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FOOD SECURITY GOVERNANCE: TAMING THE ENDEMIC STARVATION FOR PEACE AND SUSTAINABLE DEVELOPMENT IN AFRICA

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ABSTRACT

This study investigated food security governance in relation to taming the endemic starvation for peace and sustainable development in Africa. Food and nutrition security remain a multi-dimensional concept to ensure sustainability of the food system by 2030. It is a prerequisite to meaningful development as starving people are not capable of learning, innovating, nor prioritizing sustainable development. The COVID-19 preventive measures such as lockdowns and curfews, and persistent conflict in Africa, plunged deteriorating food insecurity into steep descent that necessitates collaborative efforts and partnerships to change the trajectory. The partnerships will restore livelihoods, and eliminate starvation, disease, abject poverty, wars and eventually restore peace. Data for the study were collected through systematic review of scholarly reviewed publications obtained from Access to Global Online Research in Agriculture (AGORA) database, University of Nairobi and Google search engines. The objectives of this paper, therefore, are to analyse underlying causes of persistent starvation in Africa, examine the factors that contribute to food security issues degenerating into conflict, and highlight the role of governance in finding lasting solutions to persistent starvation in the continent. However, it was revealed that, there is congruence that conflict and disease (COVID-19) may require more attention, with unanimous calls for the adoption of multilateralism in food governance as strategy to handle the nexus issues on food, water, energy, climate, economy, conflict and disease. Attention is also required to be focused on innovations supporting small-scale farmers, especially women farmers who are the most vulnerable, to benefit from autonomous measures (such as climate-smart agriculture practices) and adaptation to climate extremes. Conclusions are drawn on the best possible strategies available to mitigate endemic starvation in Africa, the urgent need for joint efforts to eliminate conflict – induced food insecurity, and emphasis on a systems approach to tackle nexus issues (Food-Water-Energy-Climate-Economy-Conflict and Disease) to ensure sustainable development.

Key words: Food security, Starvation, Conflict, Peace, Sustainable development, Africa

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INTRODUCTION

Sustainable Food and Nutrition Security (SFNS) is a multi-dimensional concept which includes dimensions such as the availability of food through agricultural production, physical and economic access to food, as well as adequate use and utilisation of available food by individuals, throughout the year (stability) [1]. The Sustainable Development Goals (SDGs) were to usher into the world livelihood systems which are more sustainable, with reduced greenhouse gas emissions for a safe planet. The United Nations SDG 2 goal is to ensure food sovereignty and justice for all in a sustainable world by 2030. This SDG is intertwined with many other SDGs such as poverty eradication, health, education, water and sanitation, gender and empowerment of women, energy, sustainable cities, industries, climate change mitigation, and ecosystem conservation [2]. It is a prerequisite to meaningful development as starving people cannot learn, innovate, or prioritise sustainability for the planet. The Coronavirus 2019 (COVID-19) preventive measures (for example, lockdowns and curfews) have worsened persistent conflict in Africa, causing a steeper descent to the already deteriorating decline in food insecurity since efforts to deliver essential food and basic staples were hampered [3], necessitating collaborative efforts and partnerships to change the trajectory.

Nonetheless, there have been many unsuccessful strategies to curb starvation, even during the COVID-19 pandemic period, and it continues to deteriorate [4]. The world is obliged to address this crisis if peace is to prevail in the near future [5]. As a result, this article attempts to address three questions: Why is starvation persistent in Africa? at what point does food security become an instrument of peace and conflict? and what is the role of food governance in bringing sustainable food security at the household, national and global levels? The objectives are meant to analyse underlying causes of persistent starvation in Africa, examine the factors that contribute to food security as a characteristic of conflict, and highlight the role of governance in finding lasting solutions to persistent starvation in the continent.

