



**Building
Nutritious
Food Baskets**

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**REPORT:
A situational Analysis
of Regional Investments, Policies,
Legislation and Advocacy Efforts
on Food-based Approaches to
Combating Micronutrient
Deficiency in Sub-Saharan Africa:
Focus on Biofortification**

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Micronutrient Deficiency in Sub-Saharan Africa:
Focus on Biofortification**

November 2017

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Abbreviations

AfDB	African Development Bank
AR4D	agricultural research for development
ASARECA	Association for Strengthening Agricultural Research in Eastern Central and Africa
AU	African Union
AUC	African Union Commission
BNFB	Building Nutritious Food Baskets Project
CAADP	Comprehensive Agenda on Agricultural Development Programme
CHANGE	Creating Homestead Agriculture for Nutrition and Gender Equity
CIAT	International Center for Tropical Agriculture
CIMMYT	International Maize and Wheat Improvement Center
CIP	International Potato Center
COMESA	Common Market for Eastern and Southern Africa
CTA	Technical Center for Agricultural and Rural Cooperation
DFID	Department for International Development of the United Kingdom
EAC	East African Community
ECOWAS	Economic Community of West African States
ECSA	East Central Southern Africa
FANRPAN	Food, Agriculture and Natural Resources Policy Analysis Network
FAO	United Nations Food and Agricultural Organization of the United Nations
FARA	Forum for Agricultural Research in Africa
HANCI	Hunger and Nutrition Commitment Index
ICN2	Second International Conference on Nutrition
IDS	Institute of Development Studies
IFAD	International Fund for Agricultural Development
IFPRI	International Food Policy Research Institute
IITA	International Institute of Tropical Agriculture
JICA	Japanese International Cooperation Agency
MOU	memorandum of understanding
NAIPs	national agriculture investment plans
NEPAD	New Economic Partnership for Africa's Development
OFSP	orange-fleshed sweetpotato
PANITA	Partnership for Nutrition in Tanzania
RAC	Reaching Agents of Change Project
RECs	regional economic communities
SADC	Southern African Development Community
SDGs	Sustainable Development Goals
SUN	Scaling Up Nutrition
UNICEF	United Nations Children's Emergency Fund
USAID	United States Agency for International Development
WFP	World Food Programme
WHO	World Health Organization
WVI	World Vision International

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Executive summary

Sub-Saharan Africa is the region with the highest prevalence of hunger and where one person out of four is undernourished. Micronutrient malnutrition, often referred to as hidden hunger, is an additional problem the region faces. Micronutrients are vital for a range of essential functions in the body and for growth and development. Micronutrient malnutrition is a risk factor for disease, low productivity and death, especially among young children. The most prevalent micronutrient disorders that are considered to be of public health significance are vitamin A deficiency, iron deficiency anemia and zinc and iodine deficiency. An estimated 163 million children and women of reproductive age in the region are anemic, while about 44% of preschool children are vitamin A deficient. Some 24% of all child deaths are attributable to vitamin A deficiency. The poor dietary diversity inherent in many communities in sub-Saharan Africa, coupled with the high burden of infectious diseases, makes it difficult to meet the daily micronutrient requirements.

Current efforts to address the prevailing micronutrient malnutrition in sub-Saharan include supplementation programs that provide iron and vitamin A capsules to women of reproductive age and children under the age of five through the health sector. Even where this supplementation coverage is high, the efforts target only the most vulnerable groups, yet micronutrient deficiencies are of public health significance and the entire population needs to have access to adequate micronutrients. Food-based approaches for addressing micronutrient malnutrition have so far been largely limited to commercial food fortification of salt with iodine, cooking oil, sugar and margarine with vitamin A, and flour and maize meal with iron and B vitamins. The coverage of fortified foods is dependent on how developed the market infrastructure is. In sub-Saharan Africa many rural communities have limited access to commercially processed and fortified foods. Often, locally processed foods and unfortified foods are more readily available and cheaper. The promotion of dietary diversification, nutrition-sensitive food production systems, and nutrition education has not received the focus and sustained attention necessary to effect sustainable behavior change. Biofortification provides an additional strategy for addressing micronutrient malnutrition and it has the potential to reach the remote rural areas often not easily reached by the existing initiatives.

The Building Nutritious Food Baskets (BNFB) Project is being implemented in Nigeria and Tanzania from 2015 to 2018. Its main goal is to support and accelerate the scaling up of biofortified crops for food and nutrition security and improved micronutrient nutrition. The project has adopted a multi-crop food basket approach and advocates for increased investment in the integration of biofortified food crops into food systems. It also contributes to the sustainable solutions for addressing micronutrient malnutrition, especially in the vulnerable groups of young children and women. The specific objectives of BNFB are to strengthen the enabling environment for increased investments in biofortified crops and develop institutional and individual capacities to produce and consume biofortified crops. The project acknowledges the critical supportive role regional institutions can play in providing an enabling policy environment for biofortification.

This situation analysis report provides a snapshot of the regional and subregional policies and frameworks that support biofortification and the organizations implementing various nutrition-sensitive initiatives. The report identifies some ongoing initiatives that are relevant to the BNFB mandate and that can be aligned to its activities to facilitate its starting up and scaling up. The report recommends the key actions necessary to facilitate increased investment in and scaling up of biofortified crops in sub-Saharan Africa. It also provides guidance on the broad strategic areas that could form the focus in the development of a regional advocacy strategy for the BNFB Project, and serve as the basis of a plan of work for biofortification advocacy champions for stimulating sustainable investments in the production and consumption of biofortified crops.

Key findings of the analysis

Organizations involved in addressing micronutrient malnutrition through nutrition-sensitive agriculture and biofortification

The African Union (AU) and its implementing arm, the New Economic Partnership for Africa's Development (NEPAD); the Forum for Agricultural Research in Africa (FARA), and regional economic communities, i.e. the Association for Strengthening Agricultural Research in Eastern and Central Africa (ASARECA), the Common Market for Eastern and Southern Africa (COMESA), the East African Community (EAC), the Economic Community of West African States (ECOWAS), the Food, Agriculture and Natural Resources Policy Analysis Network (FANRPAN) and the Southern African Development Community (SADC) provide an enabling food and nutrition policy framework for addressing micronutrient malnutrition. The potential for implementing nutrition-sensitive agriculture initiatives through the process of the Comprehensive Agenda on Agricultural Development Programme (CAADP) is high, and this is even more so since the second generation national agriculture investment plans are now incorporating nutrition-sensitive agriculture into their activities.

At the international level, the lead agencies in food and nutrition within the United Nations family, namely the Food and Agriculture Organization of the United Nations (FAO), the International Fund for Agricultural Development (IFAD), the United Nations Children's Emergency Fund (UNICEF), the World Food Programme (WFP) and the World Health Organization (WHO), all have embraced nutrition-sensitive agriculture and biofortification as a key strategy in the 1000 Day Initiative to reduce stunting. FAO is leading this initiative in line with its mandate, and has developed some useful tools for training and programming. The International Center for Tropical Agriculture (CIAT), the International Institute of Tropical Agriculture (IITA), the International Potato Center (CIP) and HarvestPlus are the CGIAR institutions at the forefront in providing technical leadership and support through the value chains of biofortified crops at the country and regional levels.

The development partners that have been providing technical and financial resources for nutrition-sensitive agriculture initiatives are the Bill & Melinda Gates Foundation, the Department for International Development of the United Kingdom (DFID), the European Union, Irish Aid, the Technical Center for Agricultural and Rural Cooperation (CTA) and the United States Agency for International Development (USAID).

The international nongovernmental organizations at the forefront in implementing nutrition-sensitive agriculture initiatives, including biofortification, are Africare, Helen Keller International and World Vision International.

Policy and competency gaps

Regional, subregional and national policies have gone a long way towards responding to the prevailing micronutrient deficiencies by integrating nutrition-sensitive agriculture concepts. But they have tended to be piecemeal and to often lack a cohesive and coordinated approach, disregarding the fact that a multisectoral approach that engages different stakeholders is necessary for success of their goals. Furthermore, the regional, subregional and national capacity to customize and translate these policies and strategies into action is limited.

Main barriers in policies, strategies and investment plans for nutrition-sensitive agriculture and biofortification

The main barrier in nutrition-sensitive agriculture is the lack of a coherent strategy for its implementation. The results from the plethora of pilot interventions currently being tested are eagerly awaited as they will provide the much-needed guidance for advocacy. Furthermore,

meaningful interaction is virtually nonexistent among the key sectors in the health and agriculture sectors implicated in nutrition-sensitive agriculture.

Initiatives that BNFB can align itself with for maximum impact

The BNFB Project can be aligned to several ongoing initiatives. These include nutrition-sensitive agriculture programs that are largely promoted through the agriculture sector and nutrition-specific interventions implemented through the health sector, where biofortified crops can be a useful contribution to the diversified diet that has been endorsed for good health.

Current environment for scaling up the production and consumption of biofortified crops

Scaling up the production and consumption of biofortified crops is going to require multiple interventions that include sustaining the enabling policy environment at the global, regional and national levels and delivering behavior change communication that facilitates the adoption of biofortified crops by small-scale farmers. It will also require identification of opportunities that have the potential to increase the demand for biofortified crops, such as those in the home-grown school feeding program and the social protection programs that provide food to vulnerable groups. The current focus on dietary diversification for improved nutrition and health, where biofortified crops can be integrated into a diversified food basket, has the potential to promote the scaling up of the biofortified crops. If existing routine food and nutrition surveillance systems can include biofortification indicators they would provide the evidence needed to sustain and scale up biofortified crops. The results of the ongoing interventions that are piloting the integration of nutrition into agriculture systems are eagerly awaited. They are expected to provide some useful insights and inform the process to scale up biofortification.

Organizations to target for advocacy to increase investments in biofortification

Investments in biofortification will occur when the policy environment is enabling and stable and the benefits that accrue from the investment are clearly understood and are backed by supportive evidence that demonstrates their value as well as the demand for the crops. Furthermore, potential investors need assurance that their investment will yield the required benefits, by having in place clear implementation modalities and guidelines and investment guides. The policy environment at the regional and subregional levels is largely enabling, with policy documents incorporating nutrition-sensitive agriculture and food-based approaches to address nutrition concerns. However, there is need for regular reinforcement of the policies with information updates and advocacy that keep the issue on the regional agenda. The potential investors in biofortified crops include the regional organizations themselves, the countries, farmers and development partners.

Current investment patterns in addressing micronutrient challenges through food-based approaches

In the absence of a clear regional strategy for implementing food-based approaches to address the prevailing micronutrient problems, many initiatives funded by development partners such as USAID, DIFID and the Bill & Melinda Gates Foundation are piloting various models. These efforts should lead to the identification of effective models for investing in and scaling up of biofortified crops. Given that the second generation national agriculture investment plans include nutrition-sensitive agriculture that incorporates food-based approaches to tackle malnutrition, there is potential for increased government investment if a compelling argument can be made for it through advocacy.

Industrial food fortification of salt with iodine, flour and maize meal with iron and B vitamins, and cooking oil and margarine with vitamin A is the most prevalent food-based approach in use for addressing micronutrient challenges in Africa. Development partners such as the Global Alliance for

Improving Nutrition, Nutrition International and USAID have over the years provided technical and financial resources to develop regional and national fortification capacity. Food composition tables and food-based dietary guidelines and a clear narrative on how they can improve micronutrient intake are not available in most countries in Africa to guide and inform nutrition education and awareness campaigns. FAO is currently trying to redress this deficiency by supporting countries to develop food composition tables and dietary guidelines.

Key actions towards increased investment in and scaling up of biofortification

To ensure its success, BNFB will need to contextualize biofortification within the broader regional targets, policies and ongoing initiatives, while at the same time taking the steps to effect the necessary alignment of its goals with these. The recommended actions to realize that are categorized under the following thematic areas:

- Sustaining the existing policy-enabling environment at the regional level;
- Harnessing available opportunities for increased investment promotion;
- Establishing strategic partnerships with existing initiatives;
- Coordinating and harmonizing existing nutrition-sensitive agriculture initiatives;
- Strengthening the evidence base to support biofortification scaling up and measuring the impact of biofortification on micronutrient status;
- Advocacy and knowledge sharing.

The findings from the situation analysis suggest that the conditions are favorable for the achievement of the project's goal of ensuring sustainable regional advocacy for increased investment in biofortification and implementation of nutrition-sensitive agriculture in a sustainable manner.

1. Background

1.1 Food and nutrition situation in Africa

The scale of food and nutrition challenges in Africa is staggering. According to the Hunger and Nutrition Commitment Index for Africa (2016), 58 million children under the age of five are stunted, 13 million are wasted and 10.3 million are obese. Additionally, an estimated 220 million Africans are considered to be calorie deficient. Micronutrient malnutrition, often referred to as hidden hunger, is a serious problem in sub-Saharan Africa. The most prevalent micronutrient disorders are vitamin A deficiency and iron deficiency anemia. An estimated 163 million children and women of reproductive age are anemic, about 44% of preschool children are vitamin A deficient and 24% of all child deaths are attributable to vitamin A deficiency.

Vitamin A deficiency in sub-Saharan Africa is the result of inadequate dietary intake of the primary sources of this micronutrient, which are yellow and orange fruits and vegetables and dark green leafy vegetables. The consequences of vitamin A deficiency include a high risk of diseases such as diarrhea and measles, growth retardation, and premature death for children under five years of age. Individuals who are vitamin A deficient are not able to fight off common diseases because their immune system is weakened and are likely to suffer eye disorders that could lead to visual impairment and blindness. In pregnant women, vitamin A deficiency could lead to night blindness.

