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Inclusive and Sustainable Agro-industrialization for Structural Transformation and Wealth Creation Technical Working Group (TWG) 5 Report

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Abbreviations and Acronyms

AAIN	African Agribusiness Incubation Network
AfCFTA	African Continental Free Trade Area
AfDB	African Development Bank
ARSO	African Organisation for Standardisation
AU	African Union
AUC	African Union Commission
AU-STC	African Union-Specialised Technical Committees
AUDA-NEPAD	African Union Development Agency-New Partnership for Africa's Development
BR	Biennial Review
CAADP	Comprehensive Africa Agriculture Development Programme
CAAPs	Common African Agro-Parks
ECA	United Nations Economic Commission for Africa
ESG	Environmental, social, and governance
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FEFAC	European Feed Manufacturers' Federation
FTA	Free Trade Area
GDP	Gross Domestic Product
GTI	Guided Trade Initiative
HLCD-3A	High-Level Conference on the Development of Agribusiness and Agro-Industries in Africa
ICT	Information and Communication Technology
JSRs	Joint Sector Reviews
MSMEs	Micro, Small, and Medium-sized Enterprises
NGOs	Non-Governmental Organizations
PCD	Policy Coherence for Development
PPPs	Private-public Partnerships
RAVCs	Regional and Continental Agricultural Value Chains
RECs	Regional Economic Communities
SDG	Sustainable Development Goal
SMEs	Small and Medium-sized Enterprises
STC	Specialised Technical Committee
TWG	Technical Working Group
UN	United Nations
UN DESA	United Nations Department of Economic and Social Affairs
UNFSS	United Nations Food Systems Summit
WTO	World Trade Organization

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1 See Annex 2 for a list of expert contributors.

Editorial

Since its adoption by the African Union (AU) in 2003, the Comprehensive Africa Agriculture Development Programme (CAADP) has been Africa's primary policy framework for agricultural transformation, wealth creation, food security, economic growth, and prosperity. It guides the African Union Commission (AUC), AUDA-NEPAD, Regional Economic Communities (RECs), and Member States in driving food security and agricultural transformation toward a self-reliant and productive Africa.

The continent has witnessed robust economic growth since the launching of the agenda, producing rising average incomes and household consumption expenditures. Evidence indicates steady decreases in the prevalence of poverty and improvement in food security and nutrition, with undernourishment declining in the 2000s and early 2010s and child malnutrition declining consistently throughout the CAADP period. However, progress on many of these indicators has slowed and, in the case of undernourishment, reversed in recent years, especially with recent economic disruptions related to the Russia-Ukraine war, the COVID-19 pandemic, and the climate crisis.

As Africa phases out of ten years of implementing the Malabo Declaration set to conclude in 2025, the Kampala (Post-Malabo) Agenda aims to deepen CAADP's impact and accelerate progress. In early 2024, the AU Department of Agriculture, Rural Development, Blue Economy and Sustainable Environment (AUC-DARBE) and AUDA-NEPAD, in collaboration with critical technical partners, launched the process to develop a Post-Malabo Agenda for Action on CAADP. The CAADP Post-Malabo Agenda development process set out to leverage an inclusive, multistakeholder effort to build on 20 years of CAADP successes while addressing emerging challenges like sustainable food systems, climate change, and resilience to shocks.

Under the framework of the Post-Malabo Agenda development process, AKADEMIYA2063, as a technical partner to AUC-DARBE, was designated to facilitate the **Data and Analytics Workstream**. This entailed the mobilization of African centers of excellence and think tanks organized across 13 Technical Working Groups (TWGs) to lead the research, data, and analytical work to inform the thematic design of the successor to the existing CAADP Agenda. This process leveraged extensive stakeholder consultations, research, and analysis to guide the formulation of a new strategy for the next decade of CAADP implementation.

With the Kampala CAADP Declaration on "Building Resilient and Sustainable Agrifood Systems in Africa" and the associated CAADP Strategy and Action Plan (2026-2035) endorsed by the Extraordinary AU Summit in January 2025 and entering into force in January 2026, there is a real opportunity to leverage knowledge and evidence to enhance Africa's preparedness for its implementation.

The ***Kampala Technical Paper Series*** presents research developed by the 13 TWGs comprised of African academic institutions, think tanks, centers of excellence, and various CAADP constituencies deployed during the Post-Malabo Agenda development process. The series proposes comprehensive technical content designed to feed into the thematic core of the Kampala Agenda to ensure inclusive, sustainable, and resilient agrifood systems and livelihoods in Africa over the next decade.

With this series, AKADEMIYA 2063 aims to make the research available to a wide range of stakeholders and development practitioners while providing insights into the critical priority areas for the continent's agrifood systems transformation. This move is motivated by the belief that the evidence-based recommendations for policy and programmatic interventions will help move the needle toward an agriculture-led, broad-based economic transformation across Africa.

Executive Summary

The present paper presents the contributions received by TWG5 on the theme of "Inclusive and Sustainable Agro-Industrialization for Structural Transformation and Wealth Creation." The report focuses on the potential of inclusive and sustainable agro-industrialization to structurally transform Africa's agrifood and economic systems and support the goals of Agenda 2063. **Agro-industrialization has a wide range of benefits,** including promoting technological innovation and technology diffusion, creating off-farm employment opportunities, improving access to safe and nutritious foods, facilitating value addition and reduction of post-harvest losses, and shifting economic resources to higher productivity sectors, giving rise to economic transformation. Agro-industrialization plays a central role in reducing poverty by linking smallholder farmers to growing urban markets and increasing the income generation potential of the large informal agrifood processing sector. Inclusive industrialization is key to addressing barriers and reducing the inequalities that limit the capacity of women and youth to generate incomes and build assets from agriculture. **Advancing agro-industrialization requires significant investments, political commitment, and coordination and should therefore be considered a critical component of the CAADP Post-Malabo Agenda.**

The report reviews drivers that have shaped agro-industrialization patterns in Africa and potential game-changers that could influence the sector in the future. Africa's agro-industrial development patterns have been shaped by a number of drivers, including strong political support for industrialization; a large and entrepreneurial youth population; rising demand for value-added foods; increasing, albeit still limited, access to reliable energy resources; an emerging agro-based incubation and acceleration ecosystem; and recent initiatives to support the development of agro-parks and agribusiness incubation centers across the continent. In addition, several policy and development initiatives are emerging as potential game-changers that could affect the future path of agro-industrial development: the launch of the African Continental Free Trade Area (AfCFTA), the Common African Agro-Parks (CAAPs) program, and the rise of food safety and quality regulations as well as sustainability requirements.

Given the opportunities and challenges represented by these drivers and policy initiatives, **the report identifies 11 key priorities for policy efforts seeking to advance inclusive agro-industrialization:**

- **Accelerating agrifood system transformation for consistent supply of raw materials.** Promoting agricultural productivity growth and stronger linkages between food system actors is essential to enable agro-industrial growth by ensuring reliable access to raw materials.
- **Inclusion and incubation of women- and youth-led enterprises.** Upgrading skills, removing barriers to the equal participation of women and youth in agribusiness, and expanding social protection will increase equity and boost overall productivity.
- **Adopting enabling technologies and innovations.** Investments in research and skills development, as well as incubation and acceleration programs to develop new technologies, can increase access to technology.
- **Fostering land policy reform.** Land policies should support an enabling investment environment while also respecting communities' land rights and livelihoods.
- **Promoting intra-African trade in agricultural goods and services and Regional and Continental Agricultural Value Chains (RAVCs).** Boosting intra-regional trade and strengthening RAVCs can increase efficiency and value-added opportunities.
- **Integration of small-scale producers in value chains and regional markets.** Building linkages between smallholders and other value chain actors benefits farmers and enables agro-industrial development.
- **Supporting partnerships and building the incubation ecosystem.** Partnerships with financial and research institutions and the private sector can help ensure access to resources, technology, and information.
- **Innovative financing and risk management.** It is essential to increase public and private investments and innovative instruments to mobilize financing for producers.
- **Fostering energy and infrastructure services.** Expanded infrastructure and efficient, reliable, and sustainable energy sources are vital for continued agro-industrialization.
- **Enabling policy environment.** Agro-industrialization requires a conducive enabling environment facilitated by supportive policies and regulatory measures.
- **Engaging the private sector.** Collaborative cross-sectoral relationships and inclusive accountability platforms will help ensure that firms' voices are heard.

Following from these priorities, the report proposes key goals and indicators to assess progress on promoting inclusive and sustainable agro-industrialization. Given the huge potential of Africa's agro-industries to contribute substantially to poverty reduction, agrifood systems, and economic transformation, the sector should feature prominently in the continent's development ambitions, including the CAADP Post-Malabo Agenda.

1-Scope and Rationale

The focus of the present thematic area examined by TWG5 is on inclusive agro-industrialization as a potent driver of broad-based economic growth, structural transformation, employment and wealth creation, and shared prosperity. This is justified by the huge untapped potential of agro-industry to sustainably transform agrifood systems, which are currently not being addressed by any of the other 12 TWGs. While inclusivity and equality – the focus of Malabo Declaration Commitment 4 – are the sole and prime focus of the current TWG9, TWG5 recognizes the importance of inclusive agro-industrialization, particularly as it relates to youth- and women-led enterprises and SMEs and their respective contributions to inclusive agrifood transformation. This report will shed light on key drivers, including dynamics of growth and performance, constraints, challenges (institutional, technological, financial, and managerial), opportunities, and policy options for strengthening the performance and competitiveness of the domestic agro-processing sector with a view toward enhancing its contribution to inclusive and sustainable food systems transformation.

