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Transforming Africa's Agriculture through Agro-Industrialization

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1 | Introduction

Economic growth in Africa has been accelerating for the past two decades. The continent enjoyed sustained economic growth registering an annual average growth of more than 5 percent. This episode of rapid economic growth, where four out of ten fastest growing economies in the world in the past ten years were African countries, undoubtedly kindled high hopes for a continent, which had been painted as hopeless and backward just two decades ago. Instead, the recent discourse has been dominated by the "Africa Rising" narrative, with significant shift in the sentiment towards the prospect of prosperous Africa. This episode of economic expansion was primarily driven by favorable commodity prices, particularly of oil, minerals, and agricultural products. For a continent whose extractive sector constitutes one-third of the GDP and oil exporting countries account for over half of the GDP, this has indeed been a favorable period. What is more encouraging is that, driven by non-traditional sectors, such as manufacturing and services, growth has also been relatively balanced in many African countries. In addition to the extractive industry and quarrying, agriculture, services, and to some extent manufacturing played significant roles in the buoyant economic performance registered in the past decade and half.[2]

Amid the optimism, however, there is a subtle cautionary tale. Growth has been jobless, poverty remains stubbornly high, and the benefits of growth have not been shared equally among Africans as high and widespread inequalities persist. Growth in Africa has been largely without jobs. Studies find that even in the fastest growing countries, such as Ethiopia, Rwanda, Tanzania, and Uganda, the responsiveness of formal employment to growth is very low with 1 percent GDP growth having resulted in less than 0.4 percent growth in total employment[3] (Figure 1). Although, poverty rate declined from 56.7 percent in 1990 to 42.7 percent in 2012, the absolute number of poor people living below the poverty line of US$ 1.25 per day increased from 330 million to 390 million.[4] For 24 African countries, for instance, poverty decreased by an average of about only 0.77 percentage points per annum. Similarly, inequality has been pervasive, ranging from an estimated Gini coefficient of 30 to 60.[5] In addition, statistics show that among 28 Sub-Saharan African countries, more than 40 percent of total income is controlled by the richest 20 percent of the population while the poorest 20 percent gets less than 9 percent.[6] Moreover, owing mainly to global headwinds,

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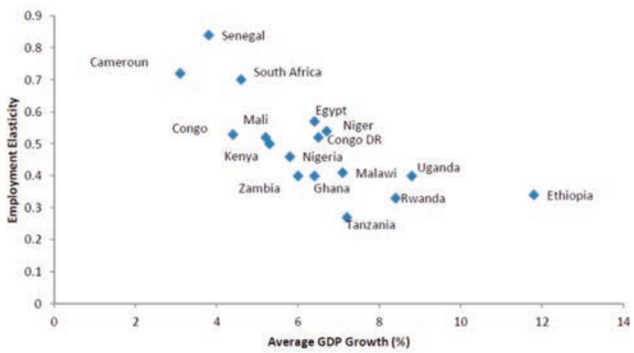
[2] AfDB et al. (2012).
[3] Page and Shimeles (2015); Newman et al.(2016)
[4] http://povertydata.worldbank.org/poverty/region/SSA
[5] AfDB (2012).
[6] World Bank Poverty and Equity Databank and PovcalNet.

such as the fall in commodity and oil prices, growth in the past two years has been slowed, expanding only at a rate of 3.6 percent in 2015. Although, forecasts indicate a slight rebound in 2017, the recent lackluster economic performance is a testament to the fact that African economies remain less diversified and heavily reliant on low-productive agricultural and extractive activities.

Figure 1 Employment intensity and growth in selected African countries



Source: Page and Shimeles (2015).

The stylized fact is that Africa lacks the much needed structural transformation. Structural transformation, which is a key aspect of sustainable economic growth in low-income countries, has been dismal in Africa. Broadly, structural transformation is a movement of labor from low-productivity sectors into higher productivity employment. Although a good share of the labor force has been leaving the agricultural sector, which has the lowest level of productivity, the shift has been predominantly into the services sector, which serves mainly domestic consumers. History tells us that without employing a significant proportion of their people in manufacturing activities, few countries have been able to escape poverty.[7]

However, Africa's experience with structural transformation has been disappointing. Although average labor productivity of manufacturing is more than six times that of agriculture and more than three times that of services, by all measures, Africa has an enormous manufacturing deficit. For instance, studies show that the share of manufacturing in many of the continent's recent growth success stories—Ethiopia, Ghana, Kenya, Tanzania, and Uganda—is well below the benchmark countries which are now middle-income countries.[8] Hence, growth in Africa has been without structural change that typically should occur as income rises.

