

Policy Brief: Policy Constraints and Opportunities in the Edible Insect Value Chain for Improved Nutrition and Food Security

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Key Concerns

Why edible insect?

- Given the understanding that approximately 2 billion people, which translates to 25 percent of global households, rely on traditional diets of insects that are a good protein, fats, calcium, and energy and vitamins source.
- In East Africa, Edible insects form a substantial and traditional part of the regional and national diets.
- From ecological perspectives, Edible insects are understood to emit fewer greenhouse gases (GHGs) than livestock.
- The rearing of edible insects is not land based and will not require clearing of land for expansion in production.
- Harvesting and rearing of edible insects requires low capital investment and low technology that allows even the poorest of people in society to engage in beneficial activities along the value chain to achieve nutrition and food security in Kenya.

Priority Actions

- **Awareness and collaboration:** Among the most debilitating constraints in promoting edible insects as an alternative source of protein is inadequate awareness made worse by muted collaboration between and among important Stakeholders and within targeted Communities. Therefore, there is need for a concerted awareness creation particularly in rural areas as well as among key stakeholders. This would entail Action oriented and practical collaboration of stakeholders including: policy makers, entrepreneurs, financiers as well as consumers) needed to support the use of edible insects as a food security solution.
- **Implementation of Policy:** For effective adoption of Edible insects as alternative avenue for nutrition and food security, a major contribution would include favorable policy development and implementation to increase engagement of diverse public and private sector

stakeholders participation and improved efficient deliver at the various segments of the edible insects value chain.

- **Provision of technical support:** Suffice is to say Technical support promoting sustainable edible insect farming and harvesting through agricultural extension services is essential.
- Training and Capacity Building of Farmer Groups, Group Marketing, and Consumer Advocacy Groups would go a long way to improve Edible insect farming acceptance and as an alternative avenue for wealth creation.
- **Financing alternative protein solution:** There is a need to develop mechanism that help in the financing research support and development of alternative protein solution as well as suitable low-interest and long-tenure loans and investment financing that support edible insects production initiatives. Deliberate attempts have to be made to attract individuals in the private sector to finance these initiatives.
- **Monitoring:** There should be improved monitoring of household food security, including primary and supplementary protein sources. Monitoring is essential for precise tracking and measuring the impact of household food security, which helps in ascertain the progress towards achieving food access levels that are globally acceptable. Therefore, every country is supposed to come up with a monitoring system.

Introduction

Over the years it has been evident that the intense population growth that daunts the world today requires that the food supply has to match the growth rate being experienced (Godfray et al., 2010). With this rapid population growth, Kenya has not been an exception. However, it is worth noting that a variety in food sources for dietary needs in both human and animal consumption is important for their health benefits. Protein among other dietary needs is one of the most important. Thus, according to Niassy and Ekessi (2017) reports an estimated of over 2 billion people worldwide now partake in insect consumption in Africa.

This emanates from the understanding that African ancestors practiced the use of insects as food for decades mainly due to the fact that they were easily accessible and others took it as a cultural practice. Apart from the food consuming public, policies are designed to also protect the livestock producing enterprise; as such regulations and policies act as a voice for the animals. Preventing of diseases that can infect humans from entering the food supply is the first point of defense. Cautionary regulations on the feed used for insects as well as inspections on the livestock before slaughter and inspection of the meat products after slaughter is important. Many elements put together have proved to make insect farming for food to be a viable agricultural field with endless opportunities. Nutritional benefits and environmentally friendly are the biggest benefits of this emerging field, yet there are still a number of constraints that are hindering it from reaching full potential.

Methodology

The research study was conducted in Siaya, Kisumu and Homabay counties due to the fact that the region has a high concentration of insect consumption rate as well as insect farming and processing. As such the research adopted a non-probability purposive sampling techniques in order to identify stakeholders who were more knowledgeable and experts within the insects for food value chain. The study employed an advocacy research design seeking to gain in-depth knowledge on the constraints and opportunities that hinder the regulation of insects for food value chain.

