

Vol 6, Issue 2, pp 150-160, October 12, 2024, © International Research Journal Publishers, ISSN 2710-2742 (online) www.irjp.org

ASSESSMENT OF CAUSES OF FOOD INSECURITY AND MALNUTRITION AMONG THE DISPLACED POPULATION IN MALAKAL COUNTY, SOUTH SUDAN

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Accepted, Oct 5th, 2024

ABSTRACT

In a critical endeavor to address the severe issues of food security and nutrition among displaced populations in South Sudan's Malakal County a region deeply affected by conflict and displacement this research adopts a comprehensive and methodical approach. The study aims to assess the underlying causes of food insecurity and poor nutrition among the displaced population. It is grounded in the Conflict theory and the Malnutrition and Food Security Theory. Utilizing a descriptive research design, a sample size of 419 respondents, representative of the IDP population in the county, has been determined. Data collection was conducted through targeted questionnaires. Quantitative data was analyzed employing statistical techniques such as frequency distribution tables, percentages, and inferential statistics, facilitated by statistical software like SPSS. Findings revealed a high prevalence of food insecurity and malnutrition, with participants frequently experiencing food shortages and inadequate nutrition. Causes identified included limited access to farming land, economic instability, and disruptions due to conflict. The study concluded that addressing food insecurity and malnutrition in Malakal County requires multifaceted approaches integrating immediate relief with sustainable interventions. It highlighted the need for context-specific strategies that bolster agricultural productivity, enhance food accessibility, and educate communities on nutrition. Recommendations emphasized the importance of policy interventions to stabilize food prices, enhance transportation infrastructure, and strengthen local agricultural practices.

Keywords: Causes of Food Insecurity, Food Insecurity and Malnutrition, Displaced Population

INTRODUCTION

Internal displacement is a complex humanitarian situation that affects millions of people throughout the world. The number of people forced to flee their homes as a result of war, natural catastrophes, or other forms of violent conflict reached 71.1 million in 2022 (Internal Displacement Monitoring Centre, 2022). Extreme health problems are just one of the many obstacles these people must overcome. Factors such as military wars, civil unrest, human

rights abuses, and natural catastrophes come together to cause internal displacement, which is characterized by forced relocation inside national boundaries.

Issues of nutrition and food security have become worse on a global scale. In 2021, there was a major setback in the global effort to eradicate malnutrition, food instability, and hunger by 2030. Conflict, climate change, economic downturns, and the COVID-19 pandemic are major factors that are reducing the rate of development towards Sustainable Development Goal 2 (SDG2), according to the World Bank (2023). Consider Yemen: millions of people are in danger of starvation due to the prolonged conflict's effects on food security, which have resulted in massive displacement (Nagi & Krzyzaniak, 2021).

In 2020, the prevalence of undernourishment climbed to approximately 9.9 percent, with an estimated 720 to 811 million people worldwide facing hunger. There had been a steady upward tendency, but this was a marked change from the previous year, showing a considerable rise. The Food and Agriculture Organization of the United Nations (2021) estimates that 660 million people would still be hungry by 2030, partly because the COVID-19 pandemic's impacts might be seen for a long time. As an example, De Schutter and Gil-Rivas (2022) note that food insecurity has worsened due to Venezuela's economic crisis and political turmoil, resulting in extensive malnutrition and internal migration.

In Africa, the situation is particularly alarming. In terms of achieving SDG 2, the continent is falling behind schedule. With a rise of 46.3 million from 2019, more over 20% of Africa's population, or 281.6 million people, were hungry in 2020. United Nations Food and Agriculture Organization (2021) reports that this decline is part of a longer pattern that started in 2014 after food security had been increasing. An instance where this is evident is in Nigeria, where the Boko Haram conflict has exacerbated food insecurity due to its effects on internal displacement and agricultural activity (Bello-Schünemann & Porter, 2021).

In addition to hunger, micronutrient deficiencies are widespread, and overweight and obesity are significant public health concerns in many African countries. For instance, in Ethiopia, recurrent droughts and political instability have led to chronic food insecurity, affecting millions of people and leading to widespread malnutrition (Haile & Kotschi, 2022). The compounded effects of conflict, climate change, and economic challenges have made it difficult for many African nations to achieve food security, highlighting the need for coordinated efforts to address these issues (Tafere & Workneh, 2022).