This is a review article, where the literature focused on three thematic areas based on the questions that the research attempts to address. They are causes of food insecurity in Africa, food security as an instrument of peace and conflict, the role of governance in ensuring sustainable food security, and the various previous attempts to address food insecurity in the continent. Some identified research gaps include: studies on conflict-induced food insecurity requiring sound evidence-based policy [6], inadequate knowledge base of people suffering from food insecurity under conflict environment and their coping strategies, sustainability framework to contain the effects of land-based challenges such as food insecurity [7], examining the land-biodiversity-food-climate change nexus, examining the social dimension of

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the social-ecological system dynamics for example governance, human behaviour and decision-making that shapes complexity of land uses, among others. The literature used were retrieved from University of Nairobi and Google search engines, Access to Global Online Research in Agriculture (AGORA) database where peer-reviewed scholarly journal papers, books, book chapters, reports, and policy briefs were reviewed and findings reported.

MATERIALS AND METHODS

Data for the study were collected through systematic review as illustrated in Kothari and Gaug [8]. The thematic scope was limited to the domain of food security governance, conflict, starvation and sustainable development. The geographical coverage of the study is Africa while the year coverage was 3 years (2020 to 2023), thus, any global research with analysis on Africa was considered. The year 2020 was used as a benchmark because it was the start year of the COVID-19 pandemic. The publications were accessed through the University of Nairobi database/search engine, Access to Global Online Research in Agriculture (AGORA) database and Google search engine. Access to Global Online Research in Agriculture (AGORA) was chosen because it is the largest and most prominent database or digital library collection of major scientific journals in food and agriculture fields.

The literature sources were sorted out using different filters: 3 years, relevance, journal articles, peer-reviewed and scholarly journals and the subject. The literature search was conducted using the search terms “food security,” “food security and conflict,” “malnutrition and starvation,” “food security governance,” “agriculture and environmental sciences,” “food security and COVID-19” and “nexus issues- food-water-energy-climate.” The search resulted in 1222 publications, and 1184 were rejected after reviewing their titles. Forty-nine (49) abstracts were screened and after the review process, 30 relevant articles comprising 16 peer reviewed scholarly journal articles, 5 books and book chapters, 7 reports, and 2 policy briefs were selected for analysis (see Fig. 1). Figure 1 shows the search matrix strategy, and further illustrated in Table 1 to show areas that were considered.

