



**Once Upon a
Partnership:
A Model for Sustainable
Fortification Interventions**

**Establishing Solid Ground:
The Views of the
Academic Sector**

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Getting the Message Out: the Importance of Social Marketing

With 40 official languages currently spoken throughout Uganda, communicating critical public service announcements is a tricky business. Depending on whom you ask or what document you look at, Uganda has either 28 official stations or 188 operational and licensed radio outlets. FM radio is seen even today as the best dissemination channel for advertising and marketing— even more than television and magazines, which

Food Fortification in Uganda

Mass fortification is defined as the addition of micronutrients to edible products (staples and condiments) commonly consumed by the general public. Such products are oil/fats, cereals, sugar, salt, and milk. Fortification efforts started in Uganda with salt iodization when, in 1994, the country mandated that all imported salt be iodized. In 2001, Makerere University, with the support of the U.S. Agency for International Development's MOST project, produced a food assessment report focused on vegetable oil and maize flour as potential vehicles for food fortification.

In 2002, the National Working Group of Food Fortification (NWGFF) was constituted with the participation of delegates from several public institutions, universities, private companies, and consumer associations. The NWGFF facilitated the preparation and approval of fortification standards for oil, sugar, wheat and maize flour in 2004. These standards were modified in 2006 to come into alignment with fortification guidelines established for the East, Central and Southern Africa region.

In 2004, the largest oil manufacturer in Uganda began voluntary fortification with technical support and minor financial contributions by USAID/MOST. When a second oil manufacturer - using entirely its own resources - also began fortification in 2005, the combined production covered 85% of the market. Recently, a third oil manufacturer has joined these efforts.

Oil fortification has helped to create a positive environment around food fortification, and now efforts to extend this practice to wheat and maize flour are ongoing. Today, fortified oil production covers at least 90% of the market, under a voluntary system of fortification in compliance with national standards. Vegetable and palm oils have become the main source of Vitamin A to the Ugandan population. Although the biological results necessary to prove quantitative impact are still pending, surely oil fortification is contributing to the improvement of the nutritional and health status of the Ugandan population.



THE REPUBLIC OF UGANDA

Once Upon a Partnership: A Model for Sustainable Fortification Interventions

Uganda, like many countries in Great Lakes Africa, has seen many development efforts over the years. Many projects that have potential for lasting impact often fail to remain sustainable due to insufficient funding, loss of technical expertise, and/or a lack of local ownership. To address these recurring constraints, Uganda has leveraged public-private partnerships with the hopes of creating lasting impact. The Ugandan Government identified one sector in particular, food fortification, as an ideal arena to engage the private sector to address the issues of malnutrition in the country. "It's important to realize private sector's role in sustainability," says Kamal Hyder, a Food Technology Specialist who, while employed with the U.S. Agency for International Development-funded MOST project, started the support of oil fortification in Uganda. "Profit doesn't always have to be a dirty word to the public sector and donor community. For example, fortification in places like Uganda with oil and Zambia with sugar cane is working because industry has had an incentive to do something good, and at the same time to be recognized as contributing to public health. Core business interests and investments in the good of people don't have to be mutually exclusive."

The Ugandan Ministry of Health has understood the importance of responding to vitamin A and other micronutrient deficiencies since the early to mid-1990s. Universal mandatory salt iodization in 1994 and vitamin A supplements for pre-school-aged children were followed by diet diversification initiatives. None of these were sufficient, however, to address the profound degree of micronutrient deficiencies in children under five years-old and pregnant mothers manifesting in chronic disease, disability, severe anemia, poor growth, and weakened immune systems. In the early 2000s, the Ministry of Health with support from USAID, commissioned a study that examined consumption patterns to search for evidence that would justify considering the fortification of commonly consumed foods. In the beginning, oil and maize flour were assessed as possible vehicles for vitamin A fortification. Maize posed limitations due to the lack of large-scale producers within the country, but oil represented an ideal industry for a large-scale, country-wide fortification intervention.