Iron deficiency anemia impairs the health of women in the childbearing age and young children. According to the World Health Organization (WHO), the failure to tackle iron deficiency anemia consigns women to impaired health, a poor quality of life and reduced capacity to optimally undertake physical activity, reducing their economic productivity. In young children, anemia can lead to impaired development and affect learning ability, as iron is a nutrient required for optimal brain development. According to the 2016 HANCI (Hunger and Nutrition Commitment Index) Africa report, progress towards attaining the WHO global target of reducing iron deficiency by 50% by 2025 has been negligible and none of the 54 countries in Africa is on course to meet that target. According to HANCI, the prevalence of anemia in Nigeria and Tanzania stands at 48.5% and 39.6%, respectively. To meet the WHO target it will be necessary to (1) have a multifaceted and multisectoral approach that includes the promotion of a diversified, nutrient-dense diet with fortified and biofortified foods, (2) treat and prevent infectious diseases, and (3) improve hygiene and sanitation. The poor dietary diversity inherent in many communities in sub-Saharan Africa, coupled with the high burden of infectious diseases, makes it difficult for individuals to meet their daily micronutrient requirements.

The high levels of malnutrition are a burden on national budgets. Estimates made through the cost of hunger studies undertaken in Africa indicate that the disease burden and losses in productivity due to malnutrition can account for 3–16% of the fiscal expenditure.

Current efforts to address the prevailing micronutrient malnutrition in sub-Saharan Africa include supplementation programs that work through the health sector to provide iron and vitamin A capsules to women of reproductive age group and children under the age of five. Even where such supplementation coverage is high it targets only the most vulnerable group yet micronutrient deficiencies are of public health significance. The entire population needs to have access to adequate micronutrients. Food-based approaches for addressing micronutrient malnutrition have so far been largely limited to commercial food fortification of salt with iodine, cooking oil, sugar and margarine with vitamin A, and flour and maize meal with iron and B vitamins. The coverage of fortified foods depends on how developed the market infrastructure is. In sub-Saharan Africa many rural communities have limited access to commercially processed and fortified foods. Often, locally processed and unfortified foods are more readily available and cheaper. The promotion of dietary

diversification, nutrition-sensitive food production systems and nutrition education has not received the focus and sustained attention necessary to effect sustainable behavior change. Biofortification provides an additional strategy for addressing micronutrient malnutrition, and it has the potential to reach the remote rural areas not easily reached by the other existing initiatives. It holds promise in improving nutrition outcomes, as it has already been proven to improve the vitamin A status in some communities, using orange-fleshed sweetpotato (OFSP).

1.2 Building Nutritious Food Baskets Project

The Building Nutritious Food Baskets (BNFB) Project: Scaling Up Biofortified Crops for Nutrition Security in Nigeria and Tanzania is a three-year project running from 2015 to 2018 that aims to contribute to the reduction in hidden hunger by catalyzing sustainable investments in utilizing biofortified crops in the two countries. The project adopts a multi-crop food basket approach and advocates for increased investment in the integration of biofortified food crops into food systems. It also contributes to the sustainable solutions for addressing micronutrient malnutrition, especially in the vulnerable groups of young children and women.

The project will build on the lessons from and achievements of the Reaching Agents of Change (RAC) Project, which was implemented 2011–2015 and was spearheaded by the International Potato Center (CIP) and Helen Keller International to scale up the adoption of biofortified crops. The multi-crop food basket being promoted includes high-iron and zinc beans, pro-vitamin A maize, OFSP and yellow cassava.

The key objectives of the BNFB Project are to strengthen the existing enabling environment for increased investments in biofortified crops and develop institutional and individual capacities to produce and consume biofortified crops.

The project is being implemented in Nigeria and Tanzania, where the current momentum for biofortification is strong. A consortium of six core partners is working together to meet the objectives of the project. Five of the partners are CGIAR institutions. CIP is providing the leadership and coordination for the project. CIP has extensive experience in capacity building and advocacy for biofortification, built through its renowned work on OFSP. That work received international acclaim by being awarded the 2016 World Food Prize. The International Center for Tropical Agriculture (CIAT) has expertise in iron/zinc rich beans; the International Maize and Wheat Improvement Center (CIMMYT) has expertise in pro-vitamin A rich orange maize and a broad international, regional, subregional and national level stakeholder base; the International Institute of Tropical Agriculture (IITA) has expertise in yellow cassava and pro-vitamin A maize; and HarvestPlus is a global leader in developing micronutrient-rich staple crops. HarvestPlus will be collaborating with CIP in providing technical and scientific expertise to the project, especially in capacity development and advocacy.

To effect policy change to increase investments in the production and consumption of biofortified crops at the regional, subregional and national levels requires sustained advocacy efforts. Towards that end, the Forum for Agricultural Research in Africa (FARA) is included in the BNFB partnership owing to its regional role in policy engagement and advocacy. Advocacy and communication for increased investment in agriculture by African governments and private sector entities are the core functions of FARA that particularly speak to the advocacy coordination role it is assigned in the project.

FARA is the apex continental organization responsible for coordinating and advocating for agricultural research for development (AR4D) in support of agriculture development frameworks such as the Comprehensive Agenda on Agricultural Development Programme (CAADP). FARA serves as the technical arm of the African Union Commission (AUC) on matters concerning agricultural

science, technology and innovation. Furthermore, FARA was involved in biofortification work through the Dissemination of New Technologies in Africa (DONATA) program, working in partnership with CIP and the Association for Strengthening Agricultural Research in Eastern Central and Africa (ASARECA) during 2008–2012. That program was funded by the African Development Bank (AfDB) and it supported Ethiopia, Kenya, Tanzania, Rwanda and Uganda to scale up OFSP technologies along its value chain. To increase the production, consumption and marketing of OFSP roots, planting materials and processed products, the program worked through multi-stakeholder platforms that included national agricultural research institutions working at the district level, nongovernmental organizations (NGOs), farmer organizations, the private sector and government extension agents.

1.3 Purpose of the situation analysis

The situation analysis aimed to provide a snapshot of the regional and subregional policies, investment processes and frameworks that support biofortification and the organizations implementing various nutrition-sensitive initiatives (see Annex 1). It also intended to identify ongoing initiatives that BNFB could add value to and to recommend key actions on issues affecting the scaling up of biofortified crops in sub-Saharan Africa. Furthermore, the analysis was expected to identify the barriers and bottlenecks to nutrition-sensitive agriculture and biofortification, as well as the lessons, experiences and success stories, and to provide the information needed to develop and ground a regional advocacy strategy and the development of plans for biofortification advocacy champions. Moreover, it was meant to identify the indicative elements to guide the development of the advocacy strategy, whose main purpose would be to catalyze sustainable investments in the production and utilization of biofortified crops, thereby contributing to the effective reduction in hidden hunger.

1.4 Specific objectives

The objectives of the situation analysis were to:

- Identify the key regional, subregional and international organizations and initiatives involved in addressing the micronutrient malnutrition challenge through nutrition-sensitive agriculture, as well as scaling up biofortified crops;
- Assess the current investment patterns in addressing the micronutrient malnutrition challenge through food-based approaches, including biofortification, by key regional, subregional and international organizations and initiatives, and identify the main donors to approach for increased advocacy and investments in biofortification;
- Analyze the regional and subregional policies and funding priorities as far as nutrition-sensitive agriculture and biofortification are concerned;
- Provide a snapshot of the regional and subregional policies, investment processes and frameworks that support biofortification, and assess the extent to which there is an enabling environment to facilitate the scaling up of the production and consumption of biofortified foods;
- Identify existing organizations implementing various nutrition-sensitive initiatives that BNFB could add value to and align and/or collaborate with for maximum impact;
- Identify the relevant lessons, experiences and success stories in regard to advocacy on the scaling up of biofortified crops in sub-Saharan Africa, such as the success of OFSP scaling up in Rwanda;
- Identify the barriers and bottlenecks in the regional and subregional nutrition policies and strategies, investment plans and programs that support nutrition-sensitive agriculture and biofortification;

-
- Identify the policy and competency gaps that must be addressed in order to facilitate active participation of regional and subregional organizations and champions in advocacy to achieve BNFB objectives;
 - Provide information on the indicative elements on which to ground the development of the regional advocacy strategy and identify the target stakeholder institutions and champions.

2. Methodology

A strengths, weaknesses, opportunities and threats (SWOT) analysis was undertaken to assess the extent to which the prevailing environment for food and nutrition policies, strategies and programs in the region would facilitate or hinder the BNFB Project in meeting its objectives. This assessment of the regional situation was undertaken mainly through a desk review of key documents from regional and international organizations relevant to the biofortification agenda (see Annex 2). Some interviews were conducted with key informants from regional organizations, where feasible (Annex 3). These SWOT elements were analyzed with a focus on the following key aspects of the regional situation:

- policy and strategy
- advocacy
- food-based approaches and nutrition-sensitive agriculture
- capacity
- scaling up
- investment opportunities

In addition to FARA, the following global organizations were prioritized for review in the analysis using their websites, policy documents and discussions with key informants held on the sidelines of meetings the consultant attended, as well as through email communication (see Annex 4):

- Food and Agriculture Organization of the United Nations (FAO)
- HarvestPlus
- Helen Keller International
- International Fund for Agricultural Development (IFAD)
- International Potato Centre (CIP)
- Japanese International Cooperation Agency (JICA)
- United Nations International Children's Emergency Fund (UNICEF)
- United States Agency for International Development (USAID)
- World Food Programme (WFP)
- World Health Organization (WHO)

The regional organizations included in the analysis were African Union's (AU) New Partnership for Africa's Development (NEPAD), which is the economic development arm of the AU, and the Common Market for Eastern and Southern Africa (COMESA).

At the subregional level, the East African Community (EAC), East Central Southern Africa (ECSA) groups, the Economic Community of West African States (ECOWAS), the Food, Agriculture and Natural Resources Policy Analysis Network (FANRPAN) and the Southern African Development Community (SADC) were specifically targeted because of their relevance in the BNFB target countries of Nigeria and Tanzania. In addition, documents from the RAC Project were reviewed and meetings held with key informants such as OFSP champions and the former manager of the RAC Project.

The situation analysis contributed to the identification of the key elements for a regional advocacy strategy for biofortification, and the advocacy strategy for the BNFB Project will build on the strengths identified, take into account the weaknesses identified and take advantage of available opportunities, while acknowledging the potential threats. The specific objectives of the situation analysis have been used to frame the presentation in this report of the findings, conclusions and recommendations.

Regular participation in strategic regional and global meetings and continued engagement in the prevailing food and nutrition agenda at national, regional and global levels provided ready access for the consultant to a considerable number of documents and materials relevant to this assignment. These materials included Agenda 2063, the AU Strategic Plan for 2014–2017, the Africa regional nutrition strategy, the Malabo Declaration, the Sustainable Development Goals (SDGs), the Second International Conference on Nutrition (ICN2), the Rome Declaration on Nutrition, SADC’s regional agriculture policy, and the Food and nutrition strategy (see Annex 2).

The stakeholders to be interviewed were prioritized based on the ease of reaching them by the consultant during regional, global and country-level events to gather information on their knowledge and understanding of their organization’s mandate and its relevance to biofortification. The particular events used for this purpose were (see annex 5):

- The African Nutritional Epidemiology Conference (ANEC VII) in Marrakech on 9–14 October 2016;
- The commemoration of the African Day for Food and Nutrition Security in Accra on 26–28 October 2016;
- The FAO/WHO International Symposium on Sustainable Food Systems for Healthy Diets and Improved Nutrition in Rome, 1–2 December 2016;
- The HANCI Africa Technical Review Workshop in Johannesburg on 26–28 January 2017.

Question guides were customized for each key informant’s interview, taking advantage of their participation in the strategic meeting to obtain information directly from them. Follow-up email correspondence and Skype calls were employed where appropriate to enrich the information gathered through the interviews and research. The network established by the consultant over the years was particularly useful in securing interviews and current information about regional organizations and upcoming events in the short time that was available during these events. The information gathered has been incorporated into the findings and recommendations in this report. The issues of relevance to biofortification and the BNFB project that emerged from each of these events are outlined in Annex 5.

The consultant took specific steps to gather the data:

- An inventory was compiled of known contacts and key individuals strategically placed in regional institutions relevant to the situation analysis. The key informants were approached through email correspondence and Skype calls to arrange for face-to-face meetings at the identified regional conferences. The consultant customized the questions to secure the required information from these interviews.
- The opportunities provided by attendance at the various meetings and conferences were used, where feasible, to interview the key informants in strategic international and regional organizations such as AU/NEPAD, COMESA, ECSA, FANRPAN, FAO, FARA, IFAD, WFP and WHO, as well as other strategic partners, to assess the changes in policy and programming since the conclusion of the RAC Project. Face-to-face interaction was used also in validating information obtained from websites and other sources. The consultant faced some difficulty in conducting these discussions given that December is a slow month, since it is when most

organizations wind up their operations for the year. The lists of the people interviewed and the institutions reviewed are provided in annexes 2 and 3, respectively.

