Public Policy in Africa Initiative

Policy Recommendation: **Integrating Nutrition into African Food and Agricultural Policies**

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Acronym List

AU: African Union

AUC: African Union Commission

CAADP: Comprehensive Africa Agriculture Development Program

CAC: Codex Alimentarius Commission

CERFAM: Centre d'Excellence Régional contre la Faim et la Malnutrition (Centre of Excellence against Hunger and Malnutrition)

CIRAD : Centre de coopération internationale en recherche agronomique pour le développement (The French Agricultural Research Centre for International Development)

ECA: United Nations Economic Commission for Africa

FAO: Food and Agriculture Organization

GFSI: Global Food Security Index

HGSF: Home-Grown School Feeding

IFAD: International Fund for Agricultural Development

IFPRI: International Food Policy Research Institute

MAFAP: Monitoring and Analyzing Food Policies

OECD: Organization for Economic Co-operation and Development

US: United States

USAID: United States Agency for International Development

WBCSD: World Business Council for Sustainable Development

WHO: World Health Organization

WFP: World Food Program

Introduction

Nutrition is a critical aspect of overall health and well-being, and it is essential that policy decisions in the food and agricultural sectors take this into account. In Africa, a continent where food insecurity and malnutrition are prevalent issues, it is particularly important that nutrition is integrated into food and agricultural policies to put an end to all forms of malnutrition. The 55 member states of the African Union (AU) pledge to eliminate hunger by 2025 in Africa under the framework of the Comprehensive Africa Agriculture Development Program (CAADP). Similarly, the Sustainable Development Goal 2 of the United Nations calls for the eradication of all forms of hunger and malnutrition by the year 2030 (World Bank, 2020). The food security situation differs significantly between African subregions (FAO, ECA, and AUC, 2021). Table 1 below illustrates the most food-secure countries in Africa according to the Global Food Security Index 2022.

Table 1: Top-performing African Nations in Global Food Security Index (GFSI) 2022 with overall scores of 50 minimum (Economist Impact, 2022).

Rank	Country	Overall Score
1	Morocco	63
2	South Africa	61.7
3	Tunisia	60.3
4	Algeria	58.9
5	Egypt	56
6	Kenya	53
7	Ghana	52.6
8	Mali	51.9
9	Senegal	51.2
10	Botswana	51.1
11	Rwanda	50.6

The GFSI 2022 ranking indicated that Morocco and South Africa are Africa's most food-secure countries. However, a worsening food security situation has been prevailing in Africa since 2014 and a substantial deterioration in food and nutrition security occurred between 2019 and 2020 (FAO, ECA, and AUC, 2021). Figure 1 shows the number of severely food-insecure people in Africa from 2014 to 2020.

