

5 Achieving Resilience in Downstream Agri-Food Systems

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"Mayibuye¹¹ is simply a plea to all Africans to come together, share their problems, try to solve them in a manner and fashion that our great forefathers and kings... would be proud of..." - Miriam Makeba

Key messages

- 1 Over the coming decade, Africa's food demand will rise, making it one of world's largest sources of additional demand.
- 2 Value addition post-farm in Africa is low by international standards. To meet growing demand, Africa will benefit from upgrading value chains in the food system. This is best achieved through policies that support agricultural transformation more generally and incentives that encourage private investment in food systems.
- 3 Africa's agri-food system offers growth potential to large-scale, multinational agribusinesses. Over the past five years, some of the world's largest grain traders, food processors, and wholesalers/retailers have expanded their investments on the continent. This has positive implications for private investment by small- and medium-scale agribusiness firms as well, and for the economic, social, and environmental sustainability of African food systems.
- 4 Africa will become more resilient as it 'upgrades' value chains in the food system which will involve shifting production and employment from informal microenterprises to formal firms offering wage employment with income security and health benefits for employees and their families, and improvements in food safety.

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8 Sokoine University of Agriculture, and ReNAPRI

9 Eastern Africa Grain Council

10 The Rockefeller Foundation

11 Mayibuye iAfrika was the concluding response at the 1958 Accra Conference of peoples from all over Africa. The literal translation is "Come back Africa!"

5 The prospect of a single market with more than a billion consumers and a combined GDP of more than US\$2.5 trillion presents vast opportunities for agribusiness in Africa. The expanded markets create unprecedented opportunities to capitalize on economies of scale. To realize this potential, African countries should effectively implement AfCFTA. The additional state revenues from greater intra-Africa food trade can help finance public investments to make Africa's food systems more resilient and sustainable.

6 SSA remains a challenging place to do business. Bureaucratic obstacles to entry and growth result in high transaction cost for potential agripreneurs. Public investment in transport (rail, road, and port) and energy infrastructure would significantly lower the cost of trade and create many indirect benefits that support both resilient and sustainable food systems.

Introduction

The agri-food system is best viewed as a complex adaptive system consisting of related activities and institutions. Achieving the growth and transformational targets of Agenda 2063 and the SDGs will depend on the ability of the system to self-organize in response to tipping-points and ever-changing landscapes¹² (Barder, 2012, Mitleton-Kelly, 2003, Ramalingam, 2008). Welfare-improving co-evolution and adaptation will require game-changing, innovative, and pragmatic actions that build a sustainable and resilient¹³ downstream agri-food system over the next decade.

This chapter examines the capacity of the downstream agri-food system to meet the needs of current and future generations and the degree to which the emerging system can absorb, recover, and adapt to external shocks and/or stressors. The downstream agri-food system is defined as actors engaged in post-farm value addition, e.g., assembly, trading, wholesaling, storage, processing, retailing, preparation of food for sale outside the home, beverage manufacturing, etc.

Using a Strength, Weakness, Opportunities, and Threats (SWOT) framework, Section 2 identifies the key internal strengths and weaknesses of

¹² See Chapter 3 on the growing impacts of shocks on African agri-food systems

¹³ See Chapter 2 for the conceptual framework of sustainability and resilience.

the off-farm food system that may ensure or erode economic, social, and/or environmental sustainability. Section 3 examines external political, economic, social, and technological (PEST) factors that are either opportunities or threats to the resilience of the downstream agri-food system. We conclude in Section 4 by translating the SWOT and PEST analysis into actionable strategies and concrete plans to achieve a sustainable and resilient agro-food processing system in Africa. In short, we identify the "sweet-spot" actions that promote both sustainability and resilience.

Internal factors shaping sustainability in downstream agri-food systems in Africa

The ability of the downstream agri-food system to meet the current and future needs of African consumers will require achieving sustainability along three dimensions namely economic, social, and environmental (Elkington, 1994). Acknowledging the heterogeneity across Africa, this section focuses on the strengths and weaknesses internal to the food system that affect the sustainability of the downstream agri-food system. Table 5.1 below summarizes the key characteristics which either provide a relative advantage or disadvantage to achieving economic, social, and environmental sustainability in Africa's downstream agri-food system.

Table 5.1: Key internal strengths and weaknesses shaping the sustainability of Africa's downstream agri-food system

Internal factors	Strengths	Weaknesses
Upstream¹⁴	<ul style="list-style-type: none"> Primary agriculture has the ability to meet rising food demand as evidenced by growing output between 2000 and 2018. 	<ul style="list-style-type: none"> Agricultural growth driven mainly by expansion erodes environmental and social sustainability: root cause is chronically low public investment in agricultural R&D&E which, in turn, leads to low productivity.
Consumer demand	<ul style="list-style-type: none"> Rapidly increasing demand for food driven by population growth has implications for economic sustainability. 	<ul style="list-style-type: none"> Slow, post-COVID economic recovery will constrain income growth which, in turn, will slow the pace of dietary diversification in most regions. This has implications on the health and well-being of consumers.
Typology of downstream markets	<ul style="list-style-type: none"> Growth potential of Africa's agri-food system attracts investments of multinational agribusinesses (elephants¹⁵) and small and medium enterprises (gazelles) at the trading, processing, and retailing level. These investments not only have implications for employment but through these companies' corporate social responsibility programs, social and environmental sustainability are core values. 	<ul style="list-style-type: none"> Persistent informality perpetuated by fast-growing labor supply results in low-productivity and limited economies of scale. Self-employed <i>survival entrepreneurs</i> are generally seasonal operations in the informal sector with no benefits.

Upstream

Rapidly-rising demand for food translates to increasing demand for primary agricultural products. Between 2000 and 2018, crop and livestock production values in SSA grew annually by 4.3 percent in real terms (Jayne and Sanchez, 2021). Over the coming decade, the net value-added for agricultural and fishery products in SSA could grow by as much as 23 percent, while meat production for the continent is expected to increase by 26 percent (Figure 5.1) (OECD-FAO, 2021).

The projected growth in meat production is driven both by increasing the number of animals and

their productivity (i.e., transition to more intensive production systems using improved breeds, more intense feeding, advanced herd/flock management, resulting in higher off-take rates). The projected intensification of production systems varies by meat type. Small ruminants' production will likely continue to use mostly extensive production systems. By contrast, poultry production has been undergoing structural changes in recent years and the projections assume that this will continue in the coming decade, often supported by policy initiatives. For example, poultry production in Morocco has benefitted from the Government's agricultural development blueprint "Green Morocco Plan".

Despite these gains, the output growth has been largely driven by extensification. Between 2000 and 2018, only 25 percent of crop production

¹⁴ Refers to farm-level of the agri-food value chain

¹⁵ Borrowing from Birch et. al.'s (1995) animal analogy in classifying firms, Elephants refer to large-scale, multinational firms while gazelles refer to fast growing small and medium enterprises (SMEs).

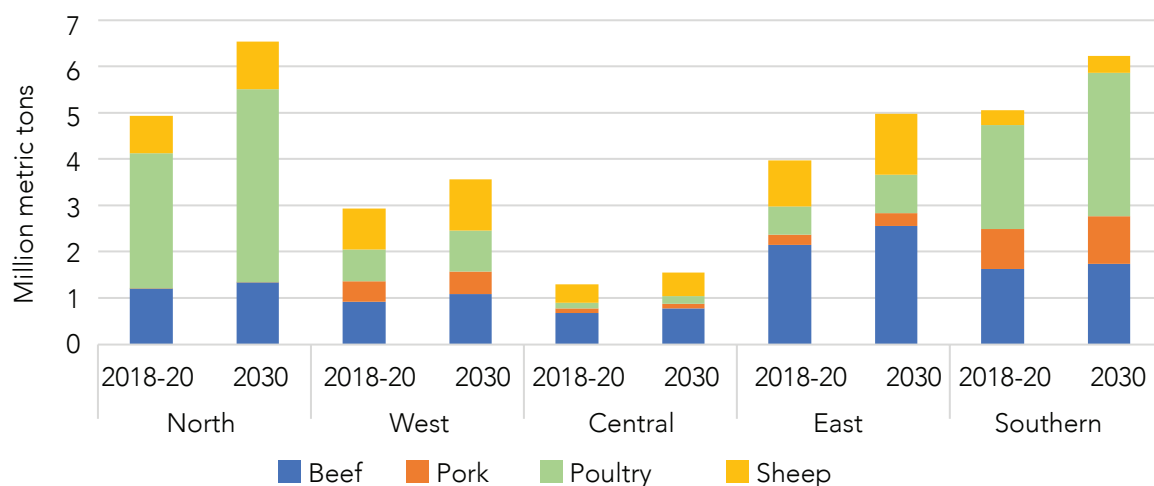


Figure 5.1: Meat production in Africa

Source: OECD-FAO, 2021

growth was attributed to improvements in yields (Jayne and Sanchez, 2021). Going forward, growth driven by expansion is both environmentally and socially unsustainable. Rising land fragmentation, deforestation and loss of biodiversity are a few of the challenges that arise with continued reliance on area expansion as a driver of growth.

