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Ayalneh Bogale

## The Africa Agricultural Transformation Agenda

Concurrent Challenges and Strategic  
Pathways for Building Resilience and  
Sustainable Food Systems

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## Abstract

Faced with mounting challenges related to food insecurity due to natural and human-induced shocks and stresses, a growing number of African countries have adopted policies and strategies that transform the agri-food system and thereby increase production and productivity and enhance resilience. Attempts have also been made to replicate the stylized Green Revolution type of interventions even though scaling and sustaining the momentum have been a challenge. Continentally and nationally, numerous commitments, goals and targets have been proposed including zero hunger by 2030 and many initiatives have been established to that end. Unfortunately, almost all indicators show that Africa is not on track to achieve it. This paper reviews what Africa can learn from the success and failures of Green Revolution, the pace at which the continental agricultural transformation is progressing towards attaining its stated goals and then proposes few strategic pathways that may be considered to enhance sustainable and resilient agri-food systems that would produce sufficient, safe and nutritious food to meet the needs of all people for an active and healthy life – and doing so without compromising the food security, health and nutrition of future generations.

## 1 Background: Extent of the Problem

Agriculture is a key economic sector in Africa, contributing between 3 percent and 50 percent of national gross domestic product (GDP) in many countries with continental average of 30% in 2017 and employing around 32% of the economically active population (AfDB, 2016). A number of farm characteristics including small-scale subsistence farming and fragmented plots, a lack of or underdeveloped infrastructure, and policy and institutional barriers has left the sector underdeveloped and unable to meet the food requirements of the growing population. This has resulted in a heavy reliance on food imports with an annual value of US\$40 billion in 2015 and expected to grow to over US\$110bn by 2025 in order to meet the main need of the growing population (AfDB, 2016). Agriculture has also been the main source of foreign exchange earnings for most of the non-oil and/or mineral exporting countries.

After years of relative neglect to the agricultural sector mainly due to Structural Adjustment Programme (SAP), African countries have begun to revitalize their commitment to agriculture under the Comprehensive African Agricultural Development Plan (CAADP) in 2003, and later The Malabo Declaration on Accelerated Agricultural Growth and Transformation for Shared Prosperity and Improved Livelihoods in 2014. These continental agreements renewed commitments and set goals showing a more targeted approach to achieve the agricultural vision for the continent which is shared prosperity and improved livelihoods through investment in the agricultural sector that will help increase smallholder access to modern package of inputs including improved seeds, fertilizer, pesticides and irrigation.

The 2021 United Nations Food Systems Summit (UNFSS) has also created an opportunity for African countries to engage in broad consultation and dialogue with key stakeholders with the overarching objective of exploring perspectives for food systems transformation within the continent and beyond. Key stakeholders in agricultural transformation process explored the challenges linked to sustainable and resilient agri-food systems that would produce sufficient, safe and nutritious food to meet the needs of all people for an active and healthy life – and doing so without compromising the food security, health and nutrition of future generations.

However, even after almost two decades of the launch of CAADP, thorough and rigorous study on the impact of CAADP and later the Malabo declaration for agricultural transformation on agricultural and economics growth has been very scant or inconsistent. For example, Benin (2016) finds out that even though CAADP has had a positive impact on agricultural value-added and land and labor productivity, the impact on agriculture expenditure is generally negative, and its impact on income and nutrition is generally insignificant.

Even the gains registered in agricultural output growth have been largely attributed to expansion of cultivated area rather than by higher productivity (Fuglie and Rada, 2013). Since expansion of cultivated land would entail massive costs to the environment (forest and land degradation, biodiversity loss, etc.), it is not a sustainable pathway to development.

Furthermore, the current world population of 7.6 billion is projected to increase by almost one-third to reach 9.8 billion in 2050. Most of the additional 2 billion people will live in developing countries. Africa's population is growing faster than any other continent and estimated to almost double from the 2019 estimate to reach 2.2 billion by 2050. Thus, African agriculture need to grow faster in order to feed an extra one billion people despite the fact that more than 200 million are undernourished in the continent currently.

The conditions are further worsened by the devastating consequences of multiple shocks that have hit the continent in recent years. The major ones include the Ebola epidemics in Guinea, Liberia, Sierra Leone and Democratic Republic of Congo since 2014; the fall armyworm invasion of eastern and southern Africa since 2017; the desert locust infestation in eastern Africa in 2020, and most recently the COVID-19 pandemic have disrupted the agri-food system and the conflict in Ukraine has further aggravated the already dire situations.

These are, of course, a wake up calls on the Africa continent to collaborate amongst themselves and creating an increasing imperative for reducing import dependency and sustainable increase in food production. Therefore, a paradigm shift is required to transform the agricultural landscape in Africa towards sustainable and resilient food system. At the forefront of the efforts to transform Africa's agriculture is to ensure that it is sustainable (ecological, economical, social) and resilient to stresses and shocks which are increasing in frequency and intensity.

Africa needs to put its food system on a new trajectory if it is to feed its current and future population sustainably in view of growing threats from changing climate and other multiple disaster risks and stresses. The transformation of this sector is also critical for the achievement of the aspirations stated in the continent's strategic development framework: Agenda 2063 -The Africa we Want.

## 2 Agricultural / Food Systems Transformation and Resilience

Articulating a national or continental narrative on agricultural transformation requires a due consideration for resilient and sustainable food systems that can sustainably manage current and future stresses, both climatic and non-climatic, while contributing to emission reductions and ensuring sustainable land use and the protection of ecosystems. Sustainable and resilient food systems are productive and prosperous to ensure the availability of sufficient food; equitable and inclusive to ensure access for all people to food and to livelihoods within that system; empowering and respectful to ensure agency for all people and groups, including those who are most vulnerable and marginalized to make choices and exercise voice in shaping that system; resilient to ensure stability in the face of shocks and crises; regenerative to ensure sustainability in all its dimensions; and healthy and nutritious to ensure nutrient uptake and utilization (HLPE, 2020).

In recent years, a growing number of states have adopted policies and strategies that enhance resilience food systems and progress has been made in many cases, but there remains much work to be done to achieve the full realization of the transformation process as the window of opportunity for action is shrinking particularly due to climate change and variability. Furthermore, the uniqueness of the African agricultural context implies that agricultural transformation in Africa may not be the same or may not follow the same pathways as in other parts of the world (Cuthbert Kambanje and Tobias Takavarasha, 2017). The Malabo Declaration on Africa Agricultural Transformation as well as the Agenda 2063: “The Africa We Want” have articulated the vision regarding what a transformed African agriculture should look like emphasizing on the need to converting large numbers of smallholder subsistence farmers to commercial units with highly efficient linkages to the inputs and output markets.

Even before the onset of the COVID-19 pandemic, most of the African economies have already faced serious challenges in achieving nutritious, safe and adequate food for all, environmental sustainability and resilience to shocks and stresses. Thus, it makes it more imperative that African Governments must be quick in identifying conditions conducive for speedy recovery and transformation of the food system in accordance with the specific resources and instruments at their disposal so that the devastating consequences can be minimized.

Even though food production and the productivist solutions have dominated the food security debate for long years, there is an increasing recognition for greater integration of diverse elements and activities connecting production, processing, distribution, preparation, consumption and disposal of food. This marks shifting away from a narrow traditional thinking to broader “food systems concept” (Termeer et al 2018, Ericksen, 2006; Ingram, 2011).



Since the food system concept aims to elucidate the interconnected relationships between various activities in the commodity chain (producing, distributing, trading, consuming of food); various issues linked to food security outcomes (access, availability, utilisation, nutrition); various interactions across scales (time, space); and various socio-economic and environmental constraints and impacts, policy makers and international/ intergovernmental organizations have been increasingly embracing that food system transformation is the clearest path to overcoming the massive and complex challenges facing African countries (IFPRI, 2021). A transformed food system should be efficient by providing incentives and removing hurdles along the food supply chain, contribute to global health by producing affordable, nutritious foods, boosting demand for them among consumers, and guarding food safety. Furthermore, they should be inclusive of smallholder farmers and marginalized groups, environmentally sustainable and resilient to natural and human-induced shocks (Figure 1).

**Figure 1:** Food system transformation goals



Source: IFPRI, 2021.