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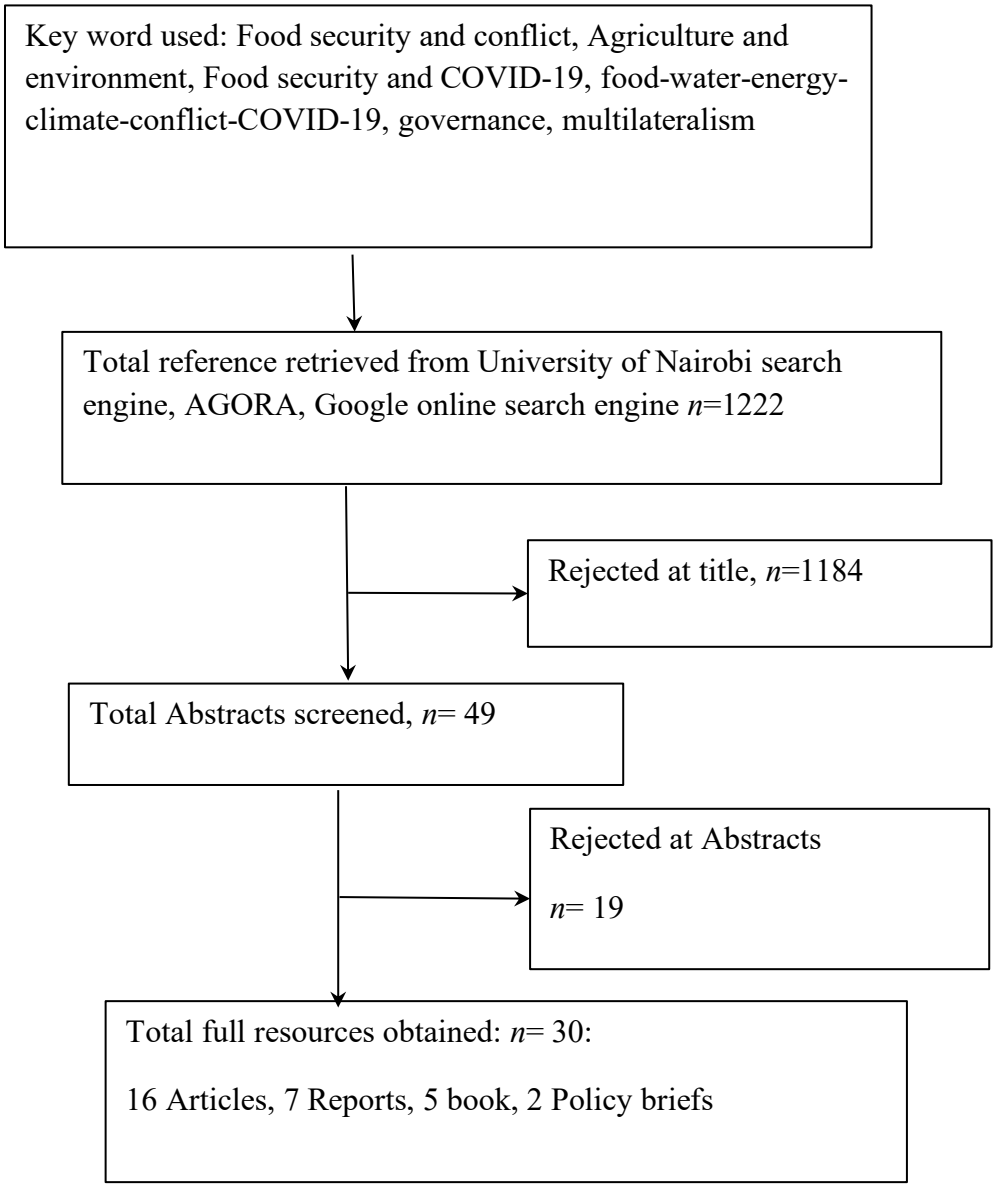

Figure 1: Search Strategy Matrix (Source: Author)

Thematic Areas

Conclusions in this study are drawn from literature search and are discussed under 3 pertinent themes.

Causes of food insecurity in Africa and proposed alleviation strategies

Sustainable Food and Nutrition Security (SFNS) is an essential component for individuals and households alike. As a multi-dimensional concept, all the four dimensions: availability of food, accessibility, adequate utilisation and stability are all required [1]. Above this, the food system must take care of risks as any dysfunction within the system can lead to malnutrition (undernutrition, overnutrition and obesity), often combined with micronutrient deficiency and other health

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complications. Thus, the complex interrelationships between food and nutrition security and associated variables require good governance to reduce food insecurity not only in Africa but in the world over [1]. Thus, governance of the food system is crucial for continuity and prevention of food pilferages for maximum benefit from the system.

There are five factors that contribute to food insecurity in Africa, namely: Anthropogenic factors (geopolitical, historical and related issues), climate extremes, gaps in treaties, food governance and COVID-19 pandemic [9]. Anthropogenic food insecurity due to geopolitical issues are those linked to relations between countries, mainly resource-based, and contribute to conflict. Food insecurity has historically been attributed to poor governance, for example focusing on export crops at the expense of food crops, prioritizing foreign crops over local ones, and non-prioritization of agriculture and food security by national governments [9]. According to Oluoko-Odingo [9], the widespread occurrence of starvation is closely linked to the history of colonization and was present in Africa before the onset of climate change. Unfortunately, the United Nation charter preceded the independence of most African countries so that African food crises did not form part of the negotiations. As a result, food insecurity in Africa can easily be addressed by looking at production, technology, distribution, consumption and governance. To ensure sustainable food security, small-scale farmers require innovations in financing, technology and markets, while addressing other factors like inadequate capital, market accessibility, farmer health, among others.