1.1. Role of inclusive and sustainable agro-industrialization in agrifood systems transformation

FAO defines agro-industrialization as a broad concept that refers to the establishment of linkages between enterprises and supply chains for developing, transforming, and distributing specific inputs and products in the agricultural sector (FAO 2013). The development of inclusive and sustainable agro-industries in Africa is recognized in the CAADP Pillar 2 as a pathway to increased economic growth and food security in the continent. This was endorsed by Heads of State and Government at the Abuja High-Level Conference on the Development of Agribusiness and Agro-Industries in Africa (HLCD-3A) in 2010.[2] However, the continent continues to experience high levels of food and nutrition insecurity and high food import dependency, driven by persistent low agricultural productivity, weaknesses in the enabling environment, high post-harvest losses, and low value-addition. According to the evidence at hand, agro-industry can transform the agricultural sector by promoting technological innovation and technology diffusion, creating off-farm employment opportunities, reducing post-harvest losses,[3] increasing price stability, facilitating value addition and exports of finished products, and shifting economic resources to higher productivity sectors, giving rise to economic transformation. Inclusive industrialization is key to addressing barriers that limit the capacity of women and youth to generate incomes and build assets from agriculture.

Inclusive and sustainable agro-industrialization is central to achieving Africa's ambition to significantly reduce poverty. Agro-industries enable a shift from a fragmented and supply-driven agricultural sector to one that is organized, demand-led, and quality-oriented; they are at the center of the transformation of food systems. Inclusive and sustainable agro-industrialization also addresses barriers that limit the capacity of women and youth to generate incomes and build assets from agriculture (UNIDO 2019). With demand growing in urban areas for higher-value food products, the agrifood processing sector is vital in bridging the gap between smallholder farmers and urban consumers. For example, in Senegal, the emergence of ready-to-cook and ready-to-eat millet products has allowed Senegalese millet farmers to increasingly penetrate urban markets (Badiane et al. 2022). Similarly, in Zambia, the ability to sell soya beans to wholesalers and processing SMEs has been associated with higher incomes for smallholders (Nuhu et al. 2021). Developing domestic agro-industrial capacity can reduce the continent's high dependency on imported processed food.

A significant share of agrifood processing firms are SMEs, often in the informal sector. They account for a large share of employment and operate under constraints that limit their competitiveness and profitability (Badiane et al. 2022; Dolislager et al. 2021). Efforts to help these firms innovate, increase productivity, and grow their capacity could significantly increase their contribution to employment and income generation. Increasing agro-industry capacity will thus create a double dividend for poverty reduction by (1) enabling income growth in rural areas by connecting farmers with markets and (2) boosting the income generation potential of agro-industrial enterprises.

2 The delegates endorsed the African Agribusiness and Agro-Industries Development Initiative (3ADI).

3 A meta-analysis of post-harvest losses (PHL) carried out by Affognon et al. (2015) found that post-harvest losses in cereals reach as high as 26-27 percent, but could be reduced to 5-6 percent through interventions at the storage, handling, processing, and other stages (see Affognon, H., C. Mutungi, P. Sanginga and C. Borgmeister. 2015. "Unpacking postharvest losses in Sub-Saharan Africa: a meta-analysis." *World Development*, 66). While few studies have carried out quantitative estimates of potential reduction on post-harvest losses associated with processing specifically, processing is thought to offer important opportunities to reduce losses and increase shelf-life of foods.

Agro-industrial development also plays an important role in improving access to nutritious, high-quality, and safe foods on the continent. MSMEs are thought to supply at least 80 percent of processed and semi-processed food on local markets (IFPRI 2019), making them central to food security in Africa (Reardon et al. 2021b). Research suggests that MSMEs in the midstream and downstream of agricultural value chains, in particular, have an effect on food prices and quality and can contribute significantly to increased demand for and supply of safe food (van Campenhout et al. 2021). The expansion of agro-industry has the potential to increase the supply of and access to safe and nutritious foods and has the added nutritional benefit of providing opportunities for small- or large-scale food fortification: for example, fortification of wheat flour with iron in Morocco was associated with reductions in anemia (Wirth et al. 2012), and in Uganda, multisectoral food fortification was found to be a cost-effective means to reduce micronutrient deficiencies (WHO 2013). However, rising consumption of processed food can also foster overweight, obesity, and related non-communicable diseases, in particular, ultra-processed foods with high levels of sugar, salt, and fat. Agro-industrial policies and investments therefore need to be targeted to reap the benefits while minimizing the risks.

A further benefit of the rise in agro-industry and increased availability of processed food is the decreased time burden, particularly for women, associated with home processing of food. Reardon et al. (2021a) show that rising opportunity costs of time for both women and men associated with increased employment off the farm and out of the home have helped to drive demand for processed food since as early as the 1990s.

1.2. Agro-industrialization: A key pillar in the CAADP Post-Malabo Agenda

The development of a robust agro-industrial sector[4] is critical to long-term inclusive and sustainable economic growth. The vast majority of higher-income countries passed through an industrialization phase, starting with agro-industries. Manufacturing is important for technology diffusion and skills development, pushing up productivity and wages. Commodity-based industrialization, such as agro-industries, can be an engine of growth, productive jobs, and economic diversification that can catalyze the structural transformation of Africa's economies. Structural change is the shift of labor from lower productivity sectors to higher productivity sectors. In this case, the shift from agriculture to agro-industries is the bridge between agriculture and industries. Such a shift will contribute to rapid and resilient growth rates with less volatility, thus sustaining the economy in the long run (UNIDO 2016).

The Post-Malabo Agenda, therefore, should seek to catalyze structural transformation driven by a robust agro-industrial manufacturing sector that adds value to primary products for domestic and international markets. Such transformation will be underpinned by agricultural productivity increases that lead to income growth across a broad spectrum of people, further leading to demand for locally produced goods and services (African Development Bank 2015). African economies, with a majority of their labor employed in agriculture, can potentially trigger this demand effect by increasing productivity and orientating agriculture more commercially. Finally, successful agricultural development leads to food self-sufficiency and drives food prices down. This outcome contributes to lower real product wages in non-agricultural sectors, making these sectors more attractive for further investment.

Given its current persistent underperformance in Africa and its massive potential to contribute to poverty reduction, agrifood systems, and economic transformation, agro-industrialization should be prominently featured as a key pillar in the CAADP Post-Malabo Agenda. Its inclusion would reflect growing recognition of its key role in meeting Africa's development goals. Agro-industrialization has been highlighted as a key game changer in the African Common Position to the United Nations Food Systems Summit (UNFSS). Moreover, most regional economic communities (RECs) have developed an Industrialization Strategy and Roadmap (2015-2063) to foster deepened regional integration and cooperation through beneficiation and value addition to engender economic and technological transformation. As such, agro-industry has been recognized as a priority area. In addition, the Common African Agro-Parks (CAAPs) initiative has been adopted as a Flagship Program for the next 10 years of the implementation of the AU Agenda 2063. Fostering inclusive agro-industrialization that promotes value addition and job creation also aligns with the goals of the African Continental Free Trade Area (AfCFTA) and Agenda 2063. As promoting inclusive agro-industrialization requires political commitment and

4 Agro-industries are pivotal in transforming economies by: adding value to agricultural products; diversifying away from dependence on raw agricultural commodities and global price fluctuations; generating decent and productive off-farm employment; fostering forward and backward linkages across all sectors of the economy; promoting rural development through infrastructure; enhancing food security; increasing export earnings; and fostering inclusive and sustainable growth.

coordinated efforts, its inclusion as an integral component of the Post-Malabo Agenda will facilitate cooperative action to enhance the contribution of agro-industry to achieving Africa's goals.

This paper sheds light on key drivers, constraints, challenges, opportunities, and policy priorities for boosting the performance and competitiveness of Africa's domestic agro-industrial sector to induce structural transformation.

2-Drivers of Change and Progress

Africa has already witnessed a significant move towards agro-industrialization, and this has been driven by a number of factors. The following section attempts to provide an overview of drivers contributing to shaping and nourishing agro-industry in Africa. The overview includes assessments of contributions, current statuses, and Africa's position vis-a-vis each driver.

2.1. Political momentum for industrialization

The post-colonization period saw Africa intensively adopting import substitution industrialization policies to decrease its dependency on imported goods and encourage local manufacturing. These policies delivered promising initial results, but by the mid-1970s, many industries started to decline for a number of reasons, including (i) the import substitution manufacturing industries were heavily dependent on imported capital and intermediate goods and (ii) the bias in favor of industry had led to a relative neglect of agriculture and rising food imports (African Development Bank 2017). In response, between 1985 and 2000, more than 30 African countries undertook structural adjustment programs on the advice of international financial institutions. Structural adjustment had little impact on development on the continent. Africa's share of manufacturing in GDP in 2000 was less than half of the average for all developing countries, and manufacturing growth continued to be uneven and relatively low during the 2000s and 2010s, albeit with more robust growth in some countries and subsectors (African Development Bank 2017). More recently, medium- and high-technology industries recovered faster post-COVID-19 and have continued expanding dynamically, while growth in lower-technology industries has stalled. Automation, technological advances, and attempts to increase the resilience of supply chains in the wake of COVID-19 have led to the reshoring of manufacturing and shortened value chains. A decoupling trend is evident between manufacturing, production, and employment (UNIDO 2023).