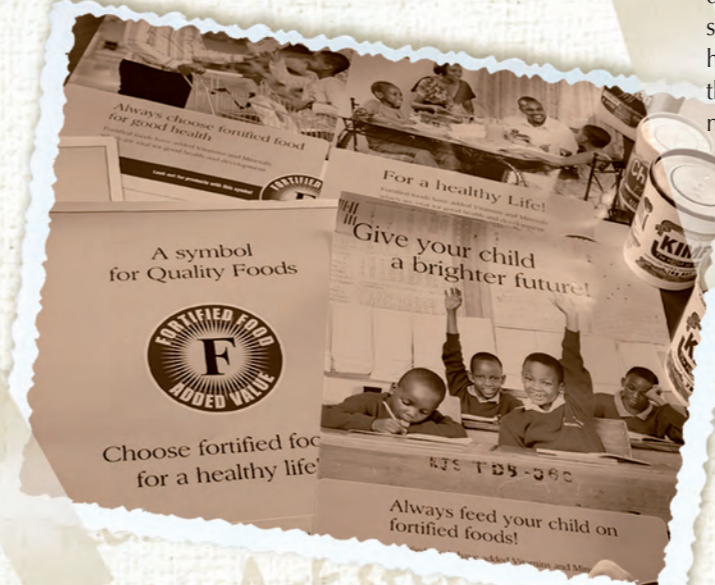
"Oil fortification in Uganda is an example of how relatively little money used judiciously, in an environment where the public and private sectors have different but mutually supportive objectives, can go a long way toward addressing a public health issue. If there is a success story out there, oil fortification in Uganda is surely one of them."

*-Roy Miller, Director of MOST,
the USAID Micronutrient Project (1998-2005)*

"We had a willing Ministry of Health in Uganda which was very supportive from even the earliest meetings on food fortification as a public health strategy. We had suppliers who were invited to take a seat at the table and come as participants, not just vendors, to discuss the role they could play in providing free vitamins for a short trial period to the oil industry if the industry would agree to develop a fortified product for the market. USAID worked with Mukwano Industries (U) Ltd (AK Oils and Fats) to design and invest in a proper re-circulating pump for the industry to fortify its oil, as well as educational and marketing materials for raising awareness," reminisces Hyder. He describes the consistency, ownership and commitment of industry, as well as an environment in which different stakeholders came together, realizing that this critical public health intervention would not work without the participation of each one of these. "This is how the Uganda National Working Group on Food Fortification was built and from it was created an enabling environment. Ugandans are where we are today and we were where we were then because no one organization put itself first," added Dr. Louise Sserunjogi, a renowned Ugandan nutritionist.

In those first years, Mukwano Industries changed flooring in its laboratories that did not meet acceptable regulations; replaced tanks, pumps and pipes used for adding pre-mixes and fortificants; and raised the standards of its marketing and production. While Mukwano initially received some USAID funding for equipment to carry out oil fortification, the oil manufacturer willingly undertook these changes, and even today makes its own investments without complaint. Mukwano even assumed the responsibility to purchase the vitamin A fortificant, which is the highest-cost item in food fortification under formal industry settings.

One year later, a new oil company, Bidco Oil Refineries Ltd., emerged on the market. Bidco realized that Mukwano had the additional value of containing vitamin A in its oil, and the managers, on their own initiative, decided to fortify from the very first batches produced. Thus, in less than three years after fortification began in earnest, more than 85 percent of the national oil supply in Uganda was fortified with vitamin A. Recently, a third company, Mount Meru Millers (U) Limited, entered the market, and with their production in the North, soon nearly 90 percent of the oil in Uganda will be fortified. Indeed, the success of oil fortification in Uganda has depended on the coordinated and synergistic actions of several stakeholders, and will continue to do so. It is the history of that commitment and that collaborative action that will sustain these food fortification efforts and even now are making a public health difference.



Back to Basics: The Ultimate Goal

The problems impeding food fortification are rarely technical, but very often human in nature. When outcomes are not immediate and clear, sustaining momentum and co-operation to arrive at a shared goal becomes a major challenge. This is especially true in public-private partnerships where each sector has distinct and sometimes conflicting goals. Each has its strengths and weaknesses.

There are several areas of divergent opinion in the field of food fortification. Some of these differences revolve around matters of policy while others around approaches to technical implementation. For example, should compliance with fortification be voluntary or mandatory or should small industries be exempted? How feasible is it to solve the myriad of challenges that exist in supporting small-scale manufacturers to fortify the foods they produce? Should more vehicles be considered as a means of fortifying foods with essential vitamins and minerals, or does limiting the vehicles have a particular advantage? "More communication and messaging, more partners, more vehicles, and a wider, more creative outlook is what we need to advance food fortification interventions and regain our focus on how we can have real impact. Also critical is appreciating what is being done by industry, and recognizing that industry won't stick with us on the Social Corporate Responsibility ticket if we don't recognize, reward and appreciate them. We need to say thank



you to them for what they have done in oil fortification, especially since they have motivated others to fortify as well," says Maureen Ndahura, former program assistant for the Uganda Ministry of Health's Food Fortification Program (funded under a GAIN grant), as well as for the MOST project funded by the U.S. Agency for International Development (USAID). She continues: "Advocacy [that targets] policymakers, industry or businessmen – this is great. But it is the mother who makes the decision about what cooking oil to buy. As a result, creative and sustained advertising and sensitization is a requirement."

