



GOVERNMENT OF UGANDA

Priority Actions for Strengthening Institutionalization of the Food Fortification Program

June 2023

Table of Contents

Acknowledgements	iii
Executive Summary.....	v
1.0 Background	1
1.1 Objectives.....	2
1.2 Approach	2
2.0 Summary of Findings	3
2.1 The Link between Institutional Work Plans and Budgets with the NDP III.....	3
2.2 Food Fortification Interventions in NDP III.....	3
2.3 Food Fortification-Related Actions, Indicators, and Budgetary allocations in NDP III.....	4
2.4 Proposed Food Fortification-Related Priority Activities for MDAs.....	6
3.0 Proposed Sustainability Matrix.....	9
3.1 Conclusion	10
References	11
Annex 1. Priority Actions to strengthen Institutionalization of the Food Fortification Program	12

Acknowledgements

The Government of Uganda (GOU) would like to acknowledge the support of USAID Advancing Nutrition in the consolidation of this document.

Acronyms

CSOs	Civil Society Organizations
FACT	Fortification Assessment and Coverage Tool
GOU	Government of Uganda
IPs	implementing partners
MAAIF	Ministry of Agriculture, Animal Industry, and Fisheries
MDA	Ministries, Departments, and Agencies
MINIMOD	Micronutrient Intervention Modeling
MOES	Ministry of Education and Sports
MOGLSD	Ministry of Gender, Labour and Social Development
MOH	Ministry of Health
MTIC	Ministry of Trade Industry and Cooperatives
NARO	National Agricultural Research Organisation
NDA	National Drug Authority
NDP	National Development Plan
NITA-U	National Information Technology Authority-Uganda
NPA	National Planning Authority
NWGFF	National Working Group on Food Fortification
OPM	Office of the Prime Minister
PIAP	Program Implementation Action Plan
PPDA	Public Procurement and Disposal of Public Assets Authority
PSFU	Private Sector Foundation Uganda
PWG	Program Working Groups
RUTF	Ready to Use Therapeutic Food
SPRING	Strengthening Partnership, Results and Innovations in Nutrition Globally
TOR	Terms of Reference
UBOS	Uganda Bureau of Statistics
UDHS	Uganda Demographic and Health Survey
UHS	Uganda Harmonized Integrated Survey
UNBS	Uganda National Bureau of Standards
UNHS	Uganda National Household Survey
UNPS	Uganda National Panel Survey
URA	Uganda Revenue Authority

Executive Summary

Large-scale food fortification (LSFF) is an evidence-based and cost-effective system-level intervention that has the potential to improve diets and nutrition. LSFF entails improving the nutrient content of regularly consumed staple foods and condiments during the industrial processing stage. It provides a safety net for essential vitamins and minerals, protecting households and families when they are unable to afford or access a diverse diet (USAID 2022).

Several countries have adopted the LSFF program to address the growing burden of micronutrient deficiencies, which are a public health problem. In Uganda, twenty-two percent (22 percent) of children aged 6–59 months suffer from iron deficiency anemia. Vitamin B12 depletion among women of reproductive age (15–49 years) is relatively high at 29 percent (UBOS 2018/19). In a bid to address this problem, the Government of Uganda (GOU) adopted the industrial food fortification program starting with the salt iodization program in 1993. This was followed by the issuance of the voluntary (GOU 2005) and mandatory (GOU 2011) fortification regulations for edible oils and fat, wheat flour, and maize flour. The GOU continues to demonstrate commitment to institutionalize and up-scale the implementation of industrial food fortification program alongside other complementary interventions like; dietary diversification, bio-fortification and vitamin A supplementation using a multisectoral approach. To strengthen the implementation of these programs, a Food Fortification Regulatory Framework was put in place, together with a coordination mechanism that aims to synchronize the public and private sector contributions to the program. Efforts have been made to integrate food fortification into national development planning, budgeting, implementation and reporting frameworks—including the recent Third National Development Plan (NDP III)— where food fortification is cited as a key intervention to address micronutrient deficiencies under the human capital development and agro-industrialization programs. In addition, Uganda has demonstrated effective national coverage of iodized salt (99 percent) and vitamin A fortified edible oils (82.6 percent) at the household level evidenced by the results of Uganda National Panel Survey, UNPS (UBOS 2018/19). These promising results are attributable to several factors among which is the existence of a functional public-private partnership demonstrated through the multi-sectoral National Working Group on Food Fortification (NWGFF)—an advisory and coordination body for food fortification initiatives in Uganda. Despite this progress, prioritization of the food fortification activities and sustainable financing, particularly among public sector entities, remains a challenge. This has consistently hampered the effective implementation and institutionalization of the food fortification program.

To address this, the Ministry of Health (MOH), with support from USAID Advancing Nutrition, held a meeting on October 26, 2022 with other government ministries, departments and agencies (MDAs), the private sector, and implementing partners on the NWGFF, where they:

1. mapped the current food fortification interventions and indicators in the NDP III,
2. outlined the food fortification priority activities and indicators by MDAs for integration in institutional annual work plans,
3. highlighted the provisional budgetary allocation for food fortification activities in the NDP III for fiscal year (FY) 23/24 and FY24/25
4. proposed a sustainability matrix that weighed MDA priorities to facilitate institutionalization of the food fortification program.