Industrialization on the continent is underpinned by strong political will. In taking appropriate steps towards achieving the goals of the African Union (AU) Agenda 2063[5] and the Agenda 2030, the United Nations General Assembly proclaimed the period 2016-2025 as the Third Industrial Development Decade for Africa through resolution A/RES/70/293 passed on July 25, 2016.[6] The AU Commission (AUC) Agenda 2063 provides a strategic framework for the socio-economic transformation of Africa, emphasizing industrialization as a key driver for economic growth and development. The AfCFTA, through its single market for goods and services, is expected to spur industrialization on the continent. The AUC's Programme for Infrastructure Development focuses on roads, water, and energy, which are critical to developing a robust agro-industrial sector.

Commodity-based agro-industrialization is linked closely to industrialization, benefiting from the same enabling frameworks for industrial transformation, including infrastructure, innovation and technology transfer, industrial financing, industrial knowledge and skills, and support from public and private sector institutions that regulate and advocate industrial development.

2.2. Youth dividend and women's empowerment

Africa is the world's youngest continent, with a median age of 19 (UN DESA 2024). This large population of young people represents important opportunities for future productivity and output growth. However, for the 10-12 million youth that enter the job market every year, only three million formal jobs are created. The number of young Africans having completed an upper-secondary or tertiary education will more than double between 2020 and 2040, from 103 million to 240 million. Moreover, youth make up a significant proportion of vulnerable workers (those who are self-employed or contributing to family labor), and these workers account for a large share of the workforce in agriculture, forestry, fishing, and wholesale and retail trade (AUC/OECD 2024). There are high rates of unemployment and underemployment among young people, and this represents a missed opportunity to advance inclusive economic growth. Analysis suggests that reducing youth unemployment rates to those of adult workers could increase Africa's GDP by 10 to 20 percent. Additionally, youth unemployment presents significant risks, with unemployed youth more susceptible to participation in political violence (African Development Bank 2016).

5 https://au.int/en/agenda2063/overview
6 https://www.unido.org/IDDA3

Data on the current contribution of youth to agricultural and agro-industrial development is lacking, but youth are thought to play an important role, with potential for greater participation. According to the World Bank, a demographic shift of youth back to agriculture in Africa could generate an 11-15 percent increase in gross domestic product. However, if young people are to be drawn to agriculture, they will need to have a positive perception of the sector and see the potential to use ICT and digital technologies (Botha 2022). Young people tend to have an entrepreneurial mindset and an openness to technology. For example, a 2021 survey of youth aged 15–24 in 15 African countries found that 78 percent of respondents planned to start a business in the next five years, with a majority planning to use technology to support their business (Ichikowitz Family Foundation 2022). Young people need to be equipped to advance the continent's productive and sustainable transformation, and policymakers can do this by prioritizing skills development in the fields of renewable energy, the digital economy, mining, and agriculture (AUC/OECD 2024).

According to a recent FAO report, 66 percent of women's employment in Africa is in agrifood systems, compared with 60 percent of men's. However, women's roles tend to be marginalized, and their working conditions are likely to be worse than those of men: irregular, informal, part-time, low-skilled, or labor-intensive (FAO 2023). The Malabo Montpellier Panel (2023) also notes that Africa's food systems are failing to serve its women, affording them unequal access to land, inputs, technology and information, finance, and employment opportunities. At the agricultural production level, empirical evidence shows significant gender productivity gaps in many African countries; data on gender gaps at the processing level are more scarce, but the overall productivity of the processing sector could be increased by efforts to close gender disparities in access to productive resources (David 2021). African women are highly entrepreneurial, with entrepreneurship rates around twice those of women in other regions (AfDB, OECD, and UNDP 2017). While sectoral data are lacking, women are thought to constitute a large share of small and often informal agro-processing entrepreneurs (Yinusa and Mabaya 2019). Women-owned firms face the same challenges that affect Africa's private sector as a whole, as well as additional disadvantages. A study on African women entrepreneurs across sectors showed that women-owned firms had 34 percent lower profits than male-owned firms on average, as well as lower capital investments, fewer employees, lower sales, and lower value-added (Campos et al. 2019).

Enhancing the participation, incubation, and acceleration of youth and women in agricultural value chains in general and agro-industry, in particular, has been recognized in continental strategies as a key way to promote inclusive economic development. However, success has been mixed, and in many cases, data is lacking to track the achievements of these initiatives. The Malabo Declaration includes commitments to create job opportunities for 30 percent of youth in agricultural value chains and to support and facilitate preferential entry and participation for women and youth in gainful and attractive agri-business opportunities. However, the recent Biennial Review (BR) shows that the continent is off-track regarding both commitments. The Malabo Montpellier Panel reports on women (2023) and on youth (2024) provide comprehensive summaries of relevant continental policy frameworks and highlight successful strategies implemented by various countries in Africa for inclusive agrifood systems that resonate with agro-industrial development (Malabo Montpellier Panel 2023; 2024).

2.3. Rising population, middle class, and urbanization

Africa's urban population is increasing rapidly, with an annual population growth rate of 3.6 percent from 2015 to 2020 (UN DESA 2019). Africa is still the least urbanized of major world regions, with 43.5 percent of the continent's population living in urban areas as of 2020, compared with 56.2 percent for the world as a whole. Projections by the UN DESA Population Division (2018) suggest that Africa's urban population share will rise by 11.3 percent over the current decade, reaching 48.8 percent in 2030 and 58.9 by 2050. This is the fastest rate of increase in the world.

Economic growth over the past two decades has helped drive a decrease in poverty levels from 44.1 percent in 2000 to 30.0 percent in 2020, giving rise to a small but growing middle class with greater disposable income. Ncube, Lufumpa, and Kayizzi-Mugwerwa (2011) assessed the middle class to constitute 27 percent of the continent's population as of 2010; van Blerk (2018) found that around 60 percent of urban residents in 10 surveyed cities belonged to the middle class; and Signé (2020) projected that the middle and upper class will constitute 43 percent of the continent's population by 2030.

Increased urbanization and growing affluence have driven changes in the composition of diets, leading to significantly increased demand for processed and higher-value food products. In addition to a shift away from staples and toward perishable and nutrient-dense foods, the time pressures associated with urban lifestyles have led to increased demand for convenient processed foods (Hollinger and Staatz 2015). Dietary changes associated with rising incomes and urbanization are projected to continue. Tschirley et al. (2015) project that the share of processed foods in food expenditures in Eastern and Southern African countries will increase from 70 to 79 percent by 2040 (Tschirley et al. 2015). Major demand-side drivers of agro-industrialization are expected to continue to spur growth in the sector. At the same time, there is also an untapped opportunity to boost the demand for healthy processed and ready-to-eat meals.

A Harmonized Implementation Framework for the New Urban Agenda in Africa was developed in 2020 by the African Union, UN-Habitat, and UNECA to define objectives and strategic actions to achieve the continent's ambitions for sustainable urbanization and enhance the contribution of urban areas to overall development. While the Framework does not address agro-industry specifically, it calls for the promotion of inclusive and sustainable industrialization as well as efforts to strengthen rural-urban trade linkages and increase smallholders' participation in value chains and markets (UN ECA, African Union, and UN-Habitat 2020). If smallholders are to gain better access to urban markets, it will be necessary to boost the agro-processing sector's capacity to meet urban demand (Badiane et al. 2022).

2.4. Enhanced energy access

The lack of reliable and affordable energy is a major constraint to the growth and development of agro-industry, particularly in rural areas. Agro-industry in Africa relies on a variety of energy sources, including traditional biomass and fossil fuels. Access to electricity is limited, though it is increasingly being used for irrigation and agro-processing.

Electrification rates in Africa have been steadily increasing, albeit slower than in other continents. The percentage of the population with access to electricity increased from as little as 32 percent to about 56 percent between 2000 and 2021 (IEA, IRENA, UNSD, World Bank, WHO 2023). This progress is largely attributed to an expansion of grid infrastructure, particularly in urban areas. However, rural communities, often lacking access to reliable grid electricity, rely heavily on traditional and often inefficient energy sources, such as firewood and kerosene. The growth of off-grid solutions, including solar home systems and mini-grids, has proven crucial in bridging this gap and providing electricity to underserved populations.

Renewable energy is gaining momentum in Africa, driven by abundant natural resources, declining costs of renewable energy technologies, and a growing awareness of the need to combat climate change. Solar energy is particularly prominent, with solar power plants emerging across the continent. Other renewable energy sources, such as wind, geothermal, hydropower, and bioenergy, are also witnessing increasing investment with the potential to contribute significantly to agro-industry.

The adoption of renewable energy has numerous benefits for Africa, including reducing reliance on fossil fuels, promoting energy security, creating jobs, and stimulating economic growth. However, the continent's vast potential for renewable energy needs to be harnessed responsibly, considering environmental impacts and ensuring equitable access to energy benefits.

Despite significant progress, the lack of reliable and affordable energy continues to pose a major challenge for agro-industry in Africa. This challenge stems from several factors, including high upfront costs for infrastructure development, limited access to financing for energy projects, and lack of a robust regulatory framework for off-grid energy solutions.