Climate change-induced food insecurity is due to weather extremes. Climate extremes cause food, water and energy scarcities, migration, natural disasters (droughts and floods), and diseases, which exacerbate conflicts by stretching out resources [10]. Climate-related natural disasters affect Africa's economic growth, agriculture, poverty as well as cause armed conflicts. Drought has affected maize and coffee leading to increased poverty and armed conflicts, while over-reliance on cereal assistance adversely affects domestic food production [11].

Shimada [11] noted a research gap on data regarding economic and social impacts of climate-related natural disasters for example droughts and floods. Sietz and Neudert [7] pointed out the urgent need for a sustainability framework to include the effects of land degradation, biodiversity decline, food insecurity and climate change (land-based challenges). Other gaps highlighted by Sietz and Neudert [7] include the need for integrated actions at large scale, examining the interplay between land, biodiversity, food, and climate change nexus issues, and examining the social dimensions of governance, human behaviour, and decision-making that shape land use complexity. Zhou *et al.* [12] noted that explosive population growth

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has led to increased food demand, water and energy supply, calling for further research on the food-water-energy-climate nexus.

Globally, COVID-19 pandemic worsened food insecurity affecting both developing and industrialized countries, despite that, food insecurity is endemic in Africa. The vulnerability of food access value chains led to the amplification of starvation during the pandemic [13]. Food insecurity in Africa is a result of social isolation and socio-political barriers, worsening access to food. The endemic food insecurity in Africa exposed the impacts of marginalization and the isolating nature of structural discrimination. Innovations in food security, such as the use of mobile phones to order food and other items, can help urban communities achieve food security and embrace green infrastructure. However, community-centered strategies are crucial to dismantling existing socio-political barriers, with food justice focusing on community development rather than access to food.

Between 2019 and 2022, COVID-19 pandemic-induced price increase was noted in oil seed, vegetable oil, cereals, dairy and meat [14]. While weather-related supply disruptions are less severe compared to COVID-19 disruptions, trade interruptions significantly affected food prices, particularly in low-income countries where food accounts for half of consumption basket and 20% of imports [14]. The rise in international food price for staples explain 40% of the overall consumer price increase in these countries in 2021 [14]. Although there was adequate food in the world during COVID-19 pandemic, food accessibility was limited due to restrictions on movement, particularly for low-income farmers and countries. These countries are net consumers of food, making them more vulnerable to price increases. Low-income county governments have limited fiscal capacity to protect farmers' purchasing power. Agricultural production was affected by restrictions on movement, which affected labour mobility, availability of costs of inputs and viability of existing marketing channels [14]. In such cases, multilateralism (partnership between different governments at various levels) would come in handy to fill the gap in dealing with the ramifications of food price inflation.

At the local level, the COVID-19 pandemic significantly affected food security, cross-border trade, and agro-allied and hospitality industries as well as the informal sector, healthcare, clothing and textiles sectors. Restrictions, lockdowns and curfews led to income losses, increased business costs, and job losses, particularly for women who could not afford loans. The lockdowns gave rise to increased transport costs, gender-based violence, responsibilities for women and girls, poverty and food insecurity, commercial sex and early marriages, and increased household workload. There was also increased labour in on-farm activities, inadequate financial resources for hired labour, financial constraints due

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to underemployment and market closures, instability, lack of means to transport farm produce, and health concerns [15, 16, 17, 18].

In recent years, efforts to address hunger and food insecurity have focused on intensifying staple food production, integrating people and the environment, expanding markets, diversifying cereals, reforming economic policies, and improving food quality and nutrition [19]. Despite the efforts, in 2011, over 1 billion people were hungry, raising concerns about food security. Oluoko-Odingo [20] suggests innovations to ensure small-scale farmers achieve food sovereignty, focus on individual farm environments for climate change adaptation, support women farmers who are mostly small-scale farmers, and re-evaluate existing agronomic practices for better outcomes.