Food systems transformation should also be linked to overall economic transformation that requires sectoral and structural change (Jayne T.S. et al 2021). Sectoral change manifests itself through increases in labor productivity, especially in the sectors containing the majority of the labor force; and structural change requires the shift of workers and other resources from low-productivity sectors, such as subsistence agriculture, to high-productivity sectors, such as industry and modern services (De Vries et al., 2015; Timmer and Akkus, 2008). Economic transformation raises the general level of output per worker and hence

is a fundamental driver of rising wages and incomes, improved living standards, and economic opportunities (Herrendorf et al., 2013). Agricultural transformation in Africa will lead to a more resilient and sustainable food system that is capable of feeding and employing billions in normal times, and adjusting quickly to whatever disasters, natural or human, may arise in future.

Even though economic transformation is a fundamental driver of improved living standards, risk and shocks are unavoidable during economic transformation and development; the antidote is resilience. It is important, however, to acknowledge that, in reference to resilience, different conceptual perspectives exist and they may vary both globally as well as locally. The concept

of resilience has been defined, researched, and debated across many academic disciplines as well as operational sectors and agencies, and has grown increasingly popular in recent years in development and policy discourse (Dubois and Krasny 2016; Meerow, et al., 2016). Box 1 presents the most widely used definitions by development and humanitarian agencies including the conceptualization and definition of resilience by UNDRR, DFID and USAID.

While there is not yet consensus on the definition of resilience, employment of the term resilience is rapidly evolving and solidifying into a more actionable concept. This paper adopts the conceptual framework and definition of resilience proposed by FAO (2021a) as “the ability to prevent disasters and crises as well as to anticipate, absorb, accommodate or recover from them in a timely, efficient and sustainable manner. This includes protecting, restoring and improving livelihoods systems in the face of threats that impact agriculture, nutrition, food security and food safety.”

**Box 1:** Alternative definitions of resilience:

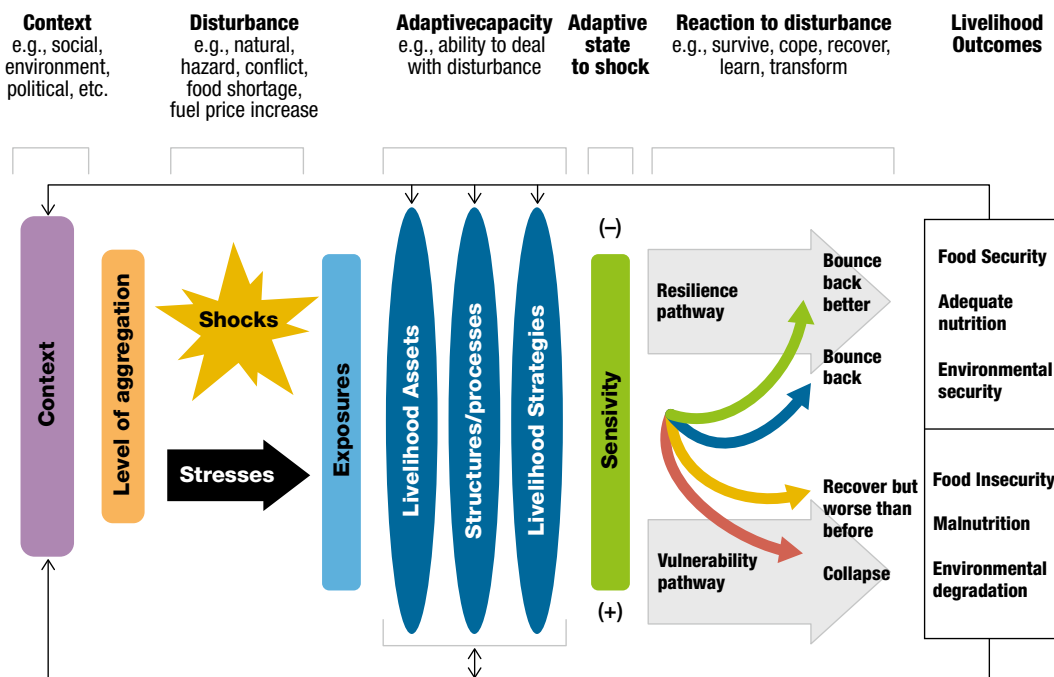
*UNISDR (2005) defines resilience as “the ability of a system, community or society exposed to hazards to resist, absorb, accommodate to and recover from the effects of a hazard in a timely and efficient manner, including through the preservation and restoration of its essential basic structures and functions”. Whereas DFID (2011) defines resilience as “the ability of countries, communities, and households to manage change, by maintaining or transforming living standards in the face of shocks or stresses such as earthquakes, drought or violent conflict, without compromising their long-term prospects”. USAID (2012) on the other hand expresses resilience as “the ability of people, households, communities, countries and systems (social, economic, ecological) to mitigate, adapt to, recover from shocks and stresses in a manner that reduces chronic vulnerability and facilitates inclusive growth”. Furthermore, to advance a harmonized understanding and application of the concepts of risk and resilience across sustainable development, humanitarian, peace and security and human rights efforts of the United Nations (UN) system, as a basis to promote coherent and holistic analysis and joint planning, the UN has developed and adopted the UN Common Guidance on Helping Build Resilient Societies (UN, 2020) and defines resilience as “the ability of individuals, households, communities, cities, institutions, systems and societies to prevent, anticipate, absorb, adapt, and transform positively, efficiently and effectively when faced with a wide range of risks, while maintaining an acceptable level of functioning and without compromising long-term prospects for sustainable development, peace and security, human rights and well-being for all.”*

Expressed one way or the other, all the definitions above have something in common that resilience can be best described by five crucial capabilities, according to UN, 2017, 2020 and FAO, 2021b:

- (i) **Anticipative capacity.** The ability to take early action in anticipation of a potential threat to reduce its potential negative impacts including through early warning, early action and forecast-based financing.
- (ii) **Preventive capacity.** The ability to implement activities and take measures to reduce existing risks and avoid the creation of new risks. While certain risks cannot be eliminated, preventative capacity aims at reducing vulnerability and exposure in such contexts where, as a result, the risk is reduced.
- (iii) **Absorptive capacity.** The ability to take protective action and ‘bounce back’ after a shock using predetermined responses to preserve and restore essential basic structures and functions. It involves anticipating, planning, coping and recovering from shocks and stresses.
- (iv) **Adaptive capacity.** The ability to make incremental adjustments, modifications or changes to the characteristics of systems and actions to moderate potential changes, in order to continue functioning without major qualitative changes in function or structural identity.
- (v) **Transformative capacity.** The ability to create a fundamentally new system when ecological, economic or social structures make the existing system untenable. Transformative capacity is required when the change needed goes beyond the system’s anticipatory, absorptive, adaptive and preventive abilities and when there is recognition that ecological, economic or social structures keep people trapped in a vicious circle of poverty, disasters and conflict and make the existing system unsustainable.

The DFID (2011) resilience framework as adapted by the Technical Assistance to NGOs (TANGO) is relevant here to summarize our conceptual framework for this paper. As presented in Figure 2 below, we can scrutinize how communities and households can build resilience to certain shocks and stresses while at the same time building a system’s adaptive capacity to respond to the disturbances. The response then determines the direction of resilience or vulnerability pathways that the system will take following exposure based on its sensitivity to the disturbance.

**Figure 2: The Resilience Framework**



Source: DFID, 2011

### 3 Approaches and Discourse: Green Revolution and African Reality

Patel (2013) summarizes that the genesis of Green Revolution can be traced back to 1941 when the Rockefeller foundation sent a team to survey Mexican agriculture that resulted in Mexican Agricultural Program (MAP). Norman Borlaug, a biologist hired to the Program developed what he called the “miracle wheat” in 1954. The “miracle seeds” were dwarf varieties with dense canopy and dramatically increased yields but required to be accompanied by chemical fertilizers, pesticides, and, for the most part, irrigation. With a big boost from the International Agricultural Research Centers created by the Rockefeller and Ford corn were developed as well. It is in 1968 that William Gaud described what had happened as a result of government and philanthropic support for fertilizer, irrigation, improved hybrid seeds and credit as “Green Revolution”.