Addressing these challenges requires a multifaceted approach involving governments, private sector investors, development agencies, and local communities. Collaboration and knowledge sharing are crucial to overcoming these obstacles and achieving universal African energy access. Energy plays a critical role in Africa's agro-industry growth and development. By addressing the challenges of accessing reliable and affordable energy, Africa can unlock the full potential of its agro-industry sector and achieve its sustainable development goals.

2.5. Development of agro-parks and agribusiness incubation centers

Agribusiness development and incubation are driving forces for agricultural transformation and catalysts for diversification, sustainability, profitability, and the development of links with non-agricultural sectors. Agricultural poles – also commonly referred to as agro-industrial parks – are an emerging trend in Africa's new generation of agricultural development strategies and agribusiness incubation models geared towards eradicating hunger and rural poverty. Agricultural poles are widely regarded as an effective way to help shift Africa's agriculture from subsistence farming to commercially oriented economic activity. They do this by strengthening agribusiness competitiveness, promoting regional value chain development, developing regional community-based incubation centers, and facilitating spatial inclusion. Established agro-industrial parks across Africa, equipped with facilities and technologies, have helped to expand the processing of agricultural produce into higher-value products (Picard et al. 2017). This not only increases the economic value of exports but also creates jobs and stimulates local economies. By transforming raw materials into finished or semi-finished goods, the development of agro-parks has helped African countries capture a greater share of the agricultural value chain, leading to increased revenues and enhanced economic resilience.

Growing recognition of the importance of agro-industrialization and the vitality of foreign investment has led more African countries to consider growth poles and corridors as an effective, equitable means to attract investment (private and foreign) to foster agricultural transformation, with agribusiness and agro-processing development as a catalyst. This has led to the emergence of about 36 agricultural growth poles and nine corridors over the past 20 years, covering at least 3.5 million hectares of land in 23 countries (Picard et al. 2017).

Despite growing interest by states, as well as regional and multilateral organizations, agro-poles in Africa have not expanded to a level that corresponds with their perceived potential. Moreover, stakeholders have raised concerns about their design, implementation, and operationalization, as well as the business climate in existing agro-poles. Concerns have also been raised about possible impacts on food security, employment conditions, and land tenure security for local people. There is also an urgent need to assess whether existing agro-poles have managed to achieve their intended objectives, including improving competitiveness and the modernization of associated food industries, improving linkages to agricultural and other economic sectors, and attracting foreign and domestic capital into the food industry and delivering meaningful benefits to local people.

For the new wave of agro-parks to be effective, it is important that vigorous policies, regulatory frameworks, and practices are put in place to ensure that investment leads to sustainable development outcomes, including minimizing unintended consequences for smallholder farmers, male and female, and the environment. It is also critical to have appropriate legal frameworks and processes that ensure that land acquisition processes reduce the potential for conflict with local people and ensure that compensation for acquired lands is paid in a timely and just manner.

Recognizing the importance of agro-parks in transforming Africa's agriculture, in November 2023, the AU-STC endorsed the Guidelines for Agro-poles Development in Africa as an essential component of the Common African Agro-Parks (CAAPs) program.

3-Future Outlook

3.1. Game Changers

Looking towards the next 10 years, four key broad policy developments could be identified as game-changers with the potential to influence the landscape and revitalize Africa's agro-industry sector significantly. These African and global developments have the potential to spur the development of agro-industry but may also present emerging challenges that Africa's agro-industrial sector will need to overcome to increase market access. The following sub-sections highlight these three game-changers, underscoring the opportunities they offer, challenges that may constrain full exploitation, and measures necessary for fully harnessing the offered opportunities toward accelerating progress in the agro-industry sector in Africa.

3.1.1. AfCFTA

The African Continental Free Trade Area (AfCFTA) agreement was adopted and opened for signature on March 21, 2018, in Kigali, Rwanda, to enter into force on January 1, 2021, following a successful, though lengthy, negotiation process considering the complexity of Africa's trade landscape. The AfCFTA is one of the largest free trade areas in the world since the formation of the World Trade Organization (WTO). The agreement is highly regarded as a tool to drive growth and innovation for Africa and create opportunities for sustainable development toward the realization of the AU Agenda 2063 and the global 2030 Agenda for Sustainable Development. The free trade agreement is also widely considered one of the instruments for continental integration in line with the objectives of the Abuja Treaty.

Africa, however, is off-track in meeting the targets related to boosting intra-African agricultural trade under the Malabo Declaration of 2014. Only two countries are on track to achieve the goal of tripling agricultural trade destined for African countries (AUC and AUDA-NEPAD 2024). Only one country has met the target relating to trade facilitation through the creation of conducive policies and institutional conditions.

The AfCFTA is expected to significantly boost intra-African agricultural trade, offering a pathway to achieving a number of targets that have been missed under the Malabo Declaration. Upon full implementation, the agreement will support AU Member States to address tariff and non-tariff barriers. It is worth indicating here that a key goal of AfCFTA is enhancing economic diversification and industrialization. To this effect, intra-African trade in agricultural commodities and products is expected to increase by about US$59 billion by 2045 upon full implementation of AfCFTA. This increase represents 82 percent, 31 percent, 63 percent, and 60 percent growth in final non-processed agrifood, intermediate non-processed agrifoods, final processed agrifoods, and intermediate processed agrifoods, respectively. Interestingly, the largest expected increases are associated with processed agrifoods, indicating that AfCFTA is an effective enabler for enhancing agro-processing in Africa (Mitaritonni et al. 2024).

AfCFTA is, unfortunately, not yet operational, as the negotiation on tariff schedules and rules of origin is not yet complete. As such, a Free Trade Area (FTA) cannot yet become operational, and preferential trade under AfCFTA rules has not yet commenced. The AfCFTA Secretariat launched partial trade under AfCFTA preferences in 2022 through the Guided Trade Initiative (GTI) to kick-start the agreement. The aim was to test the operational, institutional, legal, and trade policy environment under the AfCFTA, test the private sector's readiness, and send a reassuring message to African economic operators and firms about the AfCFTA. In the first year, eight African countries started trading within the context of the GTI. Building on the success of this first phase of the GTI, a second phase was set to commence in October 2024, including about 32 countries that have met the minimum requirements for commencing trade under the Agreement. Expanded GTI operation is certainly a move in the right direction toward realizing the potential of AfCFTA to increase trade in agro-processed products and stimulate agro-industry.

3.1.2. Common African Agro-Parks (CAAPs)

The Common African Agro-Parks (CAAPs) program is designed to transform Africa's agro-industrial landscape through the establishment of transboundary agro-industrial parks. These parks provide a structured approach to

enhancing value addition, improving market linkages, boosting regional integration, and stimulating economic growth. CAAPs represent a multifaceted strategy to promote agro-industry, encompassing various elements that all contribute to the creation of a robust and sustainable agricultural sector. The parks are expected to help African countries capture a greater share of the agricultural value chain, leading to increased revenues and enhanced economic resilience.

CAAPs have the potential to play a critical role in improving market linkages by providing a centralized location for processing, storage, and distribution through improved infrastructure. This will enable farmers, agro-processors, and allied industries to access local, regional, and international markets more effectively. This enhanced connectivity can not only boost the competitiveness of African agricultural products but also ensure that smallholder farmers and agro-processors have access to a wider customer base, thereby increasing their incomes and economic stability.

The CAAPs initiative has the potential to effectively enable the growth of agro-industry in Africa. By addressing key challenges such as resource underutilization, poor cross-country market linkages, and lack of inclusivity, CAAPs can provide a comprehensive and sustainable approach to transforming Africa's agricultural sector. Through value addition, market connectivity, job creation, and sustainable practices, the CAAPs initiative is expected to contribute significantly to African nations' economic development and social well-being. The AU has endorsed the CAAPs initiative as a flagship program, so it is now well-positioned to drive economic transformation and regional integration and support the broader goals of the AfCFTA, ensuring a prosperous and sustainable future for Africa.

3.1.3. Food safety and quality requirements

Global food safety and quality requirements are a key dimension of agro-industrialization, ensuring that food products are safe for consumption and meet certain quality standards, thus helping industries reduce losses and open up trade opportunities. For example, the Codex Alimentarius Commission, established by the FAO and WHO, develops harmonized international food standards, guidelines, and codes of practice to protect consumer health and promote fair practices in the food trade, while the ISO 22000 standard defines the requirements of a food safety management system covering all organizations in the food chain from "farm to fork."

For the agro-industrial sector to meet quality requirements and achieve market access, the first step is to set up a Quality Infrastructure System – defined by UNIDO (2018) as a system comprising the organizations (public and private) together with the policies, relevant legal and regulatory framework, and practices needed to support and enhance the quality, safety and environmental soundness of goods, services, and processes. This quality infrastructure is essential for the effective operation of domestic markets, and it offers international recognition that enables access to foreign markets. It is therefore a key element in promoting and sustaining economic development, as well as environmental and social well-being. It relies on three core elements: metrology, standardization, and accreditation. These elements are supported by two key services: calibration (part of the metrology system) and inspection, testing, and certification (together referred to as conformity assessment) (Kellermann 2019).

Securing quality infrastructure systems in Africa should contribute to enhancing trade competitiveness in global markets, promote efficient use of natural and human resources, and, thus, ensure positive food safety, health, environmental, and climate change outcomes.