In South Sudan, food and nutrition insecurity has reached unprecedented levels, particularly in the wake of a five-year civil war that ended in 2018 (UNICEF, 2018). The Russian invasion of Ukraine and other global events, as well as occasional outbreaks of subnational violence, exacerbate this predicament. As a result of these causes, more than 100,000 people have sought asylum in South Sudan (UN Office for the Coordination of Humanitarian Affairs, 2022). Osman and Mathys (2022) cite a situation in Malakal County where thousands of people have fallen victim to food insecurity as a result of conflict-related relocation.

Humanitarian aid is urgently needed by 9.4 million people in South Sudan, which is equivalent to 75% of the population. Among them, women and children are bearing the brunt of the crisis (United Nations, 2022). The government of South Sudan is working on a plan to prepare for food security crises in order to lessen the impact and make the country more resilient. This strategy is in line with other initiatives aimed at improving food and nutrition security, such as expanding government funding for farms and raising agricultural output (Harrison & Lwanga, 2022).

In addition, with a portfolio of US\$1.2 billion, the World Bank Group is actively involved in South Sudan, focusing on health, water, social protection, agriculture, and community

resilience. The Emergency Locust Response Project and the Resilient Agricultural Livelihoods Project are two examples of agricultural initiatives that get funding. These programs aim to decrease food and nutrition insecurity and increase resilience to different types of difficulties (World Bank, 2023). Reviving the Food Security Council is part of the government's effort to deal with food and nutrition security issues both now and in the future by coordinating and streamlining existing initiatives (Mabikke & Woertz, 2022).

Problem Statement

The challenge of food security and nutrition within displaced communities in Malakal County, South Sudan, is a pressing concern amidst global and regional crises. Despite extensive literature highlighting the severity of food insecurity worldwide, there remains a noticeable gap in research that specifically addresses the unique circumstances faced by displaced populations in this region. While existing reports from reputable organizations provide valuable insights into broader trends, they often overlook the localized challenges and complexities encountered by displaced communities in Malakal County.

To fill this void, this research will examine Malakal County's food security and nutrition status in great detail. In order to provide new insights and context-specific, actionable solutions, the study focuses on the unique challenges faced by displaced people and the opportunities they have had. This research aims to go further than just reporting previous data. It seeks to provide fresh perspectives that enhance academic knowledge and pave the way for focused interventions to meet the critical needs of disadvantaged populations in Malakal County.

In conclusion, the purpose of this research is to clarify the complexities of malnutrition and food insecurity among South Sudanese displaced people living in Malakal County. This research aims to contribute to global efforts to fight hunger and malnutrition by exploring the specific challenges and opportunities in this context and proposing innovative solutions that can meet the urgent needs of the world's most vulnerable communities.

LITERATURE REVIEW

Empirical Literature

A comprehensive knowledge of the causes and effects of global food insecurity and malnutrition is necessary to address these issues. Conflicts, climate change, and unstable economies all contribute to the difficulty of providing enough food and nourishment for people worldwide. Research, such that done by Barrett and Lentz (2010), has shown how these variables greatly increase the frequency of food insecurity and malnutrition across the globe. For example, price volatility in food markets may result from economic swings, making it harder for needy communities to buy essential food products. Furthermore, there is a serious danger to agricultural production from climate change, particularly in areas where farming is a major source of income and food. The effects of these issues may be seen in many nations, such as India, where food systems are being stressed by quick changes in the country's economy and environmental conditions.

In a seminal research carried out in Colombia, Webb et al. (2010) investigated how fluctuations in food prices affect food security. This study brought to light the direct effect that changes in food prices have on Colombian households' capacity to provide their families with a healthy diet. Through an analysis of the regional setting, the research illuminated the more universal problem of maintaining food security in the face of economic volatility. The need of implementing policy actions to stabilize food prices and guarantee poor people' access to wholesome food was underscored by their results. The present study enhances the comprehension of the processes by which fluctuations in food prices might intensify food insecurity, providing significant perspectives for policymakers at the local and global levels.