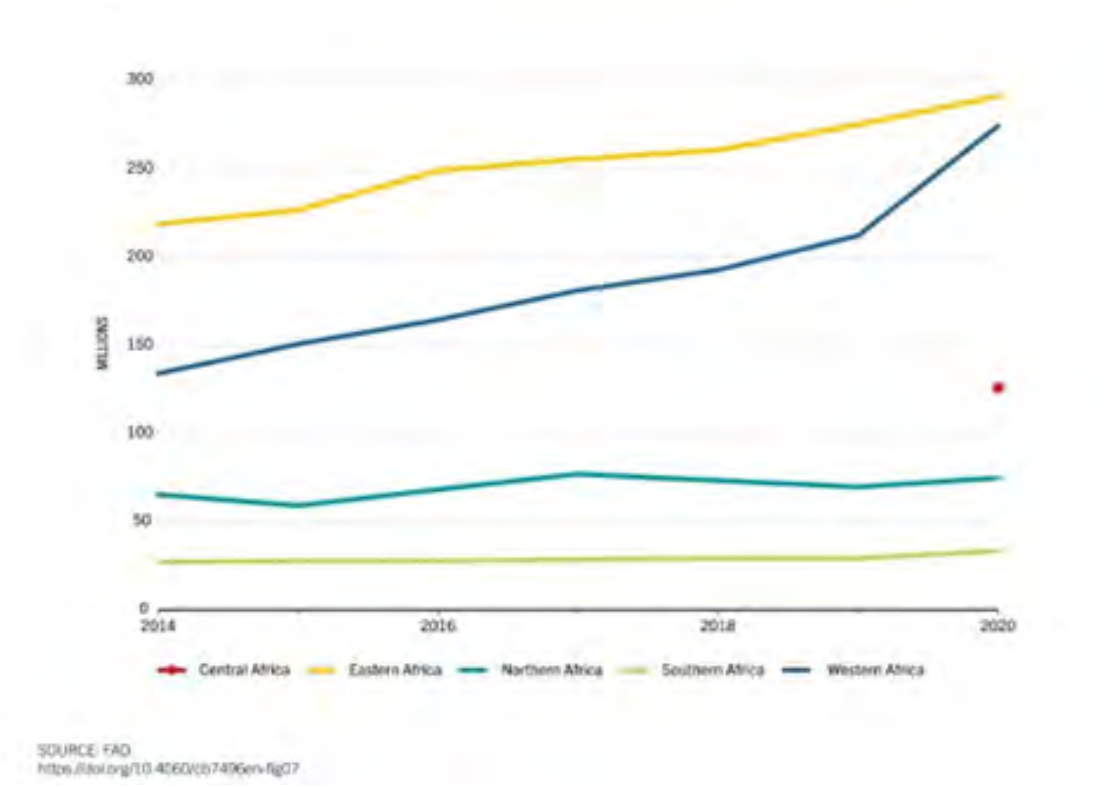

Figure 1: Estimates of severely food-insecure people in Africa (Central Africa=125.7 million people in 2020).

The number of food-insecure people has been increasing since 2014 and the Eastern African population suffers the most from food insecurity (Figure 1). Recent estimates showed that 794.7 million people faced moderate or severe food insecurity in 2021, an increase of 43.8 million compared to 2020 (FAOSTAT, 2022). In addition, increasing food production is not sufficient to ensure food security because malnutrition is a persistent problem in the African continent (AU, 2022).

In recent years, malnutrition has been on the rise in Africa (FAO, ECA, and AUC, 2021). To promote political and financial investment in addressing malnutrition, the AU declared 2022 as the Year of Nutrition under the theme "Strengthening Resilience in Nutrition and Food Security on the African Continent: Strengthening Agro-Food Systems, Health and Social Protection Systems for the Acceleration of Human, Social and Economic Capital Development" (AU, 2022).

There are many types of malnutrition, including undernourishment (inability to acquire enough food), overeating, and nutritional deficiencies (Humanium, 2018). The "prevalence of undernourishment" is the measure of hunger used by the FAO. Figure 2 shows the prevalence of undernourishment in the world and in Africa from 2000 to 2020.