3.1.4. Sustainability requirements

Sustainability standards address the economic, social, and environmental dimensions of agro-industrialization. They contribute to meeting increased demand without putting additional pressure on fragile ecosystems. Sustainability requirements aim to guide agricultural production, processing, and trading practices to better address a variety of sustainability issues. They include both mandatory and voluntary requirements and can take different forms, including national regulations, international criteria, compliance and certification systems, monitoring and traceability mechanisms, and technical innovation (UNEP and ITC 2023). This market access risk is more important than ever with the growing number of mandatory due diligence requirements for businesses operating in the agribusiness sector, where requirements aim to enhance transparency in how businesses operate. While agribusiness companies can leverage voluntary sustainability standards to access new markets, access to markets remains a key concern for many African exporters.

A number of sustainability requirements are relevant to securing gains already realized on the continent in agro-industrialization and safeguarding the continued growth of the sector. Some of the regulatory requirements for business due diligence on sustainability include but are not limited to: the EU Timber Regulation (2010)[7]; the EU regulation on deforestation-free products (2023)[8]; the UK Modern Slavery Act (2015)[9]; the French law on duty of care (2017)[10]; the German supply chain due diligence Act (2021)[11]; and the US slavery-free business certification Act[12].

Non-mandatory measures are often created by industry consortia, NGOs, or multistakeholder initiatives and habitually go beyond minimum sets of criteria mandated by regulations. A number of instruments exist, including certification-based standards (e.g., Fairtrade International Small Producer Standards; Eco Mark Africa), audit protocols (e.g., GLOBALG.A.P Crops), codes of conduct (e.g., Fair Labor Association Agriculture Code of Conduct), benchmarking tools (e.g., FEFAC Soy Benchmarking tool), environmental, social and governance (ESG) rating programs (e.g., Sustainalytics), reporting initiatives (e.g. Global Reporting Initiative), guidance and good practices (e.g. SAFA-Sustainability Assessment of Food and Agriculture Systems), and due diligence frameworks (e.g. OECD-FAO Guidance for Responsible Agricultural Supply Chains), among others.

Eco Mark Africa, legally registered under the African Organisation for Standardisation (ARSO), currently covers coffee, fish, forestry, and citrus products. Eco Mark Africa has established a recognition system for sustainability standards, with a set of threshold criteria including ecological, social, and climate-relevant requirements and credible implementation mechanisms. Adherence to Eco Mark Africa is an effective way for African countries to signal compliance with sustainability standards.

Failure to adhere to regulatory requirements and non-mandatory standards can lead to restricted access to export markets, reduced foreign direct investment, and issues such as environmental degradation. Member States therefore need to enhance their conformity assessment services and mutual recognition arrangements in order to (i) improve the credibility of intra-regional trade and (ii) expedite cross-border commodity trade.

3.2. Core priorities

A number of core priorities have been identified as shaping agro-industry in Africa in the next 10 years. It is imperative that these priorities are considered for due focus within the CAADP Post-Malabo Agenda. These core priorities have the potential to greatly enhance the competitiveness and inclusiveness of domestic agro-processing sectors.

3.2.1. Accelerating African agrifood system transformation for consistent supply of raw materials (quantity and quality)

Agrifood systems in Africa are undergoing transformation, bringing numerous benefits such as expanded markets for small-scale farmers, rural development, enhanced resilience, poverty reduction, more job opportunities (including for women and youth), increased export earnings, agricultural innovation, and greater diversity of consumer choice. Food systems transformation is associated with productivity growth and the increasingly commercial orientation of producers, which can facilitate agro-industrialization growth. Agro-industrialization, in turn, contributes to greater value addition and income opportunities in food systems. However, recent crises such as the COVID-19 pandemic and the war in Ukraine have highlighted the fragility of agrifood systems and their critical role in ensuring food security and nutrition in Africa. Thus, urgent action is required for a more productive and sustainable agrifood system that contributes to better and more viable outcomes for people and the planet, leaving no one behind.

Food systems transformation is one of six transitions, or investment pathways, identified for enabling the effective delivery of sustainable, resilient, and innovative high-impact solutions to reach the SDGs by 2030.

7 https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32010R0995
8 https://environment.ec.europa.eu/topics/forests/deforestation/regulation-deforestation-free-products_en
9 https://www.gov.uk/government/collections/modern-slavery-bill#:~:text=Contents&text=The%20Modern%20Slavery%20Act%20will,on%20Thursday%2026%20March%202015
10 https://www.legifrance.gouv.fr/jorf/id/JORFTEXT000034290626/
11 https://www.bmas.de/EN/Europe-and-the-World/International/Supply-Chain-Act/supply-chain-act.html#:~:text=The%20Act%20on%20Corporate%20Due,rights%20in%20global%20supply%20chains
12 https://www.congress.gov/bill/117th-congress/senate-bill/3578#:~:text=Introduced%20in%20Senate%20(02%2F03%2F2022)&text=This%20bill%20requires%20businesses%20with,to%20the%20Department%20of%20Labor

The momentum generated by the UN Food Systems Summit (UNFSS) in 2021 and subsequently the UN Food Systems Summit +2 Stocktaking Moment (UNFSS+2) offers opportunities to advance agro-industrialization and sustainable development within a continental framework for a prosperous Africa. Agrifood systems in Africa face short- and long-term challenges and opportunities. The trends in key drivers, such as population dynamics, economic growth, and urbanization, signal the exacerbation of already urgent challenges, including endemic multidimensional poverty and food insecurity. Additionally, the low productivity of the agricultural sector in Africa compared to other regions, in combination with climate change, accelerates the overuse and degradation of natural resources, which, in turn, feeds conflict and political violence. Conflicts, political instability, and natural disasters are among the factors that increase the vulnerability of communities to the extent of provoking massive forcible internal displacement and international migration. Analysis of these driving forces should inform priority areas for interventions and strategic options toward sustainable agrifood systems.

An agro-industrialization drive provides an effective means to enhance value addition in agricultural value chains, fueling agricultural productivity, offering employment opportunities, improving incomes, and contributing to poverty reduction. Africa's fishery sector offers an example of the linkages between production and agro-processing sectors and their potential to contribute more fully to food systems transformation. The fisheries sector is estimated to represent almost 1.3 percent of Africa's GDP, with 12.3 million people employed, accounting for 2.1 percent of Africa's working-age population. Nearly half of these are fishers, 42.4 percent are processors, and 7.5 percent are engaged in aquaculture. Women account for about 27.3 percent of the total workforce in fisheries and aquaculture, and they are directly involved in fishing (3.6 percent), processing (58 percent), and aquaculture (4 percent) (de Graaf and Garibaldi 2014). With low demand for water and energy, aquatic food systems offer opportunities for African countries to make their food systems more inclusive and efficient, delivering healthier and sustainable diets. However, there is a need for more evidence to guide and support Member States to ensure (1) good governance and production, (2) fishery sustainability, (3) waste reduction, (4) minimization of impacts on the natural environment, and (5) mitigation of potential impacts of aquatic foods on individual and population health (WorldFish 2020).

Increased agricultural productivity associated with agrifood system transformation and greater interconnectedness among agrifood system components will boost agro-industrialization. Agro-industries require consistent access to high-quality raw materials at pre-determined quantities and quality. Strong links are needed between value chain actors (FAO 2017). Markets send signals to agricultural producers on quality requirements, while extension services support adherence, supplemented by access to finance and agricultural inputs. Production is strengthened by irrigation, mechanization, information technologies, and common infrastructure for post-harvest management to facilitate the aggregation and storage of raw produce before moving downstream to agro-industrial firms. Investment in roads, canals, railways, airports, and ports can support consistent access to quality raw materials. For example, investment in road and rail transportation reduces the cost and travel time of agricultural raw materials from farms to factories for processing and of final products from factories to markets (FAO 2017).

3.2.2. Inclusion of women and youth and improved inequality

According to the United Nations, persistent inequality (based on income, sex, age, disability, sexual orientation, race, class, ethnicity, religion, and opportunity) across the world threatens long-term social and economic development, impedes poverty reduction and destroys people's sense of fulfillment and self-worth (UN 2023). Africa south of the Sahara is marked by significant inequality, with 10 of the 19 most unequal countries globally located in this region. Women and youth are highly entrepreneurial and account for a large share of small-scale agro-industry but face particular inequality-based constraints that limit their ability to grow their businesses and meet their potential, including access to finance and capital, risks from corruption and harassment, gender gaps in education and skills development opportunities, and social norms that discourage business growth (International Trade Centre 2024; Ichikowitz Family Foundation 2022; Campos et al. 2019).

Industrialization may potentially be associated with a surge in wealth inequality because the owners of capital may substitute human labor and drive down wages, increasing wage inequality, or wealth inequality may increase as those capitalists owning new technologies make extraordinary profits (Albers, Kersting, and Stieglitz 2023).

Achieving the ambitious goal of lifting people out of extreme poverty by 2030 is contingent upon reducing inequality (UN 2023). High levels of inequality currently hinder further poverty reduction, as economic growth has not been equally distributed nor equitably benefited the most disadvantaged populations. To effectively combat poverty, it is crucial to address income disparities through redistribution while also fostering economic growth (World Bank 2020).

