

Review

Policy Considerations for African Food Systems: Towards the United Nations 2021 Food Systems Summit

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Abstract: Achieving food and nutrition security and ending hunger is a complex and multi-faceted global challenge, which requires urgent attention, particularly in Africa. To eliminate hunger, the continent needs to transition to new sustainable, inclusive, and resilient food systems that deliver nutritious food and a healthy planet for all. This paper discusses challenges and opportunities highlighted during the “Food Systems Transformation to Address the SDGs” session convened by the African Research Universities Alliance (ARUA) and partners at the 8th World Sustainability Forum (WSF2020) held in September 2020. The paper reflects on how African food systems need to change to achieve the food systems related and interconnected the Sustainable Development Goals (SDGs). It also presents issues for consideration at the 2021 United Nations Food Systems Summit. Key considerations include (i) the realization that nutrition insecurity is not food insecurity, (ii) the need for Africa to actualize its potential, (iii) the need to demystify policy development processes; (iv) the need to invest in better measurements and indicators; and (v) the need to create nature-based climate-smart solutions

Keywords: Africa; food systems; transformation; policy development; healthy diets; food and nutrition security; SDGs



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1. Introduction

Sustainable food systems are at the center of the United Nations' Sustainable Development Goals (SDGs), which call for significant transformations in agriculture and food systems to end hunger, achieve food security, and improve nutrition by 2030 [1]. There are also essential linkages between food systems and perhaps less obvious SDGs, demonstrating that food is central to attaining all 17 SDGs [2]. For example, drought affects some of the world's poorest countries, exacerbating hunger and malnutrition [3]. In addition, several policies that would improve sanitation and access to drinking water (SDG 6), such as investment in the management of freshwater ecosystems and sanitation facilities, would also support broader food-sustainability targets [4].

Furthermore, food production and transport consume almost a third of all energy generated worldwide [5]. Unfortunately, there is continued use of unsustainable and polluting sources to generate most energy, notably fossil fuels [6]. Therefore, sustainable food production and consumption could also involve embracing and promoting affordable and clean energy (SDG 7), such as ethanol from agricultural waste [7].

However, with 2030 fast approaching, the world is not on track to achieve the global commitments proposed in the 2030 Agenda for Sustainable Development [8]. According to the 2020 State of Food Security and Nutrition in the World [9], more than 700 million people, or 10 percent of the world population, still live in extreme poverty. About 690 million

people were undernourished at the end of 2019, and because of the absence of rapid interventions, the COVID-19 pandemic could force an additional 130 million people into chronic hunger.

To accelerate actions towards the attainment of the SDGs, in 2020, the United Nations Secretary-General António Guterres called for a high-level Food Systems Summit to “awaken the world to the fact that we all must work together to transform the way the world produces, consumes, and thinks about food” [10]. The emphasis on food system transformation recognizes that our food systems are among the most powerful ways to change course and progress towards all 17 SDGs.

Traditionally, the focus for the agriculture sector has been on food security, with increasing yields and income touted as the solution. This approach has proved problematic, as it has emphasized quantity over quality [11]. On the other hand, the food systems approach focuses on the complex relationships between the environmental, economic, and social pillars of sustainable development, forming a collaborative network from farm to fork [12]. These interactions of formal and informal actors, vested interests, and technology and innovation inequities make food system transformation complex adaptive systems [13].

This paper draws from the outcomes of the “Food Systems Transformation to Address the SDGs” session held at the 8th World Sustainability Forum—WSF2020 held in September 2020. The session was led by the African Research Universities Alliance (ARUA), the Food Systems Research Network for Africa (FSNet-Africa) at the University of Pretoria, and the Directorate of Strategic Partnerships, South Africa’s National Research Foundation and partners. This paper is further enriched by a broad review of recent research in food systems aiming to identify key policy considerations for the United Nations Food Systems Summit (UNFSS), which will occur in September 2021.

In analyzing the challenges rife within Africa’s food systems, this paper first places Africa’s food systems into context by assessing the ability of Africa’s food systems to provide healthy diets. Second, it considers policies relevant to the transformation of the food systems before discussing the importance of science, data, and evidence to guide and monitor actions designed to transform the continent’s food systems. The paper proceeds to highlight the opportunity presented by the 2021 United Nations Food Systems Summit before concluding with crucial actions for considerations by the Summit and the African Member States to move towards equitable and sustainable food systems that provide food security and nutrition for the continent’s growing population.

2. Africa’s Food Systems Context

Sub-Saharan Africa is not on track to achieve global commitments set out in the 2030 Agenda for Sustainable Development [14]. Hunger is increasing at an alarming rate, with over 100 million Africans facing a crisis, emergency, or catastrophic levels of food insecurity, according to the Global Report on Food Crises 2021 [15]. In West Africa, 23.6 million people face crisis-level food insecurity, and while conditions are deteriorating in East Africa, where 7 million people are at risk of starvation and 33.8 million people face acute food insecurity [16]. In Southern Africa, successive crop failures, poor harvests, and high post-harvest losses are some of the factors that have taken a toll on agriculture production and soaring food prices [17].

The outbreak of the COVID-19 global pandemic in 2020 and the different measures adopted to control or mitigate the pandemic’s impact has worsened an already precarious food security context in sub-Saharan Africa [18]. The pandemic has forced countries in Africa to undertake strong measures ranging from total lockdowns to partial lockdowns to stay-at-home orders [19]. To a large extent, these measures disrupted agricultural activities, including farming, access to labor, farm inputs, and markets, leading to reduced food access, lack of diversity, and high food costs, all of which have exacerbated food insecurity related nutrition deficiencies [20].

Given that over 60 percent of Africa’s population lives in rural areas and is dependent on agriculture and food systems, COVID-19 continues to pose a severe risk to millions

of already vulnerable households [21]. The urban population has not been spared; over-nutrition and micronutrient deficiencies are rising due to relatively high natural population growth rates and rural–urban migration [22].

What is clear is that the pandemic has added a new and more complex layer to pre-existing food security threats. In this review, we aim to assess how Africa’s food systems are positioned to (1) deliver a healthy diet in sufficient quantities for all seasons and all ages; (2) provide an affordable healthy diet; and (3) deliver an environmentally friendly and healthy diet. We are also interested in the interlinkages of diets and food systems with climate change, biodiversity loss, and other forms of environmental degradation.

2.1. African Food Systems and Healthy Diets

Food systems should provide diets to meet nutritional requirements for human health [23]. The United Nations World Health Organization (WHO) [24] defines a healthy diet as one that can prevent malnutrition in all of its forms and protect against non-communicable diseases (NCDs) such as diabetes, heart disease, stroke, and cancer. Some scholars define the ideal diet as a healthy one of sufficient quality and quantity and that is affordable, safe, and culturally acceptable for ideal human nutrition and health status.

The EAT-Lancet Commission [25] on healthy diets from sustainable food systems advocates for a new planet-friendly diet, branded as the “planetary health diet.” The diet is a global reference diet for adults represented by half a plate comprising fruits, vegetables, and nuts. The other half consists primarily of whole grains, plant proteins (beans, lentils, pulses), unsaturated plant oils, modest amounts of meat and dairy, and some added sugars and starchy vegetables.

However, this planetary health diet has been labelled by some African researchers [26]. Most diets in sub-Saharan Africa consist mainly of energy-dense staple cereals and root crops, with tiny animal source proteins, vegetables, and fruits, resulting in limited dietary diversity and micronutrient imbalances [27]. Because of this, sub-Saharan Africa as a region not only suffers a high prevalence of chronic hunger but hidden hunger, as many more people suffer from micronutrient deficiencies [28].

There is overwhelming evidence on the grave consequences and high costs of nutritional deficiencies [29–31]. According to the 2017 Global Nutrition Report [32], these forms of malnutrition present a significant impediment to achieving sustainable development, with crippling consequences for human health, the environment, and human capabilities. While there are multiple underlying determinants of malnutrition, sub-optimal diets are essential contributors to poor nutritional outcomes [13]. These deficiencies are often coupled with cases of obesity within the same communities—forming a triple burden on human health and society [15].

