institutions (men, women and youth) to support regional, national and local advocacy efforts for biofortification and equipped them with technical and advocacy skills (Fig. 2).



Fig. 2 BNFB's Olapeju Phorbee with the Honorable Minister of Agriculture of Nigeria

- Developed and implemented advocacy strategies in Nigeria, Tanzania and at regional level. BNFB has raised awareness by holding a series of promotion and sensitization events, and high-level advocacy engagements at regional and national levels with senior policy makers and key stakeholders in development organizations, public, private and civil society sectors.
- Participated in several strategic regional and national events to advocate for prioritization and inclusion of biofortification in regional policy documents, strategies and plans and the scaling up of biofortified crops. Consequently, biofortification has been entrenched in 11 policies, strategies and plans (110% against the target on this indicator) in Nigeria, Tanzania and at regional level. BNFB has supported the implementation of some of the policy documents and this has helped to accelerate the scaling of biofortified crops within the wider agricultural and nutrition/health/education sectors.

The policy documents that prioritize and include biofortification comprise:

For Nigeria

- (1) Nigerian Food and Nutrition Policy (2016–2020);
- (2) Draft Nigeria Food and Nutrition Strategic Plan of Action;
- (3) The Agricultural Sector Food Security and Nutrition Strategy (2016–2025); and
- (4) A draft national advocacy policy brief prepared by the Federal Ministry of Budget and National Planning. In addition, some state Governments have included biofortification in their strategies such as Oyo, Rivers and Kano.

For Tanzania

- (1) Tanzania National Multi-Sectoral Nutrition Action Plan for Prevention of Micronutrient Deficiencies (NMNAP);
- (2) Tanzania Ministry of Agriculture, Livestock and Fisheries – Food Security draft five-year strategic plan;
- (3) Tanzania Food and Nutrition Center's five-year strategic plan; In addition, BNFB supported the implementation of statements on biofortification in the Agricultural Sector Development Programme Phase II (ADSP II).

BNFB also helped influence inclusion of biofortification in addition to industrial fortification as one of the complementary approaches in the Tanzania National Food Fortification Alliance.

Regional

- (1) The African Development Bank (AfDB) Multisectoral Nutrition Action Plan (2017–2021);
- (2) The West and Central African Council for Agricultural Research and Development (CORAF) Nutrition Strategy for implementation in Promoting West Africa Trade Integration (WATiP);
- (3) The African Union Business Plan to guide Implementation of the Comprehensive Africa Agriculture Development Programme - CAADP-Malabo Declaration 2017–2021;
- (4) The Communique of the Pan African Parliament (PAP) and NEPAD nutrition document and the Resolution of the PAP-NEPAD High level event on nutrition and food systems. Biofortification has also been entrenched in several programmes and calls for proposals including the implementation of the FARA Science Agenda for Agriculture in Africa with several strategic plans and country guidelines; NEPAD's Flagship Programmes for Nutrition and Food Security; the Technology for African Agricultural Transformation (TAAT) programme; and the African Union Commission's (AUC) 2018 Call for Research Proposals.

The BNFB project strengthened the capacity of two national multisectoral policy platforms – under the Ministry of Budget and National Planning in Nigeria and the Prime Minister's Office in Tanzania. These platforms continue to bring together key actors in agriculture, nutrition, health, education, finance and planning to influence policy and advocate for increased investment in biofortification. The platforms have continued to advance the biofortification agenda and have helped to coordinate the efforts of the different ministries that have key roles to play in ending hidden hunger among children, women and the population in general.

To date, a total of US\$6,145,332 (61.5% of the target) has been mobilized to support programs on biofortification – mainly from external governments or development agencies (41.5%); NGO/foundations (24.9%); the private sector (22.9%); Governments (10.7%). However, it is noted that the governments of Tanzania and Nigeria have invested much more in biofortification, but it has been challenging to establish the exact amount earmarked for biofortification out of the larger investment disbursed for nutrition. The Governments have also invested in staff salaries, research activities, land, and other fixed costs to support implementation of programs on biofortification. An additional \$12,946,180 is in the pipeline in the two countries.

