


Original Article

The Africa Food Environment Research Network (FERN): from concept to practice

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Abstract:

Background: Africa is contending with unhealthy food environments that are, in part, driving increasing rates of overweight, obesity and diet-related non-communicable diseases, alongside persistent undernutrition. This current paradigm requires expanded efforts – both in the volume and nature of empirical research, as well as the tools and capacity of those who conduct it. High quality and context-relevant research supports the development and implementation of policies that create healthy food environments.

Aim and approach: This paper sets out the concept of the Africa Food Environment Research Network (FERN) initiative recently established by the Measurement, Evaluation, Accountability, and Leadership Support for non-communicable diseases (NCDs) (MEALS4NCDs) prevention project. Central to the Africa FERN initiative are: 1) building research capacity for innovative food environment research in Africa; 2) improving South–South, South–North partnerships to stimulate robust food environment research and monitoring in Africa and 3) sustaining dialogue and focusing priorities around current and future needs for enhanced food environment research and monitoring in Africa.

Conclusion: The FERN initiative presents an opportune platform for researchers in Africa and the global North to weave the threads of experience and expertise for research capacity building, collaboration and advocacy, to advance food environment research.

Keywords: Africa, food environment, food systems, capacity building, obesity, non-communicable diseases, nutrition policy, knowledge sharing, networks and partnerships

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(This manuscript was submitted on 9 May 2021. Following blind peer review, it was accepted for publication on 23 August 2022).

Background

Food environments – described as the collective physical, economic, policy and socio-cultural surroundings, opportunities and conditions that shape food choices – can present both risks and benefits to the nutritional and health outcomes of people (1). While healthy food environments provide equitable access to healthy foods, unhealthy food environments contribute to promoting unhealthy diets and related sequelae.

Today, many countries in Africa are contending with unhealthy food environments characterized by widespread availability and consumption of energy-dense, nutrient-poor ultra-processed foods and beverages (2–4). These have been linked to the increasing trends of overweight, obesity and diet-related non-communicable diseases (DR-NCDs) that co-exist with persistent undernutrition and micronutrient deficiencies (2).

This current paradigm requires expansion in the scope and volume of empirical research as well as enhancement of the capacity of researchers to conduct policy-impacting research. Such research is needed to create healthy food environments that adequately tackle malnutrition in all its forms.

Although food environment research is receiving increasing attention in Africa, research characterising some policy-influencing components of food environments are lagging (5). Examples include a lack of research on how food environments are experienced, such as how food environments inside children and adolescents' homes, schools, stores or communities, routinely influence their food consumption. There is also little evidence about how social, physical and macro-environments drive dietary habits (6). Research that advances the generation of local or contextual evidence can provide insights into which policies may be more effective in combating DR-NCDs.

Another area requiring focus is the monitoring and benchmarking of national food environment policies and actions as they relate to obesity and DR-NCDs. This is an emerging area in many countries around the globe. A framework developed by The International Network for Food and Obesity/NCDs Research, Monitoring and Action Support (INFORMAS) provides a 'standardized way' for countries to monitor and benchmark government and stakeholder actions to increase accountability and progress towards

obesity and DR-NCD prevention. The INFORMAS framework comprises 'process modules' that make it possible to monitor the policies and actions of the public and private sectors, 'outcome modules' that monitor dietary quality, risk factors and NCD morbidity and mortality and 'impact modules' that monitor the key characteristics of food environments (1,7). At present, only a few African countries are adapting and implementing modules from the INFORMAS framework (8). Researchers in Ghana, Kenya and South Africa recently engaged local experts, using the INFORMAS Healthy Food Environment Policy Index (Food-EPI) tool, and identified priority actions to address gaps in public sector policies and actions that could create healthy food environments in the respective countries (9–11). Tanzania and Uganda are currently adapting the tool for similar engagements (12). A related effort led by a team of researchers from Senegal is evaluating policies and developing multi-sectoral strategies to promote healthy and sustainable food environments in Francophone West Africa (IRDC 2020–2023). This effort will implement the Food-EPI Module in Senegal, Benin, Burkina Faso, Ivory Coast and Togo (13). Many other countries on the African continent could benefit from contextualising and applying modules from the INFORMAS framework.

The Africa Food Environment Research Network initiative

In order to accelerate participation and strengthening of capacity to address the current and future food environment-related research needs in Africa, the Measurement, Evaluation, Accountability, and Leadership Support for NCDs (MEALS4NCDs) prevention project convened the Africa Food Environment Research Network (FERN). This network, launched in November 2020, has the overarching aim of building within Africa a community-of-practice with the capacity, expertise and experience to pursue robust and innovative implementation of food environment research and practice in Africa. Central to FERN's mission are the threefold objectives of 1) building research capacity for innovative food environment research in Africa; 2) improving South–South and South–North partnerships to stimulate robust food environment research and monitoring in Africa; and 3) sustaining dialogue and identifying priorities around current

