Harnessing dietary nutrients of underutilised fish and fish-based products in Uganda (NutriFish) - CultiAF 2

Nutritional deficiencies are widespread in poor rural and urban communities of Uganda, particularly among women of reproductive age and children under 5 years. These groups are particularly affected due to limited access to animal protein and micronutrient-rich foods, especially fish. Fisheries and aquaculture offer opportunities to reduce hunger, improve nutrition, alleviate poverty, and generate economic growth.

The challenge

Fish has become less available to Ugandans due to declining stocks of large fish species, coupled with high exports and post-harvest losses. Consequently, Uganda's per-capita fish consumption estimated at 10 kg per person per year is lower than the FAO recommended 25 kg per person per year. This will decline further due to the high population growth rate in Uganda. Currently, the Nile perch is mainly processed for export, leaving by-products like frames, skin and heads for the local population. In addition, only 40% of the small fishes (<20 cm total length) caught are utilized as human food, thus are "under-utilized". Poor handling and rudimentary processing of the by-products and small fishes impedes harnessing of all the nutrients. Handling and processing needs to be improved in order to develop nutritious, affordable and safe fish-based products that are accessible to vulnerable groups.

The Research

NutriFish researchers will work alongside fish production and its associated value chains to address the nutritional needs of vulnerable groups who cannot afford expensive commercial fish but who are in critical need of high-quality nutritious diets. NutriFish aims at increasing availability, accessibility and consumption of underutilized fish and the processing of by-products through public-private partnerships, for sustainable food and nutrition security, and better livelihood of vulnerable groups. Through improved post-harvest and processing technologies (Solar Tent Dryer and NARO Smoking Kiln), the research will find ways to reduce losses and increase product quality, safety, and acceptability and improve distribution among populations living far from bodies of water. Researchers will (i) quantify post-harvest losses and promote cost-effective handling and processing technologies for underutilized small fishes and fish by-products; (ii) assess socio-economic and institutional factors constraining access to and use of underutilized fishes and fish-based products; (iii) develop fish-based complementary foods for vulnerable groups using underutilized small fishes and fish by-products; (iv) develop marketing models for efficient distribution of fish based products; and (v) enhance capacity of partner institutions to sustain availability and consumption of underutilized small fishes and fish-based products.

Considering that women are often excluded from profitable ventures, NutriFish will deliberately integrate a gender responsive strategy to ensure that product development, marketing, and entrepreneurship strategies include women in order to enhance their economic capacities as well as their acceptance and adoption of fish and its by-products within their diets. An estimated

560,000 consumers from low-income segments of Uganda's population are expected to access affordable and nutritious fish-based products by the end of this three-year project.

Expected outcomes

By increasing consumption of higher quality protein from fish and improving dietary diversity, the project will:

- Contribute to reducing the incidence of micronutrient deficiencies, particularly among women of reproductive age and children under 5 years;
- Create diversified income opportunities for around 200 people (50% women) through enterprise development in fishing, fish processing and marketing;
- Share project results and outputs with local and national policy makers to facilitate the scaling-up of results.

Implementing partners

- **Makerere University: Dr. Jackson Efitre (jefitre@cns.mak.ac.ug; jefitre@gmail.com)**
- **National Fisheries Resources Research Institute (NaFIRRI): Dr. Anthony Taabu Munyaho (director@firi.go.ug/ataabum@yahoo.com)**
- **NUTREAL (U) Limited: Assoc. Prof. Dorothy Nakimbugwe (nutrealfoods@gmail.com)**
- **McGill University: Prof. Lauren J. Chapman (lauren.chapman@mcgill.ca).**

Countries: Uganda

Duration: February 2019 to August 2022

NutriFish is funded by the Cultivate Africa's Future Fund (CultiAF), a joint program of IDRC and the Australian International Food Security Research Centre of the Australian Centre for International Agricultural Research. **Cultivate Africa's Future Fund** (CultiAF) supports research to achieve long-term in Eastern and Southern Africa. Learn more at www.idrc.ca/cultiaf

Australian Government
Australian Centre for International Agricultural Research

IDRC | CRDI
International Development Research Centre
Centre de recherches pour le développement international

Canada