The Ugandan experience with food fortification is an example of what is possible when individuals from the public and private sector set aside potential differences and work together for a common good. "I always put myself in the position of a child. Children are wholly dependent on their mothers to make the right choices for them. These choices

affect their lives forever, and it includes what they eat. A mother's decision (knowingly or not) will impact the degree to which a child's brain functions or body develops. We must not lose sight of this perspective," says Ndahura.

USAID, UNICEF, the World Food Programme, GAIN, and others have worked closely with the government and industry to support Ugandans implementing their own fortification solutions to public health concerns around micronutrient deficiencies. "Involving key policy people in the ministry and decision-makers in industry, as well as implementers on the ground, is critical. We need to remind ourselves where we all were and how we came together and how we laid that groundwork -- keeping the ultimate goal in focus. So as we look forward, we should be working together and exploring all the possibilities for furthering food fortification. After all, it's for the health of the people, especially the child," Ndahura concludes.



Maureen Ndahura

"We use vegetable oil as one example in teaching child caretakers at our nutrition rehabilitation unit; we show them how to correctly identify fortified foods. Use of logos is one simple way for a common woman to select healthy foods."

*-Hanifa Namusoke
Senior Nutritionist, Mulago Hospital*

Reaching the People: The Public Health Perspective

Micronutrient malnutrition in Uganda, as in most countries in Sub-Saharan Africa, is due to various deficiencies. Two of the more widespread deficiencies, vitamin A and iron, contribute to the country's high rates of anemia. According to 2006 Department of Health Statistics data, 49 percent of women of reproductive age, 64.4 percent of pregnant women, and 73.2 percent of children under the age of five in Uganda are affected by anemia. Dr. Elizabeth Madraa, former Head of Nutrition at the Ministry of Health from 2008-2010 admits, "The evidence of the prevalence of micronutrient deficiencies in Uganda in the mid-1990s was so far beyond what would necessitate a public health intervention. It was dire and we had no capacity to deal with these deficiencies. People didn't know the magnitude of the health impact that lack of vitamin A, iron, and iodine was having on our communities." Micronutrient deficiencies more often than not cause irreparable and irreversible damage. In 2002, the National Working Group on Food Fortification (NWGFF) was established by the Ministry of Health and consisted of government ministries, private sector industries and development partners such as the U.S. Agency for International Development (USAID), UNICEF and the World Health Organization. The NWGFF's members dedicated themselves to food fortification as one of the interventions necessary for tackling micronutrient deficiencies in Uganda.



Dr. Elizabeth Madraa

Dr. Madraa has worked in health and nutrition all of her life. She has seen night blindness, young women bleed to death after delivery, and stunting, wasting, and extreme listlessness in young children who have no energy to engage in learning. "There's been lots of emphasis on vitamin A supplementation through the biannual Child Days Plus, [but] the government realized that this alone was inadequate to make the necessary improvements in the public health situation. We needed to ensure that essential vitamins and minerals were making their way into the food that people consumed on a daily basis," explains Madraa.

It was clear to the Ministry of Health that additional strategies with a much broader reach to the Ugandan population were needed to combat the public health crisis. As a result, strategic food fortification interventions were explored. The government of Uganda worked with the food industry to create

"Food fortification addresses micronutrient deficiencies to the scale we need here. If we don't support food fortification, the disabilities that result from these deficiencies will become too much of a health and economic burden for the state to handle."

-Dr Elizabeth Madraa, Project Manager,
Food Fortification Project & Secretary
of NWGFF

a program for the delivery of vitamin A through vegetable oil which had the potential to reach almost every household in the country based on what the government knew about food consumption patterns. Now, nearly 90 percent of the cooking oil available in Uganda is fortified and this availability of fortified oil on the market is augmenting the importance of other public health and nutrition interventions. For example, the oil industry has stimulated other food industries to follow suit. Thus, wheat flour is starting to be fortified with nine vitamins and minerals, and some efforts have been conducted to initiate fortification of maize flour and sugar. "As an intervention, food fortification is an efficient and low-cost intervention. We know, for example, oil is being consumed consistently at the household level and that oil and salt are part of the daily diet in rural, urban, North, South, East and West of Uganda. That means we are reaching the people," concludes Dr. Madraa.

