



Feed the Future Country Fact Sheet

Online Version: <https://www.feedthefuture.gov/article/feed-future-fellow-promotes-food-security-and-nutrition-among-children-ugandan-primary>

Feed the Future Fellow Promotes Food Security and Nutrition among Children in Ugandan Primary Schools



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Feed the Future supports researchers like Richard Bukenya in food and nutrition science.

One of the ways Feed the Future supports better nutrition and food security is by increasing the number of agricultural scientists and strengthening scientific institutions in developing countries. To learn more about what that looks like in practice, Feed the Future talked to Richard Bukenya, a Fellow with the [Borlaug Higher Education for Agricultural Research and Development](#) program, who is working to improve nutrition for in Uganda through his research at the University of Illinois Urbana Champaign.

Q: Tell us about your research objectives in a nutshell.

A: My long-term goal is to maximize the delivery of adequate nutrition to vulnerable populations in homes and schools as a way to reduce the burden of hunger and malnutrition in Uganda.

Q: From your perspective, why is it important to address malnutrition?

A: Malnutrition undermines national education efforts in Uganda. Undernutrition and micronutrient deficiencies (e.g. iron deficiency and anaemia, zinc and vitamin deficiencies, etc.) are the major forms of malnutrition among school-aged children (6-12 years old).

Q: How does your research support improved nutrition for school-aged children in Uganda?

A: During my PhD studies I will explore robust ways of addressing anemia in this age category through promoting better nutritional practices and fortification in school feeding programs. Whenever needed, I will analyze the nutrient composition of staple foods consumed by children at schools and in homes.

This summer, I am learning to conduct elemental and vitamin analysis using two technologies called microwave plasma atomic emission spectrometry (AES) and high-performance liquid chromatography (HPLC). In my first summer at the University of Illinois, I am familiarizing myself with wet lab techniques including sampling, drying, weighing, pipetting, etc. For example, in some studies I am analyzing the nutrient composition of staple cereals. Cereal flours are weighed and digested in the lab using nitric acid and hydrogen peroxide to oxidize organic matter and free elements before reading iron from the AES.

Q: What are some unexpected nutrition challenges Uganda faces and how can new research and technology

address them?

Uganda is not only experiencing undernutrition challenges, but also an increased prevalence of obesity at all stages of the life cycle, especially school-aged children in urban and peri-urban areas. Numerous studies conducted in Uganda have used Body Mass Index (BMI), a ratio of weight to height to assess body fat composition. However, BMI is a poor estimator of fat mass. Thus, other methods to assess body composition among school-aged children need to be explored.

One such method, Bioelectric Impedance Analysis (BIA) has been reliably and widely used in body composition studies elsewhere, but only a few studies in Uganda have used the BIA technique to assess body composition. I expect to achieve my long-term research goal by evaluating the feeding practices of children in schools and homes. This will involve assessing the children's nutritional status and body composition. With support from Feed the Future's Borlaug Higher Education for Agricultural Research and Development program, the lab where I work acquired a new portable BIA scale, which allows for portable assessment of body composition and reliable information storage and analysis through integrated software. This tool can measure a wide range of populations, from 5-99 years of age. This summer, I will familiarize myself with the appropriate use of this equipment and data analysis for my field work in Uganda in the months to come.