

DIVERSE PERSPECTIVES ON CREATING A FAIRER SOCIETY



DIETARY DIVERSITY FOR SUSTAINABLE DEVELOPMENT

HADIJAH ALLY MBWANA
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A fair society is one that is just, inclusive and embracing of all without any barriers to participation based on sex, sexual orientation, religion or belief, ethnicity, age, class, ability or any other social difference. One where there is access to healthcare and education, technology, justice, strong institutions, peace and security, social protection, decent work and housing. But how can research truly contribute to creating global equity and diversity without showcasing diverse voices that are underrepresented in academia or paying specific attention to the Global South?

Including books addressing key challenges and issues within the social sciences which are essential to creating a fairer society for all with specific reference to the Global South, *Diverse Perspectives on Creating a Fairer Society* amplifies underrepresented voices showcasing Black, Asian and minority ethnic voices, authorship from the Global South and academics who work to amplify diverse voices.

With the primary aim of showcasing authorship and voices from beyond the Global North, the series welcomes submissions from established and junior authors on cutting-edge and high-level research on key topics that feature in global news and public debate, specifically from and about the Global South in national and international contexts. Harnessing research across a range of diversities of people and place to generate previously unheard insights, the series offers a truly global perspective on the current societal debates of the 21st century bringing contemporary debate in the social sciences from diverse voices to light.

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DIETARY DIVERSITY FOR SUSTAINABLE DEVELOPMENT

Local-Global Policy Lessons from
Tanzania

BY

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INTRODUCTION

1.1 OVERVIEW OF DIETARY DIVERSITY AND ITS ROLE IN GLOBAL DEVELOPMENT GOALS

Dietary diversity is a foundation of nutrition that signifies the adequacy of micronutrient intake and overall diet quality. As a critical indicator of nutritional security, dietary diversity highlights the extent to which individuals or populations consume a variety of foods across and within major food groups. This is particularly vital in resource-constrained settings, where monotonous diets often fail to meet basic nutritional needs. Consuming a diverse range of foods ensures the intake of essential vitamins, minerals and other nutrients necessary for optimal growth, health and development. This importance is magnified for women of reproductive age, who face heightened nutritional demands due to menstruation, pregnancy and lactation, making dietary diversity an essential focus for improving maternal and child health outcomes (FAO & FHI 360, 2016).

Dietary diversity, which reflects the number of individual foods or food groups consumed, increases the likelihood of obtaining adequate essential nutrients. The diversified diet is crucial for diet quality. Diet quality is measured by scoring food patterns based on their close alignment to the national dietary guidelines and how diverse the variety of healthy food choices is within the main food groups or corresponding to international groupings. Studies reveal that the major indices for diet quality include the Healthy Eating Index (HEI), Healthy Diet Indicator (HDI), Healthy Food Index (HFI), Recommended Food Score (RFS), Diet Quality Index (DQI), Diet Quality Score (DQS) and the Mediterranean Diet Score (MDS) (Wirt & Collins, 2009; Seymour et al., 2003; Fitzgerald et al., 2002; Hann et al., 2001).

However, the most validated diet quality scores are the HEI, DQI, HDI and the MDS (Toft et al., 2007; Weinstein et al., 2004; Gerber et al., 2000; Kim et al., 2003).

Globally, dietary diversity is increasingly recognized as a key driver in achieving the United Nations' Sustainable Development Goals (SDGs). Specifically, it directly supports SDG 2, which aims to end hunger, achieve

food security and improve nutrition by eradicating malnutrition in all its forms – undernutrition, micronutrient deficiencies and overnutrition. Simultaneously, it contributes to SDG 3, aiming at improving health and well-being by reducing diet-related diseases and promoting healthier lifestyles. Dietary diversity is also linked to SDG 5 on gender equality, as empowering women with improved dietary quality not only enhances their health but also enables them to better care for their families and participate fully in societal and economic activities (Global Nutrition Report, 2021).

Studies have consistently demonstrated the value of dietary diversity as a predictor of nutritional adequacy and overall diet quality. For example, research by Arimond et al. (2010) found that women consuming more diverse diets were significantly more likely to meet their micronutrient needs. To standardize the assessment of dietary diversity among women of reproductive age, the Food and Agriculture Organization (FAO) introduced the Minimum Dietary Diversity for Women (MDD-W) indicator. This global metric assesses whether women consume foods from at least five out of ten predefined food groups within a 24-hour period, reflecting the likelihood of meeting minimum micronutrient requirements (FAO & FHI 360, 2016).