- A desk review was conducted of the organizations included in the situation analysis undertaken for the RAC Project and other secondary sources. The review involved a literature search and an appraisal of the information on the organizations' websites, where these existed, to identify the organizations still relevant to the biofortification agenda. New entrants into the field of food and nutrition at the regional level since the last situation analysis were identified and added to the list. The organizations' potential and existing roles in food and nutrition advocacy; food and nutrition, particularly micronutrient and biofortification policy and program implementation; and scaling up of food and nutrition initiatives were identified and documented.
- The policies, strategies, plans and current recommendations, declarations and commitments of the regional organizations were gathered, cataloged, reviewed and assessed for their responsiveness and relevance to food-based approaches, nutrition-sensitive agriculture, nutrition in general, and biofortification.
- In addition, the policy, strategy and programming gaps that could be addressed through appropriate advocacy by champions were identified. Gaps in policies and strategies that could be addressed through an advocacy strategy and by champions were identified. A narrative on biofortification to be used in developing a regional advocacy strategy for biofortified crops was framed.
- Some local and regional offices were visited where feasible, interviews were conducted with relevant officials, and organizations' strategic documents were obtained from DFID, FAO, UNICEF, USAID, WFP, WHO and others.
- The key documents of the development partners and relevant international organizations, i.e. AfDB, DFID, FAO, IFAD, JICA, WFP, WHO and USAID, and other strategic partners were reviewed to assess their current focus in policy, investment and programming for food-based approaches, nutrition-sensitive agriculture, nutrition, and biofortification.
- New regional initiatives that address micronutrient malnutrition and biofortification in particular were identified, as well as the available funding for nutrition-sensitive agriculture and the potential for integrating biofortification.
- The key ongoing regional, country and subnational level initiatives on advocacy, nutrition-sensitive agriculture and nutrition that the BNFB Project could align itself to or coordinate with, especially those with the potential for scaling up biofortification, were identified.

The guides used in the document review and interviews are in Annex 6.

3. Key findings

The following is an account of the in-depth analysis of the strengths, weaknesses, opportunities and threats observed through the review of the developments in the regional post-RAC policy and advocacy environment for nutrition-sensitive agriculture. The analysis helped to identify existing strengths at the regional level that a regional biofortification advocacy strategy should capitalize on and existing opportunities and initiatives that biofortification can be aligned to. A lesson learnt from the RAC Project was that advocacy for biofortification was more effective when aligned to an existing initiative than as a stand-alone initiative. The weaknesses identified should be taken into account and approaches devised to minimize them, and the threats should be factored into any regional advocacy strategy developed (see Table 1).

Table 1: Summary of SWOT analysis results on the prevailing regional environment for food and nutrition policies, strategies and programs

Thematic areas	Strengths	Weaknesses	Opportunities	Threats
Policy and strategy	<ul style="list-style-type: none"> Enabling policy environment 	<ul style="list-style-type: none"> The policies are fragmented and organizations relevant to food and nutrition often do not speak to one another. 	<ul style="list-style-type: none"> Ongoing development of regional policies and strategies in EAC and ECOWAS can be influenced to include biofortification and nutrition-sensitive agriculture guidelines and initiatives. With the AU Strategic Plan expiring this year, an opportunity exists to inform the development of the new strategy. 	
Advocacy	<ul style="list-style-type: none"> Recognition of the importance of advocacy at the institutional level as evidenced by the establishment of high level panels and platforms and appointment of champions. Increasing amount and availability of quality advocacy material and tools. (RAC-produced quality advocacy materials are still in use). 	<ul style="list-style-type: none"> Lack of a coherent narrative on micronutrient malnutrition on which to pin biofortification advocacy and communication. Advocacy efforts are haphazard, fragmented and transitory. Targeting of farmers' associations is inadequate. 	<ul style="list-style-type: none"> New advocacy champions and initiatives, e.g. Africa Leaders for Nutrition. New tools, e.g. cost of hunger studies and HANCI New targets for advocacy efforts. Fresh focus on school feeding through AU's home-grown school feeding program provides new target areas for advocacy and communication messaging. Farmer organizations have not previously been engaged in regional advocacy efforts. They form new targets for advocacy. RAC advocacy material still relevant for OFSP. 	<ul style="list-style-type: none"> Too many actors at the regional level operating in an uncoordinated manner.
Food-based approaches and nutrition-sensitive agriculture	<ul style="list-style-type: none"> A large proportion of pilot initiatives supported by development partners (Agricare, Bill & Melinda Gates Foundation, DFID, Helen Keller International, IFPRI, USAID, WVI). Nutrition-sensitive agriculture institutionalized in regional and national policies and strategies through CAADP, SUN, ICN2, African Regional Nutrition Strategy etc. 	<ul style="list-style-type: none"> Narrative on food-based approaches and nutrition-sensitive agriculture and guidelines are only beginning to be developed (FAO). This has delayed the translation of food-based approaches and nutrition-sensitive agriculture into actions. Evidence from previous pilot initiatives has not been synthesized into implementation guidelines. 	<ul style="list-style-type: none"> Revision of NAIPs. Academic research platforms. The various pilots being evaluated for impact work. 	<ul style="list-style-type: none"> The initiatives receive minimal domestic investment, relying mostly on external funding, which is not sustainable.
Capacity	<ul style="list-style-type: none"> Technical capacity available through strong CGIAR participation in biofortification. Existence of regional agriculture research institutions – ASARECA, FARA, agricultural research institutes. 	<ul style="list-style-type: none"> Inadequate national level capacity to move the biofortification agenda through the value chain. Research institutions are largely externally supported. 	<ul style="list-style-type: none"> New funding sources such as Technologies for African Agriculture Transformation, Initiative for Food and Nutrition in Africa, New Alliance for Food and Nutrition. FAO and CGIAR are developing e-courses on nutrition and agriculture for food and nutrition practitioners. 	

Thematic areas	Strengths	Weaknesses	Opportunities	Threats
Scaling up nutrition	<ul style="list-style-type: none"> • Growing catalog of SUN Movement's lessons learnt. • OFSP, the front-runner among the biofortified crops, can be used to facilitate scaling up. 	<ul style="list-style-type: none"> • Lack of implementation and investment guidelines for biofortified crops to inform decision on scaling up of the biofortified crops besides OFSP. • Limited evidence base on micronutrient malnutrition, particularly vitamin A. 	<ul style="list-style-type: none"> • Global and regional nutrition targets and nutrition-sensitive agriculture will serve to keep micronutrients and biofortification high on the agenda. • Integrating nutrition into NAIPs will facilitate scaling up of biofortification. 	<ul style="list-style-type: none"> • Current M&E and data collection systems do not accommodate biofortification and micronutrients adequately. Scaling up will be difficult to facilitate and justify without a supportive evidence base.
Investment opportunities	<ul style="list-style-type: none"> • Policy decision to integrate nutrition into NAIPs ensures sustainable investment prospects. • There exist several investments in nutrition-sensitive agriculture and pilot initiatives on policy, supported by development partners (AU, ECOWAS and USAID). • Investment guide is available for OFSP. 	<ul style="list-style-type: none"> • Lack of investment and implementation guides for the majority of biofortified crops. • Investments in food-based approaches and nutrition-sensitive agriculture are largely donor supported. 	<ul style="list-style-type: none"> • Grow Africa Partnership was created in 2011 by AU/NEPAD and World Economic Forum to increase private sector investment in NAIPs and accelerate agriculture transformation. It is hosted by NEPAD. • New investment opportunities exist through Technologies for African Agriculture Transformation and Initiative for Food and Nutrition Security in Africa (IFNA), which works in partnership with JICA. • AU's quest to obtain domestic funding for programming can and should prioritize investment in food and agriculture. • Farmer organizations have not previously been formally engaged at the regional level. They form new sustainable target areas for investment. • NAIPs developed under CAADP clearly outline the national investment priorities and provide guidance for investment in food and nutrition, particularly given that they are now being adapted to integrate nutrition-sensitive agriculture. • The 2025 Compact is an initiative for ending hunger and undernutrition by 2025 and its secretariat is hosted by IFPRI. It brings stakeholders together to set priorities, innovate and learn. Its focal countries in Africa are Ethiopia, Malawi and Rwanda. One of the biofortification champions is a member of its technical advisory board. 	<ul style="list-style-type: none"> • External investments are inextricably linked to the political environment in Europe and USA, which will determine the extent of support. • Developed countries are reprioritizing domestic health spending, which will likely lead to drastic reductions in the investments made by donors and development partners in the region.

3.1 Strengths in the prevailing regional food and nutrition policy environment

An enabling policy environment exists for meaningful improvement in food and nutrition with the convergence and consensus at the global, regional and country levels on the importance of nutrition and its potential contribution to socioeconomic development. FARA's capacity and mandate to bring together policy-makers and engage them in policy dialogue can facilitate more regular interaction between the health and agriculture sectors and facilitate advocacy to key policy-makers relevant to the biofortification agenda.

FARA's strategic plan for 2014–2018 includes nutrition amongst the emerging issues that need to be taken into account as FARA implements its strategy. FARA is committed to undertaking the activities that will build links between agriculture and nutrition in order to address the prevailing nutrition problems facing the continent. FARA's stated intention to provide guidance to policy-makers and program managers on the selection and design of effective agricultural interventions that impact on improvements in nutrition and health status is a welcome development that should facilitate the scaling up of biofortified crops.

The strategic interventions that are likely to help tackle the prevailing nutritional problems are now better understood because of the awareness created by the Lancet Series and advocacy around the 1000 Days Initiative through the Scaling Up Nutrition (SUN) Movement. This was not the case three to four years ago, when the RAC Project's advocacy strategy was being developed. In the current environment, food-based approaches to address the prevailing nutrition problems facing sub-Saharan Africa, including micronutrient malnutrition, are gaining currency. The Decade for Nutrition (2016–2025) initiative has also reinforced this focus by having as one of its pillars for action 'sustainable food systems for healthy diets'.

The greater awareness on and commitment to food and nutrition issues and the need to address them in regional institutions are demonstrated by the high level of political commitment and the enabling policy environment at the regional, global and national levels for food and nutrition, as indicated by the statements in the Agenda 2063 Framework and the First Ten Year Implementation Plan, *The Africa We Want* (2013). The implementation plan has two goals that are relevant to food and nutrition:

- Goal 1 on ensuring a high standard of living, quality of life, and well-being for all;
- Goal 3 on healthy and well-nourished citizens.

These goals are broad enough to allow the integration of specific food and nutrition actions, including biofortification. What is more, the plan has defined the key strategic actions towards attaining those goals and articulated regional and national level financing strategies. The plan gives priority to the identification of domestic resources, including government reallocations within existing budgets and increasing taxes. A panel that was charged with identifying potential domestic funding sources for the AU is scheduled to report on the progress at the January 2018 AU Summit. In the meantime these key Agenda 2063 documents are being rolled out to member states.

3.1.1 Developments in the post-RAC regional policy environment

In January 2014 African leaders adopted the Common Africa Position on the post-2015 development agenda, identifying six priority areas for development and implementation of the SDGs. These priority areas included striving for inclusive economic growth that reduces inequality and ensures sustainable agriculture, food self-sufficiency and nutrition security for all. The Agenda 2063 First Ten Year Implementation Plan includes (in Annex 3, on page 133) a table showing the linkages between the two initiatives and goals.

The AUC strategic plan 2014–2017 has embedded nutrition in one of its eight strategic priorities as follows: “policies and institutions for sustainable development, increased agricultural production, food and nutrition security, expanded value addition and market access, and sound environmental and natural resource management.” Under this theme, the strategic actions relevant to nutrition are:

- Accelerated implementation of CAADP for agricultural growth and elimination of hunger and poverty;
- Promotion of the implementation of the African Regional Nutrition Strategy and addressing of resilience and risk management.

The Malabo Declaration on CAADP reaffirmed the commitment of African governments to allocate at least 10% of their national budgets to agriculture and to seek to achieve an annual agricultural growth rate of at least 6%. That declaration commits to the use of nutrition-sensitive agriculture as a strategy to eradicate undernutrition (stunting and underweight), a goal that in the past was the responsibility of solely the health sector.

CAADP is Africa’s policy framework for ensuring agriculture transformation, wealth creation, food security and nutrition, economic growth, and prosperity for all. It remains the regional framework for agriculture that any biofortification initiative should align itself to for sustainability. Furthermore, the commitment by AU/NEPAD to integrate nutrition in NAIPs facilitates the integration of biofortification into national plans through a mechanism that could facilitate investments in biofortification.

The post-Malabo Implementation Strategy and Roadmap (2014) emphasizes the focus on agriculture-sector activities that have direct links to nutrition, particularly stabilization of food prices and food availability, as well as diversification of available nutritious foods for local consumption to improve dietary diversity. This agriculture-based approach is reinforced by a broad range of nutrition policies and frameworks at regional, subregional and national levels, including the African Regional Nutrition Strategy (2015–2025), which is aligned to the World Health Assembly’s nutrition targets. The CAADP results framework includes key nutrition targets, affording an opportunity to measure the impact on nutrition of national nutrition-sensitive agriculture and food security investment programs.

Food and nutrition advocacy environment

The area of advocacy for food and nutrition has seen rapid expansion with the increase in players entering the scene, as well as several advocacy tools being more widely available for use in targeting policy-makers. The advocacy tools and initiatives include the cost of hunger studies, the *Global nutrition report* (Africa Brief, NEPAD, IDS), and the Global Panel for Food Security and Nutrition, which has four prominent Africans as members: AfDB President Dr Akinwumi Adesina, former Ghanaian President John Kufuor, AU’s Rhoda Peace Tumusiime and Dr Agnes Kalibata, President of the Alliance for a Green Revolution in Africa. The food and nutrition advocacy arena has attracted new players including the Graca Machel Trust, African Leaders for Nutrition and the newly appointed AU and FAO nutrition champion, the king of Lesotho.