Establishing Solid Ground: The Views of the Academic Sector

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The Ministry of Health approached Makerere University at the very beginning of its exploration of food fortification as a strategy to combat micronutrient deficiencies in Uganda. Makerere saw the contribution it could make and has since been a trusted collaborator in the public-private sector partnership process. The Food Science and Technology Department, which has since grown into the School of Food Technology, Nutrition and Bioengineering, researched the types of food vehicles micronutrients would best be suited for in terms of their delivery to consumers. These studies found that oil was the most effective, immediate and safest vehicle for fortification. "I'm involved in food fortification for academic purposes. I want to see a population that is nutritionally secure. I want to see a food industry that is functioning. But as an academic institution, we want to contribute to this with quality research and critical thinking," states Kyamuhangire.

Makerere University is essential to the evolution and sustainability of food fortification in Uganda. Neither the government nor private sector needs to look outside of Uganda for quality researchers who can initiate and produce country-wide, in-depth studies, household and community level food consumption surveys, and evidence-based policy memos and papers on nutrition and food science. The University has developed the reputation of expressing itself independently on various issues, regardless of the government's position. "As a university we are not here to dictate the food fortification process, [but only to] influence the actors and institutions that are part of the process based on convincing evidence found through quantitative and qualitative assessment," Kyamuhangire states. The university has built its capacity within food sciences while contributing to Uganda's in-country knowledge base of nutrition and surveying and assessment methodologies.

"We have fortified foods on the shelves now. But it's not enough to put these foods on the shelves and stop there. We have to assess impact and penetration of this intervention, as well as we need to devise complementary strategies to reach vulnerable groups within the country." Kyamuhangire looks out over the hill on to the slums below the university and says assuredly, "Food fortification is not an end; it is only a beginning."

"I see a bright future for food fortification in Uganda because the middle class is growing, and so is the industrial food sector. People are becoming more and more aware of health in relationship to diet. I think food fortification is really coming along. Indeed, it is one of the most effective strategies for delivering micronutrients to many people."

*-Dr. Joyce Kakuramatsi-Kikafunda
Professor of Food & Nutrition Sciences,
Makerere University*

Oiling the Growth Wheel: Industry Collaboration

Although fortification of cooking oil has been voluntary in Uganda since 2004, it has become a catalyst for fortifying other food vehicles in the country and has provided an inspirational model for neighboring countries in East Africa. With the top two oil manufacturers fortifying their oils and fats, and a new, large-scale manufacturer entering the market, experts estimate that soon more than 90 percent of the cooking oil on the market will be fortified with vitamin A.



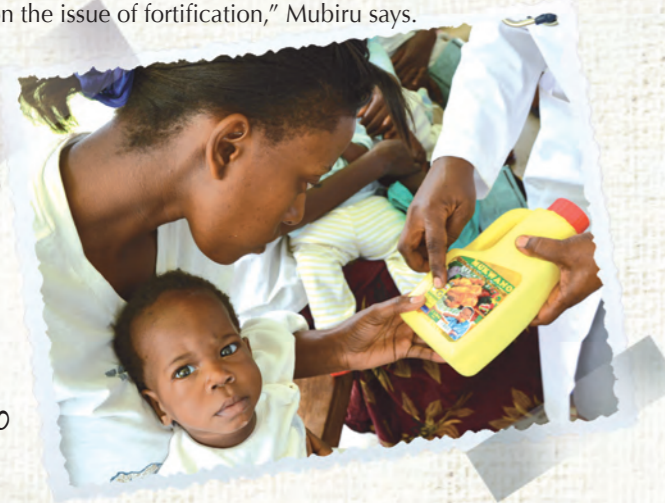
"I am really proud because I've worked very hard for Ugandans to have better food and nutrition. I'm willing to work with anybody because I believe in fortification as a public health strategy. We send our products to Congo, Rwanda, Burundi, Sudan and Tanzania. At the end of the day, we are making great contributions in Uganda and elsewhere."