The food fortification priorities included in this report were documented from the following institutions: Ministry of Health; Ministry of Education and Sports (MOES); Ministry of Trade, Industry and Cooperatives (MTIC), Ministry of Gender, Labour and Social Development (MOGLSD), National Planning Authority (NPA), Uganda National Bureau of Standards (UNBS), Uganda Revenue Authority (URA) and Uganda Industrial Research Institute (UIRI). Examples of the prioritized

activities for FY 23/24 and FY 24/25 across MDAs include, but are not limited to, development and dissemination of national the school feeding policy; review and harmonization of the food fortification regulatory frameworks; profiling and dissemination of strategic information on fortification such as tax regimes and incentives; and updating relevant food fortification standards/technical guidelines and certification of fortified products against existing national standards. A review of the NDP III indicated that only the Ministry of Education and Sports (MOES) and MOH had budgetary allocation to a tune of Uganda Shillings (Ugx) 500,000,000 and 200, 000,000 respectively for FY 23/24 and FY 24/25 for specific food fortification activities in the Program Implementation Plan (PIAP). Our engagements with institutions like UNBS and URA revealed that food fortification activities like product certification and import clearance are part of their routine activities.

At the request of the NWGFF, USAID Advancing Nutrition provided technical and logistical support to the MOH to hold a follow-on meeting in February 2023 of all stakeholders in the fortification program, where a detailed review of Uganda’s food fortification program over the past two decades was conducted. Existing national documents and other relevant food fortification resources were shared with the participants at this meeting—including the UNPS 2018/19 findings, the national food fortification strategy, USAID guidelines for LSFF, results from the Strengthening Partnership, Results and Innovations in Nutrition Globally (SPRING)-supported cost study on maize flour fortification, the capacity strengthening plan of the NWGFF, NDP III, and other sector-specific reports. These documents were used to develop a sustainability matrix intended to guide future investments for food fortification in Uganda. The proposed sustainability matrix covers six main domains related to food fortification: policy and planning; quality assurance and quality control; production and processing; monitoring, evaluation, and learning; marketing and promotion; and research and innovation. The matrix also details short-term (over the next 2 years)¹, mid-term (over the next 5 years) and long-term (over the next 10 years and beyond) priorities of the MDAs, and identifies lead agencies alongside public and private sector partners to facilitate implementation of the prioritized activities.

¹ Based on timelines of the current and future National Development Planning Cycles

I.0 Background

Micronutrient deficiencies, including deficiencies of iron, folate, vitamin A and B12, zinc, and iodine remain a major public health problem in Uganda and can lead to significant morbidity and mortality, including impaired immunity, physical and mental developmental defects, decreased growth, and death, non-pregnant and pregnant women of reproductive age (aged 15–49 years), and young children are at high risk for micronutrient deficiencies (Stevens 2022). Deficiency of at least one of three (iron, zinc, and vitamin A) micronutrients affects over half of preschool children and over two thirds of women of reproductive age. Micronutrient inadequacy results from the lack of consumption of foods that supply those micronutrients (USAID 2018). Micronutrient inadequacy is one of the causes of micronutrient deficiency; other causes of this deficiency are micronutrient losses due to diseases and infections, parasitism, and even genetic abnormalities (USAID 2018).

Micronutrient deficiencies are still a major public health concern for Uganda. According to the findings from the 2018/19 Uganda National Panel Survey (UNPS), 22 percent of children aged 6–59 months suffer from iron deficiency anemia while 29 percent among women of reproductive age (15–49 years) are depleted of vitamin B12 (UBOS, 2018/19).

Large-scale food fortification (LSFF) has been identified as an evidence-based, and cost-effective system-level intervention that has the potential to improve diets and nutrition. It provides a safety net for essential vitamins and minerals, protecting households and families when they are unable to afford or access a diverse diet (USAID 2022) thus contributing to the reduction of micronutrient deficiencies. The Government of Uganda (GOU) identified food fortification as one of the cost-effective interventions to address micronutrient deficiencies in the population. The program was introduced through the salt iodization program in 1993, after which the country issued voluntary (GOU 2005) and mandatory (GOU 2011) fortification regulations for edible oils and fat, wheat flour, and maize flour. The country has put in place a food fortification regulatory framework, coordination mechanisms and nutrition surveillance systems to monitor quality, coverage, uptake and impact of fortified foods. The National Working Group on Food Fortification (NWGFF) which comprises ministries, departments, agencies (MDAs), the private sector including food industries, academia, and civil society organization was established to guide and coordinate food fortification programs in the country.

Over the past years, GOU has made strides in its efforts to strengthen the food fortification program. These include: the deliberate efforts by GOU to institutionalize food fortification through its prioritization in the third National Development Plan 2019/20–2024/25 (NDP III) and second Uganda Nutrition Action Plan, 2020/21–2024/25 (UNAP II). The NDP III calls for a program-based approach to planning, budgeting, implementation, and reporting which is envisioned to optimize multi-sectoral collaborations and to promote efficient resource allocation and utilization compared to the previously implemented sector-wide approach that was characterized with duplication of efforts, siloed operations and limited focus on results (outcomes).