BNFB has developed a range of advocacy and communications materials (Fig. 3) and formats including a document folder, factsheets, flyers, leaflets, pull-up banners, infographics videos, posters, success stories in English



Fig. 3 BNFB's Joyce Maru and Hilda Munya displaying communication products at SPHI Exhibition (credit J. Low)

and Kiswahili, radio programs and memorabilia - BNFB T-shirts, pens and flash disks. BNFB widely disseminated print and electronic materials and uploaded on <http://www.sweetpotatoknowledge.org/project/building-nutritious-food-baskets-bnfb/>, the BNFB web page <https://cipotato.org/bnfb/> and partner web sites for wider access. More than 15,000 copies of print materials have been disseminated. BNFB has effectively optimized other tools and media - videos, blogs with a backlink to partner websites. BNFB has also been active on various social media platforms including Twitter, Facebook, Instagram and AgTube.



Key achievements under objective 2:

Strong national and community institutions with capabilities to produce and consume biofortified crops

BNFB has developed four Training of Trainers (ToT) modules that have been used for training:

- (1) Biofortification: A Sustainable Solution to Hidden Hunger;
- (2) High-Iron Beans: A Biofortified Solution for Iron Deficiency;
- (3) Pro-vitamin A Maize: A Biofortified Solution for Vitamin A Deficiency; and
- (4) The updated ToT manual on Everything You Ever Wanted to Know About Sweetpotato

The project has influenced the inclusion of biofortification in five key programmes and incentivized and strengthened institutional (national and community) capacities and competencies of more than 40 (200% of the target) institutions, community-based organizations, extension workers, researchers, lead farmers, investors and other executing institutions to design and implement technically strong, cost effective and gender-sensitive programmes that drive uptake of biofortified crops. These institutions continue to use their own funds to run trainings or offer fee-based training based on needs identified. This demonstrates the sustainability of the Reaching Agents of the project's ToT training model. Those trained have stepped down the skills and knowledge



Fig. 4 Promoting the use of OFSP puree as a partial wheat flour substitute in baked products has been emphasized with the private sector and aspiring youth agripreneurs (credit J. Maru)

acquired for increased production and consumption of biofortified crops for increased income for farmers and improved nutrition. To date, the project has trained a total of 6,405 (3,190 females) (64% of the target) change agents through ToTs and step-down courses since inception.



Key achievements under objective 2:

Proven technologies

BNFB has mainstreamed biofortification in the National Agricultural Research System crop programs and has fast-tracked the release of seven varieties against a target of 12 (58.3%). These include: one OFSP variety, UMUSPO4 'Solo Gold'; four PVA maize varieties (Sammaz 49' and Sammaz 52' in Nigeria and Meru VAH517 and Meru VAH519 in Tanzania; and two high-iron and -zinc beans varieties - Selian 14 (MAC44) and Selian 15 (RWV 1129) in Tanzania. In Tanzania, the Sugarcane Research Institute (SRI) – Kibaha is testing 11 OFSP varieties in Dodoma and Singida, with four Mother



Fig.5 Farmers from semi-arid Mbuyuni Village, Iringa (credit J. Maru)

trials and 26 Baby trials established in partnership with other CIP projects. It is expected that at least four potential OFSP candidates (Naspot13, SPKBH03, SPKBH03/676, and Ex-Luambano) will be released in 2019 in Tanzania along with other biofortified crops.

BNFB has continued to strengthen the capacity of private sector actors to process and market biofortified food products (Fig. 4) and against a target of four processors, the project has attained 100% against this indicator. In Tanzania these include: (1) AFICO Investment Co. Ltd continued to process and market PVA maize flour in target areas; (2) Mama Organic agroprocessor - started processing and selling OFSP flour after attending a training course for youth agripreneurs organized by BNFB and SUGECO; (3) and JAGEF Group - processing and commercializing bean flour. In Nigeria, the processors include the Mahauty Health Solutions Company, making OFSP infant-weaning products. Several small-scale processors in the two countries are using biofortified crops as a key ingredient to make bread, muffins, mandazi, snacks-chin chin and crisps, juice, local beverage (Kunu) and cookies.

Six crop-specific platforms for OFSP, PVA maize and high iron and zinc beans have been established to accelerate uptake of biofortified crops in the Nigeria and Tanzania. The platforms have developed strategies for sustainability beyond the BNFB project and are in the process of registering the platforms as legal entities.

Finally, at least 980,865HH have been recorded as growing biofortified crops (OFSP, PVA maize and yellow cassava) in Nigeria and Tanzania. To date, BNFB has reached 56,695 households with OFSP vines. These include 32,153 in Nigeria and 24,542 in Tanzania (Fig. 5).

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