Africa’s food systems can deliver healthy diets if the potential benefits of local or indigenous foods, which unfortunately have been neglected and labeled as orphan crops, are realized [33]. Only a few traditional foods reach consumers even though Africa is home to over 400 documented vegetables alone and countless fruits, grains, pulses, and tubers [34]. These nutrient-dense indigenous and traditional food crops play a vital role in diversifying the food supply to enhance food and nutrition security [35]. They are akin to “superfoods” that provide healthy, accessible, and affordable nutrient-dense alternatives to popular non-native crops and contribute to closing nutritional inadequacies [36].

However, the benefits and value of indigenous foods within the African context have not been thoroughly researched and publicized amongst producers, industry, and consumers [37]. In addition, there is a need to invest in research on genetic improvement and agronomic management levels, longer shelf life, and consumer access to these products [38].

2.2. Affordable Healthy Diets

The World Health Organization (WHO) [39] encourages more than 400 g of fruits and vegetables as sources of dietary fiber, micronutrients, and antioxidants. However, healthy diets are unaffordable to many people, especially the poor, in every region of the

world [11]. The most conservative estimate shows adequate nutrition is unaffordable to more than 3 billion people globally. Many in Africa struggle to provide a nutritious diet for their families [40]. According to the report, more than 77 percent of the population of sub-Saharan Africa cannot afford even the cheapest nutrient-adequate diet that meets, according to the report, “all known requirements for essential nutrients” [41]. This problem is becoming more prevalent in urban areas, which have better nutritional status than rural areas [42]. Reliance on heavily processed foods such as white sugar, white flour, and cooking oil as the cheapest source of calories is driven by cost factors [43]. On the other hand, rural areas remain vulnerable to dietary inadequacy caused by low yields, the seasonality of supplies, and limited diversity [44].

Healthy diets are estimated to be, on average, five times more expensive than diets that meet only dietary energy needs through a starchy staple [45]. The cost of a healthy diet exceeds the international poverty line (established at USD 1.90 purchasing power parity (PPP) per person per day), making it unaffordable for the poor [46]. While the unaffordability of nutritious foods is a significant barrier to diet quality, the increased cost of sustainably produced foods further reinforces economic barriers to achieving healthy and sustainable diets [47].

The unaffordability of nutritious foods, coupled with affordable non-nutritious foods, is a critical driver of the poor quality of children’s diets, contributing to all forms of malnutrition [48]. Affordability in Africa is compromised due to low productivity and insufficient nutritionally dense horticultural products such as legumes, aquaculture products, livestock, and other nutritious foods [49].

Pre- and post-harvest losses, food processing, marketing practices, and fiscal and trade policies contribute to the high costs of nutritionally valuable foods [50]. Reducing the cost of nutritious foods and increasing the affordability of healthy diets should begin with a reorientation of agricultural priorities towards more nutritionally sensitive food production [51]. Governments in Africa should consider instituting policy incentives to promote dietary diversity. Often, subsidies exist for staples (white sugar, white flour, and cooking oil), while no such supports exist for nutritious foods such as fruits, vegetables, legumes, dairy, fish, and meat [52].

2.3. *Environmentally Friendly Healthy Diets*

The availability of healthy diets depends on the sustainability of food systems, and the production of healthy diets requires healthy environments [53]. Meeting the needs of the growing global population without expanding arable land in the face of the challenges posed by climate change requires new approaches to food production and processing. SDG12 calls for “responsible consumption and production,” which rests on the sustainable use of the natural environment and resources to avoid adverse impacts on the planet [54].

Globally, food systems are locked in a spiral of decline due to environmental changes [55]. According to the 2020 Global Panel on Agriculture and Food Systems for Nutrition Report [56], food systems are the most significant cause of anthropomorphic greenhouse gas (GHG) emissions (28 percent between 2007 and 2016), while agriculture alone accounts for 70 percent of freshwater use. Even without the projected globally population growth, food systems are operating well beyond planetary capacities [21]. The pressures placed on natural resources by food production have left 25 percent of the globe’s cultivated land degraded. At the same time, deforestation for agriculture is recognized as a significant and irreversible cause of biodiversity loss [57].

As the world’s population continues to rise steadily, especially in developing countries, there is a very substantial risk that the world will irreversibly cross multiple planetary boundaries [32]. Africa’s population is the fastest growing in the world. It is expected to increase to over 1.8 billion in 2035 [55]. Providing safe and nutritious food to this fast-growing population poses severe challenges to plant, forest, aquatic, and animal production [58]. Substantially increasing food and other ecosystem goods and services while preserving the environment is a significant challenge for the region [59].

Balancing the nutritional needs of people with environmental health is a complex task [60]. They may have environmentally sustainable and unhealthy diets or healthy and environmentally harmful [61]. Our challenge is to develop food systems that provide both human and environmental well-being [62]. As such, recommendations on healthy sustainable diets can be particularly problematic, especially in low- and middle-income countries that already struggle with nutrition transitions and micronutrient deficiencies [63]. In Africa, where the undernutrition of women and children contributes more to the disease burden than metabolic dietary risk factors, it is essential not to exacerbate the high rates of undernutrition and micronutrient deficiencies through diet [64]. For example, where food choices and diversity are limited, increasing animal-sourced food consumption might improve health outcomes for these groups due to the high content and bioavailability of critical micronutrients [65].

Healthy diets can produce co-benefits for human and environmental health [66–68]. Harnessing these co-benefits requires an integrated approach at the local, national, regional, and global levels that considers the complex linkages and feedback loops between food systems, diets, human health, and the environment [69]. There is an urgent need to re-imagine Africa's food systems and the economy.

3. Mapping Policies to the Food System

Food systems are embedded in public policy structures created and are enforced globally, at national and local levels [70]. The interconnectedness of global, regional, national, and local food systems, including the inter-relationships between the political, institutional, and regulatory context in which food systems operate and the local/regional context that shapes them, present challenges for policymakers [71,72]. Policymakers face the challenge of developing coherent policies that respond to the “triple challenge” facing food systems [73].

The African Union Commission (AUC) is responsible for coordinating regional cooperation and integration amongst the African Member States [74]. Recognizing the significant contribution of agriculture and food systems to African economies, policymakers at the continental level have adopted several policies to push the continent toward sustained economic transformation, enhanced food security, poverty reduction, and integration into the global economy [75].

Specifically, to underline the commitment to agricultural development, in 2003, the African Heads of States adopted the Comprehensive Africa Agriculture Development Programme (CAADP). They pledged to allocate at least 10 percent of their national budgets to achieve at least a six percent per annum growth rate in the agricultural sector [76]. CAADP implementation primarily occurs at the national level, where countries are supposed to develop national CAADP Compacts outlining their agriculture priorities and National Agriculture Investment Plans (NAIPs) [77]. Yet for CAADP to be effective in promoting food and nutrition security and sustainable agricultural development across the African continent, its implementation at the national level needs to be supported by actions and policies at the continental and regional levels [78].

Regional coordination is increasingly recognized as key for boosting Africa's agricultural sector. Africa's Regional Economic Communities (RECs) play a critical role in addressing the barriers to agricultural trade among African countries that hamper attempts by the continent's agricultural producers to break into new markets. With the support of leading technical institutions selected by The New Partnership for Africa's Development (NEPAD), RECs offer support to develop and implement the NAIPs. They mobilize their states to define regional policies and programmes that are complementary to the NAIPs [79].

RECs are also tasked with developing Regional Agricultural Investment Plans (RAIPs) to affect the Regional Compacts. However, along with the CAADP processes, RECs continue to develop and implement regional agricultural policies to complement national policies. In 2005, the Economic Community of Western African States (ECOWAS) adopted

the Economic Community of West Africa Agricultural Policy (ECOWAP), which was supplemented in 2010 by a regional agricultural investment programme. The Southern African Development Community (SADC) began the same process and adopted the Regional Agricultural Policy (RAP) in June 2013. This was followed by the Economic Community of Central African States' (ECCAS) adoption of the Central Africa's Common Agricultural Policy in July 2013. The East African Community (EAC) has had an agricultural policy and a rural development policy since 2006. It adopted an action plan for food security in 2011 that is aligned with the CAADP priorities [80].

