

Junior Scientists Tandems

Final Report

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National University (Country): Kenyatta University

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Supervisor at IARC: Dr. Irmgard Jordan

Start and end date of stay at IARC/ GRI: 13th October 2024 to 30th March 2025

Title: Vulnerable urban and rural food environments and consumer perception of safe and nutritious food: a cross-sectional study in Kenya

Funded by the German Federal Ministry for Economic Cooperation and Development (BMZ)



Overview

From October 2024 to March 2025, I participated in a six-month research exchange program at Justus Liebig University in Giessen, Germany. This opportunity was generously funded by the Council for Tropical and Subtropical Agriculture Research (ATSAF Academy) and GIZ through the Junior Scientists Tandems (JST) fellowship. I extend my sincere gratitude to these organizations for financing my travel and to Justus Liebig University, particularly Prof. Ramona Teuber, for welcoming me into her research team and providing guidance throughout my stay. Also grateful to my employer, The Alliance of Bioversity international and CIAT for allowing time to participate in the fellow as to support me as one of the CGIAR++ by allowing me to under their project.

The primary objective of my fellowship was to advance my PhD studies through regular consultations with Prof. Teuber on my draft manuscripts focusing on food environments in Kenya. My research investigates the disparities between urban and rural food environments and their implications on diet quality and health of consumers. This fellowship has proven invaluable not only for the progress of my PhD research but also for expanding my professional network and gaining exposure to international research methodologies and approaches in food systems research.

Arrival and Integration at Justus Liebig University

I arrived in Giessen during the winter season, experiencing the European winter for the first time. Prof. Teuber's warm welcome helped offset the cold climate as she promptly provided me with an office space equipped with all necessary resources, including a computer, access to the university library, and research databases essential for my work. Together, we established a comprehensive program for my fellowship period, meeting schedules, research milestones, and participation in departmental activities.

To facilitate my integration into the research environment, Prof. Teuber arranged an introductory meeting with all team members under her supervision. This thoughtful introduction allowed me to understand the research interests and expertise of each team member, identifying potential areas for collaboration during my stay. The team's diverse backgrounds in food economics, agricultural sciences, and nutritional studies provided a rich interdisciplinary context for my research.

During this introduction, I delivered a detailed presentation on my research topic, focusing on disparities between urban and rural food environments in Kenya. My presentation highlighted the particular fragility of food environments in urban informal settlements, characterised by limited access to fresh, nutritious foods and an overabundance of energy-dense processed options. I also discussed the increasing penetration of processed foods in traditionally subsistence-based rural food environments, potentially compromising dietary quality.

Contributions to the Healthy Diet for Africa (HD4A) Project

A significant aspect of my fellowship involved continued work on the HD4A project, an ambitious initiative funded by the European Union under Horizon Europe. This project represents a collaborative effort coordinated by Justus Liebig University and implemented by various partners across Africa,



including the Alliance of Bioversity International and CIAT, which had previously supported my data collection efforts related to food environments in Kenya.

The HD4A project aims to transform African food systems to better support healthy, sustainable diets by leveraging indigenous knowledge, local biodiversity, and innovative approaches to food production and distribution. My previous involvement with the project through the Alliance of Bioversity International and CIAT provided a strong foundation for my continued contributions during my fellowship at Giessen.

My contributions to the project during my stay in Giessen were multifaceted:

1. **Nutrient Composition Database Development:** I supported the compilation of a comprehensive nutrient composition database for selected neglected and underutilized species in Africa, a key deliverable for the project. This work involved extensive literature reviews, data extraction from multiple sources, quality assessment of nutritional data, and standardization of nutrient values across different food items. This database will serve as a valuable resource for researchers, policymakers, and practitioners working to promote dietary diversity in African food systems.
2. **Project Representation at the Nutrition for Growth Summit:** I had the honour of representing the HD4A project at the Nutrition for Growth (N4G) summit in Paris, a global gathering of nutrition stakeholders. Stationed at the HD4A exhibition stand, I engaged with diverse participants, including researchers, policymakers, donors, and practitioners, explaining the project's activities across different African countries and its contributions to transforming food systems to support healthy diets. These interactions not only raised awareness about the project but also facilitated potential collaborations and knowledge exchange with other initiatives working toward similar goals.
3. **Knowledge Dissemination through Presentations:** I delivered a comprehensive presentation at the N4G summit's Village of Solutions for Nutrition on "Indigenous Plants and Vegetables: A Lever for Healthy Diets & Sustainable Food Systems." The presentation emphasised how the HD4A project is working to diversify production systems and promote the utilisation of local and endemic African plants to enhance dietary quality and improve the sustainability of food systems in Africa. Drawing on preliminary findings from project activities in Kenya, Uganda, Benin and Cameroon, I highlighted the nutritional benefits of indigenous vegetables, their resilience to climate variability, and their cultural significance in local food traditions. The presentation generated significant interest among summit participants, leading to productive discussions about scaling up the cultivation and consumption of these nutritious plant species.