There is better appreciation now about the need for multilevel advocacy to be an integral part of the efforts to improve food and nutrition security. For example, in Tanzania this is demonstrated by the involvement of the Institute of Development Studies in exploring the mechanisms for effective and sustainable multilevel advocacy for nutrition. Efforts championed by FAO to reach out to the Pan African Parliament at its conference held in Egypt in October 2016 resulted in the establishment (with FAO) of the Pan African Parliamentary Alliance for Food Security and Nutrition to fight hunger and malnutrition in Africa.

In the recent years, advocacy efforts at the regional level through AU/NEPAD, with the support of development partners such as FAO, have achieved the goal of integrating nutrition into NAIPs through the CAADP process. Most countries have either integrated nutrition into their NAIPs or are in the process of doing so. At the launch of the CAADP technical networks of communities of practice to support the implementation of the Malabo Declaration in September 2016 in Nairobi, there was acknowledgement that biofortification provides an ideal and direct example of the link of agriculture to nutrition. The investment guide developed by RAC for OFSP has been identified by COMESA as a potentially useful tool for informing advocacy efforts and providing specific guidance for investment in and production of the crop.

3.1.2 Developments in the post-RAC subregional policy environment

The regional economic communities (RECs) that are relevant to the two focus countries of the project, Nigeria and Tanzania, are EAC, ECOWAS and SADC. A review of their current policies indicated that they all have in the last three years incorporated food and nutrition into their policies and strategies, making the promotion of biofortified crops easier to accomplish.

EAC

EAC developed a regional food and nutrition policy that was adopted in 2014. The policy has very clear and specific objectives that address the prevailing food and nutrition problems in the EAC region. These objectives aim for the reduction in the prevalence of iron deficiency anemia and vitamin A deficiency through food-based approaches that include biofortification. With support from USAID, the region is currently developing a regional food and nutrition strategy for the implementation of the food and nutrition policy.

ECOWAS

ECOWAS countries established and launched in 2013 a Regional Agency for Agriculture and Food Security. This agency is based in Lomé, Togo, and is charged with the responsibility of implementing the technical aspects of the regional agricultural policy and investment programs and plans on agriculture, forestry and livestock. Several regional programs, aimed at reducing poverty and hunger in the region, were adopted as part of measures to be executed in the implementation of the regional agricultural policy.

In 2016 the ECOWAS region had a review of its agriculture and food policies and has now embarked on the Zero Hunger initiative in West Africa, mainstreaming nutrition in agriculture policies and programs with support from FAO. The review, which was undertaken by the FAO regional office in Accra, also highlighted the limited technical capacity available at the REC and country levels to implement the food and nutrition agenda.

The ECOWAS region's Partnership for Sustainable Food Fortification, running from 2011 to 2017, has benefited from technical support from Helen Keller International and funding by USAID. Its main purpose is twofold: to harmonize the fortification standards in the ECOWAS region for vitamin A in vegetable oil and for iron, B vitamins and vitamin A in wheat flour, and to advocate for mandatory food fortification in the region in response to the prevailing iron deficiency anemia and vitamin A deficiency problems. To date, 84% of the population in the ECOWAS region has access to fortified flour, 74% has access to vitamin A fortified oil, and 12 out of the 15 member states of ECOWAS have in place mandatory fortification for certain foods.

The ECOWAS region has also been implementing a vitamin A and iron folate supplementation program through the health sector, and it was the first region to be oriented into integrating nutrition into NAIPs. Some countries such as Ghana and Burkina Faso were among the first in the

region to integrate nutrition dimensions into their crop growing investment plans. Biofortification is included in strategies for food-based approaches for these two countries, given their long-standing experience with OFSP through the value chain. One of the key components of nutrition-sensitive agriculture is the food-based approach that promotes the production and consumption of nutrient-dense food crops that respond to the prevailing micronutrient problems. As an element of nutrition-sensitive agriculture, biofortification provides a direct mechanism for linking agriculture to the prevailing nutritional problems. In the ECOWAS region, Ghana and Burkina Faso have been involved in programs that promote OFSP. Beta carotene-rich cassava also was introduced in Nigeria.

SADC

In 2013 SADC developed a regional agriculture policy that recognized the need to address the prevailing food and nutrition challenges. The SADC Food and Nutrition Security Strategy for 2015–2025, which was developed and approved by the ministers of both agriculture and health, was seen as the vehicle for implementing the agriculture policy. The strategy includes a commitment by the ministers of agriculture and health in each SADC country to have a joint biennial meeting to specifically assess the progress made in implementing the strategy. This strategy includes the following priority intervention areas that are relevant to biofortification:

- Reduction in the prevalence of micronutrient deficiencies;
- Promotion of and advocacy for the consumption of high micronutrient foods including biofortified crops, as well as the development of appropriate legislation to guide their production and use;
- Promotion of increased investments for nutrition programs.

Several SADC countries such as Malawi, Tanzania and Zimbabwe have integrated nutrition into their NAIPs, where they have included biofortified crops. The process of revising the NAIPs to integrate nutrition is going on.

3.1.3 Developments in the post-RAC global policy environment

At the global level, the initiation of the SDGs, the holding of the Second International Conference on Nutrition (ICN2) and the recent enactment of the UN Decade for Nutrition (2016–2025) indicate a heightened focus and attention on nutrition. FAO has developed guiding principles for ‘Improving nutrition through agriculture’ that has specifically included biofortification as a program under ‘Production diversification and increased production of nutrient-dense crops and small-scale livestock’. The SUN Movement is taking root in more countries in sub-Saharan Africa, and Tanzania’s efforts with this initiative have made it a model for multi-stakeholder coordination for nutrition. Tanzania has institutionalized multisectoral planning and implementation platforms at its decentralized administrative levels, where the district-level budgeting process has embraced nutrition actions and allocated budgets to nutrition. The advocacy role played by the Tanzania SUN civil society platform, the Partnership for Nutrition in Tanzania (PANITA), has been instrumental in this development.

The categorization by the Lancet Series (2013) of the strategies to address stunting under the ‘nutrition-specific and nutrition-sensitive’ actions has resulted in several efforts that are currently being implemented in some countries in sub-Saharan Africa. These efforts are supported by many development partners including USAID’s Feed the Future initiative; the Agriculture to Nutrition Project supported by the Bill & Melinda Gates Foundation; the Creating Homestead Agriculture for Nutrition and Gender Equity (CHANGE) project; and Helen Keller International. These initiatives are exploring different approaches for making agriculture more responsive to nutrition outcomes.

The CGIAR Consortium of 15 leading agencies in agriculture research for a food-secure future was established in 2010 to coordinate research funding and facilitate multidisciplinary agriculture

research. With five of the partners in the BNFB Project as members of the CGIAR, the project is in an excellent position to harness the collective expertise required to implement successful biofortification projects.

There is unprecedented and focused attention at the global, regional and national levels on food and nutrition issues and in particular food systems that are more responsive to nutrition and health. This should facilitate efforts to promote the production and consumption of biofortified crops. Biofortification provides a direct link between nutrition and agriculture that is easily understood, making it easy to adopt as the world waits for more evidence to provide firm guidance on how best to integrate nutrition into agriculture. The sterling work done with OFSP through relevant CGIAR institutions such as CIP and HarvestPlus, as well as the evidence for its effectiveness in addressing vitamin A deficiency that led to the work being awarded the World Food Prize in 2016, can only facilitate its promotion and scaling up. While the many pilots going on are gathering evidence, biofortification has the opportunity to get a head start.

HarvestPlus signed a global memorandum of understanding (MOU) with World Vision International (WVI) in 2014. The MOU was updated and extended in July 2016 and has now integrated biofortified crops into WVI's community-based livelihood programs. Over the next five-year period, the program aims to improve integration amongst nutrition, health, agriculture and food security initiatives, and to improve the reach and dissemination of biofortified crops within selected countries. Priority activities of relevance to the BNFB advocacy strategy include advocacy for policy influence at the global, regional and country levels; joint documentation and publication of the program's implementation; strengthening of the evidence base on how to integrate biofortified crops into the broader programs of WVI; provision of evidence on the methodology for scaling up biofortified crops; and assessing of the impact of biofortification on nutrition and health outcomes.

Countries in sub-Saharan Africa are aware of the micronutrient problem and have been implementing some programs to improve the situation. These efforts include distribution of iron folate tablets and vitamin A capsules through the health sector, food fortification of fats and oils, provision of micronutrient powders for children and, to a limited extent, dietary diversification.

The RAC Project served to improve the advocacy environment for biofortification. The clear and informative materials produced to support regional advocacy facilitated the adoption of biofortification by the champions identified. Furthermore, the project's identification of champions in strategic regional institutions such as AU/NEPAD, COMESA, SADC and others served to facilitate the involvement of the RAC team in the development of regional and subregional policies and strategies such as the ECSA and SADC food and nutrition strategies. Most of the RAC champions have remained committed to biofortification.

In 2016 NEPAD and the Institute of Development Studies in the UK (IDS) signed an MOU to produce an Africa HANCI. This index ranks African governments' political commitment to tackling hunger. It is developed using 20 multisectoral indicators from water and sanitation hygiene, agriculture, women's rights, nutrition, health and governance. Nigeria's political commitment to addressing malnutrition seems to be waning according to the 2016 HANCI. Out of 45 African countries, it is ranked 37, whereas Tanzania is ranked 5.

3.2 Weaknesses and challenges in the regional policy and advocacy for food and nutrition, and biofortification in sub-Saharan Africa

In spite of the largely enabling environment prevailing for food and nutrition, and biofortification in particular, there are several challenges that confront biofortification:

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- The political will that the continent has aptly demonstrated through the many resolutions, declarations and policy and strategy documents has not been adequately translated into meaningful country and community-level actions. Whilst nutrition is beginning to appear in regional and subregional policies and strategies, there is no coherence within the policies. Furthermore, the institutionalization of nutrition within most regional organizations does not take into account the multisectoral nature of its issues and the need to facilitate cohesive multisectoral action. The capacity to customize resolutions, declarations and policies into actionable implementation strategies also is very limited at the regional, national and community levels.
 - Agenda 2063's First Ten Years Implementation Plan (pages 104–105) acknowledges that the 'inadequate human and institutional capacity' is a critical constraint to Africa's economic growth and sustainable development. It identifies individuals, institutions and policies as the areas for initial capacity development focus during its initial 10 years.
 - A study undertaken in 2016 and published by the World Public Health and Nutrition Association confirmed the inadequacy of capacity in terms of numbers and quality of training to meet the needs to scale up nutrition actions and accelerate progress. A report by the chairman of an AU committee charged with proposing institutional reforms for the AU to be more responsive to its prevailing development agenda cited as a hindrance the poor institutional arrangements that did not assist the AU to implement its own decisions effectively and in a timely manner. The promotion of nutrition integration into NAIPs under CAADP that occurred between 2013 and 2016 with support from FAO is welcome. A number of countries have effected this integration. Unfortunately, this effort does not sufficiently articulate the requirements for an implementation strategy defining how the nutrition component of the NAIPs will be operationalized and in particular where biofortification features. Furthermore, the *OFSP investment and implementation guide*, a tool that could have facilitated the process, was produced only at the end of the RAC project in 2014 and disseminated from 2015.
 - There is no coherent narrative on micronutrient malnutrition in any of the regional policies or strategies that integrates biofortified crops as an integral component of food-based approaches to improve nutrition.
 - There is virtually no interaction between the agriculture and health sectors at the national or even regional level, as the arrangements within regional institutions preclude this from happening on a regular basis. A case in point is in the ECOWAS region where the Food and Agriculture Authority is based in Lomé, Togo, while the West African Health Organization is based in Burkina Faso. Regular interaction between the agriculture and health sectors is a necessary precondition if food systems are to be responsive to the prevailing disease burden and nutritional disorders, including micronutrient deficiencies. One of the lessons learnt from the RAC Project was the importance of aligning the biofortification initiative with the prevailing agenda of existing multisectoral, national and regional platforms relevant to food and nutrition. This was shown to facilitate sustainability if biofortification was adopted and included amongst the food-based approaches to address the prevailing micronutrient malnutrition problems.
 - According to the Agenda 2063 framework document, the technical capacity and financial resources in the region to implement the commitments of the Malabo Declaration and Agenda 2063's promising initiatives are limited. While some headway has been made in influencing policy, the next frontier has to be advocacy for the implementation of these noble policies and strategies in a sustainable way and at a scale that will have the required impact.

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- Current policies and strategies are taking too long to be customized and to reach the communities where the action is supposed to take place. Unfortunately, most of the pilot projects attempting to develop community-based multisectoral food and nutrition programs to reduce stunting through nutrition-sensitive and nutrition-specific interventions are still at a scale that cannot produce the desired impact of reducing stunting levels in a country. Good practices that demonstrate effective modalities for scaling up effective multisectoral and integrated food and nutrition interventions to the community level in a sustainable manner are not yet available. The SUN Movement, which over 30 African countries have joined, is developing strategies for scaling up tested and proven interventions. Both Nigeria and Tanzania are part of the SUN Movement.
 - There are very limited current data on the prevalence of vitamin A deficiency. This is largely due to the fact that vitamin A prevalence studies are costly and the data are not collected regularly. Any information in sub-Saharan Africa has been largely extrapolated from the few surveys that have been carried out. Vitamin A deficiency is acknowledged by WHO to be a problem of public health significance in developing countries, contributing to child morbidity and mortality. However, the lack of a credible baseline on its prevalence has made the setting of global, regional or even national level reduction targets difficult.
 - Monitoring the impact of food-based approaches on micronutrient intake and nutrition outcomes will be a challenge, as information on food composition, consumption and dietary habits, including consumption of available nutrient-dense foods, is not available or known in many countries. A proxy for micronutrients may need to be identified and strongly advocated for. Furthermore, food-based dietary guidelines, an important tool for guiding consumers on how best to select healthy diets within the context of the foods available, do not exist in most African countries. Even where these guidelines have been developed, they are not disseminated to the intended users. This is the case in Ghana, where the dietary and physical activity guidelines developed by the ministry of health are hardly found anywhere except in its offices. The absence of an investment guide for each of biofortified maize, beans and cassava to facilitate their budgetary allocation and resource mobilization compounds this situation.