It is important to note that the CAADP framework and resulting first generation of agricultural investment plans did not provide a comprehensive approach to tackle hunger and malnutrition [81]. It was not until 2014 that Africa spotlighted malnutrition and climate change as critical challenges that could be addressed through agriculture. During the tenth anniversary of CAADP in 2014, the A.U. Heads of State and Government adopted the Malabo Declaration on Africa Accelerated Agricultural Growth and Transformation for Shared Prosperity and Improved Livelihoods [82]. They also endorsed the NEPAD Program on Agriculture and Climate Change, targeting the adoption of Climate-Smart Agriculture (CSA) by 25 million farm households by 2025 (Vision 25 "×" 25). The NEPAD programme on CSA was a good start, but much more needs to be done to institutionalize climate-smart agriculture [83].

Following the Malabo Declaration, a much stronger focus has been placed on monitoring progress and implementation. Specific indicators and targets are stated in the CAADP Results Framework [84]. Monitoring progress takes the form of agricultural Joint Sector Reviews (JSRs) facilitated by ReSAKSS and IFPRI. In the JSRs, multiple stakeholders review agricultural sector progress and hold each other accountable for commitments. The framework also includes biennial tracking of progress, which began in 2017 [85].

The complexity of food system transformations means there will be no silver bullet in policymaking. Policy processes involve a range of trade-offs, synergies, and choices of policy instruments [86]. Furthermore, agricultural policies alone will not be effective in addressing the triple challenge faced by food systems. Health, environmental, and economic policies are equally crucial to a functional food system [87]. There is a need to eliminate policy silos to achieve the required food system transformation. Inclusive and transparent policy processes are needed to identify priorities, define synergies, and make difficult decisions in the face of trade-offs and different values [88]. Developing a shared understanding of facts and evidence among stakeholders will promote transparency and accountability and help drive inclusive and agile policy processes [89].

4. Role of Research Evidence and Policy Advocacy in Informing Policies to Transform African Food Systems

Evidence-based policy dialogue is essential to navigating complex food systems and ensuring that they deliver healthy diets, livelihoods, and healthy African environments [90]. A key challenge is that agriculture and food policymakers are rarely informed of relevant research outputs, which would enable them to make evidence-based decisions [91]. Even when sound policies are created, they are neither adopted timeously nor implemented at all. Sometimes, these policies are inconsistent with other national policies or have unexpected impacts that are not mitigated against or monitored [92]. Furthermore, implementation is nearly entirely driven by governments, with limited non-state actor participation, resulting in a disconnect between stated intention and the actual delivered impact. Limited mechanisms and the capability of monitoring and evaluation implies that a government is either not always held to account by civil society for policies that may be ineffective, or implementing partners are not held accountable for partial or poor implementation [93].

For many countries, developing effective policy responses to address the challenges facing African food systems is made difficult by a lack of knowledge. There is growing demand from policymakers and analysts for data and evidence on drivers of food system transformations [94]. Such evidence could help in the design of efficient policy interventions. SDG17 encourages global partnerships for sustainable development, complemented

using multi-stakeholder platforms to implement the 2030 Agenda [95]. It also invites states and other stakeholders to share knowledge, expertise, technology, and financial resources to support the achievement of the Sustainable Development Goals in all countries, particularly developing countries [96].

The need for partnerships and inclusive platforms to support the policymaking process was one driving factor behind the establishment of the Food, Agriculture, and Natural Resources Policy Analysis Network (FANRPAN). Initiated in 1994 by the Ministers of Agriculture from the Eastern and Southern African region, FANRPAN is a pan-African policy network that brings together governments, universities, researchers, civil society organizations, farmer organizations, private actors, and private foundations [97]. FANRPAN's mandate is to "coordinate policy research and dialogue and recommend strategies for promoting food, agriculture and natural resources sectors in Africa." Currently operating in 17 African countries, FANRPAN relies on a network of national hosting institutions responsible for convening multi-stakeholder policy dialogues to define policy agenda, undertake policy research, and conduct policy advocacy. It offers a platform where a shared understanding of burning policy issues informed by research can emerge among different stakeholders and serve as a basis for policy advocacy at national and regional levels [98].

FANRPAN is co-leading the implementation of the Global Challenge Research Fund's Agricultural and Food-system Resilience: Increasing Capacity and Advising Policy (GCRF-AFRICAP) programme. The GCRF-AFRICAP programme is co-developing and conducting the research needed in each country, ranging from soils, plants, and livestock science to meteorology, ecology, and political and social sciences and how it all impacts food and nutrition security [99]. The programme has developed an integrated the Future Estimator for Emissions and Diets (iFEED) framework, which provides integrated evidence to shape policies towards climate-smart food systems.

As well as looking at future food production, iFEED includes modeling emissions, climate extremes, and trade and nutrition analysis. Through conversations with in-country project partners, we identified a range of crops to be focused on in AFRICAP. The final simulated yields in iFEED reflect these choices and available crop models. Through the framework, the project has assessed the production of a broader range of crops in the future, assuming average climate impacts where the more detailed model simulations are not available. Livestock production changes are projected using future available livestock feed and the observed relationships between livestock feed and livestock production. Taken together, assessing such a wide range of food commodities has allowed the project to say something meaningful about future food systems on the continent [100].

Science, data, and research evidence are critical components to guide and monitor activities across the various elements of the food systems [101]. The continent needs to strengthen evidence and data generation capacities to foster a shared understanding of facts and promote more transparent policy processes. It is in part due to this need that the African Research Universities Alliance (ARUA) was launched in March 2015, bringing together, at the time, 16 of the region's leading universities working to solve the development challenges of the region. ARUA is pursuing its goal of enhancing research and graduate training in member universities through several channels, including Centres of Excellence (CoEs), hosted by member universities [64].

The ARUA Centre of Excellence in Sustainable Food Systems—ARUA-SFS was established in 2018 to work with a broad consortium of African and international partners on food system research, policy, and capacity development. Hosted by the University of Pretoria in collaboration with the University of Ghana and the University of Nairobi, the ARUA-SFS is leading two flagship projects relevant to Africa's food systems [102].

The Capacity Building Food Security for Africa (CaBFoodS-Africa) project collaboratively builds the capacities required across research and policy to tackle the triple burden of malnutrition and avoid the policy paralysis that, in some countries, has led to little or no progress towards addressing the SDGs. The project team, which includes the Universities

of Pretoria, Nairobi, Ghana, FANRPAN, and the Regional Universities Forum for Capacity Building in Agriculture (RUFORUM), incorporates expertise in agriculture, post-harvest losses, land use, food security, nutrition and health, rural livelihoods, and policy and institutional analysis. The consortium addresses capacity building and policy development under five broad themes: (1) building capacity in food security through different approaches; (2) retaining nutrient quality through complementary interventions; (3) building skills to use big data through the lens of agriculture and food systems; (4) develop policies for optimal nutrition-sensitive options; and (5) a high-level colloquium [103].

The Food Systems Research Networks for Africa (FSNet-Africa) project is similarly working to strengthen food system research capabilities and translate evidence into implementable policy solutions and practical interventions supporting the SDG targets for Africa. The significant contribution of FSNet-Africa towards addressing the SDG challenges is developing a new understanding of the African food system through the development of the FSNet-Africa Food Systems Framework and using system-based methodologies to conduct research that enhances understanding of the components of the framework, the interactions between these components, and ultimately, the leverage points for food system transformation [104].