Reversing this trend will require increased investment in agricultural R&D&E. While agricultural R&D spending has risen over the years in SSA, most public investments amount to less than 1 percent of agricultural GDP¹⁶ (Fuglie, et. al., 2020). This level of public spending on agricultural R&D is not meeting the Khartoum target of 1 percent of Agriculture GDP spent on R&D (Pernechele, et. al., 2021; Traub, Jayne, Sihlobo, 2021). This type of public investment will be a catalyst for increased productivity in Africa’s agriculture and, as such, provide a sustainable pathway to meet the continent’s future food demand.

Consumer demand

While income recovery could slow due to the COVID-19 pandemic shock, rapid population growth will underpin the regions’ food demand,

¹⁶ For the latest available year, only Botswana, Cabo Verde, Mauritius, Namibia, South Africa, and Zimbabwe’s investment in agricultural R&D was valued at more than 1 percent of agricultural GDP (ASTI, 2021).

making it one of the largest sources of additional demand globally over the next 10-years (OECD-FAO, 2021). Moreover, the Sub-regional projections of per-capita calorie consumption¹⁷ indicate that for all regions, except for central and southern Africa, total per capita calorie consumption will likely increase by 2030 (Figure 5.2).

In North Africa, total calorie consumption is roughly 3,300 kcal/day in the base period (2018-2020) and could increase slightly by 2030. Driven by income growth, the region’s average diet might become more diverse over the coming decade. Consumption of staples, mostly wheat, will likely fall, while consumption of all other food groups may increase. Most of the additional calories are expected to come from animal sources (meat, dairy, eggs, and fish), followed by other foods and fats. Sweetener use, sugar, and high fructose corn syrup (HFCS) stays relatively constant.

Diets of West African consumers are also predominantly based on staples, which currently provide about 70 percent of calories. Poor income prospects preclude a transition to more diversified and protein-rich diets in the region. Staple foods are expected to remain the main source of dietary energy during the coming decade, while the

¹⁷ Consumption refers to food availability to consumers in a national accounting framework. It does not represent food intake, because losses and waste are not deducted.

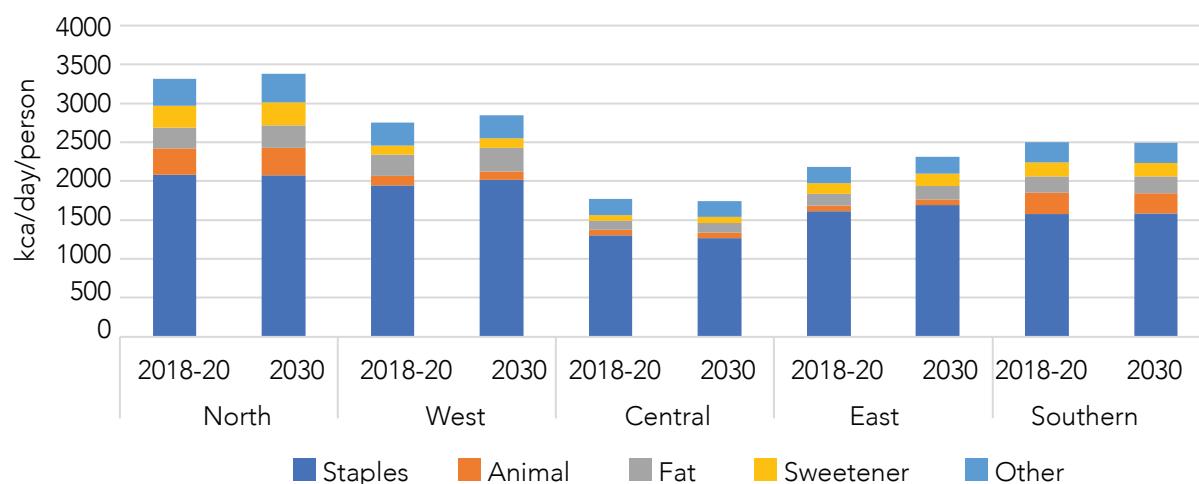


Figure 5.2: Average calorie consumption

Source: OECD-FAO, 2021

consumption of animal products is expected to remain very limited. The projected increase in the use of sugar and fats is mainly attributed to rapid population increase in urban areas where processed foods are more common.

Diets in Central Africa are dominated by staples, which currently contribute 73 percent of calories. Other foods, including plantains, account for about 12 percent, followed by fats with roughly 7 percent. Poor income prospects and an ongoing shift in consumption habits due to urbanization result in a projected increase in the consumption of fats and sweeteners, while the consumption of staples, animal, and other foods may decrease slightly. However, these changes are happening very slowly and diets will continue to consist primarily of staples for both calories and protein.

In East Africa, the average consumption per person/day is estimated at 2,180 kcal in the base period (2018-2020). This is projected to increase by 134 kcal/person/day (6 percent) in 2030, predominantly based on staples. Fast growth is expected in fats (20 percent) and sweeteners (13 percent), which gradually increases their shares in the diet indicating a growing consumption of convenient and fast-food products in the region. By contrast, animal product consumption will decrease by about 4.5 percent in the projection period, reducing its share in the average regional diet slightly to 2.9

percent, suggesting no significant improvement in dietary quality.

Total calorie consumption in Southern Africa is currently estimated at 2,500 kcal/person/day, the majority coming from staples (63 percent), followed by animal products (11 percent), fats (8 percent) and sweeteners (7 percent). Due to income constraints, per capita food consumption in Southern Africa is expected to remain nearly constant, with minimal changes in the shares of individual food groups. An increase in fat consumption is projected to compensate reductions in animal food and sweetener use.

Typology of the downstream market: elephants and gazelles

The projected value of Africa's food system is USD 1 trillion by 2030 and the food import bill is expected to increase to USD 90 billion (African Common Position, 2021). As such, Africa's agri-food system offers large scale, multinational agribusiness companies (elephants) growth opportunities. Over the past five years, some of the world's largest multinational agribusinesses have expanded their African footprint (Business Day TV, 2019). For example, in February 2021 the Distell Group, a South African spirits producer, reported a 20.3 percent growth in sales in their target African markets outside South Africa, for the six-month

period ending on December 2020 (BusinessTech, 2021). Sales volumes on their digital Business-to-Business (B2B) platform during this period, grew faster than the non-platform sales (BusinessTech, 2021). Such growth has attracted the attention of Heineken, the world's second-largest brewery, and talks are underway for a possible merger.

Large-scale multinational acquisitions are not just occurring in the beverage sector. In March 2020, South Africa's Competition Commission approved PepsiCo Inc.'s USD 1.7 billion acquisition of South African-based Pioneer Food Group Limited (Pioneer Foods, 2020). This move enables PepsiCo to immediately scale their business and product offerings within SSA by building on known brands focusing particularly on staple food products (Pioneer Foods, 2019). Over the next five years, the merger is expected to create 500 direct and 2,500 indirect jobs. The company is committed to

sourcing locally and sustainably through its Food Innovation Valleys concept (Pioneer Foods, 2020).