The challenges of achieving dietary diversity are particularly acute in rural areas of low- and middle-income countries (LMICs), where diets are often cereal-based and lack variety. For instance, in sub-Saharan Africa, including Tanzania, cultural norms, economic constraints and limited access to diverse foods hinder the attainment of adequate dietary diversity (Morseth et al., 2017; Kiboi et al., 2021). In these settings, traditional gender roles can further exacerbate nutritional disparities, as women often eat last and least in resource-scarce households. To address these challenges, multisectoral interventions – integrating agriculture, education, health and gender equality – are essential to promote access to and consumption of a variety of nutritious foods.

Dietary diversity also intersects with the global diet quality crisis, as captured by the Global Diet Quality Score (GDQS). The GDQS offers a comprehensive measure of diet quality, considering both healthy and unhealthy dietary components. Research indicates that poor dietary diversity often coexists with diets high in sugar, unhealthy fats, and processed foods, while being deficient in fruits, vegetables, and whole grains (Herforth et al., 2020). Such dietary patterns contribute to the rising burden of noncommunicable diseases (NCDs), including diabetes and cardiovascular diseases, particularly in LMICs. Promoting dietary diversity is thus essential for addressing micronutrient deficiencies and reducing the global prevalence of NCDs.

Globally, success stories highlight the transformative potential of dietary diversity. In Southeast Asia, for instance, community-based interventions

combining home gardening, nutrition education and women's empowerment have led to significant improvements in dietary diversity and nutritional outcomes (Faber et al., 2020). Similarly, in Latin America, the promotion of indigenous food systems has demonstrated the dual benefits of enhancing dietary diversity and preserving cultural heritage (FAO, 2021a, 2021b, 2021c, 2021d, 2021e). These examples underscore the need for context-specific approaches to fostering dietary diversity as part of broader food system transformations.

To achieve meaningful progress, governments, development agencies and researchers must prioritize dietary diversity in nutrition-sensitive programmes, policymaking and food system reforms. By doing so, they can help build resilient food systems, promote health equity and empower vulnerable populations, particularly women of reproductive age in rural and underserved areas. Dietary diversity is not only a measure of nutritional adequacy but also a pathway to achieving sustainable development and global health equity.

1.2 RELEVANCE OF THE TANZANIAN CONTEXT TO THE GLOBAL CONVERSATION ON NUTRITION

Tanzania occupies a pivotal position in the global conversation on nutrition due to its multifaceted challenges and opportunities within the food system. The country's agricultural diversity, socio-economic conditions, and strategic initiatives offer valuable lessons for addressing nutrition issues in LMICs. Tanzania's experience highlights the interplay between local contexts and global nutrition strategies, making it an essential case study for advancing sustainable food systems.

The agricultural sector forms the backbone of Tanzania's economy, employing over 70% of the population (URT, 2021). However, the country faces a dual challenge of food insecurity and malnutrition. Undernutrition, micronutrient deficiencies, and diet-related NCDs coexist within a complex web of social and environmental factors. Rural areas are particularly affected, with monotonous diets dominated by staple crops such as maize, rice and cassava contributing to insufficient dietary diversity and poor nutritional outcomes (Lyimo et al., 2020).

Tanzania's nutritional challenges are emblematic of broader global trends, particularly in LMICs. For example, the prevalence of stunting among children under five, recorded at 32% in 2020, mirrors global concerns about chronic malnutrition in resource-constrained settings (UNICEF, WHO, & World Bank, 2022). Efforts to tackle these challenges in Tanzania – including promoting the

cultivation and consumption of neglected and underutilized crop species (NUS) – offer insights into scalable and sustainable interventions for improving dietary diversity and food security globally (Massawe et al., 2020).

The role of NUS, such as millet, sorghum and sweet potatoes, is particularly significant in the Tanzanian context. These crops are nutrient-dense, climate-resilient and culturally relevant, making them ideal candidates for enhancing dietary diversity. Recent studies have demonstrated their potential to address micronutrient deficiencies and reduce the vulnerability of rural communities to climate-induced food insecurity (Muthini et al., 2021). By integrating NUS into national agricultural policies and development programmes, Tanzania is contributing to a global shift toward sustainable and resilient food systems.

Tanzania's multisectoral approach to nutrition further underscores its relevance to global nutrition discourse. The government's National Multi-sectoral Nutrition Action Plan (NMNAP) emphasizes the integration of agriculture, health, education and social protection to address malnutrition in all its forms (URT, 2016). This aligns with global frameworks such as the UN Decade of Action on Nutrition, highlighting the importance of coordinated efforts across sectors to achieve nutrition goals.