What is emerging from these partnerships and projects is that scientists and policy-makers will have to interact in new ways. There is a need for researchers and policy actors to co-create rather than transfer and apply knowledge independently. Without effective science–policy interfaces, transformation is hampered at a time when urgent action is crucial to design and implement healthy, equitable, and sustainable food systems [105]. New thinking and flexible funding models, at both the national and global levels, are also required to enable science to respond to short-term policy needs without diverting funds from longer-term research [106].

5. The Food Systems Summit—What It Means for Africa

In September 2021, U.N. Secretary-General António Guterres will convene a Food Systems Summit as part of the Decade of Action to achieve the SDGs by 2030. With only ten years remaining, many of the 17 SDGs stay far out of reach and have been further slowed down by COVID 19. The U.N. Food Systems Summit will raise ambition for global public mobilization and actionable commitments to invest in diverse ways to make food systems inclusive, climate-smart, and resilient and support sustainable peace [107]. The summit is structured around five objectives helping to transform global food systems to deliver on all 17 interconnected SDGs: (1) ensuring access to safe and nutritious food for all; (2) shifting to sustainable consumption patterns; (3) boosting nature-positive production at sufficient scales; (4) advancing equitable livelihoods and value distribution; and (5) building resilience to vulnerabilities, shocks, and stresses [108].

The preparatory process towards the summit is designed to enable stakeholders to develop, test, and adopt frameworks and decision-making tools. It provides platforms for the innovative partnerships and initiatives needed to catalyze significant commitments for accelerated action and investment towards more sustainable food systems. Multi-stakeholder dialogues are increasingly recognized as a valuable approach for engaging multiple actors and using their combined knowledge to resolve system challenges. That is why the Food Systems Summit Dialogues (FSSD) programme is a core component of the preparations process for the summit. There are three types of FSSDs that are being convened, namely the Member State Dialogues, the Independent Dialogues, and the Global Dialogues. To reinforce the Member State Dialogue process, some governments are working together on convening Intergovernmental Dialogues that appreciate and explore aspects of food systems that extend beyond their borders [109].

For Africa, the summit offers the region the opportunity to build on the successes by identifying opportunities, experiences, lessons, and knowledge from across the globe—and through multiple actors. It offers all actors across the region the opportunity to build a robust food system and identify actions that the continent can leverage to meet the 2030

development agenda. The summit dialogue process allows for dialogue convenors to provide feedback. To date, over 600 dialogues have been convened globally, including 116 in Africa. The most identified issues have focused on finance, distribution of resources, equity, food supply, consumer trends, impact on the environment and climate change, and the lack of sound, effective, and appropriate policies [110].

Feedback reports also mentioned lack of access to food, COVID-19 impacts, poor governance, lack of innovation, lack of education, and the lack of specific research as additional problem areas. While not mentioned as frequently, some reports noted the lack of coordination among different actors, the lack of focus or ability to ensure sustainability, food wastage, the use of plastic, poor or inadequate infrastructure, poor treatment of livestock, and the inability to scale up innovations or other interventions. Also mentioned, albeit a few times, were issues surrounding corruption, the lack of capacity of various actors, the failure to manage change, migration, no or low political will, technology, and the challenge of transforming socio-economic systems. Lack of access to resources and not ensuring inclusion were infrequently mentioned [111,112].

For Africa, the UNFSS Dialogues are valuable platforms for advocacy to push for national commitments and targets on food systems, mainly CAADP and Malabo Declaration and associated NAIPs; National Environmental and Climate Change Adaptation Plans; National Nutrition Action Plans, among others.

6. Policy Considerations for the Food Systems Summit

The transformation of food systems requires coordinated action to be accompanied by fundamental understanding and policy actions. Food systems need to be repositioned from just producing and supplying food to providing high-quality diets for all. This will require policy initiatives far beyond agriculture to encompass health and the environment, which harness the power of all food system actors. For this to happen, some potential game-changers include:

1. **The realization that Nutrition insecurity is not food insecurity**—Nutrition security goes beyond food security by considering the nutritional value of food and the systemic factors that determine an individual's nutritional status. It is about a community's access to essential nutrients, not just calories. Undernutrition, malnutrition, and increasingly overnutrition are still pressing issues in many African countries. Promoting nutrition security offers several opportunities to stimulate economic and pro-poor development in cost-efficient ways. Furthermore, by addressing food systems, production systems, the collecting, storage, transport, transformation, and distribution of food, diets, and health can be improved;
2. **Africa actualizing its potential**—Africa can produce diverse nutritious diets to feed itself and the rest of the world. However, the rhetoric that Africa, most of whose people are farmers, is poorly educated, illiterate, uninformed, and unable to feed itself has resulted in Africans depriving themselves of assets and resources within reach. As Africans, we have undervalued our potential to create, use, and add value to traditional products and hidden foods such as forest fruits and vegetables, which have been dubbed orphaned crops. There is a need to deconstruct the narrative of Africa as lacking the capacity for transformational change on the demand and supply side of the value chains;
3. **Demystifying the policy development processes**—The policy process is typically seen as having a series of sequential parts or stages of problem identification, agenda setting, consideration of policy options, decision making, implementation, and evaluation. This stage-based view emphasizes that policy is a process involving many different parts of the government. It is also simple and intuitively appealing. However, in practice, policy issues are interconnected. Policymakers fumble around for solutions in the context of great uncertainty and many internal and external constraints.

There is a need to re-engineer the policy development process and make it tangible, so the evidence is indisputable. Governments and their higher-level structures at the regional

and continental levels (i.e., RECs and the AUC) should take responsibility for directing this transformation and provide opportunities for closer engagement with all of actors in the food system. The policy environment is the most critical factor that will underpin the continent's transformation. The policy environment should ensure that activities and services across the entire spectrum of the food system function to accelerate SDG 2 (zero hunger). There is a power issue inherent in the changes that are needed. The Ministry of Agriculture is generally amongst the weaker ministries in a government, compared to the Finance, Defense, Health and Education departments. However, in countries where the agriculture portfolio has been elevated to the President's Office, there has been concerted efforts to meet the CAADP commitments and prioritize agriculture development [112].

4. **Investing in better measurements and indicators**—We need to have appropriate matrices to measure production costs and costs of inaction. Better measurements and indicators are required to assess the impact of the various determinants of sustainable food systems and the potential synergies and trade-offs associated with any recommendations towards increasing our food-changing course system;
5. **Creating nature-based climate-smart solutions**—while most emphasis has been on economic solutions and, to a limited extent, social solutions, the cost to the environment has been ignored. We are paying the prices as climate change has become a real burden. Building resilience and the adoption of climate-smart food systems calls for urgent action.

7. Conclusions

This article highlights that food systems can only be fully functional if they are sustainable, providing diverse, accessible, affordable, and nutritious diets. Food system transformation requires coordinated, multi-sector interventions that can only be achieved through visionary leadership, strong partnerships with shared outcomes. Designing sustainable food systems for healthy diets and a healthy planet will need to consider local realities and contexts. The emerging policy synergies can only be achieved by promoting transdisciplinary research and dialogues developed through strong collaboration among all stakeholders locally, regionally, and globally. For Africa, the U.N. Food Systems Summit offers a golden opportunity to collectively identify bold new partnerships, actions, solutions, and strategies to deliver progress on all the 17 SDGs. At the same time, the summit offers an opportunity to accelerate the transformation of the continent's food systems for shared prosperity and improved livelihoods.