Food security as an instrument of peace and conflict

The Russia-Ukraine (2022-2023) war has disrupted global food security and trade, causing a decrease in Ukrainian wheat, soybean and maize production, while Russia's production has partly increased, leading to increased food prices affecting food security in low-income countries [21]. By 2100, the human population is expected to reach 10 billion, increasing the likelihood of conflicts due to resource scarcity, food insecurity, climate change, urbanization and migration [21]. According to Szenkovics *et al.* [22], global malnutrition increased from 777 million to 815 million in 2016, with over 50% affected by political conflicts. The USA and EU's annual food assistance, though remedial, should be more preventive focusing on investments and partnerships to develop homegrown improved crops for food, fodder and industry [22].

Food insecurity is both a cause and a consequence of conflict, thus contributing to endemicity of food insecurity in Africa. For instance, South Sudan's protracted crises (lasting over 50 years), involve high levels of insecurity, gender-based violence, displacement, migration and severe poverty [6]. The widespread starvation hampers technological innovation with associated poverty, disease among others. Despite households employing various coping strategies, multiple severe shocks affect households' ability to respond to the food insecurity crisis, thus, they are not immune to climate extremes [6].

There is a close association between food security and energy supply. Moreover, limited access to fossil fuel compromises food security since 80% of human food is cooked [23]. During prolonged crises, access to traditional biomass cooking fuels is affected making communities rely on negative coping strategies as majority of them suffer from forced displacement and confinement into camps. Prolonged conflict, climate, environmental shocks, unsustainable livelihoods, breakdown in local institutions, and lack of political will worsen endemic food insecurity.

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Households usually cope by relying on less nutritious foods, undercooked foods, and reduced meal frequency. However, expected rise in energy demand by 2050 could compromise human security through food-related protest [23, 24]. Developing countries may continue relying on biomass energy sources, causing deforestation and negatively impacting food security and health as energy prices increase [24].

Food consumption-based strategies are short-term household responses to food crises, involving food acquisition or consumption pattern change, while livelihood-based strategies involve long-term coping strategies involving income, expenditures, and assets [6]. The armed conflicts in Bahr-el Ghazel State of South Sudan affected rural livelihoods, agricultural production, and food systems which affected about 2/3 people in the western region, and were aggravated by climate extremes and food price hike due to COVID-19 lockdowns leading to food insecurity, poverty, and vulnerability [25]. Finally, the Russian-Ukraine food production and trade war showcases multilateralism's strength in addressing global challenges like food insecurity, with EU member States ensuring minimal disruption to Ukraine's food production systems [25].

Food security governance as an approach to sustainable food and nutrition security

According to Belik [26], the world has not met the 1996 Food Summit and Millenium Development Goals (MDG) commitments on food security, thus, due to growing global malnutrition, there are doubts about meeting SDG targets on food security. The Water-Energy-Food nexus is a cross-sectoral issue affecting the management of enterprises in concerned areas such as agriculture, and necessitating a holistic approach for development and innovation [27]. Currently, water shortage affects over 40% of the global population and is expected to increase by 2050 [27]. Climate extremes such as droughts are exacerbated by global warming, land degradation, and deforestation, as humans have already destroyed 50% of forests globally [27]. Climate change, however, stimulates innovative agriculture solutions and impacts energy accessibility due to drought, falling water levels, and energy production difficulties [27].

Severe food insecurity affects 8.3 million out of 12.2 million, with 2 million children experiencing acute malnutrition and consuming $526 million in food assistance in South Sudan [28]. Consequently, integrating sustainability into food insecurity responses is crucial for sustainable livelihoods and conflict resolution [28]. Moreover, 146 million people across Africa, live in poverty, contributing to endemic food insecurity driven by poverty, marginalization, drought, flooding, conflicts, desert locusts, downturns and COVID-19 [29].