Norman Borlaug was honoured with the Nobel Peace Prize in 1970 for having set in motion a worldwide agricultural development based on the genetic improvement of particularly productive plants which doubled and tripled yields in a short period of time.

In order to realize the rapid increase in yield, the Green Revolution required to feature the following basic elements:

- High Yielding Varieties (HYVs) – these are the genetically modified seeds usually dwarf with dense canopy which can yield 2 to 3 times more than normal crop,
- Irrigation facilities and infrastructure- yield gains of HYVs are very modest in dry areas,
- Credit Requirements – Green Revolution required a good network of rural credit and micro financing for supporting the needs of farmers to purchase the required inputs,
- Commercialization of agriculture- introduction of Minimum Support Prices for crops also gave farmers extra incentive to grow more HYV crops,
- Farm mechanization to meet its on farm activity requirement like soil preparation, spraying tools, and harvesting machines,
- Use of chemical fertilizer as most soils are deficient in Nitrogen so NPK fertilizers were used,
- Use of insecticide, pesticide, weedicide, and
- Consolidation of land holding and land reforms to ensure tenure security.

### 3.1 What did Green Revolution Achieve?

Green Revolutions transformed the rural economies of many Asian and Latin American countries during 1960–90 (Dawson, et al. 2015). Some prominent proponents of the green revolution (Guad, 1968; Glaeser, 1987; Conway, 1997; Borlaug, 2000; Evenson and Gollin, 2003) and their intellectual dissidents gave impressive narratives and figures in justifying their claim. According to them, in short, green revolution has brought prosperity to farmers. Agriculture is regarded as a profitable occupation. Demand for consumer goods has increased. Standard of living has gone up. Farmers are able to ploughing back of increased profits in agriculture. It has also benefited the industrial development. Many industries producing agriculture, machinery, chemical fertilizers, pesticides, insecticides etc., have come up to meet the growing demand for these commodities.

Specifically, between 1950 and 1990 food production increased by 174% successfully outstripping global population growth of 110% over the same period (Otero and Pechlaner 2008). According to Pingali (2012), between 1960 and 2000, yields for all developing countries rose 208% for wheat, 109% for rice, 157% for maize, 78% for potatoes, and 36% for cassava. The number of calories that the world's farmers are producing per inhabitant of the world are at all-time record levels and the world seems to be the furthest it has ever been from caloric famine. Crop genetic improvement that focused mostly on producing high-yielding varieties (HYVs) not only enhanced yield, but also the decrease in time to maturity was an important improvement for many crops, allowing for an increase in cropping intensity.

### 3.2 Limitations of Green Revolution

Even though Green Revolution is believed to have contributed to widespread poverty reduction, averted hunger for millions of people, and avoided the conversion of thousands of hectares of forest land into agricultural cultivation, it came under severe criticism during the 1970s and later for ecological and socio-economic reasons (Pingali, 2012). Green Revolution spurred its share of unintended negative consequences, largely attributed to the policies that were used to promote rapid intensification of agricultural systems. In a situation where smallholder farmers and farm workers which are the main producers of food lack the bargaining power relative to large corporate suppliers of inputs and purchasers of farm produce, the producers tend to get a shrinking share of the rewards from farming. Furthermore, liberal farm land market allowed the accumulation of farmland in the hands of few and most smallholder farmers suffered. (Rosset 2000). Green Revolution had also narrowly focused on increasing production but unsuccessful to alleviate hunger because it failed to alter the tightly concentrated distribution of economic power, especially access to land and purchasing power.

Expanded use of chemical fertilizer, herbicides and pesticides and excessive use of water for irrigation contributed to the acceleration of the environmental and land degradation and sustaining higher yields became increasingly difficult and costly. Therefore, there is an increasing call for exploring an alternative food system that create a viable and productive small farm agriculture that is more sustainable, resource efficient and resilient with the potential to end rural poverty, feed everyone, and protect the environment and the productivity of the land for future generations.

In scrutinizing the success stories of Green Revolution in 1960s and 70s, it is important to consider the then prevailing political economies of rural development. Earlier Green Revolutions occurred when rural development politics was shaped by narratives of state-led modernization, import substitution, and growth through redistribution, a political context that justified transformative levels of state financing and extension activities (Ellis and Biggs, 2001). Massive public investment that included price guarantees characterized most of the successful Green Revolution outcomes. (Birner and Resnick, 2010). However, with the current neoliberal political agenda, governments are facing greater conditionality for extending similar support to farmers which led to extended protest by farmers as witnessed in 2021/22 in India (Figure 3). Of course, such protests disrupted not only the agricultural value chain but also flow of goods and services in the economy.

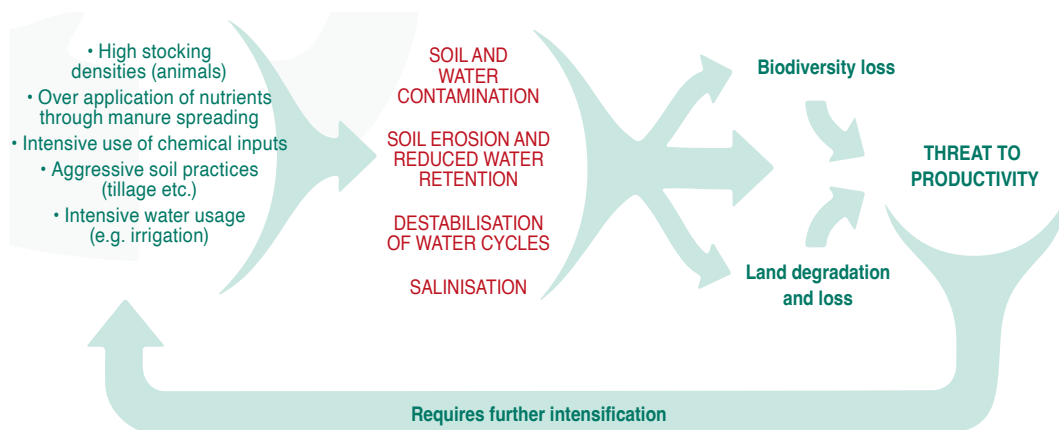
**Figure 3:** Farmers' protest in India





Furthermore, IPES Food (2016) also asserts that input intensive agri-food systems generate negative outcomes on multiple fronts: wide-spread degradation of land, water and ecosystems; high GHG emissions; biodiversity losses; and livelihood stresses for farmers around the world. It is structured in a way that will allow benefits to be captured by a limited number of actors, reinforcing their economic and political power, and thus their ability to influence the governance of food systems. In so doing, the system is locked into series of vicious cycles (Figure 4).

**Figure 4:** Vicious cycles of soil and water degradation in input intensive agri-food system



Source: IPES Food, 2016.

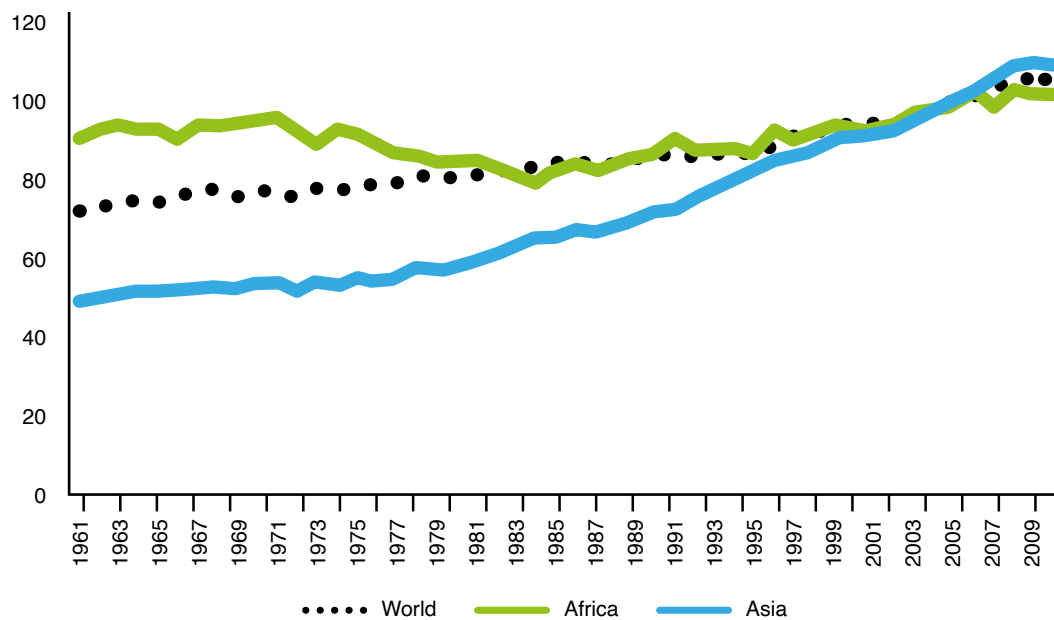
### 3.3 The Disconcerted Question: Green Revolution for Africa?