To promote inclusive agro-industrialization, the Post-Malabo priorities should include increasing the access of women, youth, and other disadvantaged groups to affordable loans and financial services, training and skills development in entrepreneurial and business management, as well as addressing discriminatory law and regulations (Campos et al. 2019; David 2021). Furthermore, efforts should be made to ensure adequate pay, increase formal employment opportunities, and improve access to social protection and safe working conditions for agro-industrial workers. Social protection, in particular, is a key policy tool to address poverty and vulnerability, promote decent work and inclusive economic growth, and increase resilience to shocks.

3.2.3. Adopting enabling technologies and innovations

The Fourth Industrial Revolution is driving technological innovations across many sectors. Still, agriculture and food systems around the world lag significantly behind when it comes to harnessing the power of technology and making it widely accessible, restricting the level of investment in the sector. According to the World Economic Forum (2018) only US$14 billion had been garnered in investments in 1,000 food systems-focused start-ups since 2010, while the healthcare sector attracted US$145 billion in investment over the same period.

However, technological innovations in agro-industries have still placed Africa in a unique position to transform agri-food systems and combat hunger and malnutrition. Digital technologies can accelerate innovation, lower the cost of scaling-up solutions, increase transparency, and promote informed, evidence-based transformation of the agriculture and agribusiness sector. Examples include automated processing, precision sorting, food safety, quality applications to permit remote auditing and training, data-driven food regulatory systems, and renewable energies for small-scale infrastructure, such as cold storage at farm and collection site levels.

Modernization of the agro-industrial sector requires investments in infrastructure, technical capacities, and human resources. Investments in the development of technical skills of workers are needed, but also in soft skills, such as leadership, problem-solving and teamwork, which are becoming increasingly important with the adoption of more sophisticated automation technologies.

In addition, agro-industrial firms rely primarily on imported processing machinery. While domestic machinery manufacturers have been expanding, their growth has been hampered by factors related to finance, human resources, utilities, raw materials, technology, production equipment, and the regulatory environment (Daum et al. 2022). Experiences in other parts of the world have shown that vibrant domestic markets are essential to promoting mechanization. A conducive policy and business environment is needed to support domestic machinery manufacturers to develop locally adapted technologies while creating jobs.

With high demand for mechanization in Africa, the manufacturing of agricultural machinery on the continent can contribute to agro-industrialization. However, harnessing this potential in today's interconnected markets will require African companies to compete with (low-cost) imports from manufacturing powerhouses such as India and China (Daum et al. 2022).

Global competition in agro-industries is fierce, and African agro-industries will need to vigorously compete to stay in the market. The profitability of businesses is often highly dependent on the technologies applied. Most African SMEs will find it challenging to invest in R&D due to insufficient economies of scale. Access to information and research will be critical for the development and efficiency of these businesses. Promoting and expanding R&D in the agro-industrial sector can support the growth of this critical sector on the continent.

Effective enterprise support ecosystem services and interventions are essential to improving cottage industries and the capacity of MSMEs to adopt modern technological innovations (SAFIN and Nourishing Africa 2021). Agribusiness incubators and accelerators play an important role in supporting enterprise development and growth-oriented businesses. However, the incubation ecosystem in Africa remains underdeveloped. There is a need to establish incubation support programs to provide financial and technical support to help sustainability-oriented agribusiness incubators take them to maturity (FAO 2023). Achieving this will require key enablers,

including policy, investment, infrastructure, and the availability of complementary technologies. Every stakeholder can play a role in realizing this potential. Governments can deliver infrastructure and innovative policy, while MSMEs can collaborate to open new markets through sharing data and intellectual property. Investors and donors can provide growth capital and enable entrepreneurs. Systems leaders can help bring these actors together to bridge gaps, align on common objectives, and enable innovation. To consolidate and sustain gains made, continuous dialogue and collaboration should be prioritized in the Post-Malabo Agenda to understand the potential impacts of specific technologies and to harness them for positive effects.

To harness this potential of technological innovation, the Post-Malabo Agenda policies should include investing in knowledge and skills development, reinforcing public research related to the design and local adaptation of technologies, and reducing barriers hindering intra-industry trade, as well as strengthening facilities for machinery testing, certification, and standard setting.

3.2.4. Fostering land policy reform

A well-functioning land administration and governance system is a key public service needed to support agricultural transformation and agro-processing. Securing the access, use, and ownership rights of smallholder farmers, as well as agri-businesses of all sizes, to the land and property they use for production and processing is a critical component of a business-enabling environment for agriculture and agro-industry. Importantly, secured rights create positive incentives to invest in activities including soil and water conservation, tree planting and agro-forestry, and the development of real property, such as storage units, irrigation systems, and factories.

However, land administration and land governance systems across the continent continue to face important constraints related to limited capacity and political and budgetary support, with the result that, overall, African countries rank low on several property rights indexes (Gwartney et al. 2023, Property Rights Alliance 2023). In many countries, documentation of land rights has lagged. In some contexts, this increases risks and land losses for producers, renters, and other land users. As the World Bank indicated in its 2023 report *Land Policies for Resilient and Equitable Growth in Africa*: "In African countries for which data are available, less than 1 percent of agricultural land and at most 25 percent of urban land have an updated title. Moreover, at least 70 percent of those titles are solely in the name of a man, reducing women's entrepreneurship by limiting their ability to hold on to assets in case of widowhood or divorce." (Deininger and Goyal 2023, p. xi). In some places, progress has been made in promoting land tenure reforms (examples include Benin, Ethiopia, Liberia, Rwanda, and Sierra Leone); however, effective implementation of new laws and policies has often been challenging to achieve.

Recognizing that the AU Declaration on Land Issues and Challenges committed leaders to support land reform processes, strengthen land institutions, and ensure adequate budgetary support for improvements (with priority given to improving outcomes for women), CAADP's fourth BR report finds that continued, albeit slow, progress is being made and that approximately 36 percent of African farmers (many of whom are smallholders on customary lands) have secured rights to their land compared with 33 percent in 2016 (AUC and AUDA-NEPAD, p. 143). Women and youth continue to have problems with land rights and access to land, constraining their ability to fully and effectively contribute to inclusive agricultural transformation. The BR's recommendations on land are all useful. They should be supported in addition to efforts to promote and implement participatory land documentation processes and create more accessible land information systems in support of rural land markets and transactions.

Africa's development gap and relatively slow progress present attractive investment opportunities for developmental projects focused on building intra-regional transport networks, creating power generation solutions, expanding irrigation, revolutionizing manufacturing and agro-processing, and achieving environmentally responsible natural resource extraction. However, the chances of meeting this potential are hampered by fundamental challenges limiting the involvement of potential financiers. To successfully fund infrastructure development projects, financial investors need to identify, understand, and overcome these challenges, including land access, in accordance with best practice guidance (UN ECA 2014). These challenges include environmental, social, and governance (ESG) factors. However, given that land is a significant component in development projects, enhancing responsible access and use has the potential to create a conducive framework for private sector investment in these infrastructure sectors, respecting land rights and livelihoods of directly affected communities.

3.2.5. Promoting intra-African trade in agricultural goods and services and Regional and Continental Agricultural Value Chains (RAVCs)

The African Continental Free Trade Area (AfCFTA) agreement, which entered into force on January 1, 2021, is expected to tear down the borders inherited from Africa's colonial past and ensure full continental integration. The integrated market created by the AfCFTA should produce a conducive environment for efficiency gains as a result of economies of scale, improved competitiveness, and efficient use of resources, thus leading to greater diversification. Diversification would be achieved by stimulating higher value-added production at domestic and regional levels, so the development of RAVCs in Africa will be critical to growth. The development of RAVCs is expected to contribute to improving intra-Africa trade in two major ways: (1) Allowing African nations to attain efficiency gains in production and (2) Helping African enterprises to move along global value chains while retaining more value at national and regional levels.

In support of promoting regional value chains, the United Nations Economic Commission for Africa (ECA), in collaboration with the African Union Commission (AUC), has developed the AU Guidelines for the Development of Regional Agricultural Value Chains in Africa, which was endorsed at the Third Ordinary Session of AU Specialized Technical Committee (STC) on Agriculture, Rural Development, Water and Environment STC in October 2019. The Guidelines serve as a framework that provides policymakers in the Member States, as well as RECs, principles, and tools to inform and guide the formulation of policies intended to promote a viable and sustainable agricultural development process in Africa through the fostering of regional agricultural value chains. The Guidelines also serve to support the implementation of the AU initiative on the Policy Framework for Boosting Intra-African Trade in Agricultural Goods and Services as endorsed by the AU-STC (also at its Third Ordinary Session). AU Member States are encouraged to adopt each of the Guidelines and the Policy Framework.

While RAVCs are critical to promoting intra-African trade in agricultural commodities, goods, and services, it is equally vital to recognize the importance of eliminating tariff and non-tariff barriers; removing trade facilitation constraints; adopting and implementing coherent and efficient trade policies at the national, regional and continental levels; bridging trade and production information gaps; developing well-functioning intra-African trade-focused financing, insurance and payment settlement systems; improving intra-state infrastructure; enhancing diversification, productive capacity, and competitiveness; harmonizing standards; and, probably most important, changing mindsets toward adhering to market terms and respecting the rule of comparative advantage as the basis for allocating factors of production and resources, with a view to achieving economies of scale and efficiency. Sadly, many African countries still aim to become self-sufficient in all products rather than use resources more effectively by focusing on comparative advantage.

