UGANDA NATIONAL ACADEMY OF SCIENCES

Sciences for Prosperity

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Integrating Nutrition in the Agriculture Value Chain in Uganda

Micronutrient Deficiencies

Uganda as a country produces sufficient quantities of food to feed the entire population but still faces unacceptably high levels of vitamin and mineral deficiencies particularly in women and children. These micronutrient deficiencies are typically caused by poor dietary diversification characterized by high intake of starches with limited consumption of foods rich in vitamins and minerals (fruits, vegetables and animal based diets) (FAO, 2010; UDHS, 2006; 2009). The most common micronutrient deficiencies found among various populations in Uganda are vitamin A, iron and zinc. The deficiency of these micronutrients is most critical because they affect the development, health and survival of those affected. Increasing the consumption of foods rich in vitamin A, iron and zinc—in addition to other micronutrients—will improve the mental and physical health of vulnerable populations like women and children. This can be done through better integration of nutrition into the agriculture value chain.

The Agriculture Value Chain

According to Webber (2000) a value chain can be defined as the process of production to market delivery of a given product. This entails an understanding of relationships between businesses, methods for increasing efficiency, improvement of productivity and value addition. In an agricultural value chain, farmers, traders, agribusiness and input suppliers would work together and government supports the private sector to encourage their participation and investment in the agriculture value chain. Many believe that public-private partnerships are key if nutrition is to be incorporated as a public good.

The typical components of the Ugandan agricultural value chain include inputs, production, harvesting and post harvest handling, processing, marketing and consumption. The components of the chain differ according to the intended purpose of the final product.

Mechanisms to Integrate Nutrition into the Agricultural Value Chain

One way of integrating Nutrition into the agriculture value chain in Uganda could involve seed/input production and access to farmers. The principal source of seeds in Uganda is farmers' own saved seeds or purchases from grain markets. Offering farmers seeds and breeds that have been deliberately modified to improve the nutritional content of needed micronutrients could lead to better nutritional outcomes of the household provided the food is consumed locally. The hope is that over time, such alterations would become the norm and would lead to an increased market demand for the seeds or breeds.

Harvesting and post harvest handling are other entry points for integrating nutrition into the agriculture value chain by minimizing losses and contamination of crops during harvesting and storage. Altering cooking processes at home also has the potential of improving nutrient retention of certain foods. Value addition from fortification and enrichment to improve the micronutrient content in the food available to the consumer population is another way of integrating nutrition into agriculture. One important point is to take care that the fortification and other processes do not affect the flavour, taste and affordability to the final consumer.

Social marketing that advocates for nutrient dense seeds and food has been shown to help with community acceptance of modified products and thus aid in the integration of nutrition into the agriculture value chain. This might involve encouraging consumers to buy nutrient dense foods in view of their nutritional advantages thus leading to increased demand for such nutrient rich foods. Furthermore, media attention and policy-makers' expression of the importance of diet diversification and fortified foods to improve health and productivity of the people in Uganda would underscore the importance of linking nutrition and agriculture. Deliberate policies by government both at central and local government levels would likely improve the potential for success of any nutrition advocacy.

Nutritionalization of national programs such as the National Agricultural Advisory Services (NAADS) presents a resourceful opportunity to improve nutrition outcomes through the integration of nutrition into agriculture in Uganda. The program focuses on enhancing rural livelihoods of poor subsistence farmers, with a particular emphasis on women, youth and people with disabilities. The multi-sectoral approach consisting of farmers, local governments, private sector, NGOs, Ministry of Agriculture, Animal Industry and Fisheries (MAAIF) and other ministries further makes the program very instrumental in the improvement of nutrition outcomes through agricultural interventions in the country.

The specific content for nutrition training of frontline agricultural workers during pre-and in-service education needs to be critically assessed through formative research. Providing agricultural extension workers with simple skills, knowledge and attitudes needed to enable them to guide and educate smallholder farmers about nutrition practices will help promote positive nutrition outcomes at the household, community, district and national levels. For instance, production of fresh fruits, vegetables and small livestock alongside market-oriented agriculture and nutrition education is likely to increase dietary consumption at household level.

However it is important to note that the current agricultural interventions in Uganda involve different players including government, private sector, civil society organizations, development partners and smallholder farmers. Sustaining results for improving nutrition outcomes through agriculture will require a well balanced and rigorous coordination mechanism stemming from national level all the way to village level.