Investment in Africa's agri-food system is no longer simply a story of multinational companies. African-owned enterprises (gazelles) are expanding their footprint. Table 5.2 lists only five of the Food Business Africa Top 100™ companies in 2020¹⁸ (Food Business Africa, 2020). When one examines the list, majority of firms only joined the food industry at the turn of the century, while others expanded and diversified their operations. For example, BIDCORO Africa Limited. BIDCO was established in 1985 and by 1998 had diversified into seed crushing. Between 2000 and 2005 it expanded their East African footprint by establishing

¹⁸ This is a first-of-its-kind listing. Criteria for inclusion on this biennial top 100 listing includes innovation and industry leadership as well as demonstrated commitment to environmental sustainability and social upliftment.

Table 5.2: Five of the top 100 food, beverage, and milling companies in Africa

Company name	Country	Established	Ownership structure	Sector	No. of employees	Local procurement
Africa Improved Foods	Rwanda	2016	Public-Private Partnership (PPP)	Grain processing	208	2020: 15K MT of maize sourced from 45K farmers
Astral Foods Limited	South Africa, Eswatini, Mozambique, Zambia	-	Publicly traded on JSE	Poultry and animal Feed	9,067 permanent + 2394 contracts	2020: Largely local with import substitution
Beloxi Industries Limited	Nigeria	1994	Private limited liability	Grains, milling and pastry	2300	-
BIDCORO Africa Limited	Kenya, Tanzania, Uganda,	1985	Joint venture with Co-Ro Food in Denmark and Land O' Lakes (US)	Consumer goods, animal feed	2,000 (+)	2020: Sources from 30K Soya bean and Sunflower farmers
Dangote Group	Nigeria	1978	Diversified and fully integrated conglomerate	Sugar, salt and seasoning, Tomato and rice farming, fertilizer	10,500 (+)	2020: 60% locally sourced rice, while vertically integrating into rice farming

Source: Food Business Africa, 2020 and company websites.

operations in Tanzania and Uganda. By 2009 the company had further diversified into animal feed production. Its products are currently available in 17 countries in Africa.

Going forward, the ability of local startups and medium-scale family-owned food processing companies to expand is predicated on the availability of financing. From a regional perspective, access to credit is woefully inadequate in SSA. Between 2000 and 2016, domestic credit to the private sector as a share of GDP declined from 57 percent to 45 percent (Figure 5.3).

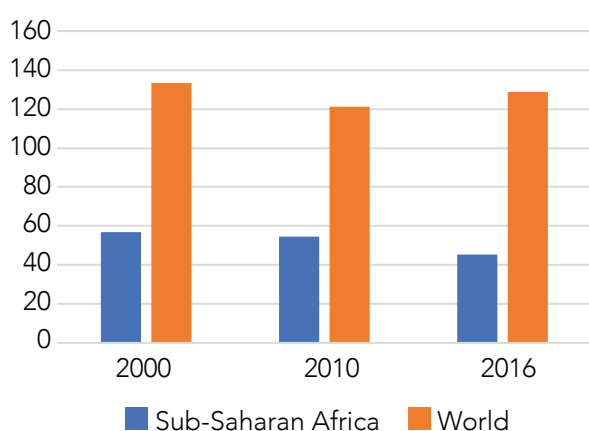


Figure 5.3: Domestic Credit to Private Sector (% of GDP)
Source: World Bank Jobs Database

At the retail level, the COVID-19 health and safety crisis further accelerated the growing demand for supermarket-style retailing, e-commerce, and food delivery by households in middle-income countries (Reardon & Vos, 2020). Africa was no exception. Between 2015 and 2020, the top three leading retail outlets in South Africa expanded their African footprint by increasing the number of outlets across the continent as indicated in Table 5.2 (MassMart, 2015 & 2020; Pick n Pay, 2015 & 2020; Shoprite Checkers, 2015 & 2020).

This expansion of the African footprint of formalized agribusiness enterprises can, to a degree, mitigate the economic precarity linked to largely informal labor markets found on the continent (Fox, et. al., 2020). These companies offer stable wage and salary employment with benefits¹⁹, equity²⁰, as well as human capacity development opportunities²¹.

While this has positive implications, one would need to think carefully about the “how” when it comes to these firms entering the African space. African national and multinational competition authorities and

¹⁹ 87.8 percent of MassMart associates received health benefits in 2020

²⁰ In 2020, 65 percent of Shoprite Checkers employees were female

²¹ Shoprite Checkers invested approximately USD 32 million towards employee training in 2020

Table 5.3: Expansion of African Footprint for the top three South African Retailers: 2015-2020

No. of Stores	MassMart*		Pick n Pay**		Shoprite Checkers***	
	2015	2020	2015	2020	2015	2020
South Africa	365	404	1126	1771	1644	2048
Rest of Africa	38	41	116	154	289	330
Total Stores	403	445	1,242	1,925	1,933	2,378
Total Employees	48,035	45,776	48,700	53,600	132,942	141,452

Source: MassMart, 2015 & 2020; Pick n Pay, 2020 & 2015; Shoprite Checkers, 2015 & 2020

Notes:

* Stores operating in Botswana, Eswatini, Ghana, Kenya, Lesotho, Namibia, Nigeria, Tanzania, Uganda, Zambia

** Stores operating in Botswana, Eswatini, Lesotho, Namibia, Zambia and Zimbabwe, with planned expansion into Nigeria

*** Stores operating in Botswana, Eswatini, Lesotho, Mozambique, Namibia, Zambia, Madagascar, Uganda, Ghana, Nigeria, Malawi, and DRC

networks such as the African Competition Forum (ACF) play a critical role. These organizations can contribute solutions to national challenges by strategically and effectively enforcing competition and merger regulations on foreign direct investments. Such enforcements could support the development of national markets and food supply chains through local procurement requirements and provide social protection through community upliftment programs and/or minimum wage requirements.

Typology of the downstream market: survivalist entrepreneurs

Most marketed food output e.g., grains, tubers, pulses, etc. in Africa goes through under-capitalized informal markets. The vast majority of those employed in these food systems are living near or below the poverty line. This applies to the majority of smallholder farmers as well as those employed in off-farm stages of the food system as illustrated in Figure 5.4. Across all regions except Southern Africa, informal employment as a percentage of total employment in the agricultural and non-agricultural sector was above the global average of 64.7 percent (represented by the green line) for the economies of emerging and developing markets.

In fact, the vast majority of those employed in off-

farm stages of the food system are self-employed *survival entrepreneurs* involved in small-scale trading or transporting; their businesses are generally seasonal operations in the informal sector with no benefits. They must self-insure themselves and their families. Their low returns to labor are related to low entry barriers into trading, creating great localized competition and hence low trading margins.

Informality has implications for economic sustainability. Limited access to credit, low human capital and physical infrastructure accumulation, and little to no livelihood and job stability are a few of the challenges (World Bank, 2021). As a consequence, productivity remains low (LaPorta and Schleifer, 2014) and perpetuates the current fragmentations of Africa's food value chains.