The lack of structural transformation is challenging the "Africa Rising" narrative and has been a central issue that needs to be tackled head on. It is against this background that there is a renewed call for structural transformation and diversification of African economies, so as to maintain the recent growth momentum, reduces poverty and inequality, create decent jobs, and improve the quality of lives and well-being of Africans. Agro-industrialization (agro-allied industrialization) is a formidable strategy for Africa to realize the much needed structural transformation and sustain its economic growth.

This issue paper briefly presents the case for agro-industrialization as Africa's viable path to sustainable economic growth. The paper also discusses the opportunities and the challenges that the continent faces with regards to its efforts toward agro-industrialization, and sheds some light on how the continent can structurally transform itself from the bottom of the global value chains to one of industrial corridors in the world. The paper further discusses the experiences and lessons of South Korea, which remarkably transformed itself from a predominantly agrarian economy into one of the high-income countries in less than a generation.

2 | The State of Structural Transformation in Africa

2.1 The Agricultural Sector

Agriculture is the backbone of Africa's economy. For 70 percent of the population, it is the primary source of livelihood and accounts for about 25 percent of the continent's GDP. However, Africa's agricultural productivity and yields are among the lowest. Yields in African agriculture are less than half of those achieved in Asia. Although, the volume of agricultural production has doubled over the past three decades, the increase is largely on the extensive margin, owing to expansion of total area cultivated as opposed to increased factor productivity. Furthermore, the vast majority of agricultural activities are at subsistence level with farm sizes remaining small—more than 85 percent of land holdings are less than two hectares. These predominantly sub-

[7] Newman et al. (2016).
[8] Ibid.

sistent smallholder farmers use rudimentary farm technologies and inadequate levels of modern inputs. For instance, studies based on the Living Standard Measurement Study–Integrated Surveys on Agriculture Initiative (LSMS—ISA) survey data on 22,000 households and 62,000 plots in Ethiopia, Malawi, Niger, Nigeria, Tanzania, and Uganda show that two-thirds of farmers report no use of inorganic fertilizer, 84 percent do not use agro-chemicals, only 1 to 3 percent of the land cultivated by smallholders is irrigated, and no more than 10 percent of households have any form of water control on agricultural plots. Although inorganic fertilizer use is significant, only one-third of households in Ethiopia and Nigeria use agro-chemicals.[9]

In addition to small farm holdings and inadequate use of modern technologies, there are widespread market failures due to lack of physical infrastructure such as roads, telecommunications and electricity, absence of markets for credit and insurance, lack of property rights and land tenure system, and prevalence of corruption[10]. These are some of the fundamental problems that prevent efficient allocation of resources within the agricultural sector, as well as other sectors within rural spaces. As a result, not only structural transformation of the agricultural sector not be materialized, Africa is not producing enough food to feed its growing population. Unfortunately, despite the continent's endowment with vast land and natural resources, Africa continues to be a net food importer, spending about US$ 35 billion per year.

2.2 The Manufacturing Sector

The share of manufacturing in the GDP of Africa is one of the lowest and has been decreasing over time. In sub-Saharan Africa, although the total value increase more than doubled between 1996 and 2015, the share of manufacturing in GDP decreased from 12 percent to 10 percent during the same period.[11] Although exports have grown, imports have been increasing at a higher pace, increasing the trade gap in the sector. Over the past decade, export of manufactured goods has increased by 9.5 percent whereas imports increased by 13.4 percent.[12] Africa imported US$ 240 billion worth of manufactured goods in 2013 and exported US$ 66 billion worth of manufactured goods.

Furthermore, Africa's export is primarily dominated by raw materials. In 2014, for example, sub-Saharan Africa's top export included stones and glasses, metals, fuel, and minerals, which constitute about 54 percent of total export value.[13] During the same period, fuel, machinery and electronics, and transportation accounted for more than half of the continent's import bill. Furthermore, manufacturing is concentrated in few African countries, with Nigeria, Egypt, South Africa and Morocco accounting for two-thirds of the continent's manufacturing activity. When Angola, Tunisia, and Kenya are added into the group, the share rises to almost 80 percent of Africa's manufacturing value added.[14] Hence, the sector has not only been minimal in its contribution to Africa's GDP and employment but also concentrated in only a few African countries.