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References

1. Valentini, R.; Sievenpiper, J.L.; Antonelli, M.; Dembska, K. (Eds.) *Achieving the Sustainable Development Goals through Sustainable Food Systems, Food and Health*; Springer: Berlin, Germany, 2019; pp. 3–23. [CrossRef]
2. Koehring, M. Why Fixing Food Systems Is Crucial for Meeting the Sustainable Development Goals. Available online: <https://sdg.iisd.org/commentary/guest-articles/why-fixing-food-systems-is-crucial-for-meeting-the-sustainable-development-goals/> (accessed on 24 June 2021).
3. Ngcamu, B.S.; Chari, F. Drought Influences on Food Insecurity in Africa: A Systematic Literature Review. *Int. J. Environ. Res. Public Health* **2020**, *17*, 5897. [CrossRef]
4. Food and Agriculture Organization of the United Nations. *Transforming Food and Agriculture to Achieve the SDGs: 20 Interconnected Actions to Guide Decision-Makers*; FAO: Rome, Italy, 2018. Available online: <http://www.fao.org/3/i9900en/i9900en.pdf> (accessed on 18 May 2021).
5. Food and Agriculture Organization of the United Nations. *Energy-Smart Food for People and Climate*; Issue Paper; FAO: Rome, Italy, 2018. Available online: <http://www.fao.org/3/i2454e/i2454e.pdf> (accessed on 24 June 2021).
6. Perera, F. Pollution from Fossil-Fuel Combustion is the Leading Environmental Threat to Global Pediatric Health and Equity: Solutions Exist. *Int. J. Environ. Res. Public Health* **2017**, *15*, 16. [CrossRef] [PubMed]
7. Science Communication Unit, University of the West of England, Bristol. Science for Environment Policy In-Depth Report: Sustainable Food. Report Produced for the European Commission DG Environment, November 2013. Available online: <http://ec.europa.eu/science-environment-policy> (accessed on 24 June 2021).
8. Zougmore, R.B.; Läderach, P.; Campbell, B.M. Transforming Food Systems in Africa under Climate Change Pressure: Role of Climate-Smart Agriculture. *Sustainability* **2021**, *13*, 4305. [CrossRef]
9. FAO; IFAD; UNICEF; WFP; WHO. The State of Food Security and Nutrition in the World 2020. In *Transforming food Systems for Affordable Healthy Diets*; FAO: Rome, Italy, 2020. [CrossRef]
10. United Nations. About the Food Systems Summit. Available online: <https://www.un.org/en/food-systems-summit/about> (accessed on 18 May 2021).
11. High-Level Panel of Experts (HLPE). *Food Security and Nutrition: Building a Global Narrative towards 2030*; A Report by the High-Level Panel of Experts on Food Security and Nutrition of the Committee on World Food Security; HLPE: Rome, Italy, 2020.
12. International Food Policy Research Institute (IFPRI). Topic: Food Systems. 2021. Available online: <https://www.ifpri.org/topic/food-systems> (accessed on 18 May 2021).
13. Fanzo, J. Healthy and Sustainable Diets and Food Systems: The Key to Achieving Sustainable Development Goal 2. *Food Ethics* **2019**, *4*, 159–174. [CrossRef]
14. United Nations. Report of the Secretary-General on SDG Progress 2019. Available online: https://sustainabledevelopment.un.org/content/documents/24978Report_of_the_SG_on_SDG_Progress_2019.pdf (accessed on 18 May 2021).
15. Fraval, S.; Hammond, J.; Bogard, J.R.; Ng'endo, M.; van Etten, J.; Herrero, M.; Oosting, S.J.; de Boer, I.J.M.; Lannerstad, M.; Teufel, N.; et al. Food Access Deficiencies in Sub-saharan Africa: Prevalence and Implications for Agricultural Interventions. *Front. Sustain. Food Syst.* **2019**, *3*, 104. [CrossRef]
16. Food Security Information Network (FSIN) and Global Network against Food Crises. *Global Report on Food Crises 2020—September Update: In Times of COVID-19*; FSIN: Roma, Italy, 2020.
17. Africa Center for Strategic Studies (ACSS). Food Insecurity Crisis Mounting in Africa. 2021. Available online: <https://africacenter.org/spotlight/food-insecurity-crisis-mounting-africa/> (accessed on 18 May 2021).
18. Food and Agriculture Organization of the United Nations. *Keeping Food and Agricultural Systems Alive: Analyses and Solutions in Response to COVID-19*; Food and Agriculture Organization of the United Nations: Roma, Italy, 2020. [CrossRef]
19. Chiwona-Karltun, L.; Amuakwa-Mensah, F.; Wamala-Larsson, C.; Amuakwa-Mensah, S.; Hatab, A.A.; Made, N.; Taremwa, N.K.; Melyoki, L.; Rutashobya, L.K.; Madonsela, T.; et al. COVID-19: From health crises to food security anxiety and policy implications. *Ambio* **2021**, *50*, 794–811. [CrossRef]
20. AGRA. Africa Agriculture Status Report. In *Feeding Africa's Cities: Opportunities, Challenges, and Policies for Linking African Farm*; AGRA: Nairobi, Kenya, 2020.
21. Global Panel on Agriculture and Food Systems for Nutrition. *Future Food Systems: For People, Our Planet, and Prosperity; A One Health Approach to Food, the Double Pyramid Connecting Food Culture, Health and Climate*. In *Barilla Center for Food & Nutrition Foundation (BCFN) Report*; University of Naples Federico, I.I. 2021: London, UK, 2020.
22. Global Panel on Agriculture and Food Systems for Nutrition. *Food Systems and Diets: Facing the Challenges of the 21st Century*; Global Panel on Agriculture and Food Systems for Nutrition: London, UK, 2016.
23. Committee on World Food Security (CFS). CFS Voluntary Guidelines on Food Systems and Nutrition. 2021. Available online: http://www.fao.org/fileadmin/templates/cfs/Docs2021/Documents/CFS_VGs_Food_Systems_and_Nutrition_Strategy_EN.pdf (accessed on 24 June 2021).
24. World Health Organization (WHO). Healthy Diet Fact Sheet N°394 Updated August 2018. Available online: <https://www.who.int/publications/m/item/healthy-diet-factsheet394> (accessed on 24 June 2021).