A major policy priority is how to grow the economy to transition most people currently informally employed in food systems to wage earners in formal sector firms (either small-, medium-, or large-scale) in agribusiness-related activities or in the non-farm sector. African governments and development partners should focus on increasing and attracting investments into network/infrastructure industries such as roads, rail, water and electricity (see Case

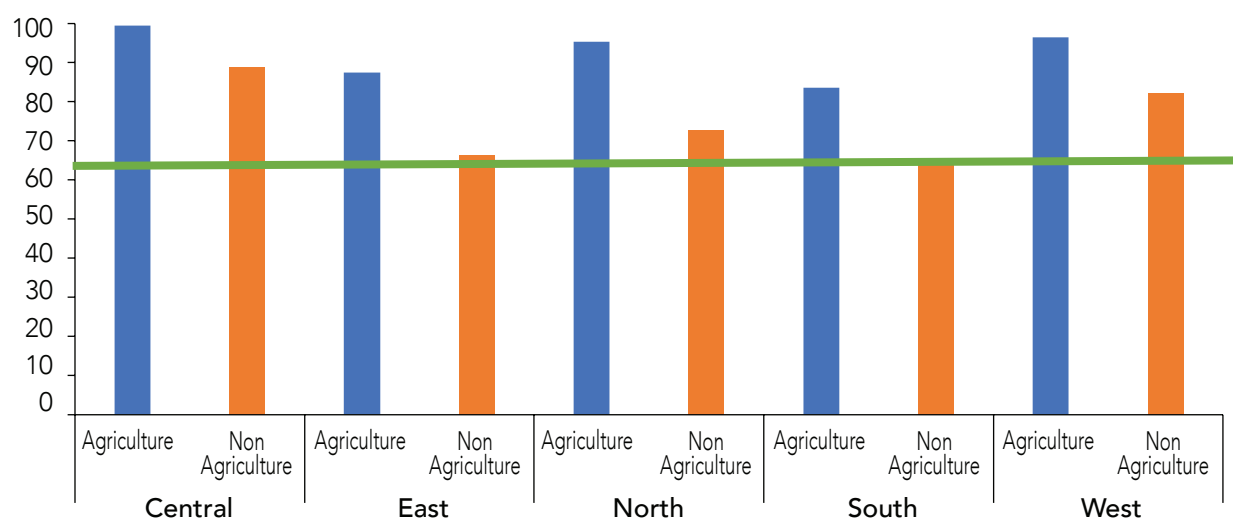


Figure 5.4: Regional Informal Rate of Employment by Sector (%)

Source: Own calculation. International Labour Organization, harmonized series; World Bank (2021)

Study Box 1). Such basic infrastructure would, in turn, serve as a catalyst for more formalized agri-food enterprises from SMEs to major agribusiness. The incentive for governments is that formalized businesses can easily be registered with the revenue authorities of the respective countries and through taxation, boost the fiscus in order to strengthen public service provision as well as social protection programs²² (World Bank, 2021).

The ability of the downstream agri-food system to meet the current and future needs of African consumers depends on the capacity of elephants, gazelles, and survivalist entrepreneurs to leverage the strengths and mitigate the weaknesses inherent in the system. In a world of growing uncertainty and constantly shifting landscapes, building resilience will require understanding the key opportunities and potential threats to the system's resilience. These insights can be translated into actionable strategies to ensure a sustainable and resilient African food system.

External factors shaping resilience in downstream agri-food systems in Africa

By definition, resilient agri-food value chains can absorb shocks, adapt to their effects, and transform themselves to “build back better” systems that deliver affordable and nutritious food to consumers (Stone & Rahimifard, 2018). This section explores external opportunities and threats that are shaping Africa's downstream agri-food systems. These external factors are summarized in Table 5.4 using a PEST framework. Given the magnitude and heterogeneity of the African continent, it is impossible to exhaustively analyze these external factors. This section therefore focuses on a narrow set of external factors that will likely have broad and enduring effects across much of the continent. It is important to acknowledge that the impact of these factors on downstream agri-food systems will vary significantly with type of commodity value chains²³, the size and composition of market actors (i.e.,

proportion of elephants, gazelles, and survivalist entrepreneurs), and geography (sub-region, country, rural vs. urban). This section explores these external factors paying attention to how they can facilitate or constrain the resilience of Africa's downstream agri-food processing systems as opportunities or threats respectively.

Political factors

Government actions, or lack thereof, at the national, regional, and continental levels play a fundamental role in shaping the macro-environment in which agri-food systems operate. The latest and probably the broadest-sweeping of these government actions is the commitment by 54 of the 55 AU nations to join AfCFTA. The Agreement, which took effect at the beginning of 2021, opens the path towards creating a single market, thereby deepening economic integration on the continent (Technical Box 1 explores the broader economic potential of the AfCFTA beyond the agri-food sector). As highlighted earlier, the prospect of a single African market with more than 1 billion consumers and a combined GDP of more than US\$2.5 trillion presents vast opportunities for agribusiness. For large and well-established agribusinesses – the elephants – the expanded markets create unprecedented opportunities to capitalize on economies of scale, while minimizing localized risks through geographically integrated supply chains. Some of the smaller agribusiness – the gazelles and survivalist entrepreneurs – may be squeezed out of the market as it consolidates. Still, many will continue to plug distribution gaps as consolidators and base of the pyramid retailers. Overall, the expansion of trade in agricultural markets both within and outside Africa will likely positively contribute to resilience in food systems (Badiane, Makombe, & Bahiigwa, 2013).

Despite the strong political will driving AfCFTA, non-tariff barriers (NTBs) will likely continue to stifle regional trade and integration. NTBs are defined as restrictions resulting from prohibitions, conditions, or requirements that make the importation or exportation of goods difficult and costly.

²² See Chapter 9 on the role of social protection in fostering sustainable food system transformation.

²³ Value chains such as livestock, blue-economy, staple crops, horticulture, and high-value products, etc.

Table 5.4: Key external factors shaping resilience in Africa's downstream agri-food systems

External factors	Opportunities	Threats
Political	<ul style="list-style-type: none"> The common market under the African Continental Free Trade Agreement will expand regional trade potential for African farmers, with associated employment growth in African food systems. National government's growing commitment to the agricultural sector (CAADP²⁴, Malabo Declaration²⁵ and NAIPs²⁶) 	<ul style="list-style-type: none"> Non-tariff barriers to regional trade Poor implementation of National Agriculture Investment Plans (NAIPs) Ad hoc government policies that disrupt market forces and trade. Conflict hotspots and political instability
Economic	<ul style="list-style-type: none"> Significant progress has been made over the past decade in improving the enabling environment for agribusinesses. 	<ul style="list-style-type: none"> Weak enabling environments for agribusiness persist through much of the continent. Poor infrastructure connectivity contributing to the high cost of doing business on the continent.
Social	<ul style="list-style-type: none"> Demographic shifts: Growing population, youth bulge and urbanization Positive returns to female participation in primary agricultural system. 	<ul style="list-style-type: none"> Gender inequality in downstream processing.
Technological/ Environmental	<ul style="list-style-type: none"> The rise of digital technologies and growth in e-commerce Rising number of patents published in field of technology with application at primary agricultural level. 	<ul style="list-style-type: none"> Declining number of patents published in fields of technology with greater application in off-farm level. Increased frequency and intensity of extreme weather events due to climate change Rapid expansion of cropped area resulting in deforestation, soil degradation, and associated losses in biodiversity and environmental resilience Spread of pests and diseases that threaten crops and livestock COVID-19 and other pandemics

24 Comprehensive Africa Agriculture Development Programme

25 Also known as the 2014 declaration on Accelerated Agricultural Growth and Transformation

26 National Agricultural Development Plans

These include unjustified and/or improper application of non-tariff measures such as sanitary and phytosanitary or technical measures. NTBs can also arise from official measures in laws, regulations, policies, restrictions, labelling requirements, private sector business practices, or prohibitions. Increasingly, several countries use them to protect domestic industries from foreign competition. Several studies show that NTBs and trade facilitation issues pose significant challenges to intra-African trade and integration (Karugia et al, 2009; Dupasquier and Osakwe, 2017). The success of AfCFTA will be primarily determined by the commitment to eliminate NTBs by all African countries. It is not the conclusion of formal agreements *per se* that will boost intra-African trade, but what countries are willing to do with the impediments at border posts and along trade routes that count.

Within the narrower confines of the agricultural sector, many African governments have made commitments to invest in the sector and support pro-business policies. CAADP, the 2014 declaration on Accelerated Agricultural Growth and Transformation (Malabo Declaration) along with NAIPs has brought together government, private sector, development partners and civil society actors under a shared framework to increase investments and boost productivity in the agricultural sector. Despite these formal commitments, progress in implementing targeted investments and reforms has fallen short in large part due to fiscal budgetary constraints (See Box 2 and 3 case studies on Kenya and Tanzania). The 2019 Biennial Review Report and the Africa Agriculture Transformation Scorecard (AATS) show that although African countries are making progress toward achieving the Malabo goals, the rate of progress has slowed. While 36 out of 49 reporting African countries improved their overall agricultural transformation scores compared to 2017, only four countries, namely Rwanda, Morocco, Mali, and Ghana, surpassed the 2019 benchmark (AUC, 2020). The same report shows that out of the seven commitments from the Malabo declaration, Africa as a whole is on track to meet only one commitment, namely tripling intra-

African trade in agriculture. Only 11 countries are on track to meet the commitment to enhancing resilience to climate variability. The gaps between political commitment and implementation will continue to limit the growth and resilience of the agri-food sector.