*-Paul Mubiru, Quality Control Officer,
Mukwano a.k. Oils and Fats Limited*

Challenges to the process of oil fortification abound, with some small manufacturers not fortifying their products and trying to undersell their competitors at marginally lower prices, or co-opting the labels of the known producers to confuse consumers. In addition, Uganda is considering making oil fortification mandatory, despite the success achieved under a voluntary program, to ensure that the progress reached thus far is not put in jeopardy by risks associated with importation of unfortified oil on the market. Moreover, public awareness and understanding around food fortification is weak. According to Agnes Chandia Baku, Acting Head of the Nutrition Section in the Ministry of Health, "Even though some people are not informed, most of the big players in the oil industry are fortifying. So, we know the public is benefitting even though they are consuming unknowingly."

Mukwano Industries is a large-scale manufacturer that recognizes its debt to the people of Uganda and has led oil fortification interventions in the private sector. Mukwano posters can be seen on billboards throughout Kampala, promising products that make families healthy. Established in 1986, the Mukwano Group's labels are present in about 90 percent of Ugandan households. At a time when Uganda was importing almost 100 percent of its soap and oil due to the absence of essential commodities within the country, the Karmali family invested in the oil refining and commercial soap producing equipment and set up operations in Kampala. The Mukwano Group has grown exponentially and employs an estimated 10,000 personnel. It is now one of the largest domestic manufacturers of edible oils and fats, soap, detergents, personal care and hygiene products, domestic and commercial plastics, energy food drinks, and drinking water in Uganda.

Mukwano has been a key player since the first public-private sector food fortification standards and regulations began in the early 2000s under the leadership of the Ministry of Health, and in collaboration with the Ministries of Agriculture and Finance, the National Bureau of Standards, and international partners. Bidco Oil Refineries Limited was soon to follow Mukwano's example and now is the largest player in the oil manufacturing industry, wholly committed to and supportive of oil fortification. "We fortify 100% of our oils and fats," says Levi Kabatabarukye, in charge of Quality Control for Bidco. Over the years, numerous obstacles have had to be surmounted through multi-sectoral and sometimes painstaking dialogue. These hurdles have included using proper packaging techniques to keep damaging UV rays from breaking down the vitamin A in the oil, agreeing on a logo that would represent the public-private sector alliance without unwittingly reinforcing myths about fortification, and working with the revenue authority to agree on customs fees and clearance procedures. According to Paul Mubiru, Quality Control Officer for 10 years with Mukwano A.K. Oils and Fats Limited, however, the journey for the industry as a whole has been worth it, especially when the individuals inside industry are actively reflecting on the people affected by their manufacturing decisions. "[Our] managing director had a vision for corporate social responsibility. He believed in giving back to the people that had supported his business from the beginning. And so, when malnutrition and micronutrient deficiencies became a discussion of the government, he was already a converted man on the issue of fortification," Mubiru says.



Setting the Standard and Carrying out Food Control: The Role of Government

The Uganda National Bureau of Standards (UNBS) became operational in 1989 and its roles are clear: consumer protection, public health and trade regulation. "Once we talk of adding something to food," states Dr. Ben Manyindo, Deputy Executive Director for the UNBS, "the issue of safety and quality becomes critical. That is when UNBS gets involved." UNBS partners with the Ministry of Health and plays a key role in the food fortification process: verifying claims and logos, providing laboratory testing for the presence of fortificants, and conducting market surveillance and inspection of foods claimed to be fortified. When the Ministry of Health started promoting food fortification as a large-scale strategy for reducing micronutrient deficiencies country-wide in the early 2000s, UNBS created regulation standards and enforcement procedures of these standards to roll out a safe and effective intervention. Ugandan standards for fortification, surveillance, and inspection were the first of their kind in the region.

UNBS' work has not been without its challenges. Food fortification program officers will speak of the overwhelming number of samples that are coming into the laboratory. "Can you imagine how many samples we have to handle in our labs? If nearly 90 percent of our oil is fortified, and that needs to be tested and validated, and we are entrusted to check other claims on manufactured products, as oil is just one of many...now you see why it takes so long to receive the results back. But it makes it difficult when we really need to check on whether something on

I think we can say that UNBS has done its work on behalf of the people of the Republic of Uganda. We have developed standards, implementation and enforcement. If someone decides to fortify and they do not follow the standards in place, there are penalties under the law. And, if we test and analyze this collaborative work we are doing all together, we can show that we are having an effect on micronutrient deficiencies in this country.