3.3 Opportunities for regional policy programming and advocacy for food and nutrition, and biofortification

The Lancet Series and the 1000 Days initiative promote numerous nutrition-sensitive interventions as an integral component in addressing food and nutrition problems. Two of such interventions are dietary diversification and food-based approaches. These interventions provide a framework for integrating biofortified crops to demonstrate how the agriculture sector can generate more improved nutrition outcomes.

Potential opportunities can be identified for increased investment in food and nutrition security and biofortification through some new initiatives. There are also new and significant players in food and nutrition that could change the implementation as well as the investment climate for nutrition and nutrition-sensitive agriculture initiatives (see Table 2).

Table 2: Opportunities to promote the objectives of the BNFB Project

Focus area	Initiatives	Organizations involved
Policy and strategy	<ul style="list-style-type: none"> • Agenda 2063 First Ten Year Implementation Plan (2014–2023), which started to be rolled out to member states in January 2017 – There is room to appropriately align the BNFB Project to this, especially at the country level. • The CAADP initiative remains the dominant development agenda for agriculture in Africa. • Ongoing AU institutional reforms provide an opportunity for advocating for the appropriate institutional arrangements for nutrition, given its multisectoral nature and the need to mainstream it in the development agenda. • The 2013 Agenda 63 (the Africa We Want) and the Malabo Declaration (2014), which include explicit food security and nutrition goals and targets have emphasized dietary diversity as one of the strategies for addressing micronutrient malnutrition. • The AU through NEPAD has developed an African Regional Nutrition Strategy that includes food-based approaches as part of the strategies to address micronutrient deficiencies, and the strategy is awaiting implementation. • At the global level, the UN Decade for Nutrition’s pillar on sustainable food systems for healthy diets is relevant to biofortification. A resource guide is being developed to guide countries in implementing the commitments to nutrition made at ICN2 conference. The guide provides an opportunity to integrate biofortification. 	<ul style="list-style-type: none"> • AU/NEPAD • FARA • COMESA • RECs (SADC, ECOWAS) • Relevant UN agencies (with FAO and WHO taking the leading role) and member states
Food and nutrition advocacy	<ul style="list-style-type: none"> • At the global level, the UN Decade for Nutrition provides a rallying point for nutrition over 10 years. • At the regional level, the AU has named the king of Lesotho as its nutrition ambassador to advocate for food and nutrition. At the global level, the king was also conferred the same role by FAO in Rome recently. • The Global Panel on Agriculture Systems and Food Systems for Nutrition is an independent group of influential experts with a good representation from Africa that includes the current president of the African Development Bank, Akinwumi Adesina and former president of Ghana, John Kufuor. This high level panel, which works through high level advocacy, has a commitment to ensure that agriculture and food systems support access to nutritious food at every stage of life. • African Leaders for Nutrition, a high level group of Africa leaders advocating for nutrition improvement under the auspices of the AU and AfDB was formally launched at the 29th AU Summit in Addis Ababa. • The Graca Machel Trust is engaged in nutrition advocacy in the SADC region as well as at the AU. A strategic partnership involving the joining of forces may be held to advance advocacy initiatives for biofortification. • WVI and HarvestPlus through their MOU plan to be actively involved in advocacy for policy influence at the global, regional and country levels for biofortification. • PANITA in Tanzania is working with IDS on strengthening nutrition advocacy at the decentralized levels, dealing with the district level and administration levels below it. 	<ul style="list-style-type: none"> • Relevant UN agencies (with FAO and WHO taking the leading role) and member states • AU/NEPAD • UK Aid Direct • Bill & Melinda Gates Foundation • African Development Bank • Nutrition Programme Manager, Graca Machel Trust • World Vision International • HarvestPlus

Focus area	Initiatives	Organizations involved
Food-based approaches and nutrition-sensitive agriculture	<ul style="list-style-type: none"> FAO has developed guidelines for use by policy-makers and program planners for improving nutrition through agriculture, after extensive consultations with member states, NGOs and development partners. The guiding principles on food production diversification and increased production of nutrient-dense food crops mention biofortified crops specifically. WVI signed an MOU with HarvestPlus in 2013 and is committed to integrating biofortified crops where appropriate in its community-based food security and livelihood support programs. WVI will also be documenting the program implementation process and developing a how-to guide for integrating biofortified crops into its programs, defining the methodology for scaling up biofortified crops and providing evidence on the impact of biofortification on nutrition and health. SPRING Project: The focus of this project is nutrition-sensitive agriculture, improving the policy environment for the delivery of effective nutrition interventions, and increasing community demand for nutrition services through behavior change communication, in order to attain reductions in stunting, anemia and aflatoxin infestation. Feed the Future: This is a nutrition-sensitive agriculture program aiming to improve food security and reduce stunting and anemia through social and behavior change communication. In Tanzania, Africare is implementing the Mwanzo Bora nutrition program under the Feed the Future banner. Agriculture to Nutrition Project: This project aims to improve nutrition outcomes of smallholder farmers through nutrition-sensitive agriculture and using the 1000-day window of opportunity. The project's targets include the BNFB project countries of Nigeria and Tanzania, where it has identified chicken and homestead vegetable gardens as entry points. The potential for integrating relevant biofortified crops is high as the project is only just beginning. Creating Homestead Agriculture for Nutrition and Gender Equity (CHANGE) project is being implemented by Helen Keller International and has incorporated biofortified crops, especially OFSP, into the Homestead Food Production Programme by targeting women small-scale farmers supporting the production of micronutrient-rich fruits and vegetables. One of its target countries is Tanzania. The program is being evaluated by IFPRI. CTA project with academic and research institutions. 	<ul style="list-style-type: none"> Relevant UN agencies (with FAO and WHO taking the leading role) Member states WVI HarvestPlus USAID (with Africare as the implementing partner) FANRPAN (with the Bill & Melinda Gates Foundation funding) Helen Keller International
Potential investment opportunities for nutrition-sensitive agriculture	<ul style="list-style-type: none"> FARA's leadership in AR4D in Africa and its regular interaction with regional and international agencies relevant to the biofortification agenda can facilitate the identification of potential investments in biofortification. The revised national agriculture investment plans with budgetary allocation for nutrition-sensitive agriculture. The New Alliance for Food Security and Nutrition is a G8, African government and private sector initiative launched in 2012 to promote private sector investment in agriculture. It recently appointed a coordinator, who is based at the AUC. Technologies for African Agriculture Transformation: The modalities are still being worked out. Given FARA's central role in this initiative, BNFB should advocate for biofortification to be one of the technologies to be included in this 	<ul style="list-style-type: none"> Relevant UN agencies (with FAO and WHO taking the leading role) and member states Development agencies of the G8 AU and member states African Development Bank AU/NEPAD

Focus area	Initiatives	Organizations involved
	<p>initiative so that it can tap into some of the US\$ 800 million fund set up for this program.</p> <ul style="list-style-type: none"> • The Initiative for Food and Nutrition in Africa was launched in September 2016. It aims to provide a framework for accelerating the implementation of evidence-based, nutrition-sensitive food-based approaches and public health programs and to foster a multisectoral approach. • AUC has appointed a high-level committee chaired by President Kagame of Rwanda. His brief includes the identification of domestic funding mechanisms to support Africa's development agenda. The committee will be reporting to the January 2018 Heads of State Summit. 	<ul style="list-style-type: none"> • AUC • FARA • JICA
Capacity development	<ul style="list-style-type: none"> • Developing capacity for Agenda 2063 is critical and AUC has identified the following key areas of focus during the first 10 years of implementation: individual and institutional/organizational capacity and enabling policy and legal environment. • FAO has developed some e-learning courses through an extensive consultative process on improving nutrition through agriculture and food systems that are already available online (see www.fao.org/elearning/#elc/en/courses/NFS). 	<ul style="list-style-type: none"> • Ministerial Committee on Agenda 2063 and the AUC Technical Unit for Agenda 2063 • FAO (with European Union and World Bank funding)
Scaling up	<p>The SUN Movement is an initiative established by the UN system to promote and strengthen multisectoral action for scaling up food and nutrition policy and program implementation at the country level. It has established a society for implementing science to understand and share the modalities for scaling up implementation of nutrition initiatives. Over 30 African countries, including the two project countries, are SUN 'early-risers' and benefit from regular interaction and sharing of experiences with others from across the globe (see implementationnutrition@gmail.com).</p> <ul style="list-style-type: none"> • Renewed Effort Against Child Hunger (REACH) is a combined WHO, FAO, UNICEF and WFP initiative that assists countries to take to scale proven and effective nutrition-specific and nutrition-sensitive interventions by facilitating partnerships and multi-stakeholder collaboration and cohesive multisectoral action for improved food and nutrition. • WVI, working in collaboration with HarvestPlus, plans to document the implementation process for its efforts to integrate biofortified crops into its programs and to define and develop guidance on how to scale up biofortification. • Helen Keller International implemented the Enhanced Homestead Food Production Program for over 25 years in Burkina Faso. The program established community gardens and provided seeds, tools and knowledge about good agricultural, health, hygiene and nutrition practices to mothers with children of 3–12 months. It was evaluated by IFPRI and demonstrated impact in just two years, lowering undernutrition in women and children and reducing anemia by 15%. IFPRI concluded that these results demonstrated that integrated agriculture and nutrition programs could improve the health and nutritional status of women or children and the model could be easily replicated in other countries. 	<ul style="list-style-type: none"> • Relevant UN agencies and development partners

3.4 Threats to regional policy programming and advocacy for food and nutrition, micronutrient malnutrition and biofortification

- According to the Africa HANCI (2016) report, African governments currently spend less than 1.5% of their national budgets on nutrition. Donors contribute about US\$ 5 billion, or 4% of the total development assistance, towards nutrition-specific and nutrition-sensitive interventions, as estimated by the Development Institute and the World Bank. The Symposium on Sustainable Food Systems for Healthy Diets and Nutrition convened by FAO and WHO on 1–2 December 2016 in Rome hinted at the likelihood of reductions in resource flows to Africa. It highlighted the seriousness with which developed countries were giving attention to the high disease burden attributed to poor dietary habits that had a heavy toll on their national budgets yet it could be prevented. With the pressure already mounting for the developed countries to first address their own problems, the resources made available to developing countries could soon decline.
- The problem of unhealthy diets and lifestyles clearly touches all countries in the world. The cost developed countries have to bear in terms of morbidity and mortality due to unhealthy lifestyles, including poor diets, far outweigh the costs of putting in place evidence-based preventive measures. The burden on their national budgets can no longer be ignored as their populations are also living longer.
- Changes in political leadership on both the African continent and beyond have the potential to adversely affect biofortification if it has not been enshrined in national policies and strategies. USAID, for example, has been a key player and investor in the nutrition-sensitive agriculture initiatives and food and nutrition security programs in sub-Saharan Africa through President Obama's initiative for food security in Africa. This initiative gave rise to the Feed the Future program. USAID is also a major source of funding for many of the initiatives that are currently piloting nutrition-sensitive agriculture. The post-Obama administration may take time to define its own focus for the food and nutrition security strategy for Africa and this can cause delays in disbursements of previously committed funds. Also, whether or not the new and subsequent US administrations belong to same party, the new administration might take time to develop its own niche as it tries to create a legacy.
- The fear of GMOs is real, it seems to be growing and it needs to be addressed in any advocacy strategy for biofortified crops in Africa. Several African governments have taken a stand against GMOs. Accordingly, any suspected relationship between biofortified and GMO products may result in outright rejection of even conventionally bred biofortified crops. Furthermore, farmers with the capacity to export their produce need to be assured that their entry into the European Union market will be unimpeded, since they are aware that the European Union will not import GMOs.
- The uptake of the newer and lesser known biofortified crops is slow, as the evidence and information about them slowly coming to the fore indicates. OFSP has been validated as a food-based approach to reduce vitamin A deficiency and is well known at the regional level. However, awareness about the other biofortified foods that BNFB wants to introduce such as yellow cassava, zinc and iron-rich beans and orange maize is inadequate.
- Climate change is threatening food production systems and may result in the reallocation of resources intended for nutrition-sensitive food initiatives to meet emergencies caused by droughts and floods.

4. Conclusion

While RAC was implemented at a time when food and nutrition issues were not a visible part of the regional policies or agendas, recent developments at the regional and global levels have brought nutrition to the fore in the development arena. These developments include the adoption of the Malabo Declaration (2014) by African heads of state and government, the launching of the SDGs in 2015 and of Agenda 2063, the institutionalization of nutrition-sensitive agriculture through ICN2, and the crafting of the African Regional Nutrition Strategy. The enunciated UN Decade on Nutrition (2015–2025) serves to ensure that nutrition issues remain high on the development agenda. Furthermore, mechanisms are now in place for monitoring these commitments through the HANCI framework and plans for the development of a nutrition scorecard by AU/NEPAD are at an advanced stage.