In most countries, ad hoc government policies continue to disrupt market signals and trade. For example, rice trade and value chain development in West Africa have been hampered by inconsistent trade policies, different and changing tariff levels, and weak enforcement of food quality and safety standards (Tondel, D'Alessandro, Hathie, & Blancher, 2020). We see a similar situation in Zambia where maize export bans are typically imposed negatively affecting the trading companies with export commitments (ReNAPRI, 2019).

Export and import bans are a common feature in Africa, even within customs union territories. Oftentimes, countries revert to export bans and other export restrictions on raw or semi-processed commodities to promote value addition and for food security considerations. This policy stance increases the domestically available supply of raw materials, eventually leading to a fall in domestic prices. The attraction of export bans is that while domestic raw producers (e.g., farmers, loggers, and miners), middlemen, and exporters are likely to lose income, processing in the country of origin becomes more competitive vis-à-vis raw exportation and foreign processing, thereby incentivizing domestic and foreign entrepreneurs to invest in country-of-origin processing.

Another major political threat to agri-food systems in Africa stems from ongoing as well as new conflicts. According to a recent report, *Conflict Trends in Africa* (Palik, Rustad, & Methi, 2020), in 2019, state-based conflicts on the continent reached a record high 13 of which were territorial conflicts. In addition to the usual conflict hotspots, there is growing concern on the rise and expansion of the Islamic State, which accounted for conflicts in nine African countries in 2019 (Cameroon, Niger, Chad, Nigeria, Libya, Burkina Faso, Mali, Somalia, and Mozambique).

Economic factors

The agri-food system operates within the broader context of macro-economies and thus any success or failure of the system is inextricably tied to national growth and development. The emergence, performance, and resilience of downstream agribusiness firms primarily depend on the enabling environment. Such an environment is defined as a “set of policies, institutions, support services and other conditions that collectively improve or create a general business setting where businesses activities can start, develop, and thrive” (Christy et al, 2009).

While significant progress has been made over the past three decades in improving the enabling environment for agribusiness, SSA remains a challenging place to do business. According to the latest *Doing Business* report, only one African country, Rwanda, makes it to the top 50 out of a ranking of 190 countries (World Bank, 2019). The average score for Sub-Saharan Africa was 51.8 out of 100, which only improved by one point from the previous year²⁷. The regions perform poorly on indicators that are vital to downstream agribusinesses, including processes for business incorporation, access to electricity, access to credit, paying taxes, engaging in international trade and contract enforcement. Weak public infrastructure, especially transport (both rail and road) and electricity, significantly increases the cost of producing, processing, storing, and delivering food, especially for high-volume, low-value products.

The *Enabling the Business of Agriculture* report, which is much more geared for upstream agri-food players (farmers and agricultural input supply), also shows high regulatory and efficiency gaps between SSA and global averages. The implications of this weak enabling environment for resilience in Africa’s agri-food system are twofold. For established agribusinesses that are already working in Africa, many have already been stress-tested under unfavorable business environments, making them

more adaptive to shocks. On the other hand, a weak enabling environment acts as a barrier to entry for many agribusinesses that could improve competitiveness and service delivery.

Poor infrastructure connectivity contributes to the high cost of doing business on the continent. Several studies have revealed that transport costs in Africa are still among the highest in the world. For instance, shipping a car from Japan to Tanzania (Port of Dar es Salaam) would cost about US\$1,500 (including insurance); shipping the same car from Dar es Salaam to Lusaka (Zambia) would cost close to US\$5,000. For a continent with the vast majority of its population living in abject poverty, this trend has to be reversed. The high cost of doing business is inadvertently passed on to the consumer, which defeats the ultimate poverty eradication and wealth creation objectives of regional integration. Closing infrastructure financing gaps should thus be a key priority for governments and development partners on the continent. The presence of physical infrastructure should stimulate trade and investment; hence more attention should be on mainstreaming soft infrastructure issues in infrastructure projects. Harmonization of transport and other infrastructure policies and regulations among member countries is essential if the continent is to benefit from regional integration.

Social factors

Demographic and socio-cultural factors both play a critical role in shaping demand for agri-food products. Africa’s population stands at more than 1.3 billion people with a growth rate of about 2.5 percent per annum (Worldometers, 2020). By 2040 the continent’s population will likely exceed 2 billion people accounting for nearly a quarter of the global population (Worldometers, 2020). From a demand perspective, population growth, coupled with rapid urbanization and a shifting consumer preference for value-added and processed foods, presents market potential for downstream agribusiness (see Figure 5.2 above).

From the supply side, Africa’s youth bulge presents unique opportunities to increase food supply

²⁷ For comparison, New Zealand and Singapore had the highest individual country scores at 86.8 and Singapore 86.2 respectively.

through labor markets. Recent investments by government and development partners to engage Africa's youth in agriculture as a strategy to create employment are starting to bear fruit (Yami et al, 2019). Other studies are more skeptical, concluding that youth training programs are proving to be ineffective and that most young entrepreneurs' ventures fail and are largely enterprises in the informal sector. Assuming that evidence-based policies will prevail, we predict that as more African youths explore entrepreneurship in agri-food systems, supported by capacity development and microfinancing, the continent will likely witness a surge in agri-SMEs (gazelles and transitioning survivalist entrepreneurs). This could further strengthen food value chains through increased and competitive service delivery.

African women make a significant contribution to agriculture at the farm level. Data from *Living Standards Measurement Study - Integrated Surveys on Agriculture* (LSMS-ISA) puts average female share of labor in crop production across Ethiopia, Malawi, Niger, Nigeria, Tanzania and Uganda at 40 percent (Christiaensen and Demery, 2018). Moreover, women play a central role in household food processing and meal preparation. Despite these significant contributions to on-farm activities by women, their participation in downstream formal agribusinesses is fairly limited. While women dominate localized and informal food markets, men are more involved as commercial players, especially in more lucrative value chains (AfDB, 2016). To build resilient and inclusive food value chains, Africa must close the prevailing gender gaps in: (i) access to and control over productive resources and opportunities; (ii) influence and collective capacity; and (iii) agricultural policies and investment (FAO, 2018).

Technological and environmental factors

Starting from a very low baseline, Africa has great potential to enhance the productivity and efficiency of agri-food systems through technological innovation and adoption. When the number of published patents by Africans in Africa across two decades (2000-2009 and 2010-2019), in fields

of technologies with greater application at the primary agricultural level are examined, the number of patents published increased between the two decades (Traub, Jayne, and Sihlobo, 2021). For example, in biotechnology and environmental technology the number of patents published increased from 133 to 200 and 197 to 212 respectively (Table 5.3). Upstream at the farm level, the prevailing yield gap can be closed by adopting and intensifying purchased technologies and innovations such as improved seed varieties, crop protection, and animal health products, fertilizers, irrigation, and mechanization.

For downstream value chain actors, new innovation in storage, processing, and logistics can significantly reduce post-harvest losses. However, in fields of technologies with greater application in downstream levels of the food system, the number of patents published in Africa by Africans tended to decline between 2000-2009 and 2010-2019. In food chemistry, this number fell from 216 to 190, while handling technologies saw a significant decline to less than half the number of patents published from 650 in 2000-2009 to 264 in 2010-2020. This decline flags the issue of African capacity²⁸ to develop such technologies which are relevant to the local downstream level of the agri-food system.

Recently, there is a growing recognition that digital technologies can transform the agricultural sector in Africa to build back more efficient and resilient food systems. Increased mobile phone penetration and improved access to the internet have fueled the spread of digital agricultural services. For example, mobile phone subscriptions in Africa grew from under 10 per hundred people in 2005 to more than 80 per 100 people by 2018. As measured by a number of unique subscribers, mobile phone penetration has risen by 25 percent over the past decade to 45 percent in 2019 and is projected to reach 50 percent by 2025 (GSMA, 2021). Moreover, the COVID-19 pandemic has provided a unique opportunity to accelerate the deployment of contact-free digital solutions along the food value chain.