Despite these, responsible MDAs still experience eminent gaps in acquisition of necessary resources to fully implement and sustain food fortification activities in the country. This in part is due to:

- limited awareness on the national planning, budgeting, and reporting requirements, which has made several institutions to consistently miss out on budgetary allocation from the national treasury;
- disconnect between institutional work plans and budgets, and with priorities enshrined in the NDP; and
- overdependence on partner support which calls for a robust sustainability plan.

For FY 23/24 and 2025, only two sectors, the Ministry of Education and Sports (MOES) and the Ministry of Health (MOH), had food fortification-specific activities prioritized in the NDP III and funds allocated for in their program implementation plans (PIAPs). This has implications on the

national level, efforts in advancing the food fortification program. These inherent challenges informed the need to document key food fortification priorities for integration into the work plans and budgets for the different MDAs to further strengthen efforts towards institutionalization of the food fortification program.

1.1 Objectives

The objective of this report is to:

1. Map the current food fortification interventions, indicators and budget allocations in the NDP III.
2. Document the food fortification priority activities by MDAs for integration in institutional work plans and budgets.
3. Develop a sustainability matrix to strengthen the institutionalization of food fortification program.

1.2 Approach

To outline the food fortification priority activities by MDAs, USAID Advancing Nutrition provided logistical and technical support to the MOH to convene two meetings on the national food fortification program in Uganda, and reviewed key documents for the different MDAs. The first meeting was held in October 2022 with select members of the NWGFF and aimed to:

1. map the current food fortification interventions and indicators in the NDP III,
2. outline the food fortification priority activities and indicators by MDAs for integration in institutional annual work plans,
3. highlight the provisional budgetary allocation for food fortification activities in the NDP III for fiscal year (FY) 23/24 and FY24/25
4. propose a sustainability matrix that weighed MDA priorities to facilitate institutionalization of the food fortification program.

The meeting provided an opportunity for representatives from MOH, MOES, the Ministry of Gender, Labour and Social Development (MOGLSD), Uganda National Bureau of Standards (UNBS), Uganda Revenue Authority (URA), National Planning Authority (NPA), Uganda Industrial Research Institute (UIRI), Ministry of Trade, Industry and Cooperatives (MTIC), and Private Sector Foundation Uganda (PSFU) to share their priorities on food fortification.

The second meeting, held in February 2023, aimed to assess the progress of the food fortification program through the years. Similarly, USAID Advancing Nutrition used the meeting to consolidate the priorities of the MDAs presented at the first meeting and document strategic actions to improve the food fortification program in the country, with the aim to align different sectors' mandates and priorities for integration into their work plans and budgets. The meeting drew representatives from the NWGFF; USAID; U.S. Centers for Disease Control and Prevention; Global Alliance for Improved Nutrition; TechnoServe; (United Nations Children's Fund (UNICEF); University of California, Davis; and Food Fortification Initiative. In addition, USAID Advancing Nutrition and the NWGFF reviewed relevant documents and reports from the different sectors including the NPA to tease out key information which helped to propose a sustainability matrix—a simple guide for future fortification investments in Uganda. In developing the sustainability matrix, the identified priorities were categorized into six main domains related to food fortification; i) policy and planning; ii) quality assurance and quality control; iii) production and processing; iv) monitoring, evaluation, and learning; v) marketing and promotion; and vi) research and innovation. The matrix also details short-term (over the next 2 years), mid-term (over the next 5 years), and long-term (over the next 10 years) priorities of the MDAs, and identifies lead agencies alongside public and private sector partners.

2.0 Summary of Findings

This section provides a summary of key findings drawing from the document review and stakeholder engagements during the two meetings. Specifically, the section focuses on the link between institutional work plans and budgets within the NDP III, prioritized food fortification interventions and indicators within NDP III, and the proposed food fortification interventions for integration into the FY 23/24 and FY 24/25 work plans and budgets to foster institutionalization.

2.1 The Link between Institutional Work Plans and Budgets with the NDP III

The NDP III adopted a program-based approach to planning and captured food fortification in the Agro-Industrialization and Human Capital Development Programs. To make the plan implementable, PIAPs were developed for the relevant programs. Food fortification indicators highlighted in the NDP III are also captured by the Ministry of Finance Planning and Economic Development (MOFPED) in its Program Budgeting System (PBS), and therefore government financing strictly targets these indicators. The NPA developed national planning guidelines to support the MDAs and local governments in aligning their strategic plans to the PIAPs and NDP III. The alignment of the strategic plans further cascades to the work plans and budgets of the respective institutions that must reflect the food fortification activities. Each program has a program working group (PWG) that constitutes a representation of the different institutions which contribute to that program. The PWG guides the distribution of finances according to priorities and helps in refining the PIAPs.

For FY 23/24, the budget ceilings were put at program level and institutions through the PWGs are expected to defend their budgets according to priorities for reflection in the first and second budget call circulars respectively. It is a requirement for institutions to budget in accordance with the indicative figures provided to them by MOFPED. During the planning process, MDAs can reflect the interests of development partners and the private sector to support some of their priorities and these are usually captured as off-budget support. At the end of the planning and budgeting cycle, each institution receives resources/budget allocations either directly to that institution or through the lead agency of the activity as reflected in the PIAP. The NPA and MOFPED reserves the right to re-assess the budget allocations by the PWG to ensure equitable distribution of resources among institutions.