An extensive body of research has been conducted in Ethiopia on the contribution of agricultural biodiversity on nutrition and food security. Sibhatu et al. (2015) carried out an extensive investigation to investigate the ways in which crop variety enhances nutritional outcomes and dietary diversity for rural communities. By analyzing data from diverse agricultural zones within Ethiopia, they demonstrated that households engaging in the cultivation of a variety of crops experienced better food security and nutritional health compared to those relying on monoculture farming practices. This diversification, encompassing both traditional and underutilized crops, provides a buffer against food shortages while supplying a range of essential nutrients. The Ethiopian context, as explored by Sibhatu and colleagues, underscores the significance of promoting agricultural biodiversity as a sustainable strategy for combating malnutrition and enhancing food security, offering lessons applicable across similar contexts in Africa.

Addressing the nexus between climate variability and food security, Jones and Thornton (2009) conducted a pivotal study in Kenya. They investigated how changes in climate patterns, including unpredictable rainfall and temperature fluctuations, pose challenges to agricultural production and food security. By analyzing climate data and its impacts on farming systems across various Kenyan regions, their research provides critical insights into the vulnerabilities and adaptive capacities of local agricultural practices. The study emphasizes the necessity of integrating climate adaptation strategies into agricultural planning to safeguard food production against the backdrop of climate change. The Kenyan experience, as detailed by Jones and Thornton, illustrates the broader implications of climate variability for food security in Africa, advocating for proactive measures to enhance the resilience of agricultural systems to climate-related disruptions.

In Sudan, the detrimental impacts of armed conflicts on food security have been a significant concern. Hendrix and Brinkman (2013) meticulously examined how these conflicts disrupt agricultural production, directly affecting the availability of food and exacerbating insecurity among local populations. Their research, conducted across various conflict-affected regions within the country, reveals a stark correlation between ongoing hostilities and the decline in agricultural output. This disruption not only diminishes food availability but also destabilizes local economies, increasing the vulnerability of communities to malnutrition and poverty. The findings from Sudan highlight the urgent need for conflict-sensitive food security interventions that can mitigate the adverse effects of warfare on agriculture, ensuring that food systems remain resilient even in the face of unrest.

Theoretical Framework

Conflict Theory

Conflict Theory, rooted in the ideas of Karl Marx, posits that social structures are defined by inequalities in power and resource distribution, which are a source of constant conflict and change within societies (Ritzer & Stepnisky, 2014). In the context of displaced populations, such as those in Malakal County, South Sudan, Conflict Theory is particularly relevant as it highlights how conflict not only uproots communities but also fundamentally disrupts existing social and economic systems. These disruptions can lead to severe disparities in access to resources, including food, thereby exacerbating food insecurity. The theory underscores the importance of analyzing power dynamics within displaced communities to understand the uneven distribution of food resources.

Applying Conflict Theory to the situation of displacement involves examining how the loss of traditional livelihoods affects food security. As conflict drives populations from their homes, it often strips them of their primary means of subsistence, primarily through the destruction of agricultural land and loss of livestock, which are critical components of rural economies (Devereux, 2007). This theory helps explain why displaced populations face higher risks of malnutrition and food scarcity, as their usual economic activities, which are centered around agriculture and local markets, are disrupted. These disruptions are not merely physical but are deeply embedded in the social reorganization that displacement entails, often leading to new power structures that control access to remaining resources.

Malnutrition and Food Security Theory

A critical framework known as the Malnutrition and Food Security Theory was developed in the middle of the 1970s amid debates on global food crises and international food issues (FAO, 1974). According to this hypothesis, eating a nutritious diet is crucial for reducing both non-communicable illnesses and all types of malnutrition (World Health Organization, 2021). According to the hypothesis, imbalances, excesses, or shortages in the intake of macro-and/or micronutrients cause malnutrition (World Health Organization, 2021). It may result from food insecurity may be related to non-food issues such poor child care, a lack of health services, and unhygienic conditions (UNICEF, 1990; Smith, 2020). The research examines the many causes causing food insecurity and malnutrition in this community by using the Malnutrition and Food Security Theory. These variables may include food accessibility and availability as well as dietary quality, medical procedures, and environmental circumstances (Smith, 2020).

Conceptual Framework

Figure 1 show the relationship between variables;

Causes of Food Insecurity

- Economic factors
- Social factors
- Environmental factors



Figure 1: Conceptual Framework Source: Researcher (2023)

METHODOLOGY

A descriptive study design that included qualitative and quantitative methods was used in the research. According to Mugenda and Mugenda (2003), this design gives the researcher the chance to look into and characterize the relevant contemporary events.