²⁸ See Chapter 7 which examines the issue of capacity and its impact on the agri-food system.

Table 5.5: Patent publications by technology: number of patents registered in Africa by Africans

Field of technology	Period	
	2000-2009	2010-2019
1 - Electrical machinery, apparatus, energy	380	325
3-7 - Telecommunications ²⁹	578	643
15 - Biotechnology	133	200
18 - Food chemistry	216	190
19 - Basic materials chemistry	305	269
24 - Environmental technology	197	212
25 - Handling ³⁰	650	264
28 - Textile and paper machines	94	75
32 - Transport	554	307

Source: WIPO Statistics database, Schmoch, 2008

The growing adoption of e-commerce in middle-income African countries will further accelerate and deepen digitalization. According to *The Digitalization of African Agriculture* report, the number of digital agriculture solutions serving Africa has skyrocketed from only 42 in the period before 2012 to 390 by 2018 (Tsan, Totapally, Hailu and Addom, 2019). These services reach an estimated 32.7 million smallholder farmers and downstream actors enhancing access to advisory and information services, market linkages, financial access, and value chain coordination tools. Digitalization of agri-food value chain can increase the resilience of the entire food system through better coordination between actors and increased use of big data to predict and mitigate against shocks.

Climate change poses an increasingly severe threat for African agriculture. From droughts in the horn of Africa, to flooding in East Africa, extreme weather events are occurring with increased frequency and intensity across the continent, often resulting in massive disruptions in food supply.

²⁹ Includes telecommunications, digital and basic communication, computer technology, and IT methods for management fields.

³⁰ This includes technologies in cranes, elevators, and packaging.

The rapid expansion of cropped area across the continent is resulting in deforestation and fueling the vicious cycle of climate change and environmental degradation, soil degradation, and associated losses in biodiversity and environmental resilience. The continent is considered highly vulnerable to climate change due to weak adaptive capacity, high dependence on ecosystem goods for livelihoods, and less developed agricultural production systems. While the immediate effect of climate change is felt upstream on farms³¹, the effect of reduced supply of raw material often cascade to downstream actors and consumers. Africa's food supply faces increased threats from a host of pests and diseases linked to climate change. These include the FAW, desert locusts, and wheat rust, which are increasingly hard to control. Due to the transboundary nature of pests, diseases, and weather events, it is essential to establish interconnected prediction, response and mitigation strategies across agri-food system actors at local, regional, and continental levels.

³¹ It's important to note that adverse weather, such as flooding, can directly impact downstream actors and consumers by disrupting distribution channels; see <https://floodlist.com/africa/kenya-floods-may-2021>

Towards actionable strategies and policy conclusions

Can Africa leverage its food system to achieve the aspirations of Agenda 2063 or the 2030 SDGs? African leaders answered the Mayibuye plea ahead of the UNFSS. At the June 2021 extraordinary meeting of the African Union Specialized Technical Committee (AUSTC), ministers of agriculture outlined the African Common Position, which identified five priority action tracks in response to the UN's call for food system transformation.

Achieving the growth and transformational targets will depend on the capacity of governments to provide an enabling environment that encourages rapid investments in productivity-led agricultural growth on millions of African farms and in small-, medium- and large-scale agribusinesses whose profits and productivity are synergistically entwined with farmer production growth. It will be extremely difficult to attract young people, from which the next generation of African farmers will come, into farming or agribusiness if neither farming nor agribusiness trading is profitable.

Government actions that provide a conducive enabling environment include the following:

1. National agricultural R&D&E in crop science, good agronomy, and animal science to promote technical innovation appropriate to the highly-varied agro-ecologies of Africa.
2. National agricultural R&D in food sciences, handling, storage, and transportation innovation relevant to all stages of the food system and market conditions of Africa.
3. Effective enforcement of national and regional competition policy to enhance inclusive economic growth and transformation for all types of agri-food enterprises (gazelles, survivalists, and elephants).
4. Physical infrastructure investments including roads, rails, ports, reliable energy/power, and conventional communications, and ICT to enable digital technologies to thrive.

5. Cybersecurity policy and regulatory frameworks that develop cyber defense capabilities, promote the digital economy, strengthen digital governance, and promote public infrastructure that closes the digital divide between women and men as well as rural and urban populations.
6. Effective and transparent implementation of existing policy to ensure no unreasonable barriers to trade or investment. Aggressively move forward to implement AfCFTA.

To translate the SWOT and PEST analysis into sustainable and resilient strategies for private sector agri-food stakeholders, this section links internal characteristics aimed at achieving sustainability with external factors that facilitate resilience. The resulting actionable strategies for the private sector include:

1. Use strengths to leverage opportunities
 - *Projected food demand – technological opportunities*

Africa has great potential to enhance the productivity and efficiency of agri-food systems through technology adoption. For downstream value chain actors, new innovation in storage, processing, and logistics can significantly reduce post-harvest losses and ensure healthy and nutritious food products. Moreover, the COVID-19 pandemic has provided a unique opportunity to accelerate the deployment of contact-free digital solutions along the food value chain. The growing adoption of e-commerce in middle-income African countries will further accelerate and deepen digitalization.
 - *Growth potential of African agri-food system – political opportunities*

National governments' commitment to agricultural investments could position agriculture as one of the sectors that will lead the economic recovery from the COVID-19 slump. Successful

implementation of AfCFTA could expand markets and create unprecedented opportunities to capitalize on economies-of-scale for well-established agribusinesses. PPP approaches to infrastructure development could ease constraints on regional trade. A case in point is South Africa's Economic Recovery and Reconstruction Plan centered around infrastructure, with the private sector playing a prominent role. There is also a role for international development finance institutions, for example, AfDB's high-five initiative around infrastructure investments.

2. Leverage Opportunities to minimize weaknesses

- *Limited productivity growth in primary agriculture – political and technological opportunities*

Governments' political commitment to agricultural R&D&E investment should be leveraged to develop regenerative agroecological approaches that protect soils and ensure sustainable intensification. This will be a catalyst for increased productivity and resilience in Africa's farming sector.

- *Persistent informality – political opportunities*

Unlock financial capital constraints to facilitate modernization of local informal food markets. Through a blend of finance

instruments, consolidate public and private funds to provide capital to transition value chains. For example, in South Africa, a blended finance instrument consists of 50-50 public and private capital. The government portion is a subsidy for de-risking the businesses so that the private sector can participate and still receive fair returns. This fund targets new participant farmers and smallholders who aim to commercialize and expand their businesses. The fund primarily targets input loans, infrastructure investments, and land acquisition (IDC, 2021).

- *Persistent informality – social opportunities*

Africa's youth bulge presents unique opportunities to increase food supply either through providing low-cost labor or through innovative and competitive service delivery. Public and large-scale agribusiness support of capacity development programs, microfinancing targeting, and removal of regulatory barriers that constrain the growth of agri-SMEs can be leveraged by transitioning value chains (gazelles).

Africa can achieve the aspirations of Agenda 2063 or the 2030 SDGs by leveraging the strength and opportunities inherent in the agri-food system. However, to do so effectively will require both private and public stakeholders working collaboratively to achieve the continent's transformational agenda. Mayibuye iAfrika.

Case Study 1: Smart Food Markets of the Future Project

A project implemented in Kenya by the Eastern Africa Grain Council (EAGC), with support from The Rockefeller Foundation.

Previous efforts in food security and food availability have been focused on production and increasing productivity. Despite their centrality and importance, market value chains in food systems have received minimal attention - "80 percent of the population relies on open-air markets for their source of food and nutrition. 55 percent of fruits and vegetables and 30 percent of food grains are sold through open-air markets. Investing in markets would immediately support women vendors who constitute about 55 percent of the traders" (EAGC, 2020).