2.2 Food Fortification Interventions in NDP III

In a bid to streamline MDAs prioritization and implementation of the food fortification program in the country, the GOU articulated food fortification interventions which are captured under two programs under the NDP III. These include Agro-Industrialization and Human Capital Development.

The Agro-Industrialization program offers a unique opportunity for Uganda to embark on its long-term goal of increasing household incomes and improving the quality of life through promotion of inclusive and equitable growth, value addition for agricultural raw materials and expansion of the export base for high value products while minimizing post-harvest and disaster related losses. The MAAIF is the lead agency. To increase production and productivity, the Agro-industrialization program builds synergies across MDAs, academia, civil society organizations and development partners to up-scale research on biofortification and the multiplication of nutrient dense food staples such as beans, cassava and sweet potatoes, rice, and supports interventions to strengthen micronutrient industrial food fortification regulations to boost agro-processing and value addition. The Human Capital Development Program is led by MOES and prioritizes investments in science, technology and innovation as critical to industrialization and achievement of sustainable development. Relatedly, the program focuses on investments in population health, nutrition, early childhood development, sanitation and hygiene basic education. In partnership with the relevant

public and private sector agencies, the Human Capital Development Program aspires to promote optimal Maternal, Infant, Young Child and Adolescent Nutrition practices through; strengthening the enabling environment for scaling up nutrition at all levels; promoting consumption of fortified foods especially in schools with focus on beans, rice, sweet potatoes, cooking oil, maize, fostering dietary diversification and development of the national food fortification policy and law among other interventions (NDP III).

The different MDAs which subscribe to these program areas are expected to design interventions and activities that contribute to the attainment of the desired outcomes. **Table I** indicates the objectives, interventions, and corresponding actions under Agro-Industrialization and Human Capital Development. Specifically, the Agro-Industrialization, focuses on two strategic actions i.e. i) scale up of research on biofortification and the multiplication of nutrient-dense food, and ii) enforce of micronutrient industrial food fortification of the already identified food vehicles while the Human Capital Development program promotes i) consumption of fortified foods, especially in schools, with a focus on beans, rice, sweet potatoes, cooking oil, and maize flour and ii) the development of national food fortification policy and law.

Table I. Program-Specific Objectives, Interventions, and Corresponding Actions.

Program	Objective	Intervention	Actions
Agro-Industrialization	Increase agricultural production and productivity	1. Strengthen agricultural research and technology development.	1. Upscale research on biofortification and the multiplication of nutrient-dense food staples such as beans, rice, cassava, and sweet potatoes, among others.
		2. Establish new and rehabilitate existing agro-processing industries for processing of key agricultural commodities.	2. Enforce micronutrient industrial food fortification of the already identified food vehicles.
Human Capital Development	Improve the foundations for human capital development	Promote optimal maternal, infant, young child, and adolescent nutrition practices.	1. Promote consumption of fortified foods, especially in schools, with a focus on beans, rice, sweet potatoes, cooking oil, and maize flour.
			2. Develop national food fortification policy and law.

Source: Adopted from the National Planning Authority of Uganda: Program Implementation Action Plans (PIAPs) for Agro-Industrialization and Human Capital Development programs.

2.3 Food Fortification-Related Actions, Indicators, and Budgetary allocations in NDP III

In the NDPIII, there are two indicators directly linked to industrial food fortification and both are captured under the human capital development program. The two indicators are a) one policy and one law on food fortification produced by 2025 under the stewardship of MOH; b) 25 percent of schools (primary and secondary) providing safe and fortified foods to children by 2025 under the

leadership of MOES in collaboration with MOH. Whereas the human capital development PWG developed the PIAP indicators, the agro-industrialization PWG fell short of developing the indicators in the PIAP, leading to no direct government funding for the food fortification activities under the agro-industrialization program. With this, only two sectors, MOES and MOH, had direct budgetary allocation for food fortification activities for FY 2023/24 and FY24/25, as highlighted in the **Table 2** below. The budgetary allocations remain the same for the two years for the MOES and MOH and there are no allocations for the other MDAs thus a need for continued advocacy and prioritization of food fortification activities.

Table 2. Food Fortification-Related Actions, Indicators, and Budgetary Allocations in the PIAPs for FY 23/24 and FY24/25.