-Dr Ben Manyindo, Deputy Executive Director, UNBS



I feel proud of Uganda. The Ugandan standards on food fortification were issued first in the region. Ugandan fortification standards started from the same blank manuscript as everyone else. But now countries in the region reference Ugandan National Standards. We are the model for standards, enforcement, and monitoring.

-Ronald Afidra, Food Fortification Advisor, USAID: A2Z

the market is meeting the standard or not," says Enaru Francis, UNBS Standards Officer. Another challenge is technical capacity. Two food fortification officers are employed at UNBS to provide surveillance and inspection, as well as to verify claims on fortified products being produced in Uganda. But with such limited staff, they are easily overstretched. "Through the East, Central and Southern Africa Health Community's laboratory network, we have had access to capacity building. And without Uganda Industrial Research Institute and its work, it would not be manageable," says Johnson Ssubi, another Standards Officer with UNBS.

UNBS serves as a reference bureau for other National Bureaus of Standards in the region. Within Uganda, UNBS is part of the National Working Group on Food Fortification, and together with the Ministries and the private sector, as well as other stakeholders, it is engaged in dialogue as well as in action. "We are confident that we have safe and wholesome fortified oil on the market here in Uganda. The dangers could be great if we didn't do our jobs. We feel proud that we've set an enabling environment for food fortification so there are no public threats to consumers and we end up doing our people more good than harm. Imagine trying to combat micronutrient deficiencies and ending up with a toxic product on the market instead?" states Ssubi, illustrating the importance of UNBS' contribution to the food fortification process.

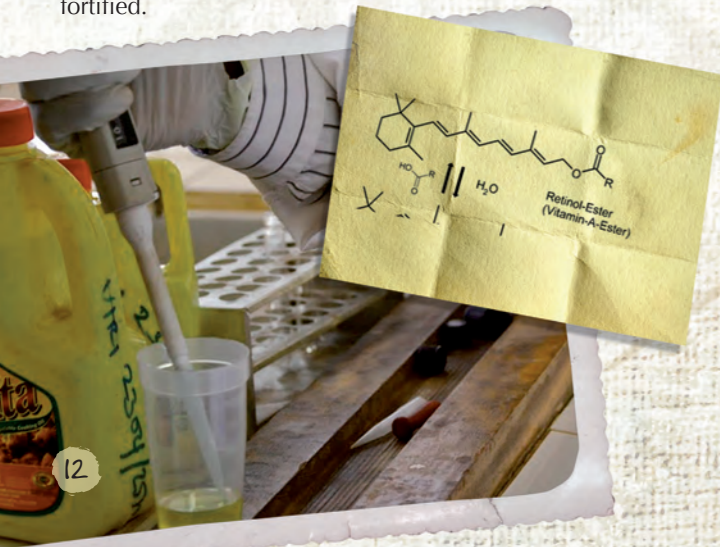
'Success Breeds Success': The Evolution of Food Analysis Capabilities

The Uganda Industrial Research Institute (UIRI) did not always have the space, equipment, skills and experience it possesses today. It was formally established in 2002 by an Act of Parliament under the auspices of the Ministry of Tourism, Trade and Industry (MTTI), but without designated funding partners. "When you start from nothing and really believe together that you are going to make it, it is something incredible -- even when in that moment you look around and you don't have space you feel is adequate and pieces of the roof are threatening to fall down and hit your head... But now, now we can proudly say that our laboratories meet quality standards for testing," smiles Charles Kwesiga, Executive Director of UIRI. Today, UIRI is the country's main vehicle for implementing strategies and measures aimed at transforming industry in Uganda. As such, UIRI is critical to the food fortification program in Uganda because it conducts and provides the analysis for quantitative testing of micronutrient levels in domestically produced and imported food vehicles for the Ministry of Health, and so supports UNBS in its food control actions.

The biggest challenge for the research institute, according to the executive director, was finding technical and financial support for its efforts. "We wanted to go beyond glossy reports to making products," said Kwesiga who believed in adding value to industry and not just criticizing or evaluating it. "So when food fortification began in earnest, even myself, I did not know we as Ugandans were consuming products that did not provide adequate nutrition to us. This was a truth that had been hidden from a lot of people. We consume maize meal and yet we don't know the impact of what we eat. I remember one

time hearing the Vice President mention something about schools where children consume foods that are simply meant to fill their stomachs but have no nutritional use. This is a strange concept to us as Ugandans," reflects Kwesiga, "To think we consume and are unaware of these issues."