EAGC, with support from The Rockefeller Foundation, is rethinking and re-imagining open-air food markets in a project to "establish Smart Food Markets for the Future in Kenya". In response to the question of "how might we re-imagine open-air markets in Kenya to enable high standards of safety, sanitation, comfort, sustainability, and economic prosperity?" EAGC imagined a market that covers market participants' basic sanitation, safety, and comfort needs while amplifying their economic opportunities. A market that supports the traceability and safety of produce to inspire better food choices for shoppers and enables reducing, recycling, and reusing of waste while restoring natural systems. A market that better reflects and responds to the needs and aspirations of vendors, shoppers and other market actors who depend on it for their well-being (IDEO.ORG, 2020).

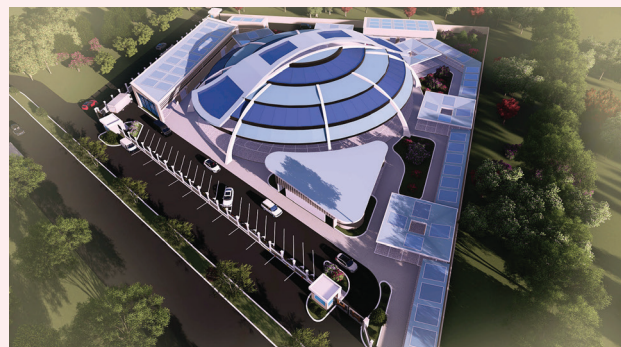
Solar energy has great potential to power then envisaged markets. A study established that "a solar mini-grid for smart food market has a payback period of 6 to 15 years depending on the size and battery storage options" (PowerGen, 2021). Business Analysis indicated that the smart markets were viable with a 32 percent return on investment (Dalberg Consulting, 2021).

The project is supporting the design and construction of the Naivasha Smart Fish Market

in Nakuru County, Kenya, and is expected to be completed at the end of January 2022. Cladded with solar photovoltaic roof panels for a solar mini-grid, the market features modern sanitation and COVID-19 compliance facilities, an e-mobility center for battery swapping and charging electric bikes and vans for food deliveries. Additionally, a cold store, kitchen, and fish processing facility, water harvesting, and sanitation. Notably, there will be a waste management center for collecting, sorting, and evacuating waste for recycling. The organic waste will be supplied to insect-based feed farmers of Black Soldier Flies³², an alternative and potentially lower-cost protein source for blending with cereals grains to manufacture animal feeds.

Besides the Naivasha Smart Fish Market, the project will pilot a solar-powered e-mobility smart solution at the Nakuru Top Market, Ngong Market in Kajiado County, and City Park Market in Nairobi County where a waste management solution will also be piloted.

To scale up, replicate and mainstream the Smart Food Markets Concept, a new National Markets Policy is under development in partnership with the State Department for Housing and Urban Development in Kenya.



The Proposed Naivasha Smart Fish Market in Nakuru County, Kenya; Design by School of Architecture & Building Sciences, Jomo Kenya University of Agriculture & Technology.

³² https://en.wikipedia.org/wiki/Hermetia_illucens

Box 1: AfCFTA: Trade creation and trade diversion potential from proposed tariff reduction

Africa's share of global trade and production has been declining over the years and the continent continues to engage at the periphery of the global economy. Most African countries predominantly export commodities in a limited range of products and largely import finished goods from outside the continent. In this context, most African businesses operate mainly in small domestic markets with low purchasing power and limited competition to drive productivity and efficiency. This stifles economic diversification and growth in most African countries. Of the 32 landlocked less-developed countries (LLDCs) in the world, 16 are in Africa and are poorly connected to sea ports and other African countries. The potential advantages of regional integration to the private sector include increasing economies of scale and access to cheaper raw materials and intermediate inputs, better conditions for the development of regional value chains, and integration into global value chains. AfCFTA therefore, presents an opportunity to develop trade in manufactured and final products.

Unlike other regions, Africa trades less with itself; intra-African trade is currently estimated at between 15 and 17 percent, which is quite low compared to Europe (69 percent), Asia (59 percent) and North America (31 percent). According to the World Bank, with the start of trading under AfCFTA launched on 1st January 2021, it is expected that the Agreement could boost regional trade and regional income by 7 percent or US\$450 billion by 2035. It is also anticipated that trade will be a key driver of growth in Africa in the next couple of decades.

According to estimates by the Economic Commission for Africa (ECA), AfCFTA could substantially increase the value of intra-African exports. Just by removing tariffs on goods, AfCFTA is expected to increase the value of intra-African trade by up to 25 percent (or \$70 billion) in 2040, depending on liberalization efforts. The removal of non-tariff barriers could potentially double intra-African trade by the same period.

Trade diversification of exports is important as it allows countries to build resilience to shifts in demand due to economic downturns in importing countries as well as price dips. In the case of commodity-exporting countries, it supports a shift from over-dependence on commodities to higher-value-added products and services. Figure 5.5 illustrates the 15 to 17 percent trade occurring among African countries; the top ten products traded are largely industrial.

Manufactured goods make up a much higher proportion of regional exports than those leaving the continent—41.9 percent compared to 14.8 percent according to recent estimates. Cement, ship and light vehicles, and sugar have consistently been the top three exports among African countries over the last ten years (2010-2019). However, the real test of AfCFTA will be how quickly African countries can accelerate export diversification and product sophistication and make trade more inclusive. It is, therefore, important that the Boosting Intra-African Trade (BIAT) Action Plan endorsed by African heads of state and government in 2012 is implemented to promote industrialization on the continent. This will allow for the inclusion of small- and medium-sized enterprises and help encourage innovation as more markets open.