The study narrowed its focus to internally displaced persons (IDPs) within Malakal County, South Sudan. The target population was identified as 126,500 IDPs, based on the 2008 National Census. The target population was expanded to include 10 leaders of Non-Governmental Organizations (NGOs), who reflected the main organizations involved in food and nutrition efforts within the county, 15 community leaders, 5 hospital administrators, 5 nutritionists, specializing in addressing the dietary needs of IDPs, were included to provide specialized insights into food security and nutritional programs. The total target population for this study added to 126,535 individuals.

For sampling the internally displaced persons (IDPs) in Malakal County, South Sudan, a proportionate stratified sampling method was used. For the leaders of NGOs, community leaders, hospital administrators, and nutritionists, a census approach was utilized.

Using the Krejcie and Morgan (1970) table for the IDP population of 126,500, the sample size was determined based on the table's recommendations for a given population size, ensuring a confidence level of 95% and a margin of error of 5%. Hence, the sample size of the study was 384 respondents. The overall sample size was thus 419 people.

Structured questionnaires were used to collect quantitative data. The SPSS software, version 26, was used to analyze the quantitative data obtained from structured questionnaires. The data analysis and organization were made easier by this effective tool. To assess the quantitative data, the research used descriptive and inferential statistical techniques.

RESEARCH FINDINGS AND DISCUSSIONS

Response Rate

The study sample size comprised of 419 individuals. From the total of 419 individuals, 388 which was (92.60 %) participated in the current study which means 31 (7.40 %) participants did not participate. This means that the responds rate was 92.60%.

Food insecurity and malnutrition among the displaced in Malakal County

Table 1 below shows the prevalence of food insecurity and malnutrition in the study population. According to average computations across food insecurity and malnutrition parameters set by the study, Malnutrition is common in my community attributing to 4.1856 mean, I frequently go without meals due to lack of food accounting to 4.1031, I experience food shortages regularly accounting to 4.0876, My household often lacks sufficient food rating 4.0361, many children in the community are underweight accounting to 3.6134.

	Ν	Minimum	Maximum	Mean	Std.
					Deviation
I experience food shortages	388	1.00	5.00	4.0876	1.30495
regularly.					
My household often lacks	388	1.00	5.00	4.0361	1.32311
sufficient food.					
Many children in my	388	1.00	5.00	3.6134	1.46272
community are underweight.					
I frequently go without meals	388	1.00	5.00	4.1031	1.31958
due to lack of food.					
Malnutrition is common in	388	1.00	5.00	4.1856	1.27249
my community.					
Valid N (listwise)	388				
$\Gamma' = 11 D + (2024)$					

Table 1: Prevalence of food insecurity and malnutrition

Source: Field Data (2024)

The study's conclusions painted a clear picture of how common food insecurity and malnutrition were among the subjects. The responses to the statement "I regularly experience food shortages" varied from a minimum of 1.00 to a maximum of 5.00. With a standard deviation of 1.30495 and a mean value of 4.0876, it was evident that a significant number of participants regularly had food shortages. A similar range of scores, from 1.00 to 5.00, was seen for the statement "My household often lacks sufficient food," with a mean of 4.0361 and a standard deviation of 1.32311, indicating a widespread problem of inadequate food in many families.

With scores ranging from 1.00 to 5.00 for community-level malnutrition, with a mean of 3.6134 and a standard deviation of 1.46272, the statement "Many children in my community are underweight" raised worries about underweight children in the community. With a mean rating of 4.1031 and a standard deviation of 1.31958, the statement "I frequently go without meals due to lack of food" indicated that many respondents often skipped meals as a result of food shortages. Finally, regarding the statement, "Malnutrition is common in my community," the scores varied from 1.00 to 5.00, with a mean of 4.1856 and a standard deviation of 1.27249. This suggests that the community saw malnutrition as a pervasive problem. These results are consistent with Smith and Haddad's (2020) research on food

insecurity caused by war in Yemen, where the disruption of agricultural systems and food delivery networks as a result of fighting has also increased the incidence of malnutrition among local communities and displaced people. Smith and Haddad underscore the importance of addressing market dysfunctions and displacement impacts on food access, lessons that are applicable to understanding the complexities of food insecurity in conflictaffected areas like Malakal County.