25. Willett, W.; Rockström, J.; Loken, B.; Springmann, M.; Lang, T.; Vermeulen, S.; Garnett, T.; Tilman, D.; De Clerck, F.; Wood, A.; et al. Food in the Anthropocene: The EAT–Lancet Commission on healthy diets from sustainable food systems. *Lancet Comm.* **2019**, *393*, P447–P492. [[CrossRef](#)]
26. Hinsley, S. Processed food in Africa. *Planet. Health Res. Digest* **2021**, *5*, I. [[CrossRef](#)]
27. Fanzo, J. *The Nutrition Challenge in Sub-Saharan Africa*; United Nations Development Programme (UNDP) Working Paper 2012-012; United Nations Development Programme, Regional Bureau for Africa: Nairobi, Kenya, 2012.
28. Sibanda, L.M.; Kalibwani, F.; Kureya, T. *Silent Hunger: Policy Options for Effective Response to the Impact of HIV and AIDS on Agriculture and Food Security in the SADC Region*; FANRPAN: Pretoria, South Africa, 2006.
29. Darnton-Hill, I.; Webb, P.; Harvey, P.W.; Hunt, J.M.; Dalmiya, N.; Chopra, M.; Ball, M.J.; Bloem, M.W.; de Benoist, B. Micronutrient deficiencies and gender: Social and economic costs. *Am. J. Clin. Nutr.* **2005**, *81*, 1198S–1205S. [[CrossRef](#)] [[PubMed](#)]
30. Wieser, S.; Plessow, R.; Eichler, K.; Malek, O.; Capanzana, M.V.; Agdeppa, I.; Bruegger, U. Burden of micronutrient deficiencies by socio-economic strata in children aged 6 months to 5 years in the Philippines. *BMC Public Health* **2013**, *13*, 1167. [[CrossRef](#)]
31. Development Initiatives. *Global Nutrition Report: Shining a Light to Spur Action on Nutrition*. 2018. Available online: <https://globalnutritionreport.org/reports/global-nutrition-report-2018/> (accessed on 24 June 2021).
32. Global Panel. *Urban Diets and Nutrition: Trends, Challenges and Opportunities for Policy Action*; Policy Brief No. 9; Global Panel on Agriculture and Food Systems for Nutrition: London, UK, 2017.
33. Dawson, I.D.; Hendre, P.; Powell, W.; Sila, D.; McMullin, S.; Simons, T.; Revoredo-Giha, C.; Odeny, D.A.; Barnes, A.P.; Graudal, L.; et al. *Supporting Human Nutrition in Africa through the Integration of New and Orphan Crops into Food Systems: Placing the Work of the African Orphan Crops Consortium in Context*; ICRAF Working Paper; International Centre for Research in Agroforestry: Nairobi, Kenya, 2018.
34. HLPE. *Agroecological and Other Innovative Approaches for Sustainable Agriculture and Food Systems that Enhance Food Security and Nutrition*; A Report by the High-Level Panel of Experts on Food Security and Nutrition of the Committee on World Food Security; HLPE: Rome, Italy, 2019.
35. Khoury, C.K.; Bjorkman, A.D.; Dempewolf, H.; Ramirez-Villegas, J.; Guarino, L.; Jarvis, A.; Rieseberg, L.H.; Struik, P.C. Increasing homogeneity in global food supplies and the implications for food security. *Proc. Natl. Acad. Sci. USA* **2014**, *111*, 4001–4006. [[CrossRef](#)]
36. Akinola, R.; Pereira, L.M.; Mabhaudhi, T.; de Bruin, F.-M.; Rusch, L. A Review of Indigenous Food Crops in Africa and the Implications for more Sustainable and Healthy Food Systems. *Sustainability* **2020**, *12*, 3493. [[CrossRef](#)]
37. Rampa, F.; Lammers, E.; Linnemann, A.; Schoustram, S.; de Winter, D. Pathways to Improved Food and Nutrition Security of the Poor: The Promise of African Indigenous Foods and Technologies. March 2020. Synthesis Paper. Available online: https://knowledge4food.net/wp-content/uploads/2020/03/FBRsynthesis02_LocalIndigenousFoods_paper.pdf (accessed on 24 June 2021).
38. Dawson, I.K.; McMullin, S.; Kindt, R.; Muchugi, A.; Hendre, P.; Lillesø, J.-P.B.; Jamnadass, R. *Delivering Perennial New and Orphan Crops for Resilient and Nutritious Farming Systems*; Rosenstock, T., Nowak, A., Girvetz, E., Eds.; The Climate-Smart Agriculture Papers; Springer: Cham, Switzerland, 2019. [[CrossRef](#)]
39. World Health Organisation of the United Nations (WHO). Increasing Fruit and Vegetable Consumption to Reduce the Risk of Non-Communicable Diseases. e-Library of Evidence for Nutrition Actions (eLENA). 2019. Available online: www.who.int/elena/titles/fruit_vegetables_ncds/en/# (accessed on 24 June 2021).
40. Morris, S.S.; Garg, A.; Black, R.E. Nutrient gaps and affordability of complementary foods in Eastern and Southern Africa and South Asia. *Nutr. Rev.* **2021**, *79* (Suppl. S1), 1–3. [[CrossRef](#)]
41. Herforth, A.; Bai, Y.; Venkat, A.; Mahrt, K.; Ebel, A.; Masters, W.A. Cost and affordability of healthy diets across and within countries. In *Background Paper for The State of Food Security and Nutrition in the World 2020*; FAO Agricultural Development Economics Technical Study No. 9; FAO: Rome, Italy, 2020. [[CrossRef](#)]
42. Vilar-Compte, M.; Burrola-Méndez, S.; Lozano-Marrufo, A.; Ferré-Eguiluz, I.; Flores, D.; Gaitán-Rossi, P.; Teruel, G.; Pérez-Escamilla, R. Urban poverty and nutrition challenges associated with accessibility to a healthy diet: A global systematic literature review. *Int. J. Equity Health* **2021**, *20*, 40. [[CrossRef](#)]
43. High-Level Panel of Experts (HLPE). *Nutrition and Food Systems*; A Report by the High-Level Panel of Experts on Food Security and Nutrition of the Committee on World Food Security; HLPE: Rome, Italy, 2017.
44. Locke, E.; Coronado, G.D.; Thompson, B.; Kuniyuki, A. Seasonal variation in fruit and vegetable consumption in a rural agricultural community. *J. Am. Diet. Assoc.* **2009**, *109*, 45–51. [[CrossRef](#)] [[PubMed](#)]
45. Bai, Y.; Alemu, R.; Block, S.A.; Headey, D.; Masters, W.A. Cost and affordability of nutritious diets at retail prices: Evidence from 177 countries. *Food Policy* **2021**, *99*, 101983. [[CrossRef](#)]
46. Ferreiradean, F.; Jolliffeepen, M.; Prydz, B. The international poverty line has just been raised to \$1.90 a day, but global poverty is basically unchanged. How is that even possible? *Let's Talk Development*. 4 October 2015. Available online: <https://blogs.worldbank.org/developmenttalk/international-poverty-line-has-just-been-raised-190-day-global-poverty-basically-unchanged-how-even/#> (accessed on 24 June 2021).
47. Hawkes, C.; Jewell, J.; Allen, K. A food policy package for healthy diets and the prevention of obesity and diet-related non-communicable diseases: The NOURISHING framework. *Obes. Rev.* **2013**, *14*, 159–168. Available online: www.jstor.org/stable/10.7591/j.ctt7zd0x.10 (accessed on 23 July 2021). [[CrossRef](#)] [[PubMed](#)]