There is now a more enabling policy environment for addressing the prevailing food and nutrition problems in sub-Saharan Africa. While the policy environment is supportive of the scaling up of food-based nutrition approaches, there seems to be a lack of coherence in the relevant regional food and nutrition policies and strategies in the agriculture and health sectors. This lack of coherence does not facilitate the use of a coordinated approach that can meaningfully engage key stakeholders to work together towards improved nutrition outcomes. Furthermore, the adoption of coordinated, multisectoral action, which is essential for sustained nutrition improvement, has not taken root in regional organizations. The current institutional arrangements for food and nutrition in regional and subregional organizations do not facilitate multisectoral coordination and planning. But some countries are ahead of their regional organizations in appropriately institutionalizing food and nutrition issues. In countries such as the Gambia, Ghana, Lesotho, Malawi, Namibia, Tanzania and Zimbabwe food and nutrition issues are coordinated through separate institutions that have coordination and convening powers such as the offices of the president or vice president and national planning commissions.

There is clarity and consensus on the actions needed to reduce the prevailing nutrition problems. These actions have been categorized into nutrition-specific and nutrition-sensitive. The focus on nutrition-sensitive actions has resulted in efforts to make food systems more responsive to nutrition outcomes and renewed the attention on food-based approaches, where biofortification can be easily accommodated. Given the plethora of nutrition-sensitive agricultural interventions currently being piloted, biofortification would best be integrated into relevant ongoing efforts as opposed to being treated as a stand-alone approach, in order to facilitate its easier adoption and scaling up. This requires a carefully crafted narrative that portrays biofortification as the first choice intervention in demonstrating nutrition-sensitive agriculture. Such a narrative will also be a legitimate component of the food-based strategies that will be a part of a holistic approach to address micronutrient deficiencies.

Biofortification has been accepted as a part of food-based approaches and as a very direct mechanism for demonstrating how agriculture can respond directly to nutrition issues. Furthermore, biofortification is in the process of being institutionalized, as indicated by a recent report from the Codex Alimentarius Commission Committee meeting on nutrition and food for special dietary uses, held in December 2016. That meeting initiated discussions on how biofortification should be defined and where it should be located within the food standards arena. It was agreed that the definition of biofortification, which is under development, be placed in the *Guidelines for use of nutrition and health claims*. That development paves the way for the institutionalization of biofortification and for its definition to be included in dictionaries for reference by researchers, food manufacturers, traders and consumers. Furthermore, the definition will be used in the development of new breeds, labeling of food and development of food regulations, acts and policies.

The phase for negotiating for biofortification to be accommodated within regional and national level policy frameworks is largely over. The focus should now be on customizing the knowledge on biofortification into regional strategies and planning in a way that defines the implementation modalities. There is still work to be done in raising awareness about nutrition in general and micronutrient malnutrition in particular. Awareness campaigns about biofortified crops and their contribution to addressing micronutrient malnutrition are needed at both the regional and subregional levels. Such campaigns should provide guidance on how best to integrate the nutrient-dense biofortified crops into food production and consumption systems. The focus of advocacy at the regional level should be on sustaining the enabling policy environment, facilitating the implementation of the policies relevant to the scaling up of biofortification and translating and domesticating those policies into action plans.

The evidence on what works with respect to nutrition-sensitive agriculture and food-based approaches, what biofortification should align itself to and what can be scalable is still patchy but is slowly trickling in from the various pilot interventions that are supported by development partners. Several models are being piloted, although largely in silos with little coordination or collaboration. If these efforts could be harnessed and consolidated into cohesive action, the scaling up of their technologies would soon occur and the impact of their efforts would be visible in a shorter time frame.

The advocacy and implementation agendas for biofortification in sub-Saharan Africa benefit from the largely enabling policy environment for nutrition and should profit from the strengths and opportunities existing in the region, but should acknowledge and factor in the existing weaknesses and threats.

CAADP remains the dominant development framework through which the scaling up of biofortification will be sustained. However, the BNFB Project will need to stay abreast of how regional and subregional organizations effect their commitments to the regional and global initiatives relevant to food and nutrition. Such initiatives are Agenda 2063, the SDGs and ICN2, to which the continent is already committed. Their customization into action plans will provide an opportunity to integrate biofortification into their various activities.

The RAC experience brought to light the glaring reality that it should have adopted a holistic approach. This meant contextualizing biofortification within the broader CAADP framework in order for it to be adopted. In this regard, RAC laid a firm foundation for the BNFB Project, which expands on RAC's biofortification efforts. The findings from this situation analysis suggest that the conditions are favorable for achieving the project goal of ensuring sustainable regional advocacy for increased investment in biofortification and implementation of nutrition-sensitive agriculture in a sustainable manner. The actions proposed in the following section may serve to inform the regional agenda for the BNFB project.

5. Recommended actions

5.1 Sustaining the enabling policy environment at the regional level

- The expiry of the AU Strategic Plan in 2017 provides an opportunity to advocate for the consolidation of the prevailing policies for food and nutrition that now exist at the AU, as demonstrated by the commitments to Agenda 2063, the Malabo Declaration, the SDGs and ICN2. The new strategic plan should harness goodwill and resources associated with these commitments and provide for the institutionalization of food and nutrition. It should

acknowledge the need for cohesive, multisectoral action and overtly recognize the contribution of nutrition-sensitive agriculture in addressing micronutrient malnutrition.

- The AU/NEPAD micronutrient strategy that expired in 2013 needs to be replaced with a comprehensive micronutrient strategy for the continent. Such a strategy would need to adopt a more holistic lifecycle approach that integrates existing efforts to address micronutrient malnutrition, including supplementation, food fortification and food-based approaches. The strategy would be implemented through the existing multisectoral coordination mechanisms, bringing together such key sectors as health, agriculture and industry.
- The work of the research and academic platforms whose current efforts focus on providing evidence on how best to integrate nutrition into agriculture, e.g. the CTA and SOANO projects, should be harnessed and channeled to regional and subregional organizations and national level efforts. The identification of regional policy and competency gaps can be informed only by evidence that it generated on an ongoing basis.
- An AU strategy for nutrition-sensitive agriculture needs to be developed through a participatory process that engages the key sectors. The sectors involved should include those organizations piloting initiatives that could provide the evidence on best practices for implementation. FARA's convening powers can facilitate such consultations.

5.2 Making use of opportunities for increased investment promotion

- Investment and implementation guidelines need to be developed for all available biofortified crops. These are important tools that will facilitate the adoption of biofortified crops and their inclusion in national agriculture and food systems and investment plans.
- Investments from domestic resources in food and nutrition initiatives and food-based approaches have been negligible. There is need to advocate for a specific allocation to nutrition within the NAIP budget in order to finance food and nutrition programs at the regional, subregional and national levels.
- Since biofortification is a clear example of an intervention demonstrating the direct contribution agriculture can make in responding directly to the prevailing micronutrient problems, it should be promoted within the context of food-based approaches.
- BNFB will need to adapt its biofortification narrative to encourage investments by potential domestic investors while at the same time targeting the relevant government ministries. The annual board meeting of the African Development Bank, which is attended by government ministers, provides an opportunity that could be used to advocate for budgetary allocations to support food-based approaches within the context of NAIPs. Other regional events that bring together policy-makers from the agriculture, health, and social sector ministries that deal with school meals and social safety nets for vulnerable groups should also be targeted for advocacy to increase investment in biofortified crops' production and consumption.
- The findings from the situation analysis identified the following organizations for particular focus in advocating for increased investment in biofortification:
 - Regional and subregional organizations, i.e. AU/NEPAD, EAC, ECOWAS, ECSA, FARA and SADC;
 - Regional and subregional forums for the ministers of finance, agriculture, health, education and industry;
 - Private sector actors including food industry and farmers' organizations (Pan-African farmers' organizations and the southern and western Africa farmers' organizations);

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- New Alliance for Food and Nutrition (AUC), engaging the private sector to invest in agriculture;
 - Development partners (AfDB, CTA, DIFID, JICA, USAID and the European Union);
 - UN agencies (FAO, IFAD, UNICEF, WHO and WFP);
 - NGOs (Africare, Helen Keller International and WVI).

5.3 Strategic partnerships with existing initiatives

- BNFB should review the list of ongoing nutrition-sensitive agriculture interventions identified in this report (see Annex 7), as well as the organizations/agencies involved, and proactively seek to forge strategic partnerships with these bodies to accelerate the scaling up of biofortified crops.

5.4 Coordination of ongoing initiatives

- Many organizations are engaged in nutrition-sensitive agriculture in the various phases of the BNFB initiative, from policy formulation to implementation of pilot interventions. These efforts are largely fragmented and uncoordinated. There is need for the efforts to be harnessed and harmonized, lessons learnt shared widely and interventions scaled up quickly in order to contribute to the reduction in micronutrient deficiencies. Regional organizations such as the AU/NEPAD and FARA and RECs such as EAC, ECOWAS and SADC will need to take up this challenge.
- A clear narrative needs to be developed that shows how biofortified crops can be integrated into promising ongoing nutrition-sensitive initiatives to improve nutrition outcomes. Such a narrative would facilitate integration of biofortification into those initiatives.
- A mapping of all the models and pilots being undertaken in sub-Saharan Africa should be undertaken jointly by AU/NEPAD and FARA and a databank established from which good practices can be identified and shared. Existing AU/NEPAD, CAADP and FARA forums could be used to share the findings from these pilots. An annual forum at the Africa Agriculture Science Week can be structured to showcase these nutrition-sensitive initiatives, share lessons and knowledge, and identify emerging good practices that can be adopted for scaling up.
- AU/NEPAD and FARA need to create a database of academic and research institutions and platforms currently engaged in nutrition-sensitive agricultural research and to find a mechanism for engaging them in various ways, notably in providing evidence for ongoing efforts of promoting nutrition-sensitive agriculture, on the impact of food-based approaches including biofortification, and on health and nutrition. AU/NEPAD and FARA could also influence the adoption and scaling up of best practices.

5.5 Advocacy and knowledge sharing

- A sustained advocacy and communication strategy that focuses on raising and sustaining awareness about the food and nutrition problems facing Africa and promotes appropriate action needs to be developed. Advocating for increased investments in nutrition-sensitive agriculture and food-based approaches will become easier if policy-makers are informed on a regular basis about the consequences of inaction.
- AfDB should be a prime target for advocacy initiatives under the BNFB project with a view to influencing their lending strategies for food production projects on the continent as well as

influencing the ministers of finance to be more responsive to allocating resources to nutrition in general and to nutrition-sensitive agriculture.

- Advocacy material that is dovetailed to speak to the organizations targeted to generate investments for biofortification should be developed for use by champions and for extensive dissemination at relevant regional forums. Investment and implementation guides for all the biofortified crops will be a key component of the material needed to promote investments in biofortified crops.
- There is need to appoint champions or advocates for biofortification and equip them with advocacy material and tools to enable them to campaign for increased investments in biofortification and to facilitate its scaling up.
- BNFB needs to work with existing advocacy mechanisms and newly established advocacy platforms for nutrition, such as the Graca Machel Trust and the African Leaders for Nutrition forum, which will operate under the auspices of the African Development Bank. The AU has appointed a nutrition champion, the king of Lesotho.
- The newly established CAADP knowledge platform could be a mechanism for sharing information about biofortification. The proposed D-Group for biofortification should consider establishing strategic links with that platform and others on nutrition-sensitive agriculture that exist.
- A mechanism for regular sharing of information on good practices for nutrition-sensitive agriculture and biofortification needs to be developed. It can build on existing knowledge platforms for food and nutrition such as the CAADP knowledge platform and nutrition-sensitive agriculture platforms such as those under IFPRI and FAO. In addition, existing regional and subregional forums such as AU summits and CAADP partnership platforms can be encouraged to host a regular side event on biofortification to facilitate knowledge and information sharing and biofortification scaling up.
- A strategy for increasing awareness among policy-makers on food and nutrition in general and micronutrient malnutrition needs to be developed and sustained so that the decision on commitment to nutrition-sensitive agriculture is informed by an understanding of the problem and its consequences on Africa's development.
- The BNFB project can facilitate demand creation for increased production and consumption of biofortified crops by (1) advocating for the use of biofortified crops in the home-grown school feeding program and social protection schemes that distribute food commodities; (2) including biofortified crops in national dietary guidelines that are currently being developed in countries with support from FAO; (3) promoting biofortification as an initiative that provides an obvious and direct link between nutrition and agriculture; and (4) aligning its communication strategy with existing community-based behavior change communication strategies or developing one where it does not exist.

5.6 Strengthening the evidence base to support biofortification scaling up and to measure the impact of biofortification on micronutrient status

- Existing academic and research platforms in the region such as those supported by the SUN Movement and CTA should be included in the proposed mapping exercise and be affiliated to regional and subregional organizations such as AU/NEPAD and FARA. They should facilitate the acquisition of the evidence needed to measure impact and to facilitate scaling up of biofortification. Research should also encompass product development and value addition for the biofortified crops in order to increase the demand for their production and consumption.

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- Information on food-based approaches and production and consumption of nutrient-dense foods, including biofortified crops, needs to be included in the mainstream data collection processes. The indicator for the minimum dietary diversity for women of reproductive age should be actively promoted as the measure for dietary diversity and micronutrient adequacy of the diet consumed. This would ensure sustained evidence gathering that could facilitate scaling up of biofortified crops in an informed way.
 - Reliable and cost-effective micronutrient assessment methods, especially for vitamin A, should be developed to facilitate regular monitoring of micronutrient status and assessment of the impact of interventions, including biofortification. Such assessment of micronutrient status, especially where it demonstrates the impact of the interventions, will serve to help increase investments in micronutrient interventions.