In the early 1960s, rising poverty, increasing dependence on food aid, and severe population pressures characterized Southern Asia, not Africa (Diao, et al. 2008). Furthermore, in 1960s and 70s, crop calorie per capita was higher in Africa than the average for the world and Asia (Figure 5). Because of relatively abundant land coupled with poor infrastructure development, farmers had little incentive for intensification. However, the ever-worsening food crises since 1990s have galvanized towards a general consensus, but still contentious on appropriate pathways, in that Africa's food system must undergo profound change to address the interlocking challenges of persistent rural poverty food insecurity, climate change and environmental degradation. There is also an increasing recognition that diversifying into agriculture can provide hedge against recently observed price volatility of natural resources particularly minerals of which Africa is home to a third of the world's reserves. Agriculture is a good option for the required diversification, as the continent has substantial undeveloped amount of the necessary endowments (AfDB, 2016).



The uniqueness of the African agricultural context implies that Green Revolution in Africa may not be the same or may not follow the same pathways as in other parts of the world (Kambanje, C. and Takavarasha, T. 2017; Breisinger, C. and Diao, X., 2008). Because, the unfolding economic transformations in many African countries appear to diverge in important respects from the stylised southern Asian structural transformation process (SEE Jayne Africa’s unfolding economic transformation).

Figure 5. Comparative Net per capita Production trends for Africa, Asia and World (2004–2006=100)



Source: Patel, R. 2013.

Southern Asian countries had managed to successfully develop labour-intensive and export-oriented manufacturing that pulled people out of farming into activities that provided much greater labour productivity and returns per capita. While labour forces of African countries are diversifying out of farming, the major forms of off-farm employment growth are in informal goods and services’ sectors, some of it providing gainful employment but most of it in activities with low entry barriers and low returns to labour (Diao, et al., 2017).

In Sub-Saharan Africa, factors such as diverse agro-ecology, drylands with poor soil quality, shortage of water for irrigation, diverse consumption pattern and staple crops may hinder substantial Asian style Green Revolution that transform the traditional subsistence system to more intensive use of modern seed varieties and inputs to specialize in marketable crops. At the same time, it is important to recognize that some African countries have registered positive results in terms of increased production and income, and reduction in conventionally measured incidence of poverty and food insecurity mainly attribute to modernization and the renewed attention given to the agricultural sector by governments and development partners (Dawson et al, 2016). However, the conclusions are quite incongruous as Jayne et al (2021) found that the high rate of agricultural production growth in Sub-Saharan Africa has mostly depended on the expansion of cropped area rather than productivity growth. Furthermore, extra attention must be given to the question of equity as in most cases only a relatively wealthy minority are likely to benefit from Green Revolution (modernization, specialization and intensification) whereas it may exacerbate landlessness and inequality for poorer rural households.

Finally, in view of the growing environmental, socio-economic and health challenges, a food system largely driven by intensification and specialization would undermine the very foundation they rely on by destroying soil fertility and biodiversity, over exploitation of the water resources, and increase greenhouse gas emissions (IPES Food et al. 2021). Such path also provides neither food security nor adequate nutrition for all. Thus, Africa countries need to navigate away from a system that embrace the traditional Green Revolution, rather a bold paradigm shift is required to redesign their agri-food systems in such a way that it is prosperous, inclusive, sustainable, low-emission and climate change resilient as well as contribute towards attaining the Sustainable Development Goals, and complying with the Paris Climate Change Agreement and Convention on Biological Diversity.

## 4 CAADP and Malabo Declaration on Africa Agricultural Transformation

### 4.1 The Genesis of Agricultural Transformation in Africa

It is back in 2003 that the heads of state and governments raised the political profile of agriculture when they launched the Comprehensive Africa Agriculture Development Programme (CAADP). CAADP is largely perceived as agriculture-led integrated framework aimed at reducing poverty and increasing food security in the continent (AU-NEPAD, 2003). This policy framework primarily calls for countries to spending an annual average of 10 percent of the total government expenditure in agriculture and attain 6 percent annual average growth in the sector. CAADP has benefited from the broader consultation in the process and continuously adapted to experiences during implementation and therefore has not suffered of being faded away quickly (Brüntrup, 2011).

Furthermore, as 2014 was commemorated as the AU Year of Agriculture and Food Security, marking the tenth anniversary of the Comprehensive Africa Agriculture Development Programme (CAADP), broad-based inclusive consultations were undertaken in a “we can do” spirit with special focus on transforming Africa’s agriculture. This led to the adoption of the Malabo Declaration on Accelerated Agricultural Growth and Transformation for Shared Prosperity and improved Livelihoods [Doc. Assembly/AU/2(XXIII)] with commitment to:

- the Principles and values of the CAADP Process,
- enhance investment finance, both public and private, to agriculture,
- ending hunger in Africa by 2025,
- ensure that the agricultural growth and transformation process is inclusive and contributes at least 50% to the overall poverty reduction target,
- harness markets and trade opportunities, locally, regionally and internationally,
- Enhancing Resilience of Livelihoods and Production Systems to Climate Variability and other related risks,
- Mutual accountability to actions and results.

The vision for the CAADP Malabo declaration is to position agriculture at the centre of driving inclusive growth and economic development to ensure wealth creation, food and nutrition security; economic opportunities for poverty alleviation and prosperity as well as ensuring resilience and sustainability. Notable and salient targets of the Declaration include, among others, to uphold the earlier commitment to allocate at least 10% of public expenditure to agriculture, and to ensure its efficiency and effectiveness; to accelerate agricultural growth by at least doubling current agricultural productivity levels, by the year 2025, to halve the current levels of Post-Harvest Losses, by the year 2025; to improve nutritional status, and in particular, the elimination of child under-nutrition in Africa with a view to bringing down stunting to 10% and underweight to 5% by 2025, the agricultural growth and transformation process is inclusive and contributes at least 50% to the overall poverty reduction target; to sustain annual agricultural GDP growth of at least 6%; resolve to triple, by the year 2025, intra-African trade in agricultural commodities and services; to ensure that, by the year 2025, at least 30% of our farm, pastoral, and fisher households have improved their resilience capacity to climate and weather related risks.