2.3 The Services Sector

The services sector is one of the most important sectors in Africa. It contributes about 50 percent to its GDP.[15] Moreover, employing up to 60 percent of the workforce in some African countries, the sector is an important source of incomes and jobs for millions of Africans. Reports also show that the services sector has become an important source of growth, accounting for more than half of the growth in real GDP.[16] The same report shows that between 2009 and 2012, the services sector grew at 4.6 percent on average. In addition to trade, restaurants, and hotels, services such as telecommunications, financial services and tourism are playing an important role in the growth of the services sector, owning to increasing openness and investment in infrastructure and relative improvement in governance and competitiveness.

Although accounting for US$ 271 billion in total exports and imports in 2012, the bulk of the services sector activities are in the non-tradable subsectors serving the domestic market, in that wholesale trade, retail, restaurants, hotels, transport, storage, and communications account for about 24 percent of output. In recent years, however, countries such as Egypt, Kenya, Ghana, Mauritius, South Africa, Tunisia, and Uganda are eyeing to get their share of the growing global business process outsourcing and offshoring services, which was estimated to be US$ 304 billion in 2013.[17]. In order to realize its full potential in the export of services, Africa needs to significantly invest in its people and improved transport, information technology, and financial services.

[9] Sheahan and Barrett (2012).
[10] Dillon and Barrett (2014).
[11] World Bank (2016a).
[12] KPMG (2015).
[13] UNSD et al., WITS Database
[14] KPMG (2015).
[15] UNCTAD (2015).
[16] Ibid.
[17] AfDB (2014)

3 | The Case for Agro-Industry in Africa

The consensus is that Africa's agriculture is not performing well, manufacturing remains one of the lowest in terms of value added and employment, and the services sector is positioned to serve mainly the domestic consumers. Undoubtedly, Africa needs to transform its economic structure to sustain growth. Agro-industry presents a promising prospect. With the right policies and enabling environment in place, it has the potential to bring the best of agricultural, manufacturing, and services sectors. Due its backward and forward linkages, it increases value addition in GDP and elevates the continent through the global value chain, creating employment opportunities and increasing incomes, strengthening food security and improving nutrition to promote a healthier and productive workforce, and ultimately, alleviate poverty.

Agro-industry is broadly defined as post-harvest activities involving the transformation, preservation and preparation of agricultural production for intermediary or final consumption.[18] It comprised of artisanal, minimally processed and packaged agricultural raw materials, the processing of intermediate goods, and the fabrication of final products derived from agriculture. An extended definition of agro-industry includes not only agriculture-related industries but also distribution and trading activities.

The most important subsectors within the agro-industry sector are food-processing and beverages, accounting for more than 50 percent of the total formal agro-processing sector in low- and middle-income countries. This number is much higher for some African countries such as Ethiopia, Eritrea, and Senegal for whom food and beverages represent more than 70 percent of agro-industry value added and 30—50 percent of total manufacturing. Processing of meat, fish, fruits, vegetables and fats, bakery, macaroni, chocolate, and other foods also constitute a sizeable proportion of the total value addition. Africa also has vast potential in tobacco and textiles, as well as leather products. Considering the entire food system, including the production of goods and commodities, marketing, and retailing, which account for more than 50 percent of the GDP of developing countries, agro-industry could play a vital role in the creation of income and employment opportunities in Africa.[19]

3.1 Why agro-Industry?

From the point of view of sustainable economic growth, food security, and poverty reduction, the contribution of the agro-industry is paramount. Studies show that due to their forward and backward linkages, agro-industries have higher multiplier effects in terms of job creation and value addition. Agro-industry stimulates businesses well beyond the closest links with its direct input suppliers and product buyers. It has the potential to bolster a range of ancillary services and supporting activities in the secondary and tertiary sectors. Furthermore, since most agricultural products are bulky and perishable, many agro-industries and small-scale agro-processing enterprises must be located close to sources of raw materials. Their impacts on rural off-farm activities, employment, and poverty alleviation in general are, hence, enormous.