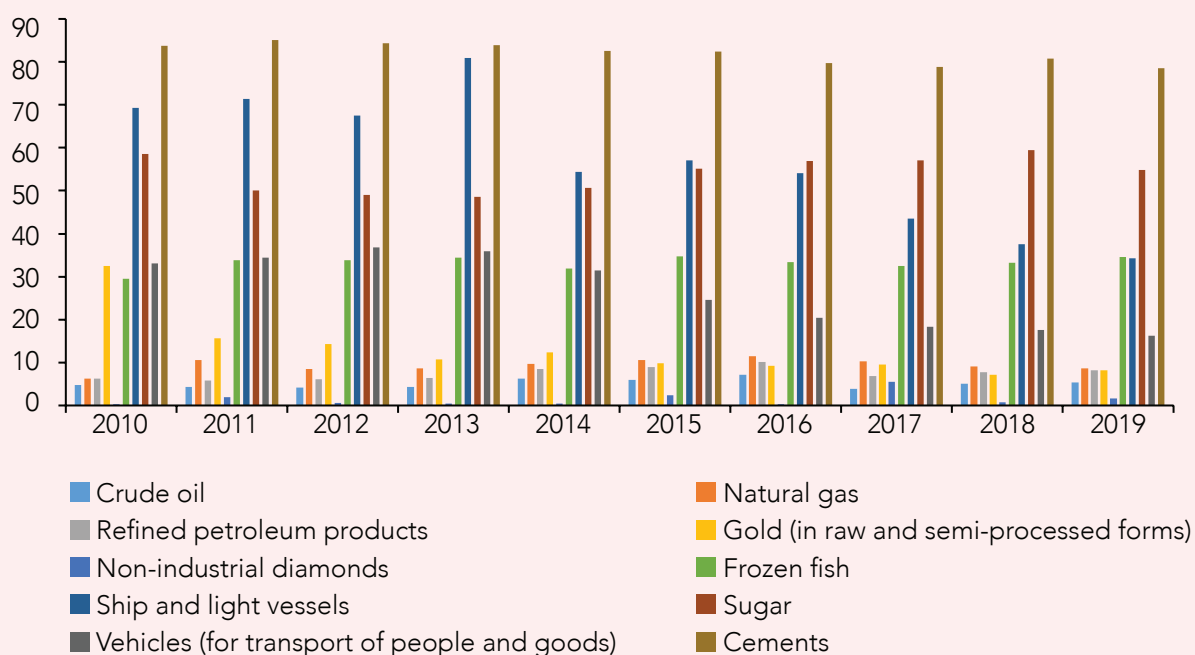


Figure 5.5: Top 10 Intra-African Export (%) Products 2010-2019

Source: UNCTADstat

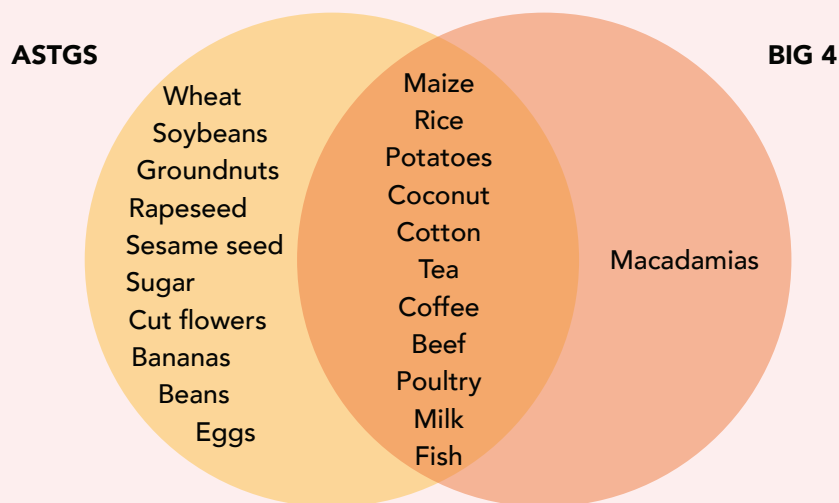
Box 2: Prioritizing the National Agriculture Investment Plan in Kenya and Tanzania: A method of determining policy/regulatory reform impacts to allow policy makers options

Kenya's NAIP for 2019-2024 is a five-year investment plan accompanying the country's 10-year Agriculture Sector Transformation and Growth Strategy (ASTGS). The goal is to achieve a vibrant, commercial, modern, and equitable agricultural sector that sustainably supports economic development. The process of preparing the NAIP was highly consultative and iterative and nine flagship projects were identified through a rigorous process of prioritization for feasibility, impact and value-chain fit given the agroecological zones in which the flagships would be implemented (GoK, 2019).

Kenya's identification of priority value chains (VCs) considered the following: production value; regional import demand; competitive advantage; potential yield increase; agro-processing potential; percent of total value chain output from smallholders; nutritional value; and calorific value. As a result, 21 and 12 VCs were prioritized under the ASTGS and the Big Four Presidential Agenda³³, respectively, as shown below³⁴.

³³Kenya's President Uhuru Kenyatta's development blueprint, The Big 4 Agenda, comprises of food security, affordable housing, manufacturing, and affordable healthcare.

³⁴ This section draws heavily from o-going work in Kenya under the PPVC project (Meyer et. al., 2019)



The identification of key VCs for driving inclusive agricultural transformation was a crucial first step towards policy prioritization. However, given budgetary constraints that policymakers typically face, the next step was to identify and prioritize actionable and affordable policies and public investments that can drive market-led inclusive agricultural transformation in Kenya. This requires: in-depth analysis of market dynamics and price competitiveness; technology and profitability analysis at each stage of the supply chain; and, economy-wide analysis of development outcomes and policy trade-offs. Although the tools required for these analyses exist in many countries, they are rarely used together to provide comprehensive assessments of policy options. As a result, governments lack crucial information needed to design actionable and cost-effective policies that can drive market-led inclusive agricultural transformation (Ferdinand et al., 2019).

To address this gap, the Bill & Melinda Gates Foundation (BMGF)-supported Policy Prioritization through Value Chain Analysis (PPVC) initiative aims to support governments to identify prioritized value chains and assess the economic costs and benefits of specific policy and investment interventions using a market-led approach.

In Tanzania, the PPVC approach, which uses multi-market and economy-wide models, complements Tanzania's ongoing national agricultural investment planning by providing new analytical tools to help the Government evaluate the policy and investment needs of priority VCs.

The approach ranked the 15 prioritized commodities in Tanzania's Agricultural Sector Development Programme Phase II (ASDP II) using quantitative and qualitative analysis. The prioritized VCs were selected based on their market potential and effectiveness in contributing to development outcomes (i.e., economic growth, jobs, poverty reduction, and dietary diversity). The indicators considered in the quantitative VC scans were: (i) market-led - consisting of multiple indicators showing the VC upgrade potential and competitiveness i.e., intensification, domestic consumption growth, regional export potential, input cost efficiency ratio and relative trade advantage; (ii) social inclusiveness i.e., poverty employment; and, (iii) agricultural transformation i.e., agricultural food system growth and dietary change. Outputs

from the Partial Equilibrium (PE) and Computable General Equilibrium (CGE) models and VC scans informed the selection criteria/indicators, which were combined into a “portfolio and ranking” approach to facilitate prioritization and selection of three VCs for deep-dive analyses, one of which was the sunflower value-chain.

The detailed analysis identified a list of value-chain-specific policies and public and private sector investments that were required to drive inclusive growth and transformation in the sunflower oilseed sector. Implementation of the recommended prioritized policies could help ensure that the cooking oil supply in the country was resilient to external shocks such as the COVID-19 pandemic.

Like many African countries, Tanzania imports large volumes of palm oil from Indonesia and Malaysia with smaller volumes also coming in from other global exporting countries. Palm oil in Tanzania is the single largest agricultural product import (by value) and is the second-largest overall product import by value behind petroleum oils (ITC, 2018)³⁵. At the same time, sunflower as an oil crop can be grown in almost all regions in the country given the favourable soil and prevailing climatic conditions. The over-reliance of the domestic edible oils sector on imported palm oil is a thus clear case for import substitution. While SMEs are the predominant sunflower oil processors in Tanzania, they underperform with an average extraction rate of 25 percent and capacity utilization running between 30 and 40 percent. Outdated technology and low levels of investment are among the key challenges.

The challenge of low investment among SMEs sunflower seed crushers can be addressed through policy incentives such as the removal of value-added tax (VAT) on the importation of solvent extraction technology and domestic sales between SMEs and commercial crushers. The results of the study indicated that with a yield gain, implementation of palm import tariff rate, VAT exemption, and feed policy reform, the net gain to Tanzania’s agri-food system could be USD 2,051 million in GDP, 181,000 jobs created, and reduction of approximately 363,000 people in the rural poor (see Figure 5.6).

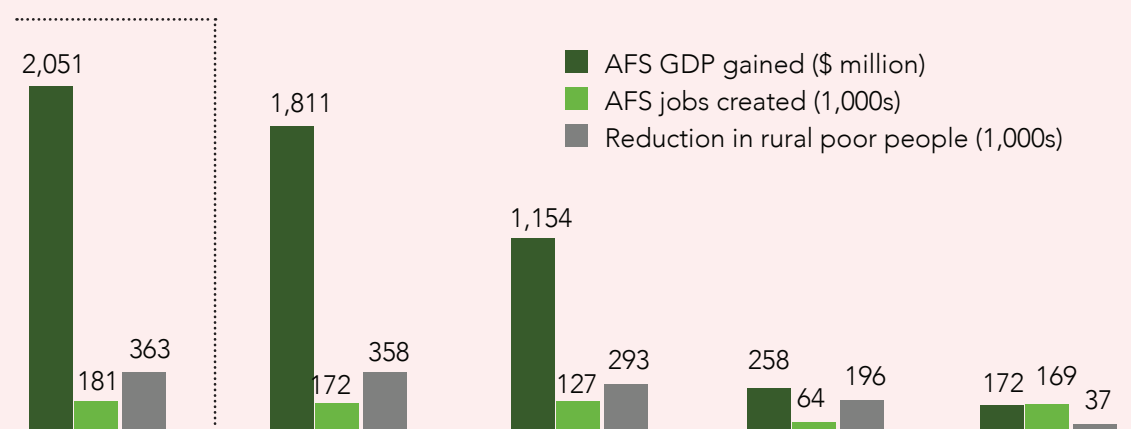


Figure 5.6. Economy-wide Gain through Sunflower Value Chain Upgrading

Source: BFAP, SUA (ReNAPRI) & IFPRI, 2018 Presentation on Sunflower PPVC Approach in Tanzania

35 Based on HS 4 level trade data obtained from ITC Trade Map. www.trademap.org, 2018

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