CHALLENGES

Several challenges that may impede integration of nutrition in the agriculture value chain in Uganda are:

- Challenges related to poor governance, unfriendly public policy, poor infrastructure, institutions and services for market information, grading and standardization of goods (including inputs and produce), and management of risks and enforcement of contracts;
- Limited financial services in rural areas where most smallholder farmers do not obtain the capital they need to acquire production and processing technologies;
- Appropriate incentives for financial institutions to invest within the often risky agricultural value chain are missing;
- The quality of agricultural extension information smallholder farmers receive from different government departments and agencies is deficient, untimely, or irrelevant.
- The lack of coordination of government, private sector and NGOs is causing confusion among smallholder farmers as they receive different, often mixed messages.
- Poor access to roads, electricity, and generally inadequate infrastructure adds to transaction costs in all agricultural produce and cause quality deterioration and high spoilage losses.
- Inadequate and insufficient post-harvest storage facilities contribute to high losses of produce and its value along the chain.
- At a country level, Uganda has not yet fully enforced the rules of product standardization and quality assurance to maintain high levels of food safety. Hence, improvement of nutrition outcomes gets difficult due to such shortfalls in maintaining food safety along the value chain.
- Farmers and food manufacturers' negative attitude towards application of modern technologies reduces adaptability of such interventions like fortified seeds and bio fortification during factory processes.

POSSIBLE INCENTIVES

Uganda has drafted a framework for integrating nutrition into agriculture for improving nutrition outcomes in Uganda by persuading the agricultural value chain players at different levels to actively integrate nutrition in all they do. By integrating nutrition along the value chain, it is anticipated that the national performance indicators pertaining to nutrition will greatly improve in the next five years. Improvement of value chain performance for promotion of nutrition outcomes in Uganda requires new incentives for all the key players involved and to attract other service providers such as telecommunication companies. Some of the incentives needed urgently include:

- Mass education of agro-input dealers to educate them on the benefit obtained from large organization representation such as access to technical assistance, linkage to market, credit facilities, etc.;
- Provision of infrastructure to enhance the quality of agricultural outputs e.g. storage facilities, agro-processing technologies and transportation services;
- Linking of farmers to large markets for value added products (in terms of nutrient rich or enriched foods);
- Government subsidies to highly needed agricultural inputs like fertilizers, seeds, herbicides and other agro-chemicals to enhance the quality of produce;
- Continued financial support to agricultural research institutions such as the National

Agricultural Research Organisation (NARO) involved in nutrient enhancement of staples thus transforming research into action;

- Integration of nutrition education into agricultural training curricula so that extension workers provide nutrition related services along the value chain;
- Mass public education of farmers on the need for integrating nutrition into the agricultural value chain;
- Enhancement of availability of food banks at community and regional levels; and
- Government putting in place a legal and policy framework that establishes and enforces food quality standards.

CONCLUSION

Integration of nutrition into the agricultural value chain in Uganda is a very important step towards promotion of nutrition outcomes in the population, particularly among the most vulnerable groups. For nutrition to be effectively integrated into the agricultural value chain in Uganda, all the key players would need to accept their roles in improving nutrition outcomes. The government, private sector, civil society organizations, research institutions and development partners each have a role in ensuring effective integration of nutrition into the value chain. Practical implementation of the activities proposed in this Policy Brief would be most effective if service providers in government teamed-up with private institutions through public-private partnerships. Appropriate incentives, especially those related to enhancing marketability and profit of the products are needed if any nutrition interventions along the chain are to be effected successfully. For this to occur, government and its partners would have to create an enabling environment. They might start by transforming the NAADS program to incorporate nutrition. This would be a viable first step to enhancing the integration of nutrition into agriculture. A formative research agenda would also be important in answering specific questions regarding how best the integration could be done.

REFERENCES

FAO. Nutrition and Consumer Protection Division. 2010. Uganda Nutrition Profile. ftp://ftp.fao.org/ag/agn/nutrition/ncp/uga.pdf [Accessed on 14 May 2011].

UDHS (Uganda Demographic Health Survey) 2006. UBOS and ORC Macro, Calverton, Maryland, USA.

UDHS (Uganda Demographic Health Survey) 2009. UBOS and ORC Macro, Calverton, Maryland, USA.

Webber M. 2000. Using Value Chain Approaches in Agribusiness and Agriculture in Sub-Saharan Africa: A Methodological Guide. The World Bank , Washington D.C. http://vle.worldbank.org/bnpp/files/TF054197VCGuideJuly28FinalDraft.pdf [Accessed on 13 May 2011].

UGANDA NATIONAL ACADEMY OF SCIENCES

The Uganda National Academy of Sciences (UNAS) was founded in 2000 and granted a Presidential Charter in 2009 as the National Academy for Uganda. Like many other academies of science, UNAS is an autonomous body that brings together a diverse group of scientists from the physical, biological, and social and behavioral sciences. These scientists work together in an interdisciplinary and trans-disciplinary manner to achieve their main goal of promoting excellence in science by offering independent, evidence-based advice for the prosperity of Uganda. The mission of UNAS is to advance the ability of Uganda to address its most serious national development challenges by (1) engaging in a series of scientific activities designed to elucidate potential evidence-based solutions to pressing national and regional health concerns; (2) enhancing the general capacity of UNAS to provide relevant and useful scientific policy advice and (3) building Uganda's appreciation of and demand for advice from the Academy.

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