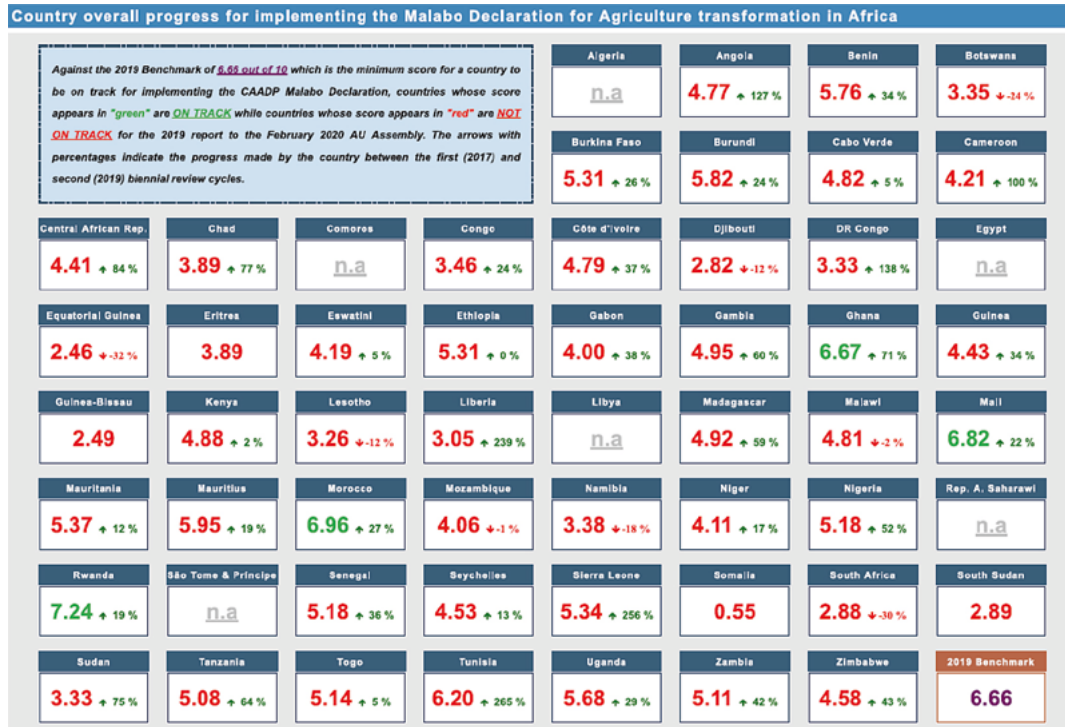
Furthermore, they resolved themselves to a systematic regular review process on the progress made in implementing the provisions of the Declaration through a biennial Agricultural Review (BR) process that involves tracking, monitoring and reporting on progress. This was expected to foster alignment, harmonization and coordination among multi-sectorial efforts and multi-institutional platforms for peer review, mutual learning and mutual accountability and strengthen national and regional institutional capacities for knowledge and data generation and management that support evidence-based planning, implementation, monitoring and evaluation.

## 4.2 Progress towards Africa Agricultural Transformation Agenda Targets

According to the provisions of the Malabo Declaration, the Africa Union Commission, African Union Development Agency (AUDA-NEPAD) with the support of Regional Economic Communities (RECs) and other technical partners have undertaken three Biennial Reviews in 2017, 2019 and 2021 and 47, 49 and 51 AU Member States submitted the relevant data on indicators using the harmonized template. Final results found out that only 20, 4 and 1 AU Member States were on track during the first, second and third cycle of the biennial review report, respectively (AUC and AUDA-NEPAD, 2022).

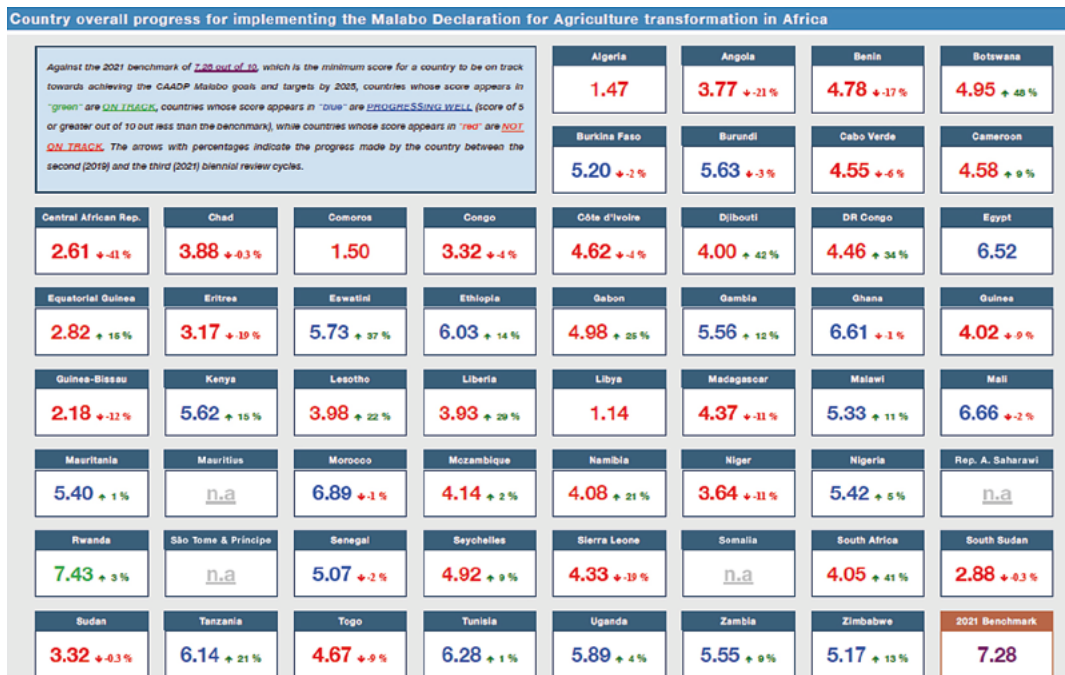
Figure 6a and Figure 6b present the overall score of countries for 2019 and 2021 Biennial Review cycles, respectively. Countries were expected to score a minimum of 6.66 for 2019 and 7.28 for 2021 to be considered on track to attain the agreed upon targets. It is evident from Figure 6a that only four countries (Ghana, Mali, Morocco and Rwanda) have achieved the benchmark for 2019 where as Figure 6b reveals that only one country (Rwanda) has scored greater than the benchmark of 7.28. This decline in the number of Member States attaining the benchmark may partly attributed to the main challenges that African agri-food system has faced during the review period. Fall army worm and the desert locust invasions have devastated crop fields in southern and eastern Africa during the last three years. The eastern Africa and the Sahel region were ravaged by drought and other climate change related episodes which have resulted in total crop failure and depleted the vital resources including drying up of rivers and dams, and driven thousands of destitute farming households and pastoralists from their lands. Even though the health effects of the COVID-19 pandemic in Africa south of the Sahara have been less severe than first anticipated given the region's overall fragility (IFPRI, 2021), the challenge to the agri-food system in the region was further aggravated by the pandemic.

Figure 6a: Individual Member States Performance Score Cards for 2019



Source: AUC and AUDA-NEPAD, 2022

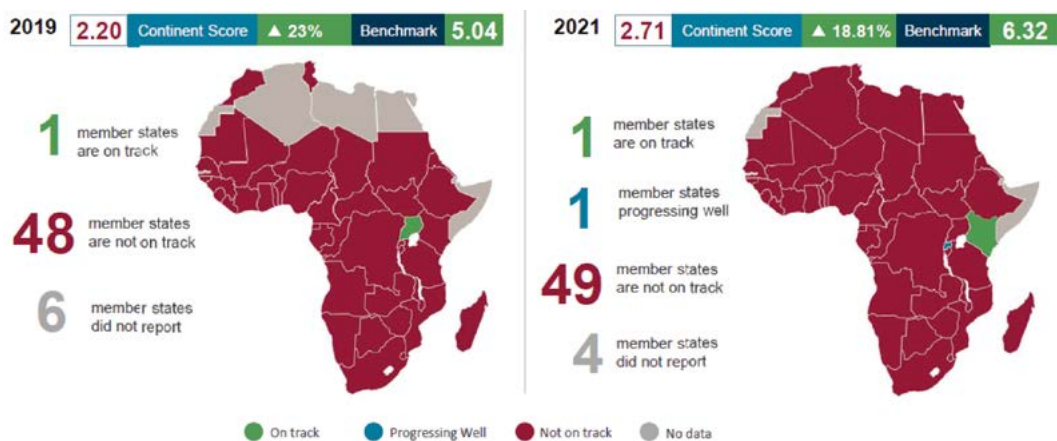
Figure 6b: Individual Member States Performance Score Cards for 2021



Source: AUC and AUDA-NEPAD, 2022

Since the aggregate scores can potentially mask the details, it might be important to see progress towards some critical indicators that relate to food security and poverty reduction. According to Commitment 3 of the Malabo Declaration, AU Member States committed themselves to ending hunger by 2025. The main instruments identified to achieve this ambitious goal was through improve access to agricultural inputs and technologies, increase agricultural productivity, reduce post-harvest losses, improve food safety, reduce food insecurity and malnutrition, and improve social protection coverage for the vulnerable groups. Overall, the continent should have scored a benchmark of 5.04 and 6.32 during the second and third biennial review cycle, respectively to be on track. Even though some level of improvement has been observed in the continental score (an increase from 2.02 to 2.71, or 18.81% improvement), eliminating hunger by 2025 seems to be far from achievable (Figure 7). At country level, it was only Uganda that was on track during the second biennial review cycle and Kenya was the only country on track during the third biennial review cycle, even though Rwanda is showing a good progress between the two cycles under consideration.