The study findings align with Haddad et al.'s (2016) comprehensive examination of the longterm consequences of malnutrition. They emphasize that malnutrition during critical developmental stages can lead to physical and cognitive impairments, limiting educational attainment and economic opportunities. This aligns with the observed impacts in Malakal County, where prevalent malnutrition may perpetuate cycles of poverty and hinder societal development, echoing the socio-economic implications discussed by Haddad et al. Maxwell et al. (2014) further contextualize these challenges within the broader African context, noting that conflict-related displacement exacerbates food insecurity across the continent. This resonates with the situation in Malakal County, where ongoing conflict and displacement disrupt livelihoods and access to food, as identified by Young et al. (2015).

Addressing these challenges requires multifaceted approaches that integrate immediate food assistance with longer-term strategies to rebuild agricultural productivity and promote economic recovery, as suggested by the insights from Popkin et al. (2020) regarding the double burden of malnutrition in Africa. Similarly, interventions in Malakal County must consider resilience-building measures against climatic shocks and stresses, as highlighted by Brown and Funk (2008).

Causes of food insecurity and malnutrition among the displaced in Malakal County

The causes of food insecurity and malnutrition in the research region are shown in Table 2. With a mean rating of 4.0077 and a standard deviation of 1.38745, the research found that a major contributing factor to food insecurity was limited access to agricultural land. These findings are shown in the table. According to the research, food supply networks have been interrupted by wars and violence, with a mean score of 4.2088 and a standard deviation of 1.2094. Based on a mean rating of 4.2320 and a standard deviation of 1.17370, the results showed that one of the main causes of food insecurity has been the state of the economy. Limited access to clean water was shown to have a considerable impact on food usage, as indicated by the study's mean rating of 4.2603 and standard deviation of 1.20154, highlighting the importance of this factor in issues related to food security. The study's findings showed that inadequate infrastructure had an effect on food distribution, as seen by the mean of 4.2629 and standard deviation of 1.17157.

	Ν	Minimum	Maximum	Mean	Std.
					Deviation
Lack of access to farming land contributes to food insecurity.	388	1.00	5.00	4.0077	1.38745
Conflicts and violence disrupt food supply chains.	388	1.00	5.00	4.2088	1.20945
Poor economic conditions are a major cause of food	388	2.00	5.00	4.2320	1.17370
Limited access to clean water affects food utilization.	388	1.00	5.00	4.2603	1.20154
Poor infrastructure affects	388	2.00	5.00	4.2629	1.17157

Table 2: Causes of food insecurity and malnutrition

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food distribution.	
Valid N (listwise)	388

Source: Field Data (2024)

An informative look at the research participants' perceptions on the causes of malnutrition and food insecurity can be found in Table 2. Their replies, which had a mean value of 4.0077 and a standard deviation of 1.38745, showed that many people believed that the lack of access to farmed land was a major cause of food insecurity. The disruptive effect of wars and violence on food supply networks was also strongly felt by participants, who rated this element with a mean of 4.2088 and a standard deviation of 1.20945. A mean rating of 4.2320 and a standard deviation of 1.17370 indicated that poor economic circumstances emerged as a key driver of food insecurity, indicating worries about how economic instability affects food availability. Furthermore, a mean rating of 4.2603 and a standard deviation of 1.20154 indicated that inadequate access to clean water was regarded to have a considerable impact on food use, highlighting its important role in issues related to food security. With a mean score of 4.2629 and a standard deviation of 1.17157, inadequate infrastructure that affects food distribution was also highly scored, underscoring its significance in comprehending the many elements that lead to food insecurity and malnourishment among the population under investigation.

The study's findings are consistent with existing literature that explores the multifaceted nature of food insecurity. For example, the lack of access to farming land, rated with a mean of 4.0077, aligns with the work of Maxwell and Wiebe (1998), who discuss how land tenure security is crucial for food security in rural areas. They argue that without secure access to land, households are unable to engage in sustainable agricultural practices, leading to chronic food insecurity.

Conflicts and violence, which were rated with a mean of 4.2088, are also significant contributors to food insecurity, as documented by Messer, Cohen, and D'Costa (1998). Their research shows that conflicts disrupt food production, supply chains, and markets, leading to increased food prices and reduced access to essential food items. The findings also resonate with Brinkman and Hendrix (2011), who highlight how conflicts exacerbate food insecurity by destroying agricultural infrastructure and displacing farming communities.