Furthermore, Tanzania's emphasis on gender-sensitive approaches to nutrition – including empowering women as key decision-makers in household food production and consumption – resonates with global priorities. Studies have shown that improving women's access to resources and decision-making power significantly enhances household dietary diversity and child nutritional outcomes (Kiboi et al., 2021). These insights reinforce the need for gender-responsive strategies in global nutrition initiatives.

In addition to addressing local challenges, Tanzania's efforts contribute to the global understanding of how context-specific solutions can inform broader nutrition policies. For instance, community-driven programmes that leverage indigenous knowledge and traditional food systems have proven effective in promoting dietary diversity while preserving cultural heritage (Lyimo et al., 2020). These approaches offer valuable lessons for other LMICs grappling with similar challenges.

Overall, Tanzania's experience illustrates the critical role of localized, evidence-based strategies in advancing global nutrition goals. By focusing on the intersections of sustainability in agriculture and nutrition, the country is not only addressing its own challenges but also contributing to a broader movement toward equitable and resilient food systems worldwide.

Part I

UNDERSTANDING DIETARY DIVERSITY

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THE SCIENCE OF DIETARY DIVERSITY: DEFINITIONS, METRICS AND GLOBAL BENCHMARKS

1.1 INTRODUCTION TO DIETARY DIVERSITY

Importance of Diverse Diets for Health and Well-Being

Dietary diversity is a cornerstone of human nutrition, directly influencing health, development and overall well-being. A diverse diet ensures the intake of a wide range of nutrients essential for physiological functions, including growth, immune response and cognitive development (Ruel, 2003). Consuming a variety of foods reduces the risk of nutrient deficiencies, which are common precursors to malnutrition and diet-related diseases such as anemia, stunted growth and weakened immune systems (Kennedy et al., 2007).

The significance of dietary diversity extends beyond preventing deficiencies. Studies have consistently shown that diets incorporating multiple food groups are linked to better health outcomes, including reduced risks of non-communicable diseases (NCDs) such as diabetes, cardiovascular diseases and certain cancers (Herforth et al., 2019). Furthermore, dietary diversity plays a vital role in supporting mental health, as nutrient-rich diets contribute to improved mood and cognitive function (Hibbeln et al., 2006).

In addition to individual health, dietary diversity positively impacts public health and food systems. It encourages sustainable agricultural practices by promoting the cultivation of varied crops, thus enhancing biodiversity and resilience to climate change (Johns & Sthapit, 2004). Culturally diverse diets

help preserve traditional food practices and culinary heritage, fostering a sense of identity and community (Lupton, 1994).

Historical Evolution of the Concept of Dietary Diversity

The concept of dietary diversity has evolved significantly over time, shaped by advancements in nutritional science, public health initiatives and global food systems. Early understandings of nutrition focused primarily on caloric intake to combat hunger and starvation. However, by the mid-20th century, the recognition of “hidden hunger”, deficiencies in essential micronutrients despite adequate calorie consumption, began to shift the focus towards the quality of diets.

In the 1980s, dietary diversity emerged as a measurable concept in nutritional research, with studies linking the variety of food consumption to better nutrient adequacy and overall health. Researchers started developing tools to quantify dietary diversity, such as food group counts, which became foundational for assessing dietary quality in various populations. Early metrics primarily targeted child nutrition but gradually expanded to include other vulnerable groups, such as women of reproductive age (WRA).

The global nutrition landscape saw a paradigm shift in the early 2000s with the introduction of Minimum Dietary Diversity indicators, particularly the Minimum Dietary Diversity for Women (MDD-W). This metric provided a standardized way to assess whether diets met essential nutrient needs. Simultaneously, the Global Diet Quality Score (GDQS) was developed to evaluate the overall quality of diets in diverse settings, reflecting the broader emphasis on dietary patterns rather than individual nutrients or foods.

International organizations, including the World Health Organization (WHO) and the Food and Agriculture Organization (FAO), have since incorporated dietary diversity into their guidelines and strategies. Global efforts, such as the Sustainable Development Goals (SDGs), underscore the importance of achieving healthy and diverse diets to address malnutrition in all its forms and to promote sustainable food systems.

Today, dietary diversity is recognized as a critical component of nutrition-sensitive interventions aimed at improving health outcomes, particularly in vulnerable populations. Its evolution reflects a growing understanding of the interconnectedness between nutrition, agriculture and sociocultural factors, highlighting its relevance in addressing global health and development challenges.