The qualitative data was collected using mixed methodologies such as desk review, household surveys using questionnaires, key informant interviews and focus group discussions to capture all actors in the value chain including: Input Suppliers, Producers, Traders, Consumers, Service Providers, as well as Development Agents and Policy Makers. A total of 96 Respondents participated in the Survey in which structured Questionnaires were administered in the 3 Counties.

Additionally, Phone Conferencing interviews were also organized for the technical staff from the 3 Counties. Furthermore, a qualitative approach of 3 focus group discussions were organized for the technical staff in the 3 selected Counties including Livestock Development Officers, the Directors of Agriculture, and Agribusiness Officers, alongside selected Progressive Farmers, Input Suppliers, and Community-Based Organization Leaders.

The study area was the selected riparian Counties in the Kenyan Victoria Basin, namely Siaya, Kisumu and Homabay where there was high concentration of edible insect farming and consumption. The data collected was cleaned, collated and analyzed using Statistical Package for Social Sciences (SPSS

version 26). Focus Group Discussion data and information was organized for both thematic and content analysis.

Results

The study first reveal the socio economic profile of the participants and evidently the gender distribution of 50 females and 46 males were selected to take part in the study. Also the bulk of the participants are from the age range of less than 60 years. It makes a 96.7% of the entire population. Those above 60 years were only 3 which make 3.1% representation of the sample. Those in the age range less than 36 were almost equal to the age range of 36-60 years. This is reasonable since most people who are economically productive lies in the age range of less or equal to 60 years.

In addition the bulk of respondents are from family sizes that are less than 6 people, which translates to 74% of the participants. 22% of the participants constituted those who come from family size of 6-10 people as illustrated in (Fig.1).

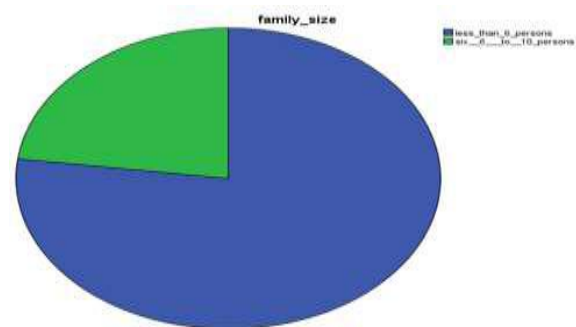


Figure 1: Family size statistics

From these family sizes, the results show that it is the families that are big in size with a low income level that end up relying on edible insects as a source of protein and food. Also given that the researcher collected as much information as possible from across all civil status it revealed that there still remain dynamics that revolve around these statuses.

In addition, the study interrogated the policy constraints on edible insects' value chain and from the interviews conducted many farmers indicated that infrastructure was one of the major challenges. The respondents cited that they do not have proper infrastructure to store their produce and also at some common market places infrastructure is still a problem. This is on the basis that insects require cold rooms, refrigerators and even transportable refrigerated containers. The respondents also cited that there is a huge need for proper infrastructure where they can perform activities like breeding of insects.

In addition, most farmers who took part in the research study also indicated that they faced severe market related challenges. One such problem cited was that they did not have

big markets to sell their produce. This is on the basis that the consumers are not well informed of insect's products on the market. They also reveal that they lack the much needed support to carry out market research as well as to fly some adverts concerning the importance of feeding on insects as an alternative source of proteins.

The study also explored the opportunity to formulate favorable policies for edible insects and as such the respondents reveal that the government does not address the use of food as insects. This reveals that no policy framework on insects as source of food has been instituted by the government. This shows that very few people know the importance of insects as an alternative source of protein. There are also a variety of insects which is edible but due to lack of knowledge many just know only crickets and termites as the only edible insects as illustrated in Fig 4. Those who are in the insect breeding and marketing industry highlighted that they faced market and infrastructure related challenges. In addition, results show there is a low market for insect products and there also is no proper infrastructure to store, sell and breed or farm the insects.