The opportunity to engage with the HD4A project at an international level during my fellowship has deepened my understanding of transdisciplinary approaches to food system challenges and reinforced the importance of connecting research with practical applications and policy advocacy.



My self and colleagues at the Healthy Diets for Africa Stand during the Nutrition for Growth Summit in Paris

ATSAF Tandem Collaboration

The ATSAF Junior Scientists Tandems program pairs African researchers with German counterparts, fostering cross-cultural scientific collaboration and knowledge exchange. My fellowship enabled continued collaboration with Chiara Masser, my designated tandem partner. Previously, at the Alliance of Bioversity International and CIAT, I had supported Chiara during her data collection phase for her Master's dissertation, which focused on the influence of nutrition knowledge on diet quality among adolescents living in urban informal settlements. Building on this achievement, we are now working together to transform her research into a manuscript for publication in a peer-reviewed journal.

Academic Development

PhD Seminars

One of the most valuable aspects of my time at Giessen was participating in weekly PhD seminars that brought together students from diverse disciplines, including agricultural economics, food science, nutrition, rural sociology, and gender studies. These seminars provided a structured yet flexible platform for:

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- Sharing theoretical frameworks and literature reviews, exposing me to novel conceptual approaches relevant to food systems research
- Presenting field experiences and data collection methods, allowing for constructive critique and refinement of research instruments
- Discussing various analytical approaches and preliminary findings, introducing me to new statistical techniques and qualitative analysis methods
- Addressing research challenges and collectively developing solutions, creating a supportive academic community

These sessions offered excellent networking opportunities with fellow students and academic staff from various departments. These connections have already led to discussions about potential future collaborations and have expanded my awareness of research funding opportunities and academic positions in Europe.

Coursework and Skill Development

To strengthen my research capabilities, I enrolled in empirical research coursework covering both qualitative and quantitative data analysis methods. The quantitative component included advanced training in statistical methods such as multivariate analysis techniques, and econometric modelling relevant to food systems research. For qualitative methods, I gained proficiency in coding approaches, thematic analysis, and the use of software for managing interview and focus group data. These technical skills have proven crucial for my current data analysis efforts and will continue to benefit my academic career, particularly as mixed-methods approaches become increasingly valued in food systems research.

I also participated in scientific writing workshops specifically designed for international doctoral students. The workshops employed a hands-on approach, with participants reviewing and editing each other's work under the guidance of experienced academic publishers. This practical experience has significantly improved my writing clarity and argumentation.

Cultural Experiences in Germany

Coming from a temperate climate, my winter arrival in Germany presented a challenging yet exciting experience. Despite the chilling temperatures often dropping below freezing, I adapted quickly and even came to appreciate the distinct beauty of the German winter landscape. I embraced new winter activities that balanced the intensive academic work and created memorable moments of joy and camaraderie.

The traditional Christmas markets (Weihnachtsmärkte) in Giessen offered another distinctive cultural experience. These vibrant markets, with their wooden stalls adorned with twinkling lights and festive decorations, provided opportunities to learn about German holiday traditions and sample local cuisine.

Conclusion and Future Directions

My six-month fellowship at Justus Liebig University has significantly enhanced my academic and professional development in multiple dimensions. The experience has strengthened my research skills through exposure to new methodological approaches and analytical techniques. It has expanded my

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professional network to include researchers from diverse geographical and disciplinary backgrounds, creating potential pathways for future collaboration. Additionally, it has provided valuable cross-cultural insights that will inform my approach to food systems research, particularly in understanding how contextual factors influence both research processes and outcomes. This experience I believe will shape my academic career and contribution to sustainable food systems in Africa.

I once again express my profound gratitude to ATSAF Academy, GIZ, Justus Liebig University, and Prof. Ramona Teuber for making this enriching experience possible.



Enjoy snow activities to keep an active life