Poor economic conditions, identified with a mean rating of 4.2320, are another critical factor. Barrett and Lentz (2010) emphasize the role of economic fluctuations in food price volatility, which can make nutritious food unaffordable for vulnerable populations. This finding is supported by Sahn and Stifel (2003), who analyze the impact of economic crises on food security in sub-Saharan Africa, showing that economic downturns often lead to reduced food consumption and increased malnutrition.

Limited access to clean water, rated with a mean of 4.2603, is also a critical issue. The importance of water access for food security is well-documented in the literature. For instance, Gleick (1993) explores how water scarcity affects agricultural productivity and food security, particularly in arid and semi-arid regions. Similarly, Rockström et al. (2007) discuss the concept of "green water" (water stored in the soil) and its significance for sustainable agriculture, especially in rain-fed farming systems.

Poor infrastructure, which received the highest mean rating of 4.2629, is another major factor impacting food security. This finding is in line with studies by Fan, Hazell, and Thorat (2000), who examine the role of rural infrastructure in enhancing agricultural productivity and reducing poverty. They argue that investments in infrastructure, such as roads, irrigation, and storage facilities, are essential for improving food distribution and access, particularly in remote and conflict-affected areas.

Furthermore, the results of the study align with the research conducted by Smith and Haddad (2000), which highlights the interdependence of several variables, including infrastructure, economic circumstances, and resource accessibility, in shaping the consequences of food security. Their study emphasizes the need of tackling food insecurity from a comprehensive perspective that takes into account the intricate interactions between social, economic, and environmental issues.

The study emphasizes the complexity of food insecurity and malnutrition, both worldwide and locally, by fusing these results with other studies. The congruence with existing research provides policymakers and practitioners with a robust groundwork for formulating allencompassing approaches that tackle the underlying causes of food insecurity. Especially in areas devastated by war, like Malakal County, these plans should prioritize expanding access to land, boosting economic stability, making infrastructure investments, and guaranteeing access to clean water. In order to improve nutrition outcomes for vulnerable groups and promote sustainable food security, such an approach will be essential.

Inferential Analysis

Table 3 below provides correlation analysis between food insecurity and malnutrition and the causes of food insecurity and malnutrition

Table 3: Correlations

		Food insecurity and malnutrition	Causes of insecurity malnutrition	food and
Food insecurity and malnutrition	Pearson Correlation	1		.830**
	Sig. (2-tailed)			.000
	Ν	388		388
Causes of food insecurity and	Pearson Correlation	.830**		1
malnutrition	Sig. (2-tailed)	.000		
	N	388		388

Source: Field Data (2024)

There is a strong positive correlation between food insecurity and malnutrition and causes of food insecurity and malnutrition (r = 0.830, p < 0.01). This suggests that as perceptions of the causes contributing to food insecurity and malnutrition increase, so does the severity of reported food insecurity and malnutrition among the study participants.

CONCLUSION AND RECOMMENDATIONS

Conclusions

The research determined numerous important parameters to evaluate the causes of malnutrition and food insecurity among the displaced people in Malakal County. The main causes were identified as being inadequate infrastructure, conflicts upsetting food supply networks, lack of access to farmed land, economic instability, and restricted availability of clean water. Addressing these root causes through policy interventions focused on agriculture, economic stability, and infrastructure development is crucial to mitigating food insecurity and malnutrition in Malakal County.

Recommendations

Addressing the causes of food insecurity and malnutrition among the displaced population in Malakal County requires targeted strategies. Government and NGOs should invest in agricultural infrastructure and provide displaced communities with access to farming land, seeds, and tools to bolster agricultural productivity and food self-sufficiency. Local authorities and international organizations must prioritize conflict resolution and peacebuilding initiatives to mitigate the disruptive impact of conflicts on food supply chains and livelihoods. Implementing economic development programs by government and development agencies that create job opportunities and improve household income levels will further enhance food security. Improving access to clean water and sanitation facilities is essential, and NGOs and local authorities should focus on these efforts to enhance food utilization and nutrition outcomes. Additionally, policymakers should advocate for and integrate food security and nutrition into broader development agendas to address underlying causes effectively.

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