3.1.1 Population Growth and Urbanization

The ever increasing demand for value-added food and agricultural products, both domestically and globally, presents a huge opportunity for the agro-industry as a formidable sector in Africa. Demand for food has been increasing due to population growth and increased incomes. In 2016, an estimated 1.2 billion people live in Africa. Growing at 2.5 percent annually, this number is expected to double to 2.4 billion by 2050.[20] Such population expansion is directly proportional to expansion in demand for food, particularly processed food. Africa is also urbanizing at a historically rapid rate. For example, the share of urban residents increased from 14 percent in 1950 to 40 percent today, and by the mid-2030s, 50 percent of Africans are expected to become urban dwellers.[21] Similarly, incomes have increased particularly in urban areas where a growing proportion of the population earns wages from a formal services sector as well as the informal sector.

Unfortunately, Africa is still a net food importer. Despite the increase in volume of production and the vast arable land that the continent is endowed with, the agricultural sector is yet to satisfy the increasing demand for food. The continent spends about US$35 billion every year to buy food and agricultural imports accounting for about 1.7 times the value of its export. Between 1998 and 2007, total net food import grew at an average 3.4 percent annually. With an increase in per capita food imports of only 0.8 percent per year, large share of the increase in food imports has been due to population growth.[22] In addition to demand-side factors, supply-side factors, mainly the dismal performance of Africa's agriculture, is to blame. Some of these factors include low and stagnating agricultural productivity, policy distortions such as protection and agricultural subsidies in advanced economies, weak institutions, and poor

[19] da Silva et al. (2010).
[20] UNDP (2015).
[21] AfDB (2015).
[22] Rakotoarisoa (2012).

infrastructure. Some of these bottlenecks are Africa's deep-rooted nemeses, which work not only against its agricultural sector but also against its overall economic performance.

Urbanization and population growth presents enormous opportunity for the proliferation of agro-industries in Africa. It offers with huge market opportunities for food processing industry. The agro-industry, in particular the food packaging and processing subsector, could fill the persisting gap between the supply and demand for food. Moreover, urbanization and population growth implies access to cheap labor for the medium- and small-scale agro-businesses and enterprises.

3.2.2 Employment, Youth, and Gender

Fighting poverty requires that economic growth and development are brought into rural areas. Most agro-industries by nature are close to sources of raw materials where main agricultural activities take place. As a result, the sector could increase off-farm employment opportunities in rural areas and alleviate poverty. According to the *World Development Report* around 75 percent of the poor in developing countries live in rural areas, 2.1 billion living on less than US$2 a day, and 880 million on less than US$1 a day[23]. Off-farm employment is a complement to agricultural wages and an instrument for risk diversification and consumption smoothing. With low capital requirements and direct local marketing channels, the rural non-farm activities offer opportunities for poor households, small-scale farmers and other smallholders, agro-industry could be an effective instrument for poverty alleviation in rural areas. For developing countries as a whole, non-farm earnings account for 30–45 percent of rural household income. This is not only a large share in absolute terms but has been increasing over time.

Furthermore, due to its forward and backward linkages, the agro-industry sector encourages a range of supplementary services and supporting activities in the secondary and tertiary sectors, including informal and small-scale enterprises. Youth and women are particularly well positioned to benefit from such employment opportunities.

The share of youth (14—24) has been rapidly increasing over the past decade, and an estimated 226 million youth live in Africa, representing one-fifth of the world youth. If the current trend continues, projections show that the number of youth in Africa will increase by 42 percent in 2030.[24] On the one hand, if combined with capital and technology, this demographic bulge can present a substantial prospect for growth dividend for Africa.[25] On the other hand, if the current pattern of jobless growth continues with more than 10 million youth entering the job market every year, it can also represent a considerable threat to social cohesion and political stability.[26] In the absence of structural transformation, where labor shifts from agriculture to high productivity sectors such as manufacturing, large- and small-scale agro-industries could play significant roles in creating jobs for youth, as well as in catalyzing structural transformation in Africa.