**Figure 7:** Progress towards ending hunger by 2025



Source: AUC and AUDA-NEPAD, 2022

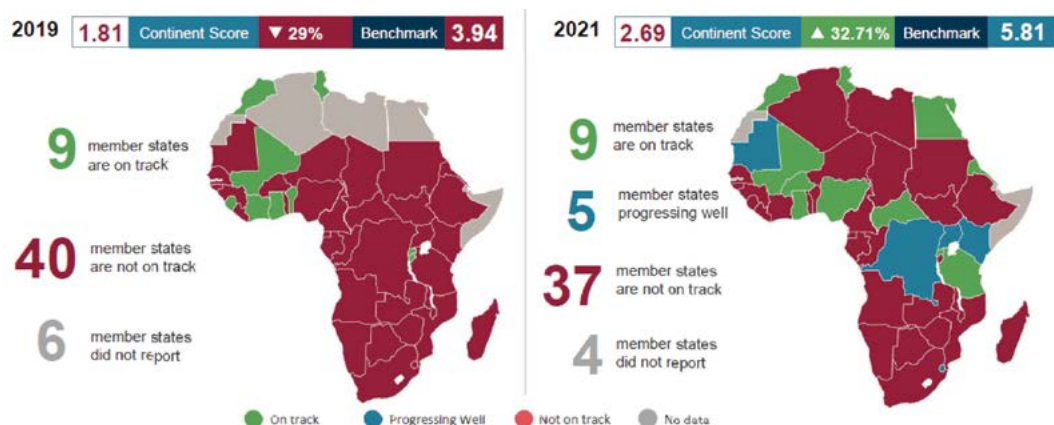
In line with the SDGs global goal of eliminating poverty in all its forms everywhere by 2030, AU Member States committed themselves to accelerating agricultural growth, increase percentage of youth that is engaged in new job opportunities in agriculture value chains, and empowerment of rural women so that the sector contributes at least 50% of the national poverty reduction targets. The commitment also recognizes addressing poverty requires a holistic and interconnected interventions that involve multiple stakeholders and must align and harmonize to other sectors. To be on track in achieving this goal, the continent could have scored a benchmark of 3.94 and 5.81 during the second and third biennial review cycle, respectively. Even though the continental score has shown improvement by increasing from 1.81 to 2.69 during the biennial reviews under consideration, this is by no means adequate



to achieve the desired target. At country level, nine countries, namely Ghana (8.24), Morocco (7.52), Rwanda (6.95), Tanzania (6.31), Egypt (6.20), Mali (6.11), Nigeria (5.96), Burkina Faso (5.90), and Tunisia (5.88) scored greater than the benchmark for 2021. Furthermore, five countries namely Democratic Republic of Congo (5.75), Eswatini (5.02), Kenya (5.0), Mauritania (5.76) and Uganda (5.51) have recorded significant progress between the two cycles under consideration even though they remain still below the benchmark (Figure 8).

The global progress towards ending hunger is not also encouraging. Even though between 2015 and 2018, global poverty continued its historical decline, with the global poverty rate falling from 10.1% in 2015 to 8.6% in 2018, the global poverty rate sharply increased from 8.3% in 2019 to 9.2% in 2020 representing the first increase in extreme poverty since 1998 and the largest since 1990 and setting back poverty reduction by around three years globally and 8-9 years in low-income countries (UN, 2022). This unprecedented reversal of the steady progress of poverty reduction over the past 25 years is largely attributed to COVID-19 pandemic and it is further exacerbated by rising inflation and the impacts of the war in Ukraine.

**Figure 8:** Progress towards halving poverty through agriculture by 2025

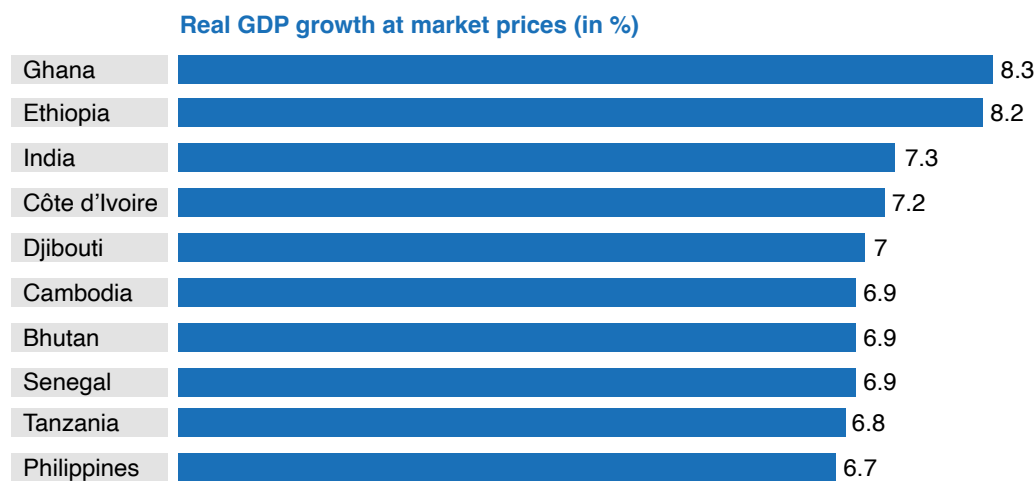


Source: AUC and AUDA-NEPAD, 2022

Just before few years, Africa was hailed for attaining profound and sustainable economic transformation as region's per capita GDP increased between 2000 and 2014 by almost 35 per cent in real terms, doubling in some countries (Barrett, et al., 2017). Sub-Saharan Africa has achieved 4.6 per cent inflation-adjusted annual mean increases in agricultural growth between 2000 and 2016 (World Bank, 2017). In 2018, Africa was home to six countries (Ghana, Ethiopia, Cote d'Ivoire, Djibouti, Senegal and Tanzania) among the top ten fast growing economies in the world (Figure 9). The major drivers for such success in achieving sustained economic growth in Africa were related to rising commodity prices and increasing exports of commodities, growing domestic demand, and dynamic agriculture and service sectors.



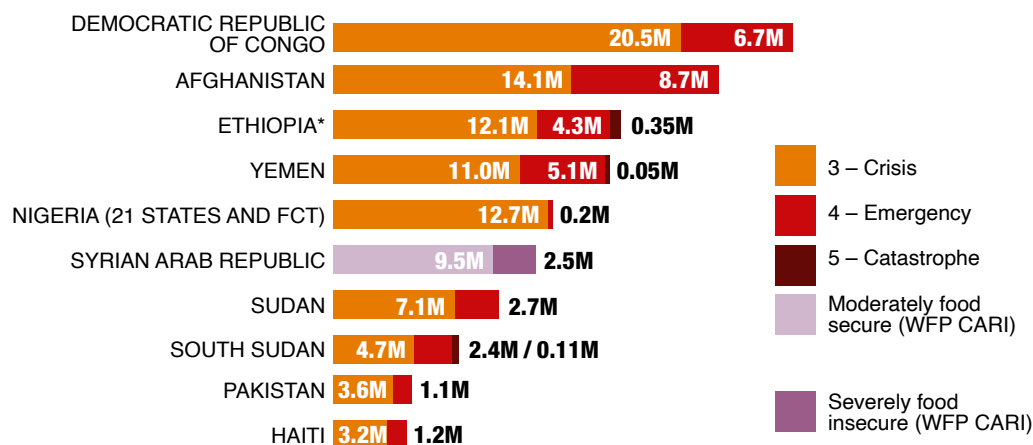
**Figure 9:** The top ten fastest growing economies in 2018



However, we are witnessing the fact that Africa's recent success was short lived and among the ten countries with the highest number of people in food crisis or worse in 2021, five are in Africa (DRC, Ethiopia, Nigeria, Sudan and South Sudan) (Figure 10). According to sixth annual Global Report on Food Crises by Global Network Against Food Crises (GNAFC) and Food Security Information Network (FSIN) in 2021, about 20.5 million, 12.1 million, 12.7 million 7.1 million and 4.7 million people in DRC, Ethiopia, Nigeria, Sudan and South Sudan, respectively, were classified under Crisis phase (IPC/CH Phase 3)<sup>1</sup> and require urgent action to meet their food needs (GNAFC and FSIN, 2022). These households are already facing food consumption gaps which are reflected in high or above normal acute malnutrition or are only able to meet their food needs by depleting essential livelihood assets or engage in crisis coping strategies. They require urgent humanitarian assistance to protect livelihoods and reduce consumption gaps. Furthermore, additional 6.7 million, 4.3 million, 0.2 million, 2.7 million and 2.7 million people in DRC, Ethiopia, Nigeria, Sudan and South Sudan, respectively, fall under the category of Emergency (IPC/CH Phase 4). These households face high levels of acute malnutrition and excess mortality due to lack of food, or resort to emergency coping strategies to mitigate large food consumption gaps and require urgent humanitarian relief assistance to save lives and livelihoods.