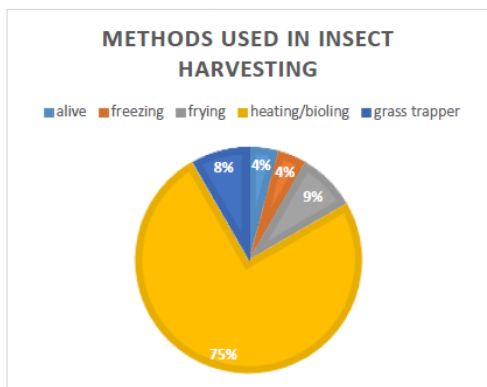


Figure 2: Harvesting Methods

In terms of harvesting methods, Fig. 2 reveals that the majority of the people use the heating and boiling method, which constitutes to 75%. Others make use the frying 9%, grass trapper 8%, freezing 4% and harvesting them alive 4%.

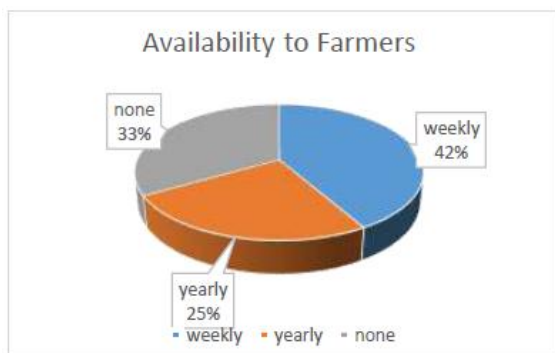


Figure 3: Input distribution

In Fig. 3 its shows that 33% of the farmers received no support from the government. 42% received support on insect farming on a weekly basis. 25% of the participants received farming input on yearly basis.

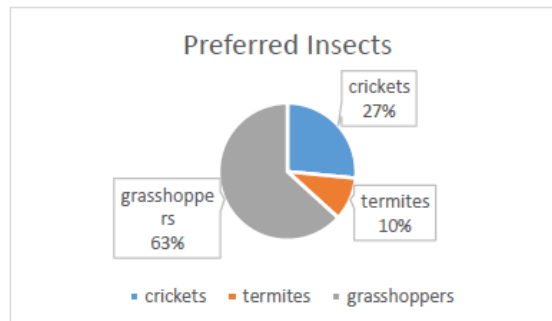


Figure 4: Preferred Insects

Results also reveal that people in this segment do not receive the needed hygiene and quality inspections from the government on their activities. A few who do, get visits at times on a yearly basis as shown in Fig.3. The research also shows 100% of respondents believing that the government's response does not address the use of insects as food. This is on the basis that none of the respondents knew of any policy or framework on use of insects as food. Thus, people can be reached through agricultural extension services and awareness creation.

In conclusion the research identified that quite a big proportion of the people recognize insects as edible. However, very few were found to be in the farming and marketing sector of these insects. Those who harvested insects had bushes and general fields as their hunting grounds. It was also noted that there were only two types of insects that people relied on, namely the termites and crickets. It was also revealed that there is a very weak positive correlation between inputs received for insects farming and time invested on fish farming.

Key recommendations

- Awareness and collaboration: A challenge that is there regarding the consumption of edible insect and its value for food security solution has to do with low awareness amongst community members and lack of collaboration. Therefore, there is need focus on awareness creation particularly in rural areas as well as other stakeholders. There is also need to have the collaboration of stakeholders (policy makers, entrepreneurs, financiers as well as consumers) needed to support the use of edible insects as a food security solution.
- Implementation of Policy: An edible insect food security solution is a major concern and the policy implementation should allow the engagement of diverse

public and private stakeholders from around the country, but not limited to policymakers.

- Provision of technical support: Technical support promoting sustainable edible insect farming and harvesting through agricultural extension services is essential. This could also help to be a point of reference in the neighboring East African countries. Thus, there will be need to develop community farming groups for edible insect farming.
- Financing alternative protein solution: There is a need to develop mechanism that help in the financing research support and development of alternative protein solution as well as suitable low-interest and longtenure loans and investment financing that support edible insects production initiatives. Deliberate attempts have to be made to attract individuals in the private sector to finance these initiatives.
- Monitoring: There should be improved monitoring of household food security, including primary and supplementary protein sources. Monitoring is essential for precise tracking and measuring the impact of household food security, which helps in ascertain the

progress towards achieving food access levels that are globally acceptable. Therefore, every country is supposed to come.

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