Women are at the heart of African agriculture and agro-allied activities. In sub-Saharan Africa, women make up 50 percent of the agricultural labor force. Often they experience economic challenges, including lack of access to finance, modern inputs, knowledge and skills of modern agricultural practices, property rights and so forth.[27] Had it not been for these disadvantages vis-à-vis males, women could be as industrious as men, not only in agriculture but also in every sector. For instance, FAO estimates that if women had access to the same resources as men, their agricultural yields would increase by up to 30 percent which could be translated into the number of hungry people by being reduced by 100—150 million globally.[28] The World Bank study on gender, time use, and poverty in sub-Saharan Africa shows that women work for 467 minutes a day in agriculture, compared to 371 minutes by men.[29]

However, women are largely shunned from good paying jobs. They have lower chances of finding jobs than men and have lower labor force participation rates. For instance, in 2013, the labor force participation of women in sub-Saharan Africa was 64 percent in general, and only 51 percent for young women (15—24), which is much lower than men.[30] A considerable proportion of women are engaged in unpaid domestic work. Women are also at the core of family and intergenerational poverty and income mobility. Empowering women by removing bottlenecks is not only a question of rights but also simple economics. Given that structural transformation in Africa is stalled, agro-industry can create employment opportunities in rural non-farm activities where non-farm activities represent 30—40 percent of income. In urban areas, agro-industries can create decent jobs, particularly for young women. In many African countries such as Ethiopia, for instance, women are becoming the face of factory jobs in garments and footwear industries.

[23] World Bank (2008).
[24] UNDP (2015).
[25] Page (2015).
[26] Ibid.
[27] AfDB (2015).
[28] FAO (2011).
[29] The World Bank (2016b).
[30] Blackden and Wodon (2006).

3.3 Changing Sentiments and The "Made In Africa" Movement

The global sentiment towards manufacturing in Africa, particularly of labor-intensive agro-industries, is improving. In recent years, investors are having a second look at Africa's huge potential in manufacturing. The continent is endowed with vast natural resources, raw materials, cheap labor, and untapped markets. Furthermore, major factors that once used to hindered industrialization in the past, such as lack of or faulty industrial policies and strategies, prolonged civil wars and conflicts, and competition from highly productive Asian countries such as China are now the part of the past. Today, Africa has the right ingredients for manufacturing, in general, and agro-industry in particular.

In several African countries, such as South Africa, Ethiopia, Kenya, Morocco, and Nigeria, to name few, governments are taking the driver's seat in bolstering manufacturing and agro-industries through implementation of the right industrial policies and strategies; preferential tax treatments; investment in critical infrastructure such as roads, railways, electricity, and skills development though expansion of technical and vocational educations; and setting up Industrial Parks and Special Economic Zones (SEZ). Furthermore, due to soaring wages and the shift to high-tech industries, China is expected to offshore 85 million manufacturing jobs, particularly of labor-intensive industries such as garments and footwear. Factors such as abundance of raw materials, including cotton, skin and hides, are expected to reinforce Africa's comparative advantage particularly in food processing, textiles, and leather and tannery. Global clothing and shoe brands, and retail giants such as H&M, Walmart, and Tesco, among many, are now sourcing from African countries with a "*Made in Africa*" label. With the right industrial policies, strong political will, improved physical infrastructure, and cheap labor, the improved sentiment toward Africa's manufacturing and agro-industry is expected to boost the flow of FDI in the sector.

4 | Challenges

Agro-industry could be the next natural stage in the quest for structural transformation of Africa's economy. It has the potential to be the engine of growth by creating a well-paying, off-farm employment, increasing incomes, and alleviating poverty. Furthermore, it could improve the lives of Africans through ensuring food security, improved nutrition, and a healthier and more productive workforce. Promoting agro-industry in Africa is, however, not without challenges. Many of the problems hindering the promotion of agro-industry in Africa are specific to country, subsector, and product category. However, access to infrastructure, access to finance, access to market, entrepreneurship and managerial capacity, and lack of enabling regulatory environment are the most prominent and common constraints that the continent faces.

4.1 Access to Infrastructure

Availability of physical infrastructure is key for the development of a competitive agro-industry in Africa. Access to infrastructure, such as roads and railways, energy and electricity, water, and communications at the lowest possible cost is critical for the development of globally competitive agro-industries. The very nature of agricultural raw materials, which are bulky and perishable, makes access to these infrastructures a necessary condition to improve competitiveness. Produces such as fruits and vegetables and dairy products needs to be kept fresh and refrigerated and transported from the farm gate to agro-processing plants or storage facilities to minimize post-harvest losses. Interruption in electricity or lack of transportation infrastructure, for instance, seriously disrupts the whole supply chain and entails substantial production cost. Similarly, access to low-cost communication infrastructure, such as internet and mobile phone services, facilitates efficient information exchange between small-scale farmers, agricultural traders, agro-processing plants, and global markets.