3.2.6. Integration of small-scale producers in value chains and regional markets

Improving linkages between small-scale producers and the market is crucial to achieving inclusive and efficient agrifood systems. Outgrower schemes, contract farming, aggregation models through farmer organizations or cooperatives, and other institutional arrangements can support value chain integration and facilitate agro-industrialization while benefiting small-scale producers. These benefits include enhanced productivity through better access to inputs, technologies, and knowledge; improved sustainability through compliance with certification schemes; reductions in poverty and hunger through increased incomes; formalization of informal agrifood workers; and improved food availability.

Several agro-industrialization initiatives in Africa provide valuable lessons for integrating small-scale producers into value chains and regional markets. Broadly, it is important to recognize that the small-scale farmer is embodied within national, regional, and global trade systems and markets. For example, Project Nurture,[13] a partnership between Coca-Cola, TechnoServe, and the Bill and Melinda Gates Foundation, helped demonstrate the potential benefits of contract farming in Kenya and Uganda by integrating smallholder farmers into Coca-Cola's supply chain. Participating farmers saw substantial income increases due to improved yields and guaranteed market access. Incubation and acceleration projects led by the African Agribusiness Incubation Network (AAIN) in Ghana, Ethiopia, Nigeria, Uganda, and other countries helped to integrate agribusiness start-ups and the smallholder farmers they work with into value chains.[14] In Senegal, the dairy firm La *Laiterie du Berger* has established a network of producers from whom fresh milk is collected twice daily;

13 https://www.technoserve.org/our-work/projects/project-nurture/
14 https://aain.africa/

the firm assists producers with veterinary care and cattle feed and provides regular payments, which help prevent distress sales of livestock.[15]

3.2.7. Supporting partnerships and boosting the entrepreneurial incubation ecosystem

Partnerships and strong incubation ecosystems bring together diverse resources, expertise, and networks, creating a synergistic effect that drives sustainable agro-industrial development, enhances productivity, and ensures inclusive and sustainable benefits for all stakeholders. To give a sense of the resources required, the African Development Bank's *Feed Africa Strategy* estimates that US$1.8 trillion over the next 10 years is needed to transform the agricultural sector (African Development Bank 2016). Partnerships with international finance institutions, such as the African Development Bank or the African Export-Import Bank, can leverage technical assistance to raise required funds for the public and private sectors. The engagement of the private sector is more important than ever to meet agro-industrial development objectives. Partnering with incubators, accelerators, and enterprise support organizations, as well as the private sector through formal vehicles such as private-public partnerships (PPPs) or simply through dialogue, reduces risk and brings expertise, fresh perspectives, and a drive for innovation and continued business mentorship support. PPPs are particularly important in large-scale projects such as energy infrastructure, transport, and logistics. In the domain of research and development, joint ventures with research institutions and universities can drive innovation in crop varieties and post-harvest technologies, while partnerships can help in the deployment and scaling of advanced technologies like precision agriculture, biotechnology, and renewable energy solutions. By fostering strong collaborations, Africa can unlock the full potential of its agro-industrial sector and achieve broad-based economic growth, wealth creation, and shared prosperity.

3.2.8. Innovative financing and risk management

Financing plays a critical role in driving food systems transformation by supporting the necessary investments and initiatives. Effective food systems transformation requires a combination of increased public and private sector investment, as well as ensuring that finance is accessible for smallholders and small-scale producers. African countries face challenges in securing adequate financing to attain the levels of investments required for agro-industrialization and agrifood systems transformation. The financing gap limits the ability of smallholder farmers, SMEs, and other stakeholder groups to invest in more sustainable and resilient agrifood systems.

There is a need for innovative instruments to access and mobilize catalytic and blended financing to de-risk and catalyze bank credit and private investment, accompanied by technical assistance, into agrifood systems. This is particularly important for emerging start-ups, SMEs, and MSMEs in incubation and acceleration ecosystems. The use of limited public sector resources to leverage increased levels of private sector investments presents an opportunity to close the financing gap. It will require collaborative efforts between governments, private sector, civil society, and development partners to track financial flows effectively, repurpose public support in agriculture, address both the levels and composition of public expenditure, and access and mobilize climate finance. Such support should help increase capital/investment financing from the private sector (e.g., commercial banks, private equity, venture funds) and other funds (such as sovereign wealth funds and insurance).

It is also imperative to improve the quality of public and private investment and other spending for agro-industrialization through optimal allocation of financial resources, while also factoring in inclusive agricultural transformation, agro-based incubation, and acceleration.

3.2.9. Fostering energy and infrastructure services

The current growth in Africa's economy calls for development and investment strategies that prioritize expanding infrastructure and capacities, as well as strengthening institutions. Modern infrastructure enables economies and companies to target higher segments of industrial value chains. Investing in modern infrastructure can diversify Africa's economy and trade patterns, foster value-added production of goods and services, and stimulate consumption. Crucially, infrastructure planning and investment should align closely with the agriculture sector development priorities of each country or subregion to effectively drive growth and reduce development disparities.

15 https://lalaiterieduberger.wordpress.com/nos-engagements/eleveurs/

Climate-smart infrastructure, such as resilient designs, green buildings, energy efficiency, and integration of renewable energies, can lessen the impact and cost of environmental requirements.

Access to energy infrastructure is a critical prerequisite to agro-industrial growth. Industry requires large-scale access to energy solutions to operate machinery, processing lines, and basic infrastructure. Unlike fossil fuel energy sources, solar panels, wind turbines, geothermal generators, and biogas systems can all provide sustainable power options to the agro-industrial sector. Smart energy systems can combine and optimize energy sources for individual sectors, which are reasonable solutions for agro-parks and agro-industry. Affordable, long-term loans should be made available to encourage agro-industrial micro, small, and medium-sized enterprises (MSMEs) to apply an energy mix using renewable energy. This should, ideally, be secured through supporting policy and regulatory frameworks. India and Nigeria provide successful examples of policy and regulatory frameworks that enhance access to affordable finance, targeting high growth in agriculture and the agro-industry.

Agrivoltaic farming could be a solution to overcome two dominant challenges in Africa: food security and energy access. This approach uses the shaded space below solar panels to grow crops, thereby improving land use efficiency. Research has even suggested that certain crops thrive better when grown in such environments (Chae et al. 2022).

In East Africa, an agrivoltaic farming project in Kenya uses solar panels held several meters off the ground, with gaps between them. This has led to higher productivity for vegetables grown underneath, as panels protect them from heat stress and reduce water loss. This has also resulted in farmers being able to grow a greater range of higher-value crops, improving their incomes. The initiative delivers a triple-win for food, energy, and water security. Researchers have pointed out that the project effectively harvests the power of the sun twice (University of Sheffield 2022).

With the effects of climate change, irrigation is more important than ever. Water management services addressing water channels, access to pumps, and drip irrigation support can increase access to water and create more efficient water use. Access to storage infrastructure such as silos, certified warehouses, and cold storage powered by renewable energies are important services that can be made available through government programs or by the private sector. Communications infrastructure is also increasingly mandatory for agro-industrial development, permitting value chain actors to better coordinate their actions, understand supply chains, and access information on new technologies and markets. Agro-parks are an example of a policy tool that brings together energy and infrastructure services, often lacking in many developing countries, particularly in rural areas.

3.2.10. Enabling policy environment

As a key element of Africa's agricultural transformation, accelerated agro-industrialization requires a conducive enabling environment facilitated by supportive policies and regulatory measures. However, this has been constrained by policy incoherence. The initial perspectives focused on Policy Coherence for Development (PCD), which emphasized the removal of inconsistencies between developed and developing country policies to the extent that they impeded development (OECD 2015). PCD concerns on policy incoherence informed the adoption of SDG Goal 17 targets 13 (enhance global macroeconomic stability, including through policy coordination and policy coherence) and 14 (enhance policy coherence for sustainable development).

However, a more binding constraint to agro-industrialization has been the incoherence of domestic policies. For instance, it has been established that a significant policy impediment to effective industrialization in Africa is the weak alignment between a country's industrial policy objectives, trade, and investment laws (van der Ven 2017). For accelerated agro-industrialization to be realized, it is imperative that mutually reinforcing policy actions across government departments and agencies are adopted to create synergies toward achieving the agreed development objectives (FAO and ECDPM 2018). This would ensure agriculture policies or other economy-wide policies such as taxation do not undermine the efficiency, effectiveness, and credibility of agro-industrialization policies. An effective way of ascertaining policy coherence to accelerate agro-industrialization would be to design and adopt functional mechanisms for coordinating policy development and implementation, including significant private sector involvement and input.

It is, however, critical to acknowledge that the agro-industry is multifunctional and provides economic, environmental, and social services. As a result, appropriate policies should be designed to ensure that increased agro-industry does not lead to environmental degradation but results in social cohesion, gender equality, improved human health, and respect for local and traditional knowledge. For example, in order to take advantage of the potential nutritional benefits of agro-industry, enabling regulatory and business environments for food fortification should be established, and governments should invest in increasing fortification capacities (Nakitto, forthcoming).

3.2.11. Engaging the private sector

Governments need to work closely with the private sector to identify constraints affecting the growth of agro-industry firms. Inclusive policy formulation and review processes that promote meaningful participation of the private sector are essential. Mutual accountability platforms such as agriculture joint sector reviews (JSRs) enable agricultural sector stakeholders to review progress in the sector, hold each other accountable for commitments, and voice their concerns and suggestions. Countries with JSRs need to improve inclusiveness and ensure the participation of the private sector and non-state actors. JSRs need to expand their scope to include agro-industry, or governments and industry stakeholders can establish similar mutual accountability platforms for the agro-industrial sector.