Action	Indicators	Responsible Agency	Indicative planning figures (Ugx) as per the PIAPs
Upscale research on biofortification and the multiplication of nutrient-dense food staples such as beans, rice, cassava, and sweet potatoes, among others.	Not captured in PIAP	National Agricultural Research Organisation (NARO), Ministry of Agriculture, Animal Industry, and Fisheries (MAAIF)	0
Enforce micronutrient industrial food fortification of the already identified food vehicles.	Not captured in PIAP	UNBS, MTIC, National Drug Authority (NDA), URA, MOH	0
Promote consumption of fortified foods, especially in schools with a focus on beans, rice, sweet potatoes, cooking oil, and maize.	25 percent of schools (primary and secondary) providing safe and fortified foods to children by 2025	MOES	Financial Year: 2023/2024 Ugx 500,000,000
			Financial Year: 2024/2025 Ugx 500,000,000
Develop the national food fortification policy and law.	One policy and one law on food fortification produced by 2025	MOH	Financial Year 2023/2024 Ugx 200,000,000
			Financial Year 2024/2025 Ugx 200,000,000

Source: Adopted from the National Planning Authority of Uganda, NPA: Program Implementation Action Plans for Agro-Industrialization & Human Capital Development Programs

The lack of prioritization of the food fortification activities by the different sectors has continued to have implications on efforts to sustain investments and institutionalization of the food fortification program thus continued reliance on partner support.

2.4 Proposed Food Fortification-Related Priority Activities for MDAs

This section provides a summary of food fortification activities prioritized by the different MDAs for inclusion in the FY 2023/24 and FY 2024/25 work plans and budgets following the different engagement meetings and consultations by the MOH and USAID Advancing Nutrition. However, it should be noted that although this report captures a number of priority activities from MDAs, the available national funding according to the NDP III is limited to institutions whose activities and indicators appeared in the PIAPs (i.e., MOES and MOH). It is therefore imperative for MDAs who missed integrating their food fortification priorities into PIAPs to internally reprioritize and lobby funding from external sources to implement these activities in FY 2023/24 and FY 2024/25. Our engagements with MDAs further established that UNBS and URA have food fortification embedded in their ongoing institutional activities like product certification and import clearance, sustainability will be attained since their activities are prepaid by clients from the private sector. The list of priorities indicated by the MDAs in **Table 3** covers all key areas for the food fortification program—policy making, capacity strengthening, advocacy and regulatory monitoring and enforcement by the relevant institutions. These activities need to be matched with budgetary allocation in the future budgets of these agencies.

Table 3. Proposed Food Fortification Priorities for FY23/24 by MDAs

Program	MDA/ Lead agency*	Proposed Food Fortification-Related Activities
Human Capital Development	MOES*, MOH, MOGLSD	<p>MOES</p> <ul style="list-style-type: none"> ● Issue a ministerial policy circular on the acquisition and provision of safe and fortified foods in primary and secondary schools. ● Review guidelines on school feeding and nutrition and make the consumption of safe and fortified foods a key requirement. ● Conduct dialogue meetings with local governments to increase interest in procurement and consumption of foods in schools. ● Review of the procurement guidelines for schools to include food fortification as a prerequisite for suppliers. ● Collaborate with the National Curriculum Development Center to produce tailored messages on consumption of nutritious and diversified diets including fortified staples. ● Conduct quarterly support supervision in schools and local governments to assess consumption of nutritious diets. ● Revamp the national multisectoral technical working group on school feeding and nutrition. <p>MOH</p> <ul style="list-style-type: none"> ● Develop a food fortification policy and law as guided by the results from the participatory review of existing food fortification regulations. ● Convene quarterly NWGFF meeting. ● Orient local governments on existing nutrition packages including Food safety and food fortification. ● Collaborate with relevant stakeholders to monitor the enforcement of food safety, food fortification and implementation of regulations on infant and young child foods. ● Collaborate with relevant stakeholders to conduct two good manufacturing practices assessments on nutrition commodity manufacturing plants annually.

		<ul style="list-style-type: none"> Conduct periodic supportive supervisions at the ports of entry to assess compliance with the regulatory frameworks on nutrition commodities including fortificants and fortified foods. <p>MOGLSD</p> <ul style="list-style-type: none"> Capacity strengthening and orientation of local government on community mobilization for food and nutrition security. Reorient the community volunteers on the national integrated early childhood development policy. Collaborate with relevant institutions to strengthen the capacity of nutrition coordination committees at national and grassroots levels. Integrate food and nutrition security into the integrated community learning for wealth creation program as an approach for implementation of the Parish Development Model—Pillar 5 on community mobilization and mindset change and the NDP. Collaborate with relevant stakeholders to roll out a community scorecard approach to participatory monitoring for food and nutrition security and early child development. Participate in national, regional and global meetings on food fortification.
Agro-industrialization	MAAIF*, MTIC, UNBS	<p>MTIC</p> <ul style="list-style-type: none"> Provide on-site technical assistance to fortifying food processing industries to conform to the requirements for certification. Offer targeted training and mentorship on food fortification to food processors. Participate in Scaling Up Nutrition (SUN) Business Network activities that relate to food fortification and share experiences. <p>UNBS</p> <ul style="list-style-type: none"> Conduct initial certification and surveillance audits of fortified food manufacturing facilities. Certify products against the requirements of the food fortification standards. Provide theory and practical training modules in quality control and assurance practices in food fortification. <p>URA</p> <ul style="list-style-type: none"> Collaborate with UNBS and other regulatory agencies to facilitate the clearance of imported fortified foods, fortificants, and other fortification inputs at customs using the electronic single-window platform. Disseminate relevant information including applicable tax regimes and incentives on fortificants, fortified foods and fortification machinery. Submit a proposal to MOFPED for waiver of Value-Added Tax on fortificants (currently rated at 18 percent). <p>UIRI</p> <ul style="list-style-type: none"> Train laboratory analysts on testing of micronutrients in fortified foods. Offer a conference facility for training and other food fortification related activities at a subsidized price. Testing of micronutrients in fortified food samples presented by food processors and other surveys (e.g., market surveillance samples). Procure necessary reagents/consumables and avail equipment to test. Provide laboratory space and analysts to test the samples.
Private Sector Development Program	MOFPED*, UNBS	<p>UNBS</p> <ul style="list-style-type: none"> Review and update standards in regards to food fortification. Simplify and translate relevant materials including standards on food fortification. Test sampled products for micronutrient content and safety, as per the existing national standards to facilitate certification. Inspect and sample fortified products imported into the country based on existing food fortification standards.