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 1 See Annex for IPC/CH acute food insecurity phase description

**Figure 10:** The top ten countries with the highest number of people in or worse (IPC/CH Phase 3 or above) in 2021



Source: GNAFC and FSIN, 2022.

All the five African countries mentioned above experiencing crisis levels of acute food insecurity in recent years also typically experience economic difficulties and conflict remained the key driver of food crises, with climate change related hazards, natural disasters and covid-19 pandemic aggravating the already dire conditions.

Africa needs to reverse the enduring and troubling condition with an estimated 282 million people (21 percent of the total population) suffering from undernourishment in 2020 which is about 46 million more people as compared to 2019 while globally 118 million more people were facing hunger in 2020 than in 2019 (FAO, et al. 2021). Under the prevailing condition, it is very unlikely that hunger will be eradicated by 2025 as per the Malabo Declaration or 2030 as per the SDGs. At least to register some progress towards achieving the goals of Africa Agriculture Transformation agenda or SDGs, bold actions are required to accelerate agri-food systems and economic transformation to regain the lost ground. These actions must ensure, among others, that the food system is more sustainable and resilient to natural hazards and human-induced disaster risks, and capable to respond effectively. The next section will be devoted to highlight some of the possible context-dependent pathways towards resilient and sustainable food systems in Africa.

## 5 Conclusions and Strategic Pathways for Resilient and Sustainable Food Systems

After some years of relative negligence to the agricultural sector, African countries have expressed their commitment for transforming the sector with major aim of increasing food security and nutrition and reduce poverty when they adopted CAADP as a continental policy framework. They have also reinforced their commitment with expanded goals and targets through the Malabo Declaration that positions agriculture at the centre of driving inclusive growth and economic development to ensure wealth creation, food and nutrition security; economic opportunities for poverty alleviation and prosperity as well as ensuring resilience and sustainability.

On the other hand, there is a growing body of literature which reports that Africa remains to be the only continent where the number of food insecure people tend to increase in recent years. Despite a number of lessons to be learned from the Green Revolution which is believed to have contributed to widespread poverty reduction and averted hunger for millions of people, most attempts to replicate the success in Africa failed to bear fruit in sustainable manner. Evidences from the Biennial Review Report of the Malabo Deceleration also clearly reveal that despite repeated expression of interest and commitment, Africa countries have failed to take appropriate measures to set them on track to achieve both the continental targets and the targets of the Sustainable Development Goal of “zero hunger” by 2030. It is, therefore, essential for Africa to “walk the talk” and change from “rhetoric to practice”. These are the entry point for attaining inclusive and sustainable economic growth and development in Africa.

In the light of what has been presented and discussed in the foregoing Sections, and built on existing strength and opportunities, the proposals below - in no way exhaustive - provide the summary of potential pathways that can systematically lead to a sustainable and resilient food systems in Africa.

**i. Promote public and private investment in agriculture and natural resources including improved access to input and output market, research and development**

Public and private investment in agriculture is desperately needed to help fix the broken agri-food system. The agri-food system is under strain from intensifying pressures due to a changing climate, ecological degradation, population growth, and competition for land. Even though African Heads of State and Government committed to invest 10 percent of the total government expenditure in the agriculture sector in 2003 and renewed the commitment in 2014, in pursuit of an annual average agricultural growth of 6 percent, very few countries achieved this target consistently. The recurrence of food price spikes in recent years, however, has concentrated the collective minds of national governments and development partners.

Public investment has to provide services that support small-scale food producers, which may suffer from economic inefficiencies because of market failures and inequality in the distribution of goods and services. The public sector also has a critical function in setting the right policies to regulate investment such that it does no harm to the smallholder farmers and the environment and creates the right incentives to encourage investment. However, inadequate, declining, faltering or inappropriate public investments in the sector is striking and is a key barrier to creating a just agri-food system. Therefore, the realization of the requisite investments to support agricultural productivity growth must be an important element of addressing the economic and agri-food system crises.

Agricultural production, in general, and farming, in particular, is inherently private sector activity. Therefore, the main investment must come from the private sector. If it adheres to some key principles, including staple food production and due consideration to the local market, private sector investment in agriculture can play a vital role in delivering inclusive economic growth, environmental sustainability and resilience, food security and poverty reduction. Investments in small-holder farmers can reduce vulnerability, improve farmers' access to productive assets, such as land, inputs, capital and technology and they are proven to bring the greatest returns in poverty reduction.

## **ii. Disaster risk reduction and adaptation to climate change including agroecology-based adaptation and diversification**

There is a general consensus that climate change and variability pose an immense challenge for African agri-food system. Both crop and livestock production has become more volatile and unpredictable. Farmers and pastoralist in Africa are struggling to find enough water to keep their crops and livestock alive due to dwindling water availability. Climate change related disasters such as drought and flooding are increasing in frequency and intensity exposing millions of people calamities with enormous burden on humanitarian relief assistance. Land and agro-ecological degradations have worsened the situation by fueling resource-scarcity induced conflicts.

Therefore, adaptation to climate change and mitigation of GHGs are not a matter of choice but a necessity. Adaptation begins with modernizing Africa's agricultural sector. This will require significant investments in irrigation systems, improved infrastructure and wider access to financial instruments such as crop and livestock insurance. Research and development are also necessary to produce stress-tolerant crops and livestock breeds along with more sustainable methods of resource management. Promoting climate smart agriculture, ecosystem-based adaptation and diversification are also some of the most promising approaches to achieve the mitigation and adaptation potentials of agricultural systems to climate change and to strengthen their resilience.

Since most African countries are riddled by natural and human-induced disasters from time to time, it is imperative to establish an effective and dedicated organization for disaster risk management, which ensures the implementation and coordination of day-to-day activities relating to disaster risk management. To ensure efficiency and avoid overlap of activities, strong vertical and horizontal coordination is required across all levels. Effective coordination also requires all the relevant sectors – agriculture, health, education, infrastructure – to mainstream elements of resilience-building in their respective planning and budgeting processes. Integration of agro-metrological information in the early warning and response system, as well as capacity-building and awareness-raising among farmers and extension officers on how to apply the information, should be considered as one of the priorities for building resilient and sustainable agriculture.

Furthermore, decentralization and a people-centred early warning and response system is likely to positively contribute to the improvement/promotion of disaster risk governance by increasing local capacity and bringing in local knowledge and perspectives by way of local actor participation. Since both natural and human-induced disaster risks manifest themselves locally, the activities of local governments and non-governmental actors are believed to facilitate context-specific risk management solutions that are custom-tailored to the specific needs, wants and capabilities of local communities.

### **iii. Increased economic integration and boost inter-African trade**

African countries have long recognized the importance of regional economic integration and boosting inter-African trade. A landmark achievement in this regard has been achieved when the African Continental Free Trade Area (AfCFTA) was launched in March 2018 and entered into force on May 30, 2019. Since then, 36 countries have ratified the agreement. If successfully implemented, the agreement will create a single African market of over a billion consumers with a total GDP of over \$3 trillion. This will make Africa the largest free trade area in the world. Even though the agreement is a move in the right direction, progress towards implementation has been slow due to country disparities in levels of development and economic integration, vast distances between markets, multiple RECs with inconsistent and sometimes conflicting regulations and standards, as well as infrastructure and connectivity problems.

The AfCFTA is expected to offer particular potential for agricultural sector. According to AGRA (2017), African countries spent about \$63 billion on food imports largely from outside the continent in 2015. This over reliance on imported food must be addressed to ensure that the continent is left with adequate revenue for other capital investments.