A visit to UIRI's laboratories shows young technicians hard at work taking food samples from all over Uganda and testing for the presence and content level of vitamin A. For cooking oil products, the presence of vitamin A will form a bluish cast in the vial. If no blue cast appears, the oil has not been fortified. UIRI has received both equipment and skills training from partners like the U.S. Agency for International Development (USAID) and others to develop its expertise on site. The quantity of fortificant added to oil must be verified by machines which feed the information into a computer that then provides graphics showing the maximum level of vitamin A present in the product sample. This allows technicians to see whether the food is fortified to the accepted legal standards. UIRI also is the coordinating laboratory that provides mentorship and capacity building for sampling and reviewing of micronutrient proficiency testing performed in laboratories throughout the East, Central and Southern Africa Health Community network. For a research institute that began from nothing, UIRI is now a key resource in the wider region and providing effective evaluation practices of the safety and veracity of what is being claimed as fortified.



Getting the Message Out: the Importance of Social Marketing

With 40 official languages currently spoken throughout Uganda, communicating critical public service announcements is a tricky business. Depending on whom you ask or what document you look at, Uganda has either 28 official stations or 188 operational and licensed radio outlets. FM radio is seen even today as the best dissemination channel for advertising and marketing -- even more than television, newspapers and magazines, which may not have the most penetration in remote rural areas or the broadest coverage in the country. "Public awareness print messages on food fortification were created but distributing them is challenging and has yet to be done in local communities. The process for sensitizing the media on the health benefits of fortified foods has been done successfully and now these journalists are ready allies in promoting community education around food fortification. However, raising awareness throughout the country to create market demand for food fortification has been disjointed, with only one communication channel being used at a time instead of a mix to form synergy and provide greater impact. We need to get the fortification message out with a bang," shares Tabley Bakayita, a Senior Health Educator at the Health Communication Department of the Ministry of Health.

"When you become a part of such a revolutionary change of mindset and habits, and are improving peoples' nutritional health, it is an exciting experience in itself. Now people internationally look at what we are doing. Our labs are known for their high standards of testing. In a way, we have arrived."

-Charles Kwesiga, Executive Director, UIRI



"If you bring your messages to the hospital, you've reached very many in a short period of time. And they come from all over and return home with the message. Social marketing around food fortification should be here."

-Dr. Elizabeth Kiboneka, Consultant Pediatrician, Mulago Hospital

Food fortification messaging for the Ministry of Health remains general through the use of a special "good-nutrition" logo in order to cover all the possible vehicles on the market. Creating promotional materials for the industry is a delicate balancing act, as marketing the critical message must skirt any misperception of the government promoting one manufacturer over another. "Focus demands sacrifice," says Bakayita with a professionalism that shows he is used to walking a fine line between appealing to industry's core business interests and aligning these with the government's duty to protect its people and promote better health and nutrition in this case. "We cannot move forward in our social marketing without industry. And we cannot move forward in our communications if we are fighting about which are the major languages and which are the minor ones in which to write our campaign messages and advertising slogans," states Bakayita. "We know what needs to get done, and we need to get the message out."

Progress is measured in steps and there have been many achievements towards communicating the message of purchasing and consuming fortified foods in Uganda. The Ministry of Health and the Ugandan Consumer Protection Association together have developed radio spots for 10 stations with the most coverage in rural and urban areas throughout the 13 districts in addition to posters, billboard messages, and information packets that have been widely distributed. Media sensitization workshops have been held in Kampala as well as the Southwestern, Eastern and Northern districts of the country with television, radio, print and online media journalists. The objective of these workshops has been to engage media as an ally in bringing food fortification awareness and education to the people, as well as to build their own knowledge of food fortification as a critical public health intervention worthy of press coverage. Furthermore, Bakayita has been part of the design and development of a food fortification logo meant to promote the multi-sectoral partnership of the National Working Group on Food Fortification (NWGFF). "The logo is maybe the least appreciated and yet it is and will be the most visible and consistent message Ugandans will see at every point of the fortification process," says Dr. William Ssali, Vice Chairman of the NWGFF. The logo appears on all fortified food products and Bakayita envisions a day in the near future when it will appear on trucks transporting fortified goods throughout the country. "We have an environment ready for a coordinated fortification campaign launch-able through multiple distribution channels and strengthened and promoted by industry," envisions a hopeful and committed health educator.