		<ul style="list-style-type: none"> • Conduct market surveillance inspections of the fortified foods.
Development Plan Implementation	MOFPED*, NPA	<p>NPA</p> <ul style="list-style-type: none"> • Conduct a midterm review of NDP III with a focus on food fortification. • Produce annual certificate of budget compliance with a special focus on food fortification and nutrition. • Develop an issues paper to build a case for food fortification in NDP IV and harmonization of food fortification indicators in national development plans and PBS. • Review the national nutrition planning guidelines to incorporate food fortification. • Orient and sensitize the NWGFF and institutions on program-based planning, budgeting, and implementation, with an emphasis on Food fortification. • Benchmark international practice regarding planning, budgeting, and implementing food fortification initiatives.

*Lead agency of a program within the NDP III

3.0 Proposed Sustainability Matrix

Annex I presents the proposed sustainability matrix/strategic actions to strengthen institutionalization of the food fortification program, categorized according to the six main domains: policy and planning; quality assurance and quality control; production and processing; monitoring, evaluation, and learning; marketing and promotion; and research and innovation. The matrix also details short-term (over the next 2 years), mid-term (over the next 5 years) and long-term (over the next 10 years and beyond) priorities for implementation by different MDAs and identifies lead agencies alongside public and private sector partners for each priority to facilitate institutionalization.

Policy and Planning: short and medium-term priorities include the review and updating of the food fortification regulatory framework, maintaining coordination and communication among stakeholders, development of an issue paper to inform food fortification priorities in NDP IV, evidence generation on costs and benefits to guide programming, as well as undertaking periodic surveys to establish the micronutrient intake gaps at national and sub-national levels. Furthermore, MOH and stakeholders plan to develop and/or update relevant guidelines, strategic plans, and tools to support food fortification programming.

Quality Assurance and Control: the short-term priority will focus on leveraging existing national systems and platforms to verify the quality of fortificants and build synergies among regulatory agencies for sustainability and improved service delivery. Similarly, the UNBS and other regulatory agencies will encourage testing for randomized indicator micronutrients to support low-cost fortification compliance assessment. Risk-based sampling approaches will be employed to ascertain the quality of fortified foods and fortificants, targeted/sentinel site surveillance to monitor compliance with national standards, and organizing proficiency testing schemes on micronutrient analysis to improve competences of laboratory analysts. Other key short, mid- and long-term priorities on quality assurance and quality control will include social audits to prompt appropriate regulatory actions, and strengthening internal quality assurance and quality control systems and benchmarking to adopt and/or adapt potentially effective mechanisms for premix regulation.

Production and Processing: short-term priorities include establishment of a platform for information sharing on the practical application of food fortification in industry processes and provision of targeted mentorship to fortifying industries. The mid- and long-term priorities will focus on recognition of the private sector efforts in the adoption of fortification as part of corporate social responsibility strategy and sharing opportunities for co-investment to the private sector—e.g., in the form of matching grants.

Program Monitoring and Evaluation: MOH and UBOS in collaboration with relevant stakeholders on the NWGFF will establish sub-regional data on the micronutrient status, promote and strengthen data linkages on food fortification across relevant MDAs, explore alternating the nutrition module in the UNPS with the UDHS to minimize program costs, perform biomarker assays leveraging in-country expertise/capacity, and participate in regional learning networks to share experiences as key short-term priorities for food fortification. On the other hand, secondary analyses of intake data to evaluate costs and benefits of micronutrient programs and striking partnerships with academia to undertake program research will be among the mid- and long-term priorities of this domain.

Marketing and Promotion: MTIC, PSFU, and other stakeholders will in the short and mid-term leverage on existing platforms to publicly recognize fortifying industries with good compliance through platforms like the National Nutrition Champions' Award and the Private Sector Enterprise Development Award Framework and disseminate other incentives available to fortifying industries in Uganda.

Research and Innovation: This will focus on the review of available data on intake patterns to deduce whether vitamin A should or should not be added to wheat and maize flours, while efforts on advocacy and awareness creation will be geared towards institutional procurement of fortified

foods, particularly maize flour, in the short and mid-term in consultation with other relevant authorities including the Public Procurement and Disposal of Public Assets Authority (PPDA).