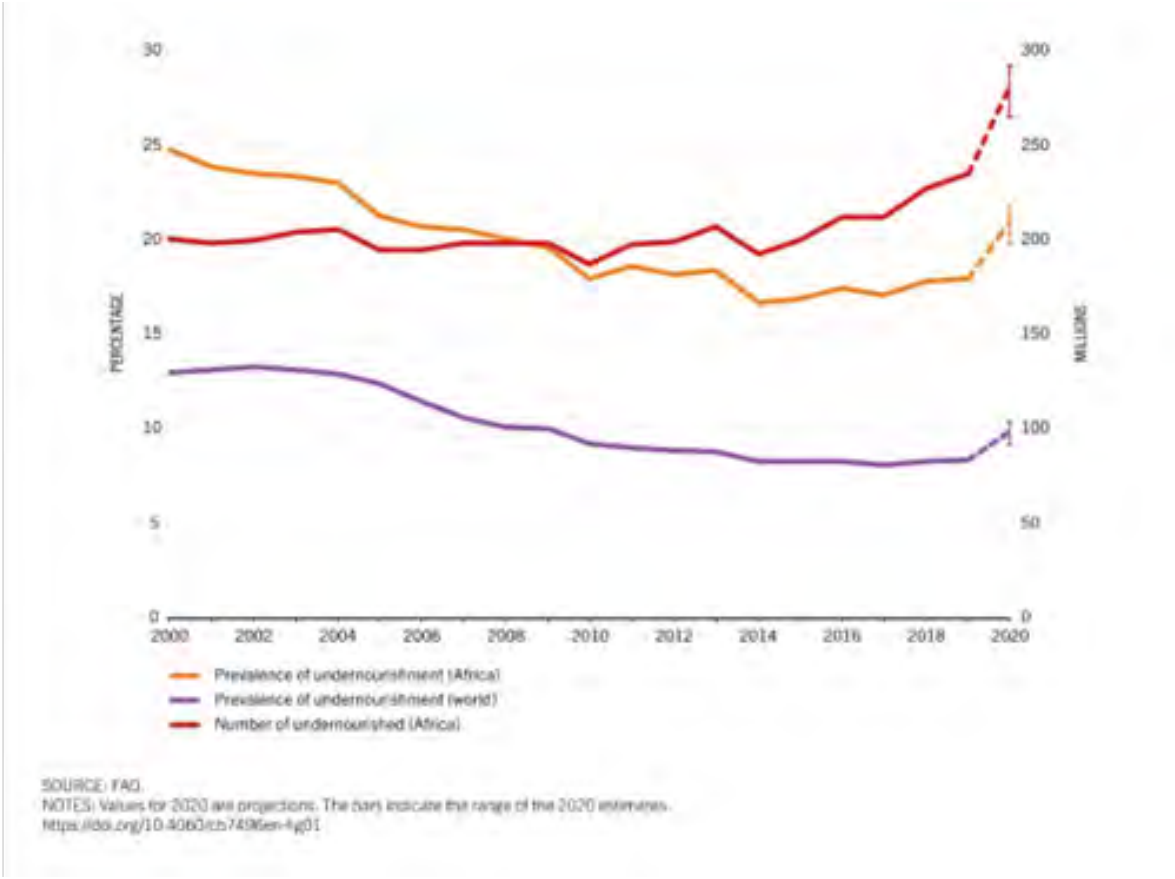

Figure 2: Prevalence of undernourishment worldwide and in Africa, and the number of undernourished people in Africa.

A significant rise in undernourished Africans is observed between 2018 and 2020 (Figure 2). The prevalence of undernourishment in Africa was 20.2% with 278 million people facing undernutrition on the continent in 2021 while 262.8 million people were undernourished in 2020 (FAOSTAT, 2022). Around 10.6 million children below the age of 5 are overweight (FAOSTAT) and the prevalence of adult obesity is 12.8%, which is quite close to the worldwide obesity rate (FAO, ECA, and AUC, 2021).

Access to nutritious foods and healthy diets is hindered due to their expensive costs, persistently high levels of poverty, and income inequality (Africa's Food Systems Forum, 2021). Chronic hunger might be eradicated worldwide by the year 2030 with an additional annual investment of 11 billion US dollars, but only with highly focused and well-planned initiatives (Fraval et al, 2018). Accordingly, this policy recommendation aims to explore the current state of nutrition security in Africa and propose ways in which food and agricultural policies can be designed and implemented to promote better nutrition outcomes for all.

Policy recommendations to achieve a nutritionally rich food system in Africa

1. Increase of nutrition-sensitive agriculture interventions

The consumption of low-quality meals is a persistent problem in Africa. Agricultural policies in several African regions are still largely geared towards boosting the agricultural production of staple crops such as cereals and pay little attention to addressing diet diversity and nutrient deficiency (Adirvatham et al, 2023; CIRAD, 2022). Nutrition-sensitive agriculture is a food-based approach to agricultural and rural development that places an emphasis on nutrient-dense foodstuff, dietary diversity, and food fortification in the fight against nutrition-related diseases (Asirvatham et al, 2023). Examples of actions to make agricultural projects nutrition-sensitive include:

- Promoting the increased cultivation of nutrient-dense crops such as fruits and vegetables and bio-fortified crops like protein-rich, iron-rich, and vitamin-A-rich crops. For instance, providing subsidies for legume seed is positively connected to child weight for age, an increase in the area planted with legume crops, legume yield, greater production & dietary diversity, and intake of micronutrients, vitamin A, and zinc (Azomahou et al, 2022).
- Promoting intercropping, reducing mono-cropping, and diversifying the crops and livestock produced by farmers. Mono-cropping which is highly practiced influences the dietary intake resulting in poor dietary diversity because much of what is produced by small-scale farmers is consumed in their homes (IFAD, 2016).
- Improving farmers' access to markets to reduce post-harvest losses, increase farmers' income and improve dietary diversity (IFAD, 2016). Lower household earnings are typically linked to lower dietary quality. With sufficient income, a variety of foods can be purchased from the market (Rajendran et al, 2014).
- African governments should encourage investment in the cultivation of crops for domestic consumption through the reform of land acquisition agreements (Azomahou et al, 2022).