Inclusive platforms and incubation and acceleration centers allow governments to work with the private sector to identify key constraints and policy actions to create enabling business environments and overcome institutional, technological, financial, market access, and managerial gaps. With many agro-industrial value chains in the nascent stages of development, policies and investments should be targeted depending on the characteristics and growth stages of value chains and individual enterprises (Badiane et al. 2022). Firms in emerging sectors need to be supported with interventions and investments that strengthen market development to lower transaction costs; expand transport, communications, and energy infrastructure to lower operating costs; promote access to vocational training and mentorship support to improve management practices; and create linkages with other value chain actors and investors, such as by establishing incubation and acceleration hubs.

As agro-industrial development advances, targeted policy and regulatory interventions will be required to promote and enforce quality norms and standards, as well as property rights protections, to encourage in-firm innovations. Countries will have to invest in vocational training, skilling, incubation, and acceleration to mainstream the upgrading and development of skills along the agribusiness value chains, as well as advanced training in quality control, marketing, accounting, labor management, and engineering. Learning from abroad and importing and adapting foreign technologies through research and training remain important, as well as interventions to improve access to credit and reliable and cost-effective energy supplies (Badiane et al. 2022).

3.3 Key goals

Considering the enablers and priorities indicated above, African countries should envisage the following as key goals in their pursuit of inclusive, sustainable agro-industrialization:

1. Increased value added to agricultural commodities for domestic and export markets
2. Reduced post-harvest losses[16]
3. Increased intra-African trade in agricultural commodities, value-added products and services
4. Increased participation of women and youth in the agro-industry sector
5. Increased job opportunities in formal employment for women and youth in the agro-industry sector
6. Increased sustainability of agro-industry enterprises

Suggested SMART indicators associated with the above key goals are listed in Annex 1.

16 https://au.int/sites/default/files/documents/34934-doc-au_post-harvest_loss_management_strategy.pdf

4-Conclusion

4.1. Key messages

Aspiration 1 Goal 5 of the AU Agenda 2063 states: *"Africa ... will be a major player in the global agro-food economy. African agriculture will be a competitive food and agriculture system which meets the fast-growing and diversifying agro-food demands of intra-African, local, national, regional markets, and beyond, responding increasingly to the demands of a growing and exigent global market."* **This goal can only be realized through a strengthened, well-functioning agro-industry sector that enables inclusive growth and sustainable development.**

By propelling productivity along agrifood value chains, enhancing value-addition, creating jobs, engaging women, youth, and SMEs, and reducing poverty and inequality, **agro-industrialization can support the broader economic transformation and industrialization goals outlined in Agenda 2063.**

Focusing adequately on regional integration and market access, **agro-industrialization further complements the Agenda 2063's emphasis on intra-African trade and economic cooperation.**

CAAPs offers a structured approach to achieving the aspirations and goals of Agenda 2063 by establishing agro-industrial parks that enhance value addition, improve market linkages, and promote inclusive economic growth. The adoption of CAAPs as a flagship program of the Second 10-year Implementation Plan of the AU Agenda 2063 underscores the strategic importance of agro-industrialization not only in transforming African agriculture but also in achieving Africa's development goals, supporting economic transformation, regional integration, and sustainable development. **This endorsement encourages the immediate consideration of promoting agro-industrialization as a key priority pillar in the CAADP post-Malabo process.**

The agro-industry sector in Africa has experienced significant growth. This could be attributed to a number of factors, including political momentum for industrialization, the youth dividend, rising urbanization and incomes, enhanced energy access, development of agro-parks, and advancing food systems transformation. The agro-industrial development landscape will continue to be shaped by these trends as well as by a number of potential policy game-changers, including the African Continental Free Trade Area (AfCFTA), the Common African Agro-Parks (CAAPs) initiative, and the rise of food safety and quality standards and sustainability requirements.

Key priorities for agro-industrial development in the next 10 years should include accelerating agrifood system transformation to improve reliable access to raw materials, ensuring the inclusion of women, youth, and SMEs, adopting enabling technologies and innovations, fostering land policy reform, promoting intra-African agricultural trade and regional and continental agricultural value chains, integrating small-scale producers in value chains and regional markets, supporting partnerships, advancing innovative financing and risk management, fostering energy and infrastructure services, ensuring an enabling policy and regulatory environment, and engaging the private sector.

The sustainability and inclusiveness of agro-industrial development should be at the forefront of agro-industry strategies.

4.2. Proposed future role for the technical working group in the implementation of the Post-Malabo CAADP Agenda

It is proposed that TWG5, which has focused on informing the Post-Malabo Agenda development process in the area of inclusive agro-industrialization, continue to contribute to the post-Summit implementation of the agenda in this area. TWG5 should serve within the planned body/coordination mechanism, which will be responsible for the implementation of the Post-Malabo Agenda, with a specific mandate for promoting agro-industrialization

in addition to other measures. The proposed coordination mechanism should provide a platform that links the major partners/stakeholders and initiatives, such as CAAPs, to support accelerating agro-industrialization advancement on the continent to harmonize their plans and activities, including progress reporting. As part of its work with the coordination mechanism, TWG can also contribute to the development of an AU strategy for agro-industrialization.

Annex

Annex 1. Proposed SMART Indicators to track progress/performance related to key goals

1. Doubling the output of the domestic agro-processing sector
2. Increasing by 30 percent the export of value-added agricultural products outside of the continent by 2034
3. Reducing by 50 percent the import of value-added agricultural products from outside of the continent by 2034
4. Tripling/doubling intra-African trade in agricultural commodities, products and services
5. Increasing the production of nutritious processed foods by 30 percent
6. Increasing youth and women entrepreneurship and employment by 50 percent in the formal agro-industry sector
7. Doubling foreign and domestic investment in the agro-industrial sector
8. Doubling the share of agro-industrial SMEs that operate in the formal sector
9. Doubling the number of vocational education and training programs with curricula adapted to the skill needs of the private sector
10. Reducing the current post-harvest losses by 50 percent[17]
11. Developing 10 common agro-parks within the context of CAAPs
12. Increasing the sustainability of agro-industry enterprises by 30 percent

17 https://au.int/sites/default/files/documents/34934-doc-au_post-harvest_loss_management_strategy.pdf

Annex 2. List of TWG5 Members[18]

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2. **Julie Collins, AKADEMIYA2063 (Co-convenor)**
3. **Tahirou Abdoulaye, IITA**
4. William Akiwumi, USAID
5. K.Y. Amoako, ACET
6. **Alex Ariho, African Agribusiness Incubators Network**
7. Aminou Arouna, AfricaRice
8. Mukulia Kennedy Ayason, African Union Commission
9. Jean-Bertrand Azapmo, African Union Commission
10. **Heike Baumüller, ZEF**
11. **Karol Boudreaux, USAID**
12. **Sloans Chimatiro, Tayali Analytics**
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25. **Lucy Muchoki, PanACC**
26. Jean Jacques Mbonigaba Muhinda, AGRA
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37. **Anselme Vodounhessi, FARA**
38. Augustin Wambo Yamdjeu, AKADEMIYA2063
39. Chahir Zaki, Cairo University

Annex 3. Recommended set of useful background materials

1. Continental Agribusiness Strategy Framework Document Driving Africa's Inclusive Growth
2. Protocol to the African Charter on Human and Peoples' Rights on the rights of citizens to social protection and social security
3. African Union Commission Post-Harvest Loss Management Strategy August 2018
4. African Common Position on Food Systems

18 Those with underlined names contributed, according to our reports, to the discussion and provided substantive inputs either to the annotated outline or the draft report (in bold). We acknowledge, with sincere appreciation, the immense concern and valuable input of those members who contributed, often doing so outside of working hours.

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About AKADEMIYA2063

AKADEMIYA2063 is a pan-African non-profit research organization with headquarters in Kigali, Rwanda, and a regional office in Dakar, Senegal. Inspired by the ambitions of the African Union's Agenda 2063 and grounded in the recognition of the central importance of strong knowledge and evidence-based systems, the vision of AKADEMIYA2063 is an Africa with the expertise we need for the Africa we want. This expertise must be responsive to the continent's needs for data and analysis to ensure high-quality policy design and execution. Inclusive, evidence-informed policymaking is key to meeting the continent's development aspirations, creating wealth, and improving livelihoods. AKADEMIYA2063's overall mission is to create, across Africa and led from its headquarters in Rwanda, state-of-the-art technical capacities to support the efforts by the Member States of the African Union to achieve the key goals of Agenda 2063 of transforming national economies to boost economic growth and prosperity. Following from its vision and mission, the main goal of AKADEMIYA2063 is to help meet Africa's needs at the continental, regional, and national levels in terms of data, analytics, and mutual learning for the effective implementation of Agenda 2063 and the realization of its outcomes by a critical mass of countries. AKADEMIYA2063 strives to meet its goals through programs organized under five strategic areas—policy innovation, knowledge systems, capacity creation and deployment, operational support, data management, digital products, and technology—as well as innovative partnerships and outreach activities. For more information, visit www.akademiya2063.org.

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