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Attempts have been made to address food insecurity, for example food system transformation since food systems contribute to 1/3 of global greenhouse gas emissions from human activities, negatively impacting agricultural yield [30]. Some areas highlighted for transformation include empowering farmers, consumer organizations, women and youth, climate information services, climate-resilient and low emission practices, innovative finance, reshaping supply chains, marketing, procurement, fostering policies, knowledge transfer, addressing fragmentation in knowledge and innovative systems, and ensuring food security. Horton *et al.* [31] proposed technologies for agriculture to improve food security and carbon sequestration, for example soil silicate amendments, agronomic technologies and resource-efficient crops. These practices free land for land intensive regenerative agriculture, afforestation and bioenergy crops with carbon-capture and storage technologies. Sala *et al.* [32] noted that oceans offer unique biodiversity, food resources and carbon sinks for anthropogenic carbon. However, only 2.7% of marine protected areas of the ocean are protected. According to Wright *et al.* [33], climate impacts are locally specific, requiring local priorities and autonomous adaptation efforts to support smallholder farmers.

A study of environmental impacts of taxation in Sweden revealed that reduced Value Added Tax (VAT) on certain food products led to increased consumption of plant-based products with decreased beef consumption, thereby reducing environmental burdens [34]. Sietz and Neudert [7] emphasized the need for partnerships to address land-based challenges like degradation, biodiversity decline, food insecurity and climate change while re-configuring agricultural systems through water purification, pollination and biological control to ensure climate mitigation and adaptation. The land-biodiversity-food-climate nexus relations also require cumulative actions to understand and inform sustainable actions.

RESULTS AND DISCUSSION

Causes of African food insecurity

There are different approaches to the understanding of food security [1, 2]. Food security should be conceptualized as an international issue and not a developing country problem. Malnourished and food insecure people and those around them usually experience no peace [9]. A food insecure world would not produce the workforce required to face the future global challenges [9]. Anthropogenic factors (for example conflicts), climate change, food governance, gaps in treaties and COVID-19 were identified as the major causes of food insecurity in Africa [9]. These five food insecurity issues should be tackled as global problems and food insecurity as an endemic problem in developing regions such as those in Africa.

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The literature has shown that food insecurity can be tackled by addressing issues of production, technology, distribution, consumption and governance [9]. Governance was found to determine people's response to climate extremes and vulnerability to disasters. However, improving food governance involves engaging communities to produce for the local/home markets and establishing food reserves for vulnerable communities [7, 9]. However, collaboration/partnerships between countries can be prioritized to address food needs by improving transport, investment in farm inputs, indigenous seed research and development. Good governance is reported as a vital social dimension of the human-ecological system that influences human behaviour and decision-making [7, 9]. Thus, a blend of good governance and multilateralism would help tackle the challenges pertaining to the nexus issues of food-climate-energy-land-biodiversity-conflict-disease (COVID-19). Furthermore, COVID-19 has been revealed to exacerbate food insecurity across Africa, highlighting the dangers of polarization and marginalization [15, 16, 17, 18]. However, multilateralism is crucial for addressing food price inflation while innovative urban food security strategies, green infrastructure and community-centered approaches are necessary to ensure food justice and to address sociopolitical barriers. Despite various strategies (for example, intensification of cropping, conservation agriculture, increasing market access, crop diversification, and policy reform, among others) employed to combat food insecurity, the number of hungry people continue to increase [19, 20], thus, calling for a new approach such as innovations (for example in climate-smart agriculture) supporting small-scale farmers particularly women, to attain food security.

Food security as an Instrument of peace and conflict

The case of South Sudan shows two generations who are lost already due to war; these generations have known only conflict [35]. Their situation condemns them to persistent poverty as no meaningful farming and technological innovations can take place in a conflict environment. Only 16% of women can read and write, and 80% live on less than $1.00 a day [35]. The organisations working on food assistance and relief services should take stock of the developments since South Sudan’s independence in 2011, in order to assess the progress of their interventions. However, multilateralism would be essential in finding lasting peace for the country as a precondition for future investment.