3.1 Conclusion

Uganda's commitment to reduce micronutrient deficiencies has been demonstrated through the adoption of food fortification as a high-impact public health interventions. Efforts to harness the potential of this intervention have been amplified through the enactment of statutory instruments, guidelines and standards on industrial food fortification and through the integration of food fortification interventions into the national planning frameworks including the NDP III. Despite these milestones, financing of the food fortification activities and institutionalization remains a challenge with only a handful of MDAs (i.e., MOES and MOH) having food fortification priorities and corresponding indicators in the PIAPs as required by the NDP III. The documented priorities and the proposed sustainability matrix will continue to inform integration of food fortification activities by MDAs in their annual work plans and budgets, and will also guide prioritization of the food fortification activities during the development of the NDP IV, thus strengthening institutionalization of the food fortification program.

References

- The Republic of Uganda, Ministry of Health; Foods and Drugs (Control of Quality) (Iodated Salt) Regulations, 1997
- The Republic of Uganda, Ministry of Health: Food and Drugs (Food Fortification) Regulations, 2005
- The Republic of Uganda, Ministry of Health: Food and Drugs (Food Fortification) (Amendment) Regulations, 2011
- The Republic of Uganda. National Planning Authority (NPA): The Third National Development Plan (NDP III) 2020/21–2024/25
- The United Nations World Food Programme. The Cost of Hunger in Uganda: Implications on National Development and Prosperity 2012: Summary Report
- Uganda Bureau of Statistics (UBOS). 2018/2019: Uganda National Panel Survey (UNPS) Report
- Stevens, G. A., Beal, T., Mbuya, M. N. N., Luo, H., and Neufeld, L. M.; Global Micronutrient Deficiencies Research Group. Micronutrient deficiencies among preschool-aged children and women of reproductive age worldwide: a pooled analysis of individual-level data from population-representative surveys. *Lancet Glob Health*. 2022; 10 (11): e1590-e1599
- USAID. 2018. “Interventions for Addressing Vitamin and Mineral Inadequacies.” Washington, D.C.: U.S. Agency for International Development. <https://www.usaid.gov/global-health/health-areas/nutrition/technical-areas/micronutrients-brief#interventions>.
- USAID. 2022. *Large Scale Food Fortification Programming Guide*. Washington, D.C.: U.S. Agency for International Development.

Annex I. Priority Actions to strengthen Institutionalization of the Food Fortification Program

Focus Area	Strategic Actions	Timelines	Responsible Agencies	Collaborators	Funding mechanism
Policy and Planning	Update the food fortification regulatory framework.	Mid-term	MOH	Relevant MDAs and implementing partners (IPs)	GOU and partners
	Conduct national surveys to establish the micronutrient intake gaps (UNPS/Uganda Harmonized Integrated Survey (UHIS), Uganda Demographic and Health Survey (UDHS), Uganda National Household Survey (UNHS), and Fortification Assessment Coverage Tool (FACT) Survey.	Short-term and Mid-term	UBOS, MOH	Academia, relevant MDAs, and IPs	GOU and partners
	Integrate food fortification activities into institutional plans and budgets and PIAPs captured in the program budgeting system. <ul style="list-style-type: none"> Develop an issue paper on food fortification to support integration into NDPs. 	Short-term	NPA	MOH, relevant MDAs, and IPs	GOU and partners
	Develop and/or update relevant guidelines, strategic plans, and tools to support food fortification programming in Uganda.	Mid-term	MOH	Relevant MDAs, private sector, and IPs	GOU and partners
	Evaluate costs and benefits to guide and organize stakeholders (policymakers and food processors) on the best course of action for maize flour fortification in Uganda—i.e., targeted vis	Short-term	MOH, MTIC	Relevant MDAs, private sector, and IPs	GOU and partners

Focus Area	Strategic Actions	Timelines	Responsible Agencies	Collaborators	Funding mechanism
	a vis mandatory fortification				
	Provide platforms for dialogue and experience sharing on LSFF.	Short-term	MOH	Relevant MDAs	GOU and partners
Quality Assurance and Quality Control	Leverage on existing national systems and platforms to verify the quality of fortificants and build synergies among regulatory agencies for improved efficiency in service delivery.	Short-term	MOH, UNBS, NDA, URA	Relevant MDAs, private sector, and IPs	GOU
	Test for randomized indicator micronutrients to support low-cost fortification compliance assessment.	Short-, mid-, and long-term	UNBS and other recognized labs	Academia, relevant MDAs, private sector, and IPs	GOU and partners
	Support proficiency testing schemes on micronutrient analysis in fortified foods to improve competence.	Mid-term	UNBS and other recognized labs	Academia, relevant MDAs, and IPs	GOU and partners
	Undertake social audits and utilize findings to prompt regulatory action.	Short, mid-, and long-term	Academia, Civil Society Organizations (CSOs)	Ips and recognized labs	GOU and partners
	Undertake targeted/sentinel site surveillance to monitor compliance with national standards.	Short-term	Regulatory agencies	Academia, relevant MDAs, and IPs	GOU and partners
	Benchmark, adopt, and/or adapt potentially effective mechanisms for premix regulation.	Mid-term	Regulatory agencies	Relevant MDAs, private sector, and IPs	GOU and partners
	Employ risk-based sampling approaches to ascertain premix quality.	Short-, mid-, and long-term	Regulatory agencies	Relevant MDAs and private sector	GOU and private sector
	Support industries to build and strengthen internal quality assurance and quality systems.	Short-, mid-, and long-term	Private sector	Regulatory agencies, relevant MDAs, private sector, and IPs	Private sector, GOU, and partners