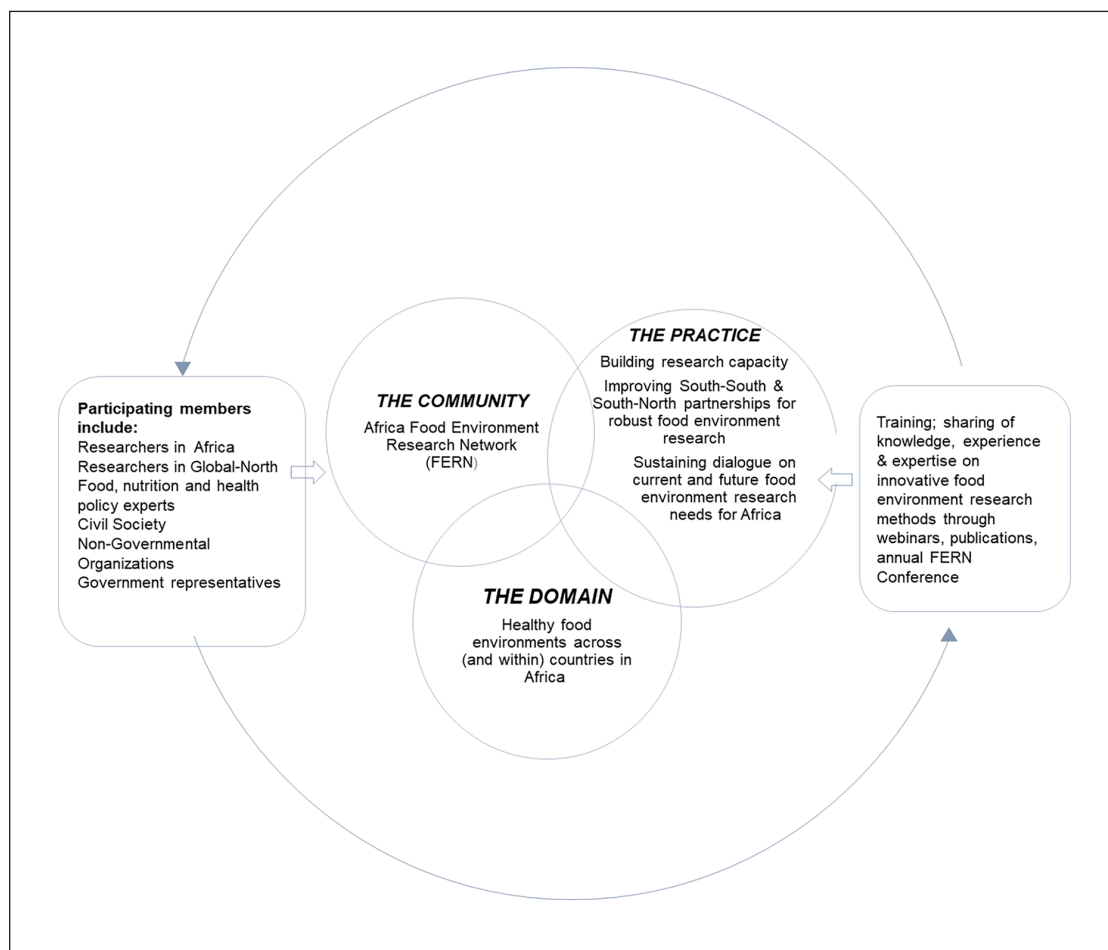


Figure 1. Conceptual framework for the Africa FERN.

and future needs for enhanced food environment research and monitoring in Africa. The conceptual framework for the FERN initiative (Figure 1) draws on three distinct traits – the Domain, the Community and the Practice – of a Community of Practice proposed by Wenger (14).

Key operational characteristics of the FERN initiative are:

1. Training researchers (particularly early career researchers) on innovative food environment research methods to encourage scale-out and collaboration across (and within) countries

in Africa. For example, adaptation and implementation of the INFORMAS modules.

2. Sharing knowledge, experiences and expertise through webinars, publications and an annual international FERN conference, to facilitate collaboration.
3. Establishing thematic areas on which to anchor collaborative South–South and South–North research efforts to shape healthy food environments in Africa.

The umbrella project under which the FERN initiative was established, the MEALS4NCDs

project, is a three-year multi-institutional research consortium led by the University of Ghana, in collaboration with seven other institutions from Ghana, Kenya, France, Belgium, Canada and the Netherlands (relevant details about the project may be found here: <https://www.meals4ncds.org/en/>). The project aims to measure and support public sector actions that create healthy food marketing, retail and provisioning environments for children in Ghana (15). Given the structure and aims of the FERN initiative, there is a real opportunity for sustained and sustainable research partnerships and advocacy work – beyond the life of the MEALS4NCDs project.

Success stories and impact of the FERN initiative

At the inaugural meeting of the FERN initiative in November 2020 (FERN2020), participants were introduced to the INFORMAS Food-EPI and Food Prices Modules to stimulate interest and capacity development. A cardinal output of this meeting was identifying research priorities and opportunities for improving research on food environments and related policy in Africa. This has been detailed elsewhere (16). In November 2021, a second FERN meeting which built on the progress made from the inaugural meeting was held under the theme ‘Leveraging Food Environment Research Network (FERN) to transform Africa’s food systems’. This meeting was jointly organized with the INFORMAS e-symposium series (see <https://www.meals4ncds.org/en/fern2021/>).