5.7 Broad strategic areas on which to ground the regional advocacy strategy to support BNFB objectives

The advocacy strategy envisaged for BNFB has the benefit of operating in an environment that is now much more familiar with the prevailing food and nutrition issues than was the case previously. Food-based approaches and nutrition-sensitive agriculture have now been embraced, and that will facilitate the integration of biofortified crops. There are also more players involved that can be harnessed into sustainable and effective partnerships to accelerate the scaling up of biofortified crops. The advocacy focus can now comfortably target issues pertaining to the implementation of biofortification interventions, given that an enabling policy environment is in place. But the modalities to implement the interventions are lacking or are inadequate. Advocating for increased investment in food-based approaches and biofortification makes more sense now that the relevant policy and strategy documents incorporate texts that can be interpreted as including biofortification. Furthermore, more tools such as learning materials, investment guidelines and communication materials are now available. These tools were developed for OFSP and can be adapted for other biofortified crops and used to facilitate advocacy for and scaling up of biofortified crops.

A regional advocacy strategy for the BNFB Project will need to take into account the unfinished agenda of the RAC Project and some of the key lessons learnt. It may be necessary to start where RAC ended, knowing that it had just begun to make inroads into influencing regional policies and strategies. A review of the RAC regional advocacy strategy (2013) shows that some of the actions it proposed have relevance today and could still be implemented under the BNFB Project. Building on and rekindling the momentum built by the RAC Project may be facilitated by continuing to engage the champions who are still available and working in positions in regional institutions that are relevant to biofortification. Table 3 highlights the issues to be advocated for and the implementation modalities for the advocacy efforts in fulfilling the objectives of the BNFB Project. There are three broad strategic areas of focus: regional policy and strategy, increased investments in food-based approaches, and scaling up.

Table 3: Strategic areas on which to ground the formulation of a regional advocacy strategy to support BNFB objectives

Focus area	Issues to be advocated for	Implementation modalities
Regional policy and strategy	<ul style="list-style-type: none"> Regional policy and strategy coherence and institutional arrangements that facilitate multisectoral response to the prevailing food and nutrition issues. Sustained food and nutrition awareness of relevant policy-makers to take up their leadership role in directing this important agenda. The development by the AU/NEPAD and RECs of a comprehensive strategy for addressing micronutrient malnutrition through food-based approaches that include biofortification to address the current fragmented nature of the continental and regional bodies' response to micronutrient malnutrition. Mainstreaming of biofortification issues in the second generation regional and national agricultural investment plans. Stimulating policies and mechanisms for cross-sector interventions on biofortification that involve e.g. agriculture, nutrition and health sectors. 	<ul style="list-style-type: none"> Take advantage of the prevailing enabling environment (Agenda 2063, Malabo Declaration, SDGs, ICN2 and the UN Decade) to develop a communication strategy. Creative use of champions identified in key institutions, with FARA taking the leading and convening role. Use of high level champions such as the Africa Leaders for Nutrition and the king of Lesotho to advocate for policy coherence. Pan-Africa Parliament to be targeted so that its parliamentarians can influence member states appropriately. A possible AUC/ NEPAD, CIP, FARA and HarvestPlus meeting to craft a comprehensive strategy to address micronutrient deficiency through biofortification and advocate for its integration into the revised AU Strategic Plan. The current plan will expire in 2017.
Increased investment in food-based approaches	<ul style="list-style-type: none"> Identification of domestic resources for food and nutrition in general, riding on the current efforts of the AU to find sustainable mechanisms to support its work by identifying domestic resources. Meaningful and regular joint engagement of policy-makers in the agriculture, health and finance sectors. Incorporation of food-based approaches, including biofortification, in national agriculture investment plans for increased resource allocation from national budgets. Meaningful engagement of the private sector such as farmers and the food industry and advocacy for the production and use of biofortified crops. 	<ul style="list-style-type: none"> Develop clear a narrative on biofortification and frame the issues so that it is easy to integrate biofortified crops into the prevailing nutrition-sensitive agriculture initiatives. FARA's role in CAADP and its power to convene policy-makers relevant to nutrition-sensitive and food-based approaches could facilitate advocacy for increased investments in food-based approaches to address micronutrient deficiencies. Develop and disseminate investment and implementation guides for biofortified crops to facilitate their adoption and action at the country level. Participate in the annual board meetings of the African Development Bank and advocate to the ministers of finance.
Scaling up	<ul style="list-style-type: none"> Demand creation for biofortified crops among farmers and consumers and new initiatives such as the home-grown school feeding programs and food-based social safety net programs. Accelerated development of food-based guidelines by countries to inform the selection of healthy diets that include biofortified crops. Regular sharing of knowledge being generated from the nutrition-sensitive agriculture pilot programs to facilitate the scaling up of biofortification. 	<ul style="list-style-type: none"> Accelerate efforts on consumer education and awareness about food and nutrition in general, including micronutrient malnutrition and how it can be addressed through food-based approaches. Existing and relevant forums such as CAADP partnership platforms and FARA and REC forums should be used to facilitate information sharing on food-based approaches and nutrition-sensitive agriculture initiatives. The research and academic platforms that have been established under the SUN Movement and through a European Union funded CTA program that is supporting such institutions to provide evidence for policy-makers on nutrition-sensitive agriculture should be meaningfully engaged to join in this initiative, perhaps through FARA.

References

FAO. (2011). Combating micronutrient deficiencies: food-based approaches.

FAO. (2014). Improving diets and nutrition: food-based approaches.

FAO. (2016). Compendium of indicators for nutrition sensitive agriculture.

FAO. (2016). Regional overview of food security and nutrition: the challenges of building resilience to shocks and stresses.

FAO and ILSI. (1997). Preventing micronutrient malnutrition: A guide to food-based approaches. A manual for policy makers and programme planners. ISBN 0-0944398-89-8.

FAO/WHO. (2016.) Proposed draft definition for biofortification: Joint Standards Programme, CODEX Committee on Nutrition and Foods for Special Dietary Uses. 5–9 December 2016.

Global Panel on Agriculture and Food Systems for Nutrition. (2016). Food systems and diets: facing the challenges of the 21st century. London, UK.

HANCI. (2016). Hunger and Nutrition Commitment Index Report on Africa. Available at <http://www.hancindex.org/>.

Mbabu, A., Munyua, H., Mulongo, G., David, S. and Brendin, M. (2015). Learning the smart way: lessons learnt by the Reaching Agents of Change Project. International Potato Center, Nairobi, Kenya.

Annexes

Annex 1: Terms of reference for the assignment

Assignment title

To conduct a situational analysis of regional investments, policies, legislation, and advocacy efforts on food-based approaches to combating micronutrient deficiency in sub-Saharan Africa

Introduction

The Forum for Agricultural Research in Africa (FARA) is the apex organization bringing together and forming coalitions of major stakeholders in agricultural research for development (AR4D) in Africa. FARA plays advocacy, coordination, and intermediation roles within the integrated agricultural research for development (IAR4D) framework, thereby facilitating the development, promotion, and adoption of improved agricultural processes, technologies and policies. In so doing, FARA adds value to the mandated functions of the national agricultural innovation systems (NAIS); regional agricultural education, extension and research organizations; and international agricultural research centers (IARCs) to deliver transformative solutions to Africa's agricultural challenges.

The IAR4D framework espoused by FARA has had positive outcomes in integrating productivity research with other thematic areas such as markets, policy, natural resources management, gender, product development, and nutrition. Since its establishment in 2002, FARA has developed (through consultation with stakeholders) and supported the implementation of a number of continental initiatives in the areas of agricultural research capacity development, agribusiness incubation, ICT-based delivery of agricultural information and knowledge, climate-smart agriculture, and multi-stakeholder processes that strengthen the NAIS.

FARA's Strategic Plan (2014–2018) recognizes nutrition as a key cross-cutting issue and recommends measures to provide guidance to policy-makers and program managers on the selection and design of effective agricultural interventions that strengthen the nutritional security of vulnerable population segments in African countries. Similarly, the Science Agenda for Agriculture in Africa (S3A) elaborated by FARA and stakeholders in response to NEPAD's 'Sustaining the CAADP Momentum' drive provides for improvement of nutritious foods and enrichment of micronutrient levels in crops through breeding and soil health management.

FARA has received a grant from the Building Nutritious Food Baskets Project towards the implementation of policy engagement and advocacy on biofortification at regional level. FARA intends to use part of the proceeds to engage an individual consultant to conduct the situational analysis.

The Building Nutritious Food Baskets (BNFB) project is testing a model to scale up biofortified crops for nutrition security initially in Nigeria and Tanzania. The three-year project builds on the achievements, successes, and scaling up approaches of the Reaching Agents of Change (RAC) project and broadens its focus from OFSP, promoted under RAC, to a multi-crop or 'food basket' approach consisting of biofortified iron beans, pro-vitamin A (orange) maize, quality protein maize (QPM), OFSP, and yellow cassava.

The goal of the BNFB project is to help reduce hidden hunger by catalyzing sustainable investments in the utilization of biofortified staple crops at scale in Nigeria and Tanzania. The purpose is to demonstrate how this can be achieved through structured partnerships involving a range of CGIAR

centers and programs as well as sub-national, national, regional, and international stakeholders. The partners will leverage on proven strengths to deliver on specific project aspects (i.e. advocacy, policy development, nutrition education, and behavior change communication) thereby jointly contributing to demand creation, strengthened capacities, and institutionalized learning needed to take multiple biofortified crops to scale. The project has two specific objectives: (1) to strengthen the enabling environment for investments in biofortified crops; and (2) to strengthen institutional and community capabilities to produce and consume biofortified crop.

The project engages a range of six mutually complementing partners, viz: the International Centre for Tropical Agriculture (CIAT); the International Maize and Wheat Improvement Centre (CIMMYT); the International Potato Centre (CIP); the International Institute of Tropical Agriculture (IITA); HarvestPlus; and the Forum for Agricultural Research in Africa (FARA). FARA's role in the project is policy engagement and advocacy at the regional level.

Accordingly, the Forum for Agricultural Research in Africa (FARA) is seeking to engage an experienced individual consultant to conduct a situational analysis of regional investments, policies, legislation, and advocacy efforts on food-based approaches to combating micronutrient deficiency in sub-Saharan Africa.

Objectives

- To provide a snapshot of regional and sub-regional policies, investment processes and frameworks that support biofortification, and organizations implementing various nutrition-sensitive initiatives.
- To provide information and data needed to ground the regional advocacy strategy and capacity development plans for advocacy champions.
- To identify on-going initiatives that BNFB can add value to and recommend necessary actions on issues affecting the scaling up of biofortified crops in sub-Saharan Africa.

Scope

The consultant will work closely with FARA and the other BNFB partners to execute the following specific tasks:

- Analyze the extent to which biofortification is prioritized in regional and sub-regional policies, strategies, investment plans and budgets. This would include an analysis of the extent to which there is an enabling environment for scaling up the production and consumption of biofortified foods, including the promotion of positive social norms and behaviors, organization of services, and institutional capacities at regional and sub-regional levels.
- Analyze regional and sub-regional policies and funding priorities as far as nutrition-sensitive agriculture and biofortification are concerned.
- Identify relevant lessons, experiences and success stories in regard to advocacy on scaling up biofortified crops in SSA; for example, the success of OFSP scaling up in Rwanda.
- Use available data and other information to accurately identify key regional, sub-regional and international organizations and initiatives involved in addressing micronutrient malnutrition challenge through nutrition-sensitive agriculture as well as scaling up biofortified crops.

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- Identify and analyze the barriers and bottlenecks in regional and sub-regional nutrition policies, strategies, investment plans and programs that support nutrition-sensitive agriculture including biofortification.
 - Assess the current investment patterns in addressing the micronutrient challenge through food-based approaches including biofortification by key regional, sub-regional and international organizations and initiatives and identify main donors to approach for increased advocacy and investments in biofortification.
 - Identify policy and competency gaps that must be addressed in order to facilitate active participation of regional and sub-regional organizations and champions in advocacy to achieve BNFB objectives.
 - Prioritize interventions such as advocacy and promotional activities and policy review that need to be implemented.

Outputs and deliverables

The following outputs are expected from the consultant:

- Inception report detailing the approaches and methodology of the study, list of stakeholders proposed to be consulted/interviewed, interview guide, initial literature review and work plan. The report shall also include a proposed outline for the final report to be presented to the project management team.
- First draft of situational analysis and strategy report. This report shall be submitted to FARA and be sent to the BNFB Project team and relevant stakeholders for review and comments.
- Presentation of draft report for validation by stakeholders.
- Final report.

Annex 2: Documents reviewed

Achieving nutrition outcomes through agriculture and food systems in West Africa. A publication in the Framework Regional Projects GCP/RAF/476 and 477GER. Available at <https://www.scribd.com/document/326235019/ECOWAP-10-years-pdf>

African Regional Nutrition Strategy (2015–2025). Available at https://au.int/sites/default/files/pages/32895-file-arns_english.pdf

African Union Commission (AUC) Strategic Plan (2014–2017). Available at https://au.int/sites/default/files/pages/32028-file-the_au_commission_strategic_plan_2014-2017.pdf

Agenda 2063: The Africa we want – first ten-year implementation plan (2013–2023). Available at <http://www.un.org/en/africa/osaa/pdf/au/agenda2063-first10yearimplementation.pdf>

Agenda 2063: The Africa we want– A Shared Strategic Framework for Inclusive Growth and Sustainable Development (2015). Available at <https://www.tralac.org/news/article/9370-agenda-2063-first-ten-year-implementation-plan-2014-2023.html>

Building Nutritious Food Baskets annual report (November 2015–November 2016).

