Technical brief #6:
Kenyan policy and legislative environment for insects as food and feed

GREEN INSECT

UNIVERSITY OF COPENHAGEN

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Introduction

Insects have been a traditional part of Kenyan diets, especially in the western part of the country. Insects have gained an increasing amount of attention for their potential contribution to local economy, both in the feed and food sector. In order to develop this new sector, regulations and policies need to be revised in order to enable investment opportunities, ensure consumer safety and protect the environment. When applicable, new standards will also need to be developed.

The main GREEiNSECT partner institutions in Kenya – Jaramogi Oginga Odinga University of Science and Technology (JOOUST), Jomo Kenyatta University of Agriculture and Technology (JKUAT) and the International Centre of Insect Physiology and Ecology (*icipe*) – have placed insects for feed and food on the political and regulatory agenda. In 2016, a major step was taken when the 'International Conference on Legislation and Policy on the Use of Insects as Food and Feed in East Africa' was held March 2nd - 4th in Kisumu, Kenya. The conference was attended by 105 invited participants, representing national, regional and international stakeholders. Some key outcomes during the conference were:

- On the African continent, Kenya (led by efforts from ICIPIE, JOOUST and external partners) has been developing as a local hub for research and development in this arena, and neighbouring countries (especially Uganda) are getting involved as well.

- The private sector interest for insect mass production, mainly for crickets for human consumption and black soldier flies for feed are gradually emerging. These are two of the most studied species and they are used to guide efforts to develop insect inclusive legislation, to secure a market for insect products.

- Food and feed safety standards are built upon current research, and should be established together with best practice behavior in order to ensure consumer safety along the production chain.

- Wild harvesting of some species for human consumption is popular in many part of Africa. Thus there is an urgent need to develop and enforce rules and regulation to protect biodiversity.

Photo1: GREEiNSECT project investigator Dr. Nanna Roos at the International Conference in Kisumu 2016.
—Source: Christopher Münke-Svendsen

Insects as feed

Processed commercial animal feedstuffs are regulated to secure quality and safety. Insects are novel ingredients in commercial feed products for livestock, chickens and fish species. The specific use of insects as animal feed has not been covered by existing standards and regulations in Kenya.

A key outcome from the conference in 2016 has been the establishment of a Kenyan standard (KS) 2711:2017, ICS 65.120 for "D*ried insect products for compounding animal feeds"* by the Kenyan Bureau of Standards (KEBS, 2017). A similar standard called "*Dried insect products for compounding animal feeds" – (US 1712:2017)* has also been established in Uganda under the Ugandan National Bureau of Standards (UNBS) under the leadership by *icipe* and Makere University, while in Kenya the process was led by GREEiNSECT partner *icipe*.

The standard is the result of a collaborative effort in between the private sector, research institutions, universities, international organizations and Kenyan authorities under the Ministry of Agriculture Livestock and Fisheries, State Department of Livestock, and the Kenya Bureau of Standards, working under the umbrella of the National Technical Committee for Animal Feed.

The newly released standard KS 2711:2017 for the use of insects as an animal feedstuff was established with references to already applicable standards: for example, the Kenyan Standard (KS) #63 – *Methods of test for animal feedstuffs* and the KS #2543 – *The animal feed industry, Code of practice and Kenyan Standard on Microbiology.*

Photo2: Insect rearing facilities at *icipe* research station Mbita, Kenya. *—Source: Afton Halloran*

The new standard further defines the meaning of processed insect products, whole insects and ground insect products. In order to categorize products, nutritional requirements for insects are defined either as low protein or high protein products as well as defatted products.

The standard for *dried insect products for compounding animal feeds* uses established standards for microbiological requirements, as well as heavy metal and pesticide residue limits following the Codex Alimentarius. In order to market products to clients, the standard established a set of requirements for packaging and labelling to ensure transparency and traceability of the product.

The standard has not been established for specific insect species, but rather as a general standard for all insect species that can be used in animal feed It was built around same thresholds that guide the use of fish meal as protein source.

Insects as food

Insects have previously been mentioned in Kenyan dietary guidelines as a food source for nutrition security, for example, in the 2006 Kenyan National Guidelines on Nutrition and HIV/AIDS. The guidelines state that "common sources of animal proteins in Kenya include milk and milk products, beef, poultry, chicken, eggs, fillet, dried small fish (*Rastrineobola argentea*) and edible insects such as termites" (Republic of Kenya 2006; p. 11). Moreover, it recommends that food security in HIV-affected households could be addressed in rural areas by promoting traditional practices of harvesting, preserving and consuming indigenous foods such as edible insects like termites. It is especially recommended when planning for the lean season (Republic of Kenya 2006).

Photo 3: Participants of the international conference learning about experimental set-ups for cricket rearing. *—Source: Afton Halloran*

Insects for food and insect-based food products are to be regulated in the same way as other foods by the Kenyan agencies that govern food safety control and consumer protection. Relevant state agencies were identified by Halloran et. al., 2015. They operate under four different ministries: 1) Trade, 2) Industrialization, 3) Public Health and Sanitation, and 4) Agriculture, Livestock and Fisheries, specifically the Department of Livestock. Standards for food products are – like for animal feed – to be implemented through the Kenya Bureau of Standards (KEBS).

Insects have made up a part of indigenous diets in a variety of ethnic groups in Kenya and consumption is therefore in generally permitted as food. However, processed edible insect products and species must not be traded unless they are registered with KEBS. Under KEBS, they would be subject to general food law, as well as any specific regulations that are developed in the future. This is unlike the legislative situation in the European Union (EU), where insects have not been a part of the traditional diet. They are, therefore, now regulated as 'novel foods' that need to be approved for consumer safety.

Most Kenyan food standards are adopted from international standards from the International Organization for Standardization (ISO) and Codex Alimentarius Commission (CAC). These standards manage and protect the health of consumers as well as facilitate trade. The World Trade Organization (WTO), Sanitary and Phytosanitary Standards (SPS) and Technical Barrier to Trade (TBT) agreements (World Bank 2005) are considered when setting Kenyan standards.

In addition to the establishment of standards for feed and food through KEBS, the conservation authority Kenya Wildlife Services (KWS) require permissions for

large-scale farming of insects. This is due to the fact, that insects have only been domesticated and farmed very recently in Kenya. These permits must conform to wildlife domestication regulation processes for the capture and reproduction of indigenous species in Kenya. The regulations that apply to transportation of livestock between different jurisdictional areas in Kenya and approved methods of transportation also apply to farmed insect species (Halloran et. al., 2015).

Insect researchers will contribute to the process of standard development, with much needed scientific data in areas such as e.g. nutritive values, food and feed safety, insect pathology and consumer awareness.

To support the development of the insects for food and feed sector in Africa, the *African Center of Excellence in the Sustainable Use of Insects as Food and Feed* (INSEFOODS) at JOOUST in Bondo has been established in 2017. It has been given the responsibility to establish a document repository to support and document the feasibility of insect species that can be domesticated or reared in confinement for food and feed purposes. The Center will also develop and oversee various activities related to insects as food and feed through research and training.

Photo 4: The International Conference on Legislation and Policy on the Use of Insect as Food and Feed in East Africa' held March 2-4 2016 jointly organized by the GREEiNSECT, INSFEED, ILIPA and EntoFood projects gathered international and national stakeholders to formulate the recommendations for legislation and policy for enabling the development of an edible insect sector in Kenya and other African countries.

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