Focus Area	Strategic Actions	Timelines	Responsible Agencies	Collaborators	Funding mechanism
Production and Processing	Establish a platform for information sharing on the practical application of food fortification in industrial processes; and strengthen stakeholder linkages with value chain actors.	Short-term	Regulatory agencies	Private sector and IPs	GOU, private sector, and partners
	Explore and communicate opportunities for co-investment to the private sector, e.g., matching grants.	Mid- and long-term	MAAIF, MTIC, PSFU	Academia and research institutes, relevant MDAs, IPs, and private sector agencies	GOU, private sector, and partners
	Support private sector efforts in the adoption of fortification as part of corporate social responsibility strategy.	Mid- and long-term	PSFU and MTIC	Relevant MDAs, private sector entities, and Ips	Private sector
	Provide targeted mentorship to fortifying industries.	Short- and mid-term	MTIC	Regulatory agencies, private sector, and IPs	GOU, private sector, and partners
Monitoring, Evaluation, and Learning	Establish sub-regional data on the micronutrient status.	Mid-term	UBOS and MOH	Academia, IPs, relevant MDAs	GOU and partners
	Promote and strengthen data linkages on food fortification.	Mid-term	MOH and UBOS	National Information Technology Authority-Uganda (NITA-U), relevant MDAs, and IPs	GOU and partners
	Alternate the nutrition module in the UNPS with the UDHS to minimize program costs, while keeping track of the impact on micronutrient status.	Short-term	UBOS and MOH	Academia and IPs	GOU and partners
	Leverage in-country expertise/capacity through mapping existing capacity strength and gaps for biomarker assays from academia, medical laboratories, and the Central Health Public	Mid-term	UBOS and MOH	Academia and IPs	GOU and partners

Focus Area	Strategic Actions	Timelines	Responsible Agencies	Collaborators	Funding mechanism
	Laboratory.				
	Strengthen partnership with academia in undertaking scientific research and information sharing.	Mid- and long-term	UBOS and MOH	Academia, relevant MDAs, private sector, and IPs	GOU, private sector, and partners
	Participate in regional laboratory networks to share learnings and improve proficiency in nutrition surveillance.	Short- and mid- term	UBOS and MOH	Academia, relevant MDAs, private sector, and IPs	GOU, private sector, and partners
	Conduct secondary analysis/synthesis of intake data using existing tools such as the Micronutrient Intervention Modeling (MINIMOD) framework to evaluate the costs and benefits of individual and combinations of micronutrient programs.	Mid- and long-term	UBOS and MOH	Academia, relevant MDAs, private sector, and IPs	GOU, private sector, and partners
Marketing and Promotion	Leverage existing platforms to publicly recognize fortifying industries with good compliance through platforms like the National Nutrition Champions' Award and the Private Sector Enterprise Development Award.	Short- and mid-term	MTIC and PSFU	Regulatory agencies, private sector entities, CSOs, and IPs	GOU, private sector, and partners
	Maintain use of the fortification logo as an incentive for fortifying industries complying with national requirements.	Short-, mid-, and long-term	Regulatory agencies	Relevant MDAs, private sector, and IPs	GOU and private sector
	Disseminate available incentives for fortifying industries in Uganda.	Short-term	URA, PSFU, and MTIC	Relevant MDAs, private sector, and IPs	GOU, private sector, and partners
Research & Innovation	Review, synthesize and triangulate available data sources on intake patterns to deduce whether vitamin A should or should not be retained in wheat flour.	Short-, mid-, and long-term	UBOS and MOH	Regulatory agencies, relevant MDAs, private sector, CSOs, and IPs	GOU, private sector, and partners

Focus Area	Strategic Actions	Timelines	Responsible Agencies	Collaborators	Funding mechanism
	Align the research and innovation agenda with government MDAs and partners.	Mid- and long-term	Academia and MOES	Private sector, research institutes, relevant MDAs, and IPs	GOU, private sector, and partners
	Define and optimize the role of academia in food fortification.	Short-term	Academia and regulatory agencies	Relevant MDAs, private sector, and Ips	GOU, private sector, and partners
Advocacy and Awareness Creation	Advocate for institutional procurement of fortified foods, e.g., maize flour, to provide business sense to fortifying industries.	Short- and mid-term	MOES and MOH	Relevant MDAs, private sector, CSOs, Academia, and IPs	GOU, private sector, and partners
	Focus investments on demand protection where foods are not centrally processed and mandatory food fortification regulations don't exist.	Short-, mid-, and long-term	MOH	Relevant MDAs, private sector, CSOs, and IPs	GOU, private sector, and partners
	Position fortified foods in a context of a healthy diet to promote dietary diversity and avoid overconsumption of fortified foods.	Short-, mid-, and long-term	MOH	Relevant MDAs, private sector, academia, CSOs, and IPs	GOU, private sector, and partners