Over half of the world's hungry people are starving due to political conflicts, highlighting the need for new investments and partnerships to develop home-grown solutions for food, fodder and industry materials. Despite known strategies to reduce food insecurity, severe and incessant shocks from conflicts and climate change worsen people’s ability to cope, therefore, highlighting the need for

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comprehensive solutions [35] which is in agreement with suggestions by the Food and Agricultural Organization in previous works [36, 37, 38, 39, 40, 41, 42].

Though starvation is a non-communicable disease, it can cause other diseases due to nutrient deficiencies. Thus, supporting the livelihoods of the people, prioritizing capital reinforcements and establishing inclusive institutions are essential [6]. To ensure peace, there should be collaborations among various governments with strong terms of reference and targets for informed deliberation by the various governments as well as an elaborate monitoring and evaluation framework necessary for accountability as regards the agreements.

The Water-Energy-Food nexus is a cross-sectoral issue affecting management of enterprises in concerned areas with conflict areas having little to non-existent energy and water. It requires a holistic approach to ensure development and innovation [27]. Water, energy and food are 3 essentials for improving living conditions and sustainable development. Food assistance should include these three for development and sustainability. As water, energy and food are closely linked with climate change, climate extremes mitigation and adaptation should be mainstreamed. Understanding the synergies and trade-offs across the 3 sectors is crucial as global population economic growth and climate change would contribute to a rise in water, energy and food requirements.

Taming endemic food insecurity in Africa through food governance

There is doubt if the food security targets of the SDGs would be met considering the inability to meet the MDG commitments on food security in 2015. Hence, food governance should integrate the current seven (7) nexus issues: Food-climate-water-energy-population-conflict-disease (COVID-19). Moreover, to improve governance and address food security challenges, a multidisciplinary approach that encourages cooperation among government and non-state sectors should be adopted.

Good governance structure is crucial for achieving expected outcomes in a system. Balancing user goals and interests between sectors, integrating sustainable planning and management is a key challenge for state policy and decision-makers [27]. Therefore, all sectors (government and non-state sectors) should be treated equitably. Currently, organizations have ventured into leadership training in Africa. It would be interesting to know the outcomes for better leadership in the continent.

Nonetheless, previous efforts to address food insecurity show that the world is not deficient in solutions to end hunger crises as existing strategies address issues of food (biodiversity), water, energy and climate. Finally, only conflict and COVID-19 still require more preventive and curative strategies to address them.

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CONCLUSION, AND RECOMMENDATIONS FOR DEVELOPMENT

The study reveals that starvation is conflict-induced food insecurity in Africa. Consequently, the findings suggest that it is possible to end starvation not just in Africa but globally as the world is not deficient in solutions. Since conflict is a chief contributor to food insecurity in Africa, a call for international cooperation to end conflict is necessary.
Undoubtedly, the identified food-water-energy-climate-population-conflict nexus is urgent to enhance realization of the sustainable development issues, thus the need to emphasize food governance.

However, the study highlighted the following key recommendation to foster development in Africa; 1) addressing conflict and disease (for example, COVID-19) as nexus issues; 2) calls for multilateralism as a strategy to tackle the seven nexus issues to ensure peace, and 3) focus on approaches such as innovations supporting small-scale farmers, in-built individual farm climate change adaptation, support for women farmers, and continuous monitoring and evaluation of farming practices for better outcomes. The autonomous or spontaneous adaptation information for small-scale farmers with partnerships and collaborations will address the nexus issues.

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Table 1: Results of Literature search

Topic	Total	Rejected at topic	Rejected at Abstract	Reviewed
Food security and conflict	23	12	3	8
Agriculture and environment	243	228	11	4
Food security and COVID-19	948	944	5	11
Nexus issues	-	-	-	7
Total				30

Source: Results from Literature search

Note: The Nexus issues were sources from Google search engine and were numerous and so the total was not entered into this table.

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