Generating Domestic Growth through Local, Innovative and Healthy Solutions: The Unintended Positive Consequences

The Ministry of Agriculture has worked alongside the Ministry of Health since the early days when food fortification was explored as an innovative large-scale strategy to combat micronutrient deficiencies in Uganda. "We have deficiencies as a country and in the villages, especially. Expanding the coverage of essential vitamins and minerals through fortification of products seen in the market every day is critical," states Connie Magomu Masaba, Project Coordinator for the Vegetable Oil Development Project at the Ministry of Agriculture. Fortified oil should reach most of the population, and the Ministry of Agriculture decided to invest in the strengthening of this sector.

The Ministry of Agriculture began the Vegetable Oil Development Project in coordination with food fortification efforts across the country. The project has worked closely with Mukwano and Bidco oil manufacturers to encourage them to work with more local farmers and millers. At the same time, the government has been promoting increases in oil production by connecting the country's principle palm, sunflower and soybean producers to smaller millers and localized markets that would work in harmony with the large-scale refineries where oil is appropriately and cost-effectively fortified. Through government promotion of domestic palm oil, palm harvesting on Kalangala Island and around Jinja is growing exponentially. This new, totally domestic enterprise is generating a booming business for the country and creating fortified palm oil for distribution. Within the next five years, the Ministry of Agriculture estimates that production will have spread

around the lake and into areas bordering Congo in the North where palms are prevalent. In addition, soybean oil is being assessed as a vehicle for fortification, as Ugandans anticipate soybean crops will flourish in the North and can be planted in rotation with sunflower crops.

"And that's not all," says Masaba. "We have even seen the sunflower fields in the North attracting bees, which has many Ugandans engaging in beekeeping. This work has expanded in the region. Honey production, which is building off the back of the sunflower fields, is providing an alternate means of income generation for many people now."

Other organizations working with the Ministry of Agriculture also contribute to the success of oil fortification in Uganda. The Uganda Oil Seed Producers & Processors Association (UOSPA) is not currently a member of the National Working Group on Food Fortification, but it is playing an important role in food security and nutrition awareness at the household and community levels. Established in 1995, the Uganda Oil Seed Producers & Processors Association (UOSPA) aims to support oil seed producers and processors and return Uganda to an era of agricultural prosperity and economic independence. UOSPA, a now-thriving organization of more than 1,000 members, works to increase vegetable oil production and consumption in the country. These local farmers, millers and manufacturers represent 27,000 households with extensive reach into the North and East of the country.

UOSPA increases raw material production through supply of quality planting seeds. It strengthens farmer advisory services and institutions, as well as advocates for favorable agricultural policies. Perhaps key to the fortification interventions in Uganda, UOSPA fosters communication between producers and processors and provides information and training on sector standards and quality, sensitizing farmers, who are also consumers, about the importance of eating fortified products.

"We provide regular trainings on nutrition through our network. We teach market sellers about food hygiene and sanitation and advise them on how to avoid exposing cooking oils to excessive sunshine. We explain how this can affect the quality of what they are supplying to others. We are trying to have an impact at the community level. Twenty-seven thousand households being reached is a drop in the bucket, but we are trying to build awareness wherever we have a presence with consistent messaging," shares Raymond Agong, Executive Director of UOSPA.

According to Agong, stabilizing the oil industry so that domestic production will surpass importation may take some time, but it is moving in the right direction. The Ministry of Agriculture would agree with Agong. It is excited by the prospect of these new oil fortification activities in the North and its potential for economic as well as health benefits for the entire region. All of these opportunities for economic growth provide positive ways to bring an economically isolated region back into the commercial market with sunflower and soybean crops, as well as to strengthen palm oil production in other districts of the country. Increasing the production of these domestic crops was not envisioned when oil fortification was introduced in 2005, but it is now a positive, unintended consequence of the fortification program. "We are getting there," says an optimistic Agong. "The North is recovering and there is some economic stability. We know about food fortification and its benefits to the health of our people, and the government and oil seed crop industries are working together in this. Now we just have to get the message out to make people aware."

We need to provide more information for people in the villages to appreciate the nutritional benefits of fortified vegetable oil so that they can look for fortified oil on the market. Even in the villages, they will pay even a bit more for fortified products if they know this will improve their health. If we educate and then this creates demand, this will further encourage the millers, both small and large scale.

-Connie Magomu Masaba, Ministry of Agriculture, Vegetable Oil Development Project



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