48. Ole-Moi, Y.; Onesmo, K. Disease Burdens of Sub-Saharan Africa and Their Interactions with Malnutrition. In *The African Food System and Its Interactions with Human Health and Nutrition*, 1st ed.; Per Pinstrup-Andersen, Ed.; Cornell University Press: Ithaca, NY, USA, 2010; pp. 34–57.
49. Headey, D.D.; Alderman, H.H. The relative caloric prices of healthy and unhealthy foods differ systematically across income levels and continents. *J. Nutr.* **2019**, *149*, 2020–2033. [[CrossRef](#)] [[PubMed](#)]
50. Ryckman, T.; Beal, T.; Nordhagen, S.; Chimanya, K.; Matji, J. Affordability of nutritious foods for complementary feeding in Eastern and Southern Africa. *Nutr. Rev.* **2021**, *79* (Suppl. S1), 35–52. [[CrossRef](#)] [[PubMed](#)]
51. Fanzo, J. Ethical issues for human nutrition in the context of global food security and sustainable development. *Glob. Food Secur.* **2015**, *7*, 15–23. [[CrossRef](#)]
52. Gillespie, S.; Haddad, L.; Mannar, V.; Menon, P.; Nisbett, N. The politics of reducing malnutrition: Building commitment and accelerating progress. *Lancet* **2013**, *382*, 552–569. [[CrossRef](#)]
53. Vegetables and Fruits. The Nutrition Source. Available online: <https://www.hsph.harvard.edu/nutritionsource/what-should-you-eat/vegetables-and-fruits/> (accessed on 24 June 2021).
54. Lindgren, E.; Harris, F.; Dangour, A.D.; Gasparatos, A.; Hiramatsu, M.; Javadi, F.; Loken, B.; Murakami, T.; Scheelbeek, P.; Haines, A. Sustainable food systems—A health perspective. *Sustain. Sci.* **2018**, *13*, 1505–1517. [[CrossRef](#)]
55. FAO. *Africa Regional Synthesis for The State of the World's Biodiversity for Food and Agriculture*; License: CC BY-NC-SA 3.0 IGO; FAO: Roma, Italy, 2019; p. 68.
56. Aleksandrowicz, L.; Green, R.; Joy, E.J.; Smith, P.; Haines, A. The impacts of dietary change on greenhouse gas emissions, land use, water use, and health: A systematic review. *PLoS ONE* **2016**, *11*, e0165797. [[CrossRef](#)] [[PubMed](#)]
57. United Nations. *Resolution Adopted by the General Assembly on 25 September 2015; 70/1 Transforming Our World: The 2030 Agenda for Sustainable Development*; United Nations General Assembly: Washington, DC, USA, 2015.
58. Bello-Schünemann, J.; Cilliers, J.; Donnenfeld, Z.; Aucoin, C.; Porter, A. African Futures 2035: Key Trends. *J. Futures Stud.* **2018**, *23*, 127–140. [[CrossRef](#)]
59. Dodo, M.K. *Understanding Africa's Food Security Challenges*; Food Security in Africa: Dans, The Netherlands, 2020. [[CrossRef](#)]
60. Kennedy, G.; Moursi, M. Dietary Diversity and Biofortification: Closer Than You Think. At Issue. October 2015. Available online: <http://ebrary.ifpri.org/utils/getfile/collection/p15738coll2/id/130124/filename/130335.pdf> (accessed on 10 May 2018).
61. Nelson, M.E.; Hamm, M.W.; Hu, F.B.; Abrams, S.; Griffin, T.S. Alignment of healthy dietary patterns and environmental sustainability: A systematic review. *Adv. Nutr.* **2016**, *7*, 1005–1025. [[CrossRef](#)]
62. Dury, S.; Bendjebbar, P.; Hainzelin, E.; Giordano, T.; Bricas, N. (Eds.) *Food Systems at Risk: New Trends and Challenges*; FAO: Rome, Italy; CIRAD and European Commission: Montpellier, Brussels, 2019. [[CrossRef](#)]
63. GBD 2016 Risk Factors Collaborators. Global, regional, and national comparative risk assessment of 84 behavioural, environmental, and occupational, and metabolic risks or clusters of risks, 1990–2016: A systematic analysis for the global burden of disease study 2016. *Lancet* **2017**, *390*, 1345–1422. [[CrossRef](#)]
64. Springmann, M.; Mason-D'Croz, D.; Robinson, S.; Wiebe, K.; Godfray, H.C.J.; Rayner, M.; Scarborough, P. Mitigation potential and global health impacts from emissions pricing of food commodities. *Nat. Clim. Chang.* **2017**, *7*, 69–74. [[CrossRef](#)]
65. Perignon, M.; Vieux, F.; Soler, L.G.; Masset, G.; Darmon, N. Improving diet sustainability through evolution of food choices: Review of epidemiological studies on the environmental impact of diets. *Nutr. Rev.* **2017**, *75*, 2–17. [[CrossRef](#)] [[PubMed](#)]
66. Volta, M.; Turrini, E.; Carnevale, C.; Valeri, E.; Gatta, V.; Polidori, P.; Maione, M. Co-benefits of changing diet. A modelling assessment at the regional scale integrating social acceptability, environmental and health impacts. *Sci. Total Environ.* **2021**, *7556*, 143708. [[CrossRef](#)]
67. Parsons, K.; Hawkes, C. *Connecting Food Systems for Co-Benefits: How Can Food Systems Combine Diet-Related Health with Environmental and Economic Policy Goals? Policy Brief 31*; World Health Organisation (WHO) Regional Office for Europe: Copenhagen, Denmark, 2018.
68. Clark, M.; Macdiarmid, J.; Jones, A.D.; Ranganathan, J.; Herrero, M.; Fanzo, J. The Role of Healthy Diets in Environmentally Sustainable Food Systems. *Food Nutr. Bull.* **2020**, *41*, 31S–58S. [[CrossRef](#)] [[PubMed](#)]
69. Burlingame, B.; Dernini, S. Sustainable Diets and Biodiversity: Directions and Solutions for Policy, Research and Action. In *International Scientific Symposium, Biodiversity and Sustainable Diets United Against Hunger*; FAO Headquarters: Rome, Italy, 2010.
70. Raja, S.; Sweeney, E.; Mui, Y.; Frimpong Boamah, E. *Local Government Planning for Community Food Systems—Opportunity, Innovation, and Equity in Low- and Middle-Income Countries*; Food & Agriculture Org: Roma, Italy, 2021. [[CrossRef](#)]
71. Organisation for Economic Co-operation and Development (OECD). *Making Better Policies for Food Systems*; OECD Publishing: Paris, UK, 2021. Available online: <https://doi.org/10.1787/ddfba4de-en> (accessed on 18 April 2021).
72. Smith, J.; Lang, T.; Vorley, B.; Barling, D. Addressing Policy Challenges for More Sustainable Local–Global Food Chains: Policy Frameworks and Possible Food “Futures”. *Sustainability* **2016**, *8*, 299. [[CrossRef](#)]
73. Organisation for Economic Co-operation and Development (OECD). *Working Party on Agricultural Policies and Markets*; OECD Publishing: Paris, UK, 2020. Available online: [https://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=TAD/CA/APM/WP\(2019\)29/FINAL&docLanguage=En](https://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=TAD/CA/APM/WP(2019)29/FINAL&docLanguage=En) (accessed on 18 April 2021).
74. Blizkovsky, P.; Grega, L.; Verter, N. Towards a common agricultural policy in Africa? *Agric. Econ. Czech* **2018**, *64*, 301–315.
75. Pernechele, V.; Balié, J.; Ghins, L. Agricultural Policy Incentives in sub-Saharan Africa in the Last Decade (2005–2016). In *Monitoring and Analysing Food and Agricultural Policies (MAFAP) Synthesis Study*; FAO: Rome, Italy, 2018; p. 77.

