

Ento-Economy: Enhancing Food and Nutrition Security Through Promotion of Edible Insects Value Chains in Eastern Africa

The Ento-Economy project aimed to unlock the potential of edible insect value chains in Kenya and Uganda. The objectives were: 1) Analysis of stakeholder interaction to develop value chains. Development of methods for mass production of edible insects, 2) Investigating entrepreneurial skills for commercial production and marketing, 3) Market and consumer research to develop marketing approaches, and 4) Regulatory framework support for Kenya and Uganda.

The project has created a network of stakeholders involved in research, policymaking, micro-financing, insect rearing, processing, and consumer aspects of the value chain. This network, however, needs formalization as part of an ongoing exercise. Research findings show that insect production, collection, and retailing are profitable enterprises. Insect value chains are gendered, with more women and youth engaged in retailing of grasshoppers and cricket production. Women are also more involved in value addition in the grasshopper value chain.

Technologies for the mass production of edible insects were developed, evaluated, and disseminated to farmer groups and processors. Cricket and grasshopper feed was developed, evaluated, and found to perform well both under laboratory and farmer conditions and is ready for scaling-up; alternative rearing containers made from locally available materials were developed and tested under laboratory and farmer conditions; protocols for rearing, harvesting, and post-harvest handling of the insects were established and disseminated to cricket farmers for use. The protocols can also be used by food processing SMEs; a farmer-to-farmer extension system was developed by training the most competent women farmers and equipping them with basic requirements.

Developed insect-based products for human consumption were further refined and are currently undergoing certification by UNBS in Uganda and KEBS in Kenya. The process of introducing the products in sales outlets is ongoing. Promotional activities for insect and insect-based products have been carried out not only through print media, national and local TV in Kenya, and Uganda but also through farmer and trade fairs. Consumers in Uganda and Kenya have positive behavior, attitude, and beliefs toward grasshopper and cricket snacks. Developing persuasive marketing strategies to influence consumer beliefs toward insect products is critical for the development and commercialization of insect products in East Africa. To support the value chain, the regulatory framework was strengthened by the development, approval, and gazettement of an edible insect standard in Kenya and Uganda.

The project held stakeholders' workshops in Kenya and Uganda and had members from Kenya, Uganda, Germany, and Belgium. This formed a basis for stakeholder engagement throughout the project. The research results were disseminated to the international scientific community

through conference presentations and publications in peer-reviewed journals. In addition, technical reports were produced and made available to policymakers to facilitate the implementation of the research findings.

As part of capacity building, the project trained three male post-docs, one female Ph.D. student, one male master, and one female master's student. In addition, the concept of entomophagy was integrated into the Agricultural Economics Master program module "Applied Marketing Research" and a series of presentations were given in various MSc and BSc courses at Humboldt-Universität zu Berlin and Jomo Kenyatta University of Agriculture and Technology to inform students about the topic. A farmer-to-farmer extension system was established, comprising skilled, knowledgeable, and interested women farmers equipped with a manual to transfer their knowledge and skills to and support the other current and potential farmers.

The project website is https://leap.iamb.it/?page_id=307

The project team consisted of:

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