FARA Strategic Plan (2014–2018). Available at faraafrica.org/about-fara/strategic-plan/

Global Nutrition Report: Africa brief; Actions and Accountability (2015). Available at <https://www.globalnutritionreport.org/files/2015/11/GNR2015-Africa-Brief1.pdf>

Malabo Declaration (2012). Available at <https://au.int/en/documents/31247/malabo-declaration-201411-26>

Micronutrient Initiative: Working for a world free of hidden hunger. Strategic Plan (2013-2017).

RAC Regional Advocacy Strategy (2013). Available at http://www.sweetpotatoknowledge.org/wp-content/uploads/2016/02/Advocacy-Strategy-and-Implementation-Plan-24_07-Mozambique.pdf

RAC Situation Analysis (2011). Available at <http://www.sweetpotatoknowledge.org/files/regional-situation-analysis-rac-project-2/>

Rome Declaration on Nutrition; 2nd International Conference on Nutrition. Rome (2014). Available at <http://www.fao.org/3/a-ml542e.pdf>

SADC Regional Agriculture Policy and Food and Nutrition Strategy (2015–2025). Available at <http://www.nepad.org/content/sadc-food-and-nutrition-security-strategy-2015-2025>

Annex 3: Key informants interviewed

Angeline Munzara, World Vision Livelihood and External Engagement Advisor, SARO Region, South Africa

Anna Lartey, Director, Nutrition, FAO

Bibi Giyose, FAO (RAC champion)

Doreen Marandu, ECSA Programme Officer, Food Security and Nutrition

Dr Adelheid Onyango, Regional Advisor Nutrition, WHO Regional Office for Africa, Brazzaville

Dr Dolf Te Lintelo, Co-Leader, HANCI, IDS, Sussex University, UK

Dr Mawuli Sablah, FAO Africa Regional Office in Ghana

Hilda Munyua Munyua, PhD, BNFB Project Manager

Izatou Jallow, Senior Advisor to CEO NEPAD, on Secondment from WFP

Ishmael Sunga, Chief executive Officer, Southern African Confederation of Agricultural Unions

Jacqueline Kung'u, Micronutrient Initiative, Regional Advisor on M&E in the Nairobi Regional Office

Juliane Friedrich, Senior Technical Specialist, Nutrition policy and technical Advisory Division, IFAD

Kefilwe Moalosi, Nutrition Programme Officer NEPAD

Laila Lokosang, CAADAP Advisor, Food and Nutrition and Senior Advisor, Department of Rural Economy, AUC

Lindiwe Sibanda, FANRPAN Executive Director

Mohammed Ag Benedict, FAO

Nalisheebo Meebelo, Senior Coordinator, New Alliance for Food and Nutrition, AUC

Nelson Ojijo (formerly at FARA)

Professor Tola Atinmo, University of Ibadan

Professor Francis Zotor, President of the African Nutrition Society

Rudo Kwaramba, World Vision Regional Leader, SARO Region, South Africa Office

Sonii David, FAO (former RAC Project Manager)

Tijan Jallow, Lead Consultant, Agenda 2063, AUC

Tumaini Mikindo, Executive Director, Partnership for Nutrition in Tanzania (PANITA)

Annex 4: Institutions reviewed

- AU NEPAD
- COMESA
- FARA

Regional economic communities

- ASARECA
- EAC
- ECSA
- ECOWAS
- FANRPAN
- SADC

CGIAR

- CIP
- HarvestPlus

Development agencies

- African Development Bank
- Bill & Melinda Gates Foundation
- CTA
- DIFID
- IDS
- USAID

UN Agencies

- FAO
- IFAD
- UNICEF
- WFP
- WHO

International NGOs

- Africare
- Helen Keller International
- WVI

Advocacy organizations

- Graca Machel Trust
- NEPAD/Institute of Development Studies (Hanci)
- Partnership for Nutrition in Tanzania

Annex 5: Events of relevance to biofortification attended by the consultant

Event	Relevance to biofortification
African Nutrition Epidemiology Conference (ANEC VII), Morocco, 9–14 October 2016	<ul style="list-style-type: none"> Presented a poster on the BNFB Project and distributed advocacy materials. Identified and interviewed four potential champions for the BNFB project, who were Professor Francis Zotor, President of the African Nutrition Society; Professor of nutrition Tola Atinmo, University of Ibadan; Jacqueline Kung'u, Micronutrient Initiative Regional Advisor on M&E in the Nairobi Regional Office; and Dr Mawuli Sablah of the FAO Africa Regional Office in Ghana. Learnt of the following new initiatives: <ul style="list-style-type: none"> Micronutrient Initiative's (MI) new strategic direction towards integrating biofortification into its programming, and has appointed a staff member specifically for that program to be based in their Nairobi regional office. One of their focus countries for biofortification was to be Tanzania; Society for Implementation Science for Nutrition (SISN) was established to support the scaling up of nutrition initiatives under the SUN Movement; EVIDENT, a project that is being undertaken by four universities in Africa to provide evidence to improve decision-making on food and nutrition by policy-makers.
African Day for Food and Nutrition Security, Ghana, 26–28 October 2016	<ul style="list-style-type: none"> Facilitated a meeting with a focal person for the BNFB Project and with other strategic and key informants such as former RAC champions from COMESA, AU/NEPAD and FAO; staff from the Ghana's Ministry of Agriculture who were involved in the RAC project, and the director of FANRPAN, and got an update on the Agriculture to Nutrition project. Participated in a side event embracing biofortification in national and regional agriculture and nutrition policies and strategies that was organized by FARA. The event served to confirm AU and FARA's commitment to nutrition in general and biofortification in particular. Global support for biofortification was confirmed also at the side event hosted by the Global Panel for Food and Nutrition, which also launched <i>The foresight report</i>.
FAO International Symposium of Sustainable Food Systems for Health and Nutrition, Rome, 1–2 December 2016	<ul style="list-style-type: none"> In line with the goals of the UN Decade for Nutrition, investment in nutrition-sensitive agriculture was included amongst the recommended actions towards sustainable food systems for improved health and nutrition. The meeting provided an opportunity to meet with individuals associated with RAC such as its former manager, Sonii David, and the former NEPAD RAC champion, Bibi Giyose, both of whom are now based at the FAO headquarters in Rome.
HANCI Technical Review Workshop, Johannesburg, 26–28 January 2017	<ul style="list-style-type: none"> Provided current statistics on the food and nutrition situation in Africa, as well as on how the two BNFB countries of Nigeria and Tanzania are ranked in terms of their commitment to reducing hunger. Identified other organizations involved in nutrition advocacy that BNFB could align itself with such as the Graca Machel Trust and PANITA, the civil society platform for the SUN Movement in Tanzania.

Annex 6: Document review and interview guides

Document and literature review guide

Document reviewed	Summary of key issues relevant to biofortification with respect to: advocacy, policy, program implementation, investments, and scaling up
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Organization review guide

Organization reviewed	Organizational mandate (Strategic focus, objectives and target)	Potential for accommodating/integrating biofortification (policy, strategy, implementation, investment)
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Global and regional initiatives review guide

Initiative reviewed	Objectives and focus of the initiative	Potential for accommodating biofortification and advocacy elements needed to facilitate institutionalizing biofortification within the initiatives (policy, strategy, implementation, investment)
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Annex 7: Ongoing global and regional initiatives with which BNFB can be aligned

Initiatives	Key focus of the initiative and its potential to promote biofortification	Lead agency
Malabo Declaration	African governments' commitments and targets set to reduce food insecurity and malnutrition and mechanisms for monitoring progress.	AU/NEPAD
CAADP	Integration of nutrition into national agriculture investment plans.	AU/NEPAD
African Regional Nutrition Strategy	Outlines AU's role in the elimination of hunger in Africa, was informed by the 2014–2017 AU Strategic Plan, and reflects AU Agenda 63 (the Africa We Want).	AU/NEPAD
Grow Africa Partnership	Grow Africa was established by AU/NEPAD and the World Economic Forum in 2011, and is hosted at the NEPAD Secretariat. Its main purpose is to mobilize and increase private sector investment in agriculture by accelerating investments in NAIPs and agricultural transformation on the continent. Grow Africa's funding partners include USAID, UK Aid Direct and the Swiss Agency for Development Cooperation. There is potential for influencing the private sector investment portfolio in agriculture to include biofortified crops.	AU/ NEPAD
Agriculture to Nutrition Project	The aim is to improve nutrition outcomes of smallholder farmers through nutrition-sensitive agriculture programs through the 1000 days window of opportunity. Its focus countries for the project are Ethiopia, Uganda, Ghana, Tanzania and Nigeria. In Tanzania and Nigeria the project has identified chickens and homestead vegetable gardens as the entry points, and the potential for integrating biofortified crops is high.	FANRPAN
Initiative for Food and Nutrition in Africa (IFNA)	IFNA provides a framework for accelerating implementation of evidence-based, nutrition-sensitive, food-based approaches and public health programs that foster a multisectoral approach.	NEPAD/JICA
African Leaders in Nutrition	African Leaders in Nutrition is a high level panel of leaders advocating for nutrition improvement under the auspices of AfDB and AUC	AfDB, AU
SUN Movement	SUN Movement promotes and strengthens multisectoral action for food and nutrition policy and program implementation at the country level, and has over 30 African countries as members including the BNFB target countries, Nigeria and Tanzania.	UN, AU/NEPAD
SPRING	SPRING aims for nutrition-sensitive agriculture, improving policy environment for the delivery of effective nutrition interventions, and increasing community demand for nutrition services through behavior change communication, all towards attaining reductions in stunting, anemia and aflatoxin	USAID
Feed the Future	Mwanzo Bora, a USAID-funded program implemented by Africare in Tanzania to reduce stunting and anemia through the strategy for social and behavior change communication.	USAID, Africare
2025 Compact	This initiative brings stakeholders together to set priorities, innovate and learn by establishing innovation labs and conducting pilots, build on successes and share lessons by evaluating pilots to assess their impact, in order to accelerate progress by scaling up best practices. The current focal countries in Africa are Malawi, Ethiopia and Rwanda. There is potential to include biofortified crops in the pilots being tested and to advocate for expansion of the target countries.	IFPRI in partnership with CARE, IFAD, WFP, the European Union, Helen Keller International
Global Panel on Agriculture and Food Systems for Nutrition	An independent group of influential experts with a commitment to ensure that agriculture and food systems support access to nutritious foods at every stage of life, working through high level advocacy.	Bill & Melinda Gates Foundation, UK Aid Direct
Cost of Hunger in Africa	Reveals the social and economic consequences of child undernutrition and is a powerful advocacy tool to influence policy-makers to renew their commitment to nutrition and to see it as a national development issue.	WFP, AU/NEPAD
United Nations Decade for Nutrition (2016–2025)	A UN-wide, member driven global collective effort to set, track and achieve SMART policy commitments to end all forms of malnutrition within the SDG agenda and framed by the Rome Declaration on Nutrition. One of its pillars is sustainable food systems for healthy diets.	UN (FAO, WHO as leads) AU/NEPAD, member states
Technologies for Agricultural	FARA's central role in this initiative augers well for the incorporation of biofortification as a technology that has the potential to transform Africa's	AfDB, FARA

Initiatives	Key focus of the initiative and its potential to promote biofortification	Lead agency
Transformation	agriculture in a manner that directly influences nutrition and health outcomes.	
Biofortification Project	This is still in the pipeline and a project coordinator has only been recently appointed, based in the Nairobi office. The potential to influence its implementation modalities through appropriate advocacy is high.	Micronutrient Initiative
New Alliance for Food Security and Nutrition	A G8, African governments and private sector initiative launched in 2012 and now has a coordinator sitting at AUC.	Development agencies of G8 member states
Renewed Efforts Against Child Hunger (REACH)	A joint UN agency initiative (WFP, FAO, UNICEF, WHO, IFAD) established to assist governments of countries with a high burden of child and maternal undernutrition to accelerate the scaling up of food and nutrition actions. REACH supports the strengthening of national multisectoral action and serves to coordinate UN agency support to nutrition. Tanzania has a REACH initiative. The regional REACH facilitator based in Nairobi could facilitate the development of a narrative that addresses micronutrient malnutrition holistically and integrates all the existing micronutrient interventions (supplementation, fortification and food-based approaches, where biofortified crops are an integral component).	FAO, UNICEF, WFP, WHO, IFAD

Building Nutritious Food Baskets

The Building Nutritious Food Baskets: Scaling up Biofortified Crops for Nutrition Security seeks to reduce hidden hunger by catalyzing sustainable investment for the production and utilization of biofortified crops (Orange-fleshed sweetpotato (OFSP); vitamin A (yellow) cassava, vitamin A (orange) maize and high iron/zinc beans) at scale. The project is implemented in **Nigeria** and **Tanzania**, to demonstrate how biofortified crops can be scaled up through a multi-crop ("food basket") approach. BNFB draws on complementary expertise for scaling up through a partnership between CGIAR centers and programs, regional organizations and other public and private sector agencies to create a movement that will eventually reach the target populations. BNFB's hypothesis is that scaling up is dependent on supportive policy environment, strong institutional capacities and availability of proven technologies.