76. African Union. Agenda 2063 Framework Document (Popular Version). 2015. Available online: https://au.int/sites/default/files/documents/33126-doc-01_background_note.pdf (accessed on 24 June 2021).
77. African Union. First Ten-Year Implementation Plan. Available online: https://au.int/sites/default/files/documents/33126-doc-11_an_overview_of_agenda.pdf (accessed on 24 June 2021).
78. New Partnership for Africa's Development (NEPAD). *CAADP Country Level Implementation Process: Concept Note Based on the Outcome of the NEPAD Implementation Retreat Organized on October 24 and 25, 2005 in Pretoria, South Africa*; NEPAD: Midrand, South Africa, 2005.
79. AU (African Union). Declaration on Agriculture and Food Security in Africa. In Proceedings of the Paper from Second Ordinary Session of the Assembly of the AU, Maputo, Mozambique, Addis Ababa, Ethiopia, 10–12 July 2003. Available online: http://www.africaunion.org/Official_documents/Decisions_Declarations/Assembly%20final/Assembly%20%20DECLARATIONS%20%20-%20Maputo%20-%20FINAL5%2008-08-03.pdf (accessed on 21 April 2021).
80. New Partnership for Africa's Development (NEPAD). *Third CAADP Partnership Platform Meeting. Documentation of Workshop Held 19–20 March 2008 at Victoria Mahe, The Seychelles*; NEPAD Secretariat: Midrand, South Africa, 2008.
81. Brüntrup, M. The Comprehensive Africa Agriculture Development Programme (CAADP)—An Assessment of a Pan-African Attempt to Revitalise Agriculture. *Q. J. Int. Agric.* **2011**, *50*, 79–106.
82. Namukolo, C.; Hendriks, S.L. Introduction. In *Achieving a Nutrition Revolution for Africa: The Road to Healthier Diets and Optimal Nutrition*; Namukolo, C., Hendriks, S.L., Eds.; International Food Policy Research Institute (IFPRI): Washington, DC, USA, 2016; Chapter 1; pp. 1–5. [CrossRef]
83. African Union. Malabo Declaration on Accelerated Agricultural Growth and Transformation for Shared Prosperity and Improved Livelihoods 26–27 June 2014. Available online: <https://www.nepad.org/caadp/publication/malabo-declaration-accelerated-agricultural-growth> (accessed on 24 June 2021).
84. Djurfeldt, A. Agricultural Policy in Sub-Saharan Africa and Its Relevance for Smallholder Farmers, Women, and Youth—A Policy Baseline Report for Sub-Saharan Africa at the Continental, Regional and National Level. AgriFoSe2030. Available online: https://www.researchgate.net/publication/320280593_Agricultural_policy_in_sub-Saharan_Africa_and_its_relevance_for_smallholder_farmers_women_and_youth_-_A_policy_baseline_report_for_sub-Saharan_Africa_at_the_continental_regional_and_national_level (accessed on 24 June 2021).
85. African Union Commission (AUC)/New Partnership for African Development (NEPAD). *Strategic Guidelines to Establish the Review Mechanism for Biennial Reporting on the Malabo Declaration*; AUC: Addis Ababa, Ethiopia, 2016.
86. African Union Commission (AUC). Technical Guidelines for Preparing Country Biennial Review Report on Progress Made for Achieving the Malabo Declaration Goals and Targets.—View of AUC. In *Country Performance Reporting Format for Preparing Country Biennial Review Report on Progress Made for Achieving the Malabo Declaration Goals and Targets*; AUC: Addis Ababa, Ethiopia, 2017.
87. African Union Commission (AUC). *Inaugural Biennial Report of the Commission on the Implementation of the June 2014 Malabo Declaration on Accelerated Agricultural Growth and Transformation for Shared Prosperity and Improved Livelihoods and the 2017 African Agriculture Transformation Scorecard*; AUC: Addis Ababa, Ethiopia, 2017.
88. Brookings. *Foresight Africa: Top Priorities for the Continent in 2019*; Africa Growth Initiative at Brookings; Brookings: Washington, DC, USA, 2019.
89. Arizti, P.; Boyce, D.J.; Manuilova, N.; Sabatino, C.; Senderowitsch, R.; Vila, E. (Eds.) *Building Effective, Accountable, and Inclusive Institutions in Europe and Central Asia: Lessons from the Region*; World Bank: Washington, DC, USA, 2020. Available online: <https://openknowledge.worldbank.org/bitstream/handle/10986/34031/Building-Effective-Accountable-and-Inclusive-Institutions-in-Europe-and-Central-Asia-Lessons-from-the-Region.pdf?sequence=11&isAllowed=y> (accessed on 27 May 2021).
90. *The World Bank Annual Report 2016*; The World Bank: Washington, DC, USA, 2016.
91. Hainzelin, E.; Caron, P.; Place, F.; Alpha, A.; Dury, S.; Echeverria, R.; Harding, A. How could science-policy interfaces boost food system transformation? *Food Systems Summit Brief Prepared by Research Partners of the Scientific Group for the Food Systems Summit*. 14 May 2021. United Nations Food Systems Summit. Available online: <https://dx.doi.org/10.48565/scfss2021-4y32> (accessed on 27 May 2021).
92. Duncan, J.; Claeys, P. Politicizing food security governance through participation: Opportunities and opposition. *Food Secur.* **2018**, *10*, 1411–1424. [CrossRef]
93. Gertz, G.; Zoubek, S.; Daly, J.; Hlavaty, H. High Level Commissions and Global Policymaking: Prospects for Accelerating Progress toward SDG2. 2020. Brookings Institution. Available online: <https://www.brookings.edu/research/high-level-commissions-and-global-policymakingprospects-for-accelerating-progress-toward-sdg2/> (accessed on 24 June 2021).
94. Lencucha, R.; Pal, N.E.; Appau, A.; Thow, A.M.; Drope, J. Government policy and agricultural production: A scoping review to inform research and policy on healthy agricultural commodities. *Glob. Health* **2020**, *16*, 11. [CrossRef] [PubMed]
95. Maltais, A.; Weitz, N.; Persson, Å. *SDG 17: Partnerships for the Goals. A Review of Research Needs. Technical Annex to the Formas Report Forskning för Agenda 2030: Översikt av Forskningsbehov och Vägar Framåt*; Stockholm Environment Institute: Stockholm, Sweden, 2018.
96. Horan, D. A New Approach to Partnerships for SDG Transformations. *Sustainability* **2019**, *11*, 4947. [CrossRef]
97. Pattberg, P.; Widerberg, O. Transnational multistakeholder partnerships for sustainable development: Conditions for success. *Ambio* **2016**, *45*, 42–51. [CrossRef]

98. Food, Agriculture and Natural Resources Policy Analysis Network (FANRPAN). *Strategy and Business Plan for Institutionalizing FANRPAN as a Recognized Source of Quality Evidence-Based Policy Research and Effective Advocacy for Agriculture and Natural Resources in Southern Africa*; FANRPAN: Pretoria, South Africa, 2007.
99. Food, Agriculture and Natural Resources Policy Analysis Network (FANRPAN). Who We Are. Available online: <https://fanrpan.org/> (accessed on 24 June 2021).
100. GCRF-Agricultural and Food System Resilience: Increasing Capacity and Advising Policy (AFRICAP). Climate-Smart Development Pathways. Available online: <https://africap.info/climate-smart-development-pathways/> (accessed on 24 April 2021).
101. GCRF-Agricultural and Food System Resilience: Increasing Capacity and Advising Policy (AFRICAP). Informing a Climate-smart, Food and Nutrition-Secure Future for Africa. Project Brief. 2021. Available online: <http://ifeed.leeds.ac.uk> (accessed on 24 April 2021).
102. African Research Universities Alliance (ARUA). African Research Universities Alliance (ARUA) the Concept. Available online: <https://arua.org.za/wp-content/uploads/ARUA-Concept.pdf> (accessed on 24 April 2021).
103. University of Pretoria. ARUA Centre of Excellence in Sustainable Food Systems: ARUA-SFS. Available online: <https://www.up.ac.za/arua-centre-of-excellence-in-sustainable-food-systems/article/2733046/arua-centre-of-excellence-in-sustainable-food-systems-arua-sfs> (accessed on 24 April 2021).
104. UK Research and Innovation (UKRI). Capacity Building in Food security for Africa-CaBFoodS-Africa. Available online: <https://gtr.ukri.org/project/0BB9A798-723A-480B-8BA2-60327B87D9FB> (accessed on 24 April 2021).
105. University of Pretoria. Food Systems Research Network for Africa (FSNet-Africa). Available online: <https://www.up.ac.za/centre-for-the-advancement-of-scholarship/article/2943259/food-systems-research-network-for-africa-fsnet-africa> (accessed on 24 April 2021).
106. Hainzelin, E.; Caron, P.; Echeverria, R.; Harding, A.; Enriquez, M.; Broin, M. Bonding Science and Policy to Accelerate Food Systems Transformation. Synthesis and Recommendations. High Level Event Science Policy 4 February 2021. Available online: <https://www.agropolis.org/pdf/news/recommendation-february-4.pdf> (accessed on 24 June 2021).
107. Knight, C.; Lyall, C. 2013. Knowledge brokers the role of intermediaries in producing research impact: The role of intermediaries in producing research impact. *Evid. Policy* **2013**, *9*, 309–316. [CrossRef]
108. Office of The Special Envoy of The Secretary-General for The Food Systems Summit. Information Note December 2020. Available online: https://www.un.org/sites/un2.un.org/files/unfss-information_note_december2020.pdf (accessed on 24 April 2021).
109. von Braun, J. Science, and Innovations for a Sustainable Food System. Presentation made to the G20 Meeting of Agricultural Chief Scientists (G20-MACS) on 15 June 2021, and on a *Statement* of the Workshop of the Scientific Group for the UN Food Systems Summit with Academies at the Pontifical Academy of Sciences (PAS) in Vatican City on 21–22 April 2020. Available online: https://sc-fss2021.org/wp-content/uploads/2021/05/Statement_ScGroup_PAS_April_21-22_workshop_6-5-21.pdf (accessed on 24 April 2021).
110. Canfield, M.; Anderson, M.D.; McMichael, P. UN Food Systems Summit 2021: Dismantling Democracy and Resetting Corporate Control of Food Systems. *Front. Sustain. Food Syst.* **2021**, *5*, 661552. [CrossRef]
111. United Nations. Synthesis of Independent Dialogues Interim Report 1. Available online: https://summitdialogues.org/wp-content/uploads/2021/04/April-Interim-Synthesis-Report_FSS-Independent-Dialogues_.pdf (accessed on 18 May 2021).
112. Juma, C. *The New Harvest: Agricultural Innovation in Africa*; Oxford University Press: Washington, DC, USA, 2011.