Empirical evidence also suggest that the AfCFTA will increase intra-African trade in agricultural products by between 20 and 30 percent. Furthermore, the agreement is expected to expand access to markets at the regional and international levels, thus generating state revenue, increasing farmer income, and expanding both farmer and country capacity to invest in modernizing the agricultural sector through processing and mechanization (Songwe, 2019).

Africa's increasing food import dependency and vulnerability to natural and human-induced shocks underscores the need for robust measures to close the food deficit in affected subregions. This requires African countries to expediate the implementation of the AfCFTA agreement in several areas including tariff liberalisation, reduction of non-tariff barriers, rules of origin and improved market Information systems to grow intra-African trade in agricultural commodities and services in an orderly and predictable manner.

#### **iv. Improved governance, conflict management and empowerment of the vulnerable**

Even though Africa has committed itself to “Silencing the Guns in Africa by 2020” with the aim to achieve a conflict-free Africa, make peace a reality for all and rid the continent of wars, violent conflicts, human rights violations, and humanitarian disasters, the continent still remains extremely volatile. A number of African countries have faced challenges related to conflict attributed to political grievance, economic deprivation and resource scarcity. These conflicts have not only diverted public resources from sectors prioritizing poverty reduction and sustainable development to defence expenditure, but they have also had a devastating impact on assets and other resources, and eroded the resilience capacity of households, the nucleus in building resilience. Millions of households have been displaced and lost access to the productive assets they built over time. They have turned from surplus producers to recipients of humanitarian assistance. Conflict can also increase the cost of market transactions and limit farmers’ options to routes and markets where safety can be guaranteed. Thus, in order for these countries to maintain the progress made in resilience-building over the last few decades, deliberate attention must also be given to peace building capacity as an essential component of this.

To support Africa in its quest for a more peaceful and resilient continent, non-violent conflict resolution of incompatible interests should be duly considered. Measures that can mitigate natural-resource-based conflicts, often multifaceted and violent in nature are, for example: the strengthening in conflict prevention and resolution of local governance institutions (both formal and informal); a public or participatory dialogue to avoid ethnic polarization; the promotion of good risk governance for environmental and trans boundary natural resources (including ensuring equitable access to these resources); the adoption of an integrated approach to address needs, risks and vulnerabilities. Furthermore, conflict-sensitive programming should be fostered so that any potential negative impact of interventions on conflict dynamics is minimized while contribution to peace is enhanced.

Furthermore, as there are specific groups and regions of people who are more vulnerable to natural and human-induced disasters, tailoring interventions for such groups is of paramount importance in building effective resilience. These vulnerable groups include, amongst others, women, pastoralists and youth. Since most of the challenges faced by such vulnerable groups are structural and require long-term intervention, programmatic approaches that is inclusive and involves multiple projects will be more effective in building resilience. The programmes should ensure that the vulnerable population have access to productive resources and safety nets without compromising dignity, rights, cultural preferences, and the natural environment.

## **v. Digital technology, data and knowledge management**

The potential of digital technology to steadily transform the African agriculture is being recognized. Some Africa countries including Rwanda, Kenya and Ghana, for example, have started employing digital technology to deliver farming advice using text messages, interactive voice responses, linking farmers to farm inputs and markets for farm produce. The use of drones and satellite systems to inform farmers on weather and the appropriate farming activities has helped farmers to realize their capacity to fully benefit from their available resources. Scaling the use of digital technology can also create employment for young people in the agricultural sector, promote economic activity and enhance income and food security. However, smallholder farmers still face daunting political, economic, legal and institutional barriers to make the best out of digitalization.

Furthermore, one of the most prominent challenges facing policy makers in Africa is lack of reliable data. Policy formulation, implementation and then evaluating the impact depends on access to information in real time. Access to good reliable data is becoming an increasingly important tool for policy making and can help guide and support decision making in agriculture, including where the food is produced and how it moves along the value chain so that adequate and nutritious food is available at the right time and place. Careful analysis of data can help assess soil health, threats of climate change and variability as well as the risk of pest and insect infestation such as fall armyworm. African countries, therefore, need to put efforts at every level to collect, analyze, and publish the relevant data needed for planning and reporting on progress against the envisaged goals of policies and strategies. Improving the quality, reliability, management and accessibility of data will further empower the different stakeholders to make informed decisions, improve management capabilities, awareness, and enhance resilience against potential risks.

Currently, much of the agri-food systems and related data in most African countries are not visible and available for access and re-use to meaningfully contribute to impact on building resilience and sustainability. Therefore, to bring together stakeholders in various sectors including national statistics office to develop and implement strategies for knowledge sharing and improving the visibility and accessibility to data will bridge the widening gap between policy goals and impact on the ground, improve decision skills, strengthen collaboration culture among colleagues and wider public working together on similar initiatives.



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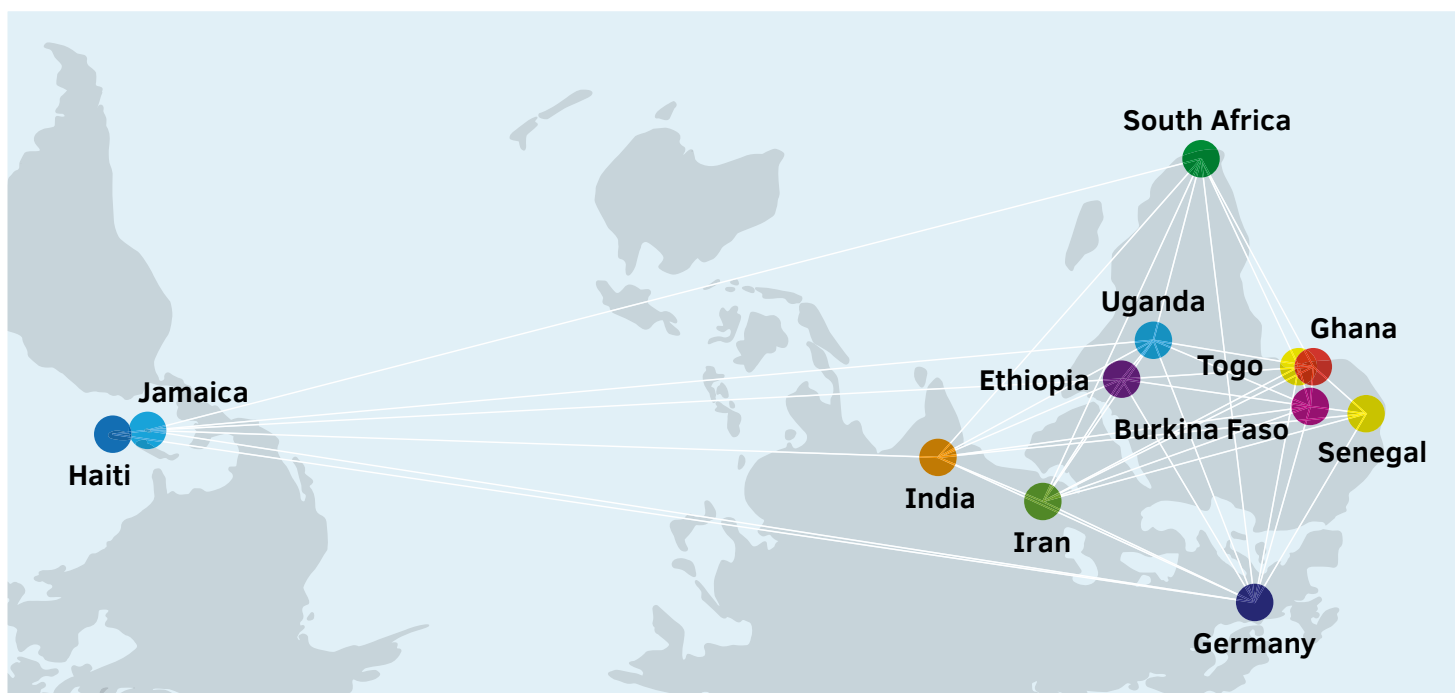
# Global Partnership Network

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## The Global Partnership Network

This world map displays all countries in which GPN partner institutions are located. The South-Up projection draws attention to overcome Eurocentrism and to take a multitude of perspectives and knowledges into account.

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