Beyond research and engagement of researchers, FERN’s continental multi-stakeholder engagement efforts include convening an Independent Dialogue in support of the implementation of the United Nations 2021 Food Systems Summit in May 2021 (details on the Summit are available here: <https://summitdialogues.org/>). This Dialogue offered diverse food systems actors a platform to exchange ideas and reflect on the challenges and opportunities for transforming African food systems. Participants deliberated on the role of measurements, evaluations, leadership and accountability science in reimagining and re-designing the African food system.

Principles of engagement/implementation

The following principles are deemed necessary for the implementation of the outlined actions of FERN.

Integration and coordination of FERN actions into other regional and international efforts

Food environments cut across all the levels of the food system, implying that strategies aimed at improving the healthiness of food or food environments are needed at multiple levels – individual, household, community, national, and regional. Interdisciplinary research teams with adequate and complementary expertise in quantitative and qualitative research methods are essential for generating data for contributing to a healthy food environment.

Currently, several opportunities exist within Africa for collaboration within and across countries, between the health sector and other sectors responsible for nutrition-sensitive programmes (such as agriculture, education, social welfare, water and sanitation, labour and trade) to regulate, promote, protect and provide incentives for healthy foods. Coordinating and synergizing with other initiatives such as the REPSAO (Réseau de Recherche sur les Politiques et les Systèmes Alimentaires en Afrique de l’Ouest) Network; The Food Systems Research Networks for Africa (FSNet-Africa); Agriculture, Nutrition and Health (ANH) Academy, Drivers of Food Choice (DFC) programme, The Approaches to Understanding Lived Experiences of Food Environments Community of Practice, and INFORMAS, among others, are needed. FSNet-Africa is focused on developing a regional Food Systems Framework for a better understanding of African food systems while strengthening food systems research capabilities to inform implementable policy interventions in support of the Sustainable Development Goal targets for Africa. ANH, DFC and INFORMAS all consist of global networks of interdisciplinary researchers, practitioners and, to a lesser extent, policymakers. The common goal of these groups is to facilitate, strengthen and support countries’ efforts to improve nutrition and health by sharing and adapting

methods to improve food environments and food systems. Having such a collaborative and participatory research approach can serve as a catalyst to close existing food environment research gaps in Africa.

FERN should exploit existing approaches to generate evidence for sustainable policy actions

All around the world, there is a growing interest in food environments in response to the need to improve dietary, nutrition and health outcomes. As food environment research is developing steadily in Africa, there is the need to adequately consider the importance of ‘*context*’ in research efforts and to align research priority areas to address continent specific issues that could influence the global food environment. To achieve this, existing ideas for effective and transformative approaches for sustainable food systems and healthy diets could be exploited. Supporting, tracking and evaluating food environment policy actions should use various analytical and coherent frameworks and approaches across diverse settings and multiple scales. A recently published brief by Neve and colleagues (17) is an important resource that improves knowledge and understanding of the different methods available to study people’s lived experiences of food environments and generate contextual evidence. While not exhaustive, the authors identify and categorize the core methods to investigate lived food environments. The brief also provides case studies of where and how these methods have been used and describes their benefits and limitations.

FERN should facilitate the effective transmission and translation of food environment research evidence

Translating food environment research into concrete actions at country and regional levels to improve population health requires a huge investment of time and other resources to generate relevant evidence and continuous engagement with policymakers. Engaged multi-sectoral planning, coordinated implementation, monitoring and evaluation are critical for any meaningful translation of research findings. Exploring ways to effectively

communicate findings and engage with policy makers is relevant to enhancing the policy impact of food environment research. The MEALS4NCDs project acknowledges that community participatory approaches are required not only for the generation of contextual evidence, but also for the incorporation of such evidence into national policy and practice. In this regard, the project deliberately engages key actors (including policy makers, government, programme implementers, civil society, private sector, and community) (15).

Conclusion

Confronting unhealthy food environments in Africa requires both contextually relevant evidence and a competent mass of researchers with a direct interest in food environment research in the African Region. The FERN initiative offers a unique platform for building capacity and conducting empirical research to generate evidence to influence policy towards creating healthier, supportive and sustainable food environments in African countries. Furthermore, the opportunity for South–South and South–North collaborations presents a two-way learning pathway to share experiences, challenges and opportunities in the evolving food environment research landscape in Africa.

Author contributions

AL conceived and designed the FERN concept. AT drafted the manuscript. AL, RA, CA, MH, GA, FZ, KM, MEL, DL, DA, SV provided critical inputs into the manuscript revision; all authors read and approved the final manuscript.

Availability of study tools and dataset

Not applicable.

Declaration of conflicting interests

The authors have no conflicts of interest to declare.

Ethics approvals

Not applicable.

Funding

The authors disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: The MEALS4NCDs Project was supported by

funding from the International Development Research Centre (IDRC) Food, Environment, and Health Program—IDRC, Canada - Grant Number: 108983-001 (PI—AL).

Role of the funding body

The funder of the study played no role in the writing of the manuscript.

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