2. Development of home-grown school feeding programs

The home-grown school feeding program (HGSF) is an initiative of the World Food Program (WFP) that involves national governments, local farmers, and schools (Borgen project, 2021). HGSF is a school feeding strategy that provides students in schools with safe, diversified, and nutritious food supplied locally by small-scale farmers. It promotes quality and safety standards for local food, maximizes farmers' revenues, and strengthens the capacities of farmers by better linking educational institutions to local agricultural producers. As a result, HGSF contributes to the in-school supply of foods with a high nutrient value and fosters community-based and sustainable, resilient strategies for improved diet and nutrition status (CERFAM, 2021).

In many developing countries, the school meal is the only nutritious meal of the day for many pupils. As a result, ensuring appropriate supplies of food in terms of quantity and quality for school lunches is essential to ensuring that all children have access to nutritious foods (United Nations University, 2022). "A daily school meal is a very strong incentive for parents to send their children to school," states Edith Heines, WFP country director for Rwanda. Attendance in elementary schools where the WFP implemented HGSF has increased to 92% in Rwanda. Therefore, high-quality school meals result in higher school attendance and improved grades (Borgen project, 2021).

The WFP is the leading buyer of local foods for school meals (WFP, 2019). However, national governments can contribute to the long-lastingness of the HGSF by incorporating the program in the action plan of appropriate ministries, through the creation of specialized school feeding committees, or by appointing public officials dedicated to the implementation and expansion of the HGSF. For Instance, in Kenya, the Njaa Marufuku Kenya program, launched by the Ministry of Agriculture, promotes agricultural development and takes into account food and nutrition security along with school feeding. In Namibia, the government took the responsibility to fully finance national school feeding (World bank, 2016). However, the payments from the government to farmers and caterers are usually time-consuming and this greatly affects the effectiveness of HGSF (SNV, 2016). To tackle this issue in Mali, the Ministry of Finance transfers money directly to its regional offices, which then distribute it to communes that are responsible for making payments (Masset & Gelli, 2013).

Despite the advances in HGSF, there is a lack of adequate monitoring and evaluation of the program in Africa (AU, 2018). In Tanzania, little data is available on elements such as food sourcing procedures, school meal compositions, and food portions (Roothaert et al, 2021). Although a 33% rise in agricultural sales and household income as a result of HGSF was observed in Ghana (WFP, 2019), the school feeding program does not provide adequate information on the quantity of food supplied by local farmers (SNV, 2016). Setting a minimum percentage for locally grown food supplies could be useful in maintaining the continuous participation of farmers and improving their benefits. For instance, the Tanzanian government has a smallholder inclusion policy that sets the supply of locally produced food at 30%, enabling stable access to the market (AU, 2018).

Assessing the food safety, food nutrient composition, and nutritional outcomes of the consumption of school lunches is essential to evaluate the impact of HGSF. A previous study in Osogbo (Nigeria) highlighted that the nutritional status of pupils in an elementary school had improved (Awojobi & Tinubu, 2020). In contrast, a study conducted in three government schools in Illaro (Nigeria) revealed that the nutritional value of some foods served is below the World Health Organization (WHO) dietary standards (Adepoju & Johnson, 2021). Nevertheless, additional studies are necessary to evaluate the nutritional benefits of HGSF for the program beneficiaries in all African countries. An adequate follow-up

on the availability of nutritious food items throughout the school year is important to ensure a constant food supply. This is because local fruit and vegetables are good sources of essential micronutrients but are seasonal and not always available year-round (Shrestha et al, 2020). An essential aspect of the HGSF is estimating meal costs in schools. Policies do not address meal costs, which results in poor diet quality and small portion sizes (Roothaert et al, 2021).

The sustainability of HGSF can be assured by increasing the number of smallholder farmers partaking in the program to increase local food sources (World Bank, 2016; FAO, 2022). The increased participation of caterers and workload partitioning for meal preparation allows for the timely delivery of quality meals to children. Workload partitioning has been practiced in Nigeria (Osun State), where each cook is assigned the preparation of 50 meals (one meal per child) every school day (World Bank, 2016). The introduction of nationally produced processed/preserved products such as yogurts will increase the production capacities and incomes of farmers and food processors as well as strengthen the agricultural value chain and increase students' food choices. To reduce social gaps, the food served in schools could be accompanied by takeaway meals to be later consumed at home by highly vulnerable individuals such as pupils living in extreme poverty (AU, 2018). Additional interventions through which HGSF could be sustained include:

- Encouraging the local farming community to produce and supply nutrient-dense agricultural products (i.e., whole grains, fruits, vegetables, and pulses) with the aim to increase yields and production diversity. This will ensure the availability of sufficient food procurement sources and better nutrition for schoolchildren (FAO, 2022).
- Educating farmers and caterers (chefs, cooks, food vendors, etc.) on quality and safety procedures during production, preparation, and distribution (CERFAM 2021; FAO, 2022). The food served in school canteens must be safe and healthy because children are highly susceptible to foodborne illnesses (Barkley et al, 2016).
- Using technological tools for weather forecasting to protect farms from climate disasters. For example, planting could be delayed by farmers to avoid damage and losses that might be caused by predicted adverse weather conditions (WFP, 2019).
- Engaging of schools in the supply of agricultural products by growing nutrient-rich fruits and vegetables in school gardens and serving them in the school canteen (Koch & Matts, 2014).
- Transferring cash from funding authorities (i.e., WFP, central governments, ministries, development organizations) to school authorities, community organizations, or other local entities to buy foods directly from farmers and therefore shorten delivery and payment times (AU, 2018). This measure has been particularly successful in Ghana, where the 'Grain Bank' funded by the SNV (a not-for-profit development organization) purchases agricultural products directly from farmers and supplies them to school feeding caterers (SNV, 2016). The use of bank accounts for financial transactions is

important to prevent the misuse of funds, as previously seen in the North of Tanzania (Roothaert et al, 2021).

- Investing in cost-effective post-harvest technologies to prevent food losses and ensure the supply of seasonal fruits and vegetables over a longer period of time (Baral & Hoffman, 2018). Examples include performing drying operations that lower the water content of the harvested crops to prevent spoilage (WFP, 2014); employing cold storage with pre-cooling in farms to extend the product's shelf life (Makule et al, 2022); and using hermetic storage containers or bags that protect agricultural commodities from moisture and pests, thereby preserving them for longer periods (Sheahan & Barrett, 2017).

3. Development of the food processing sector to produce healthy processed foods

While Africa largely depends on food imports, vast amounts of nutrient-rich foods such as agricultural crops, fresh fruits and vegetables, and dairy products are wasted in rural regions (African Development Bank, 2016). Food processing has the potential to reduce these losses. The term « food processing » refers to a broad range of operations that are performed on harvested crops and livestock during their preparation, preservation, cleaning, cooking, or storage. Food processing technologies extend food shelf life, allow for increased transportation range, wider food distribution, aid in managing food availability throughout the year, help in nutrient preservation and bioavailability, introduce ingredients with health benefits, reduce allergens, and eliminate contaminants (WBCSD, 2021). For example, improving storage and packaging by using packaging that indicates whether or not food has gone bad can help in reducing food losses (Wageningen University and Research, 2022). Processing makes it possible for populations, particularly those residing far from production sites, to safely obtain a wide variety of high-quality food products in sufficient quantities (WBCSD, 2021). According to the International Food Policy Research Institute-IFPRI (2021), the growth of the processed food sector in Africa is creating a sizable number of new jobs, thus leading to higher income generation.

A number of African traditional foods such as *garri, kilishi,* and *chikwange* are produced using processing techniques that have existed for centuries. These traditional processing techniques are unregulated, labor-intensive, and their products have a short shelf life with variable or low quality and safety. The introduction of processing machines enables the reduction of manual operations, shorter production times, increased production capacity, and improvement in the shelf life and safety of the products for better nutrition and health (Aworh, 2023). *Fonio* is a traditional staple in Western Africa whose consumption was limited because of its time-consuming preparation, but thanks to food processing technologies, its consumption is on the rise as ready-to-cook processed *fonio* is increasingly available (Badiane et al, 2022). The training of various stakeholders (farmers, food workers, and food processors) in performing food processing operations will significantly improve food safety (Oguntoyinbo, 2014). Nevertheless, investment in applied research is necessary to harmonize the production processes and

standardize the quality characteristics of foods (Agyei et al, 2020).
All Sub-Saharan African nations do have laws governing food safety. However, these laws and regulations tend to be either extremely limited or outdated colonial-era norms. Yet the majority of these nations are Codex Alimentarius Commission (CAC) members. The Codex Alimentarius standards could be used as a starting point in the updating or formulation of national food legislation for countries to comply with in order to provide their citizens with safe and wholesome foods. Therefore, governments must prioritize building efficient food safety systems, not only for reasons of quality and food security, but also because of rising consumer concerns about food safety (Berkum et al, 2017).

The growth of the food processing sector in Africa represents a market opportunity for small-scale farmers since smallholders produce agricultural raw materials that are required by food processing firms. Policy initiatives are therefore required to boost small-scale farmers' production capacities through increased and fair access to agricultural inputs and technology, increased literacy on best practices & standards to comply with, and cultivation of high-yield and climate-smart crop varieties. This will improve the capacity of smallholder farmers to supply products that meet quality standards imposed by processing companies. Finally, it is necessary to create a supportive institutional setting for connecting smallholders to food processors (buyers) through contract farming, collective farming, agricultural cooperatives, and vertical integration with partner food industries (Badiane et al, 2022).

Despite the advantages of food processing, the growth in consumption of unhealthy processed foods such as industrial packaged biscuits, margarine, and sugary drinks in Africa leads to a rise in obesity and nutrition-related health issues (Reardon et al, 2021). The increasing dependency on processed food imports, gradual increase in supermarket purchases in urban areas, and rise in fast-food consumption are changing the eating habits of the African population, hence contributing to this malnutrition trend (Berkum et al, 2017). Policymakers should implement policies that discourage the consumption of unhealthy processed foods like the imposition of taxes on high-in-sugar foods and junk foods, prohibition of unhealthy foods in schools, and the proper labeling (e.g., "high in sugar", "high in fat") of unhealthy products to warn about the risks associated with their consumption (Bhattacharya & Kumar 2022; Reardon et al, 2021). Some processing techniques produce foods that are poor in nutrients and high in calories. It is important to implement policies that incentivize the processing industry to produce nutrient-rich foods that are beneficial for the health of consumers. The nutritional value of foods can be preserved by using new and emerging non-thermal technologies that favor the retention of nutrients during processing (OECD, 2021).

Monitoring and evaluation are crucial to guarantee private sector compliance and engagement, to comprehend the health implications of food policies in a long term, to analyze how the policies contribute to achieving nutrition objectives, and to identify priority areas to implement reforms on policies and

investment strategies (OECD, 2021; FAO, 2022). MAFAP (Monitoring and Analyzing Food Policies) is an organ of the FAO that works with governments and policymakers to assist with policy changes in the agri-food sector to enable access to cheap healthy diets while simultaneously providing farmers with inclusive markets (FAO, 2022). Conducting appropriate research on specific nutrition-related topics is useful in the evaluation of the impact of policies. For example, a study in the UK evaluated the effectiveness of the sugar reduction program in the decrease in sugar intake by the population (Public Health England, 2019). Implementing policies to reduce unhealthy processed food consumption in Africa could be difficult because governments might not have the administrative capabilities, and there could be fierce opposition from powerful food industries that detain large market shares. Additionally, some fiscal policies, such as taxes on unhealthy foods and drinks, may be challenging to implement in environments where the processing and retail sectors are disconnected and predominated by the informal sector (IFPRI, 2021).

Conclusion

Malnutrition is rampant across Africa. Undernourishment is increasing while the prevalence of overweight and obesity is on the rise. The key to addressing these issues is for policy practitioners to establish and execute educated, evidence-based policies. Focusing primarily on increased food production is not sufficient to reduce nutrition insecurity. The following policy measures and practices all have the potential to eliminate hunger and inaccessibility to a healthy and nutritious diet.

They must be based on: 1) home-grown school feeding,

2) the development of nutrition-sensitive agriculture interventions by including objectives that target better nutrition outcomes in agricultural projects and promoting the cultivation of nutrient-rich and diverse food crops, and 3) the use of simple and effective food processing technologies to increase the shelf life and value of products.

The fight against hunger and malnutrition necessitates significant funding to put the formulated policies into practice. The African Development Bank (AfDB) and the United States Agency for International Development (USAID) have dedicated significant financial resources to the implementation of nutrition-specific initiatives on the African continent. Also, the United States' government has announced an investment of 760 million US dollars directed towards the African nutrition challenge at the 2022 United States-Africa Summit (AfDB, 2022). The implementation of strategies to ensure a constant and year-round supply of nutritious food is of paramount importance to achieve nutrition security. Capacity development (e.g., training and certification) of stakeholders in different sectors is required to raise awareness about food production and regulatory standards. Food system improvement should encourage the manufacturing and consumption of healthy processed foods and simultaneously discourage the consumption of their unhealthy counterparts. Additional research is required to evaluate the impact

of a growing food processing sector on small-scale farmers in Africa. To achieve the sustainability of the formulated policies, adequate monitoring and evaluation, using effective data collection and analysis methods, are necessary. Food and agricultural policies should, however, be tailor-made to each African country considering the variations in food and nutrition security observed in the different subregions of the continent.

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