

The Germany-CGIAR⁺⁺ Science and Impact Hub

Research proposal:

Title of your proposal:
Contribution of fruit and vegetable vendors to nutrition security in informal settlements in Nairobi, Kenya
Summary: (give a brief summary of your research proposal, maximum 250 words)
In Kenya, the double burden of malnutrition is still a serious problem. One strategy to address this challenge is to focus on food diversity as part of food security (Fongar et al., 2019). The potential of food vendors contributing to food security in Nairobi is well documented (Downs et al., 2022; Sverdlik, 2017; Wanjohi et al., 2025). However, the role of food vendors impacting nutrition security remains under-researched. This master thesis therefore aims to explore the contribution of fruit and vegetable (FV) vendors to nutrition security through two perspectives, the observational and the self-understanding perspective of vendors. Based on this research gap, the following main research question arises: "How do fruit and vegetable vendors contribute to nutrition security in Makadara sub-county of Nairobi, Kenya?". To answer this question, the study follows a qualitative, semi-structured approach that consists of guided, topic-focused interviews and descriptive, non-participant observations taking place in Makadara. The interviews and observations will cover the three main determinants of nutrition security by FAO, "access to food, care and feeding, and health and sanitation" (Food and Agriculture Organization of the United Nations (FAO), 2012). The results are expected to identify factors that facilitate vendors' contribution to nutrition security, as well as barriers that hinder it. Building on these findings, the goal is to formulate recommendations to strengthen the contribution of fruit and vegetable vendors to long-term nutrition security.
Introduction: (Maximum 300 words)
The double-burden of malnutrition remains serious in Kenya. As a sub-Saharan country, Kenya faces a serious level of hunger and ranks 103rd out of 123 countries in the Global Hunger Index (GHI). In 2025 the GHI increased again in comparison to 2016. Looking at the four indicators of the GHI, it becomes clear that this is due to the rise in undernourishment in Kenya (Global Hunger Index, 2025). Beyond undernourishment, other forms of malnutrition such as overweight and obesity are on the rise in Kenya. At the same time, anemia is stagnating at about 29% and is much higher for pregnant women (Global Nutrition Report, n.d.). Addressing this double burden requires focusing on improving food diversity (Fongar et al., 2019). Food groups that are most missing in diets in East Africa are fruits and vegetables due to their seasonally restricted availability, and high prices limiting affordability (Sarfo et al., 2022). This shows the high relevance of addressing food and nutrition security in Kenya. Food security consists of the four dimensions: availability, access, utilization, and stability. Nutrition security complements food security by adding care practices, health and sanitation, and access to adequate food (FAO, 2012). The potential of food vendors contributing to food security in Nairobi is well documented. Alice Sverdlik shows the great potential of vendor's contribution to food security in informal settlements in Nairobi (Sverdlik, 2017). A more recent study by Demmler et al. found that



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policies supporting vendors are key for food and nutrition security (Demmler et al., 2024). Nevertheless, existing research focuses mostly on food security, whereas the role of food vendors impacting nutrition security remains under-researched. This literature gap underlines the significance of further research on nutrition security as ensuring only access, availability, utilization, and stability alone does not guarantee healthy dietary outcomes (FAO, 2012).

Objective and research questions:

(Maximum 200 words)

Main research question: How do fruit and vegetable (FV) vendors contribute to nutrition security in Makadara sub-county of Nairobi, Kenya?

Sub-research questions:

1. What are the perceived roles played by FV vendors in contributing to nutrition security in informal settlements?
2. What challenges do FV vendors face in contributing to nutrition security in informal settlements?
3. What roles do FV vendors play for nutrition security in informal settlements, based on observations?
4. How do FV vendors' narratives about their contribution to nutrition security align with the observations?

Specific Objectives:

1. To explore and document perspectives of FV vendors on their role in contributing to nutrition security
2. To identify challenges and enabling factors affecting FV vendors' contribution to nutrition security
3. To observe and document practices through which FV vendors contribute to nutrition security
4. To compare FV vendors' perspectives with observed findings
5. To formulate recommendations to strengthen the contribution of FV vendors to nutrition security

Methodology:

(Maximum 300 words)

Embedded into the study by Irene Induli which takes place in Makadara and Kilome, the research follows the established study sites, but only includes Makadara, Nairobi City County, an urban informal settlement context, to not exceed the timeframe (Government of Nairobi City County, n.d.; Induli, I., unpublished study protocol). Within the study by Irene Induli, vendor mapping was conducted in all community units in Viwandani ward, an informal settlement in Makadara, from which a sample of 40 street vendors selling mainly fruits and vegetables for their primary livelihood will be chosen.

This thesis follows a qualitative semi-structured approach that consists of guided topic-focused interviews and descriptive observations to explore the contribution of FV vendors to nutrition security (Misoch, S., 2015). The interviews and observations focus on the three determinants of nutrition security according to FAO, "access to food, care and feeding, and health and sanitation" (FAO, 2012).

On the first day of workshops for the PhD study, vendors are introduced to the goal and methodology of this MSc thesis. As mentioned above, a total of 40 vendors who are



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available and willing to participate will be interviewed at the meeting venue or if preferred at their work place. Interviews will be either in Swahili language with the help of translators or in English if possible. The non-participatory observation is planned to happen at the vendor stands. For each interview, and observation a maximum of 30 minutes is scheduled (Pohlmann, M., 2022).

The data analysis follows the concept of the qualitative content-analysis by Kuckartz and Rädiker consisting of the following steps: Exploring the interview and observation material through repeated reading, developing categories with sub-categories, developing a category system to code the material, analysing the coded data, and finally deriving results (Stamann, C., 2025).

Expected results and envisioned impact:

(Maximum 200 words)

Based on the research objectives and methodology possible results can be described along the three determinants of nutrition security as follows. Answers and observations about access to adequate food can reveal whether vendors serve only a specific or a diverse clientele, how sales locations and times influence accessibility, and if the FV choice offered is diverse or not. Insights on care and feeding are expected to explore the knowledge vendors have on healthy diets and food preparation, and their sharing of knowledge with their clients. For health and sanitation, results may reveal how effectively hygiene rules are followed, if there is access to a water source to wash hands, how fresh FV are, and how FV are stored and packed. The findings are expected to identify factors that foster vendors' contribution to nutrition security, and barriers that hinder it. When comparing interview and observation data, inconsistencies may be found, as vendors may present their work and their contribution to nutrition security in a positive way, while observations may reveal actions that differ from these narratives. The envisioned impact is to strengthen the contribution of FV vendors to long-term nutrition security by formulating targeted recommendations based on the findings.

Work plan:

(please give a monthly schedule of your activities during your research stay at the CGIAR⁺⁺)

Research period: April 1 – September 30, 2026

1. April: In-depth literature review and analysis, Conceptualizing master thesis, Overview of the on-site situation
2. May: Developing the interview guideline, Developing the observation protocol, Planning the field-work, Organizing translators and enumerators
3. June: Data collection: Conducting interviews and observations, Documentation of data
4. July: Data collection: Conducting interviews and observations, Documentation of data
5. August: Reviewing collected data, If necessary iterative data collection
6. September: Qualitative content analysis of interviews and observations, Comparison of observation and interview data, presentation of first results at the Alliance

Thematic link to development oriented agricultural research:

(Maximum 200 words)

The topic of the thesis is linked to development oriented agricultural research through the focus on vendors' contribution to nutrition security. While studies show the importance of vendors for food security, nutrition security is often overlooked in literature, although the FAO-definition shows that it complements food security (Demmler et al., 2024; Downs et al., 2022; FAO, 2012). FAO suggests the following definition for food and nutrition security:



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“Food and nutrition security exists when all people at all times have physical, social and economic access to food, which is safe and consumed in sufficient quantity and quality to meet their dietary needs and food preferences, and is supported by an environment of adequate sanitation, health services and care, allowing for a healthy and active life.” (FAO, 2012). This underlines the significance of further research on nutrition security as ensuring only access, availability, utilization, and stability alone do not guarantee healthy diets (FAO, 2012). In Kenya, there is still an underconsumption of fruits and vegetables (Global Nutrition Report, n.d.). Vendors are one influencing factor to change this (Demmler et al., 2024). Therefore, the contribution of FV vendors to nutrition security is a highly relevant topic in the development oriented agricultural research.

Thematic link to the hosting CGIAR⁺⁺ research program/project:

(Maximum 200 words)

The study “Co-creating market linkages to enhance availability, affordability, and accessibility of fruits and vegetables in Kiloeme and Makadara sub-counties, Kenya” by the Alliance Bioversity International & CIAT, conducted by the PhD student Irene Induli and part of the larger project “Enhancing Kenya’s Organic Food System through Improved Market Access for Vulnerable Consumers in Nairobi and Small-scale Farmers in Makueni County” aims to examine whether co-created market linkages among smallholder farmers, informal vendors, and consumers can promote the availability, affordability, and consumption of fruits and vegetables, and whether these linkages are beneficial to all value chain actors (Induli, I., unpublished study protocol). While the study focuses on aspects of food security, this thesis has the goal to complement the study by focusing on the contribution of fruit and vegetable (FV) vendors to nutrition security.

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I hereby confirm to the best of my knowledge and belief that the information provided above is correct. Furthermore, I hereby confirm that no artificial intelligence was used to write the above proposal, and I am aware that any kind of deception may lead to immediate rejection of the application.

Übersee, February 14, 2026
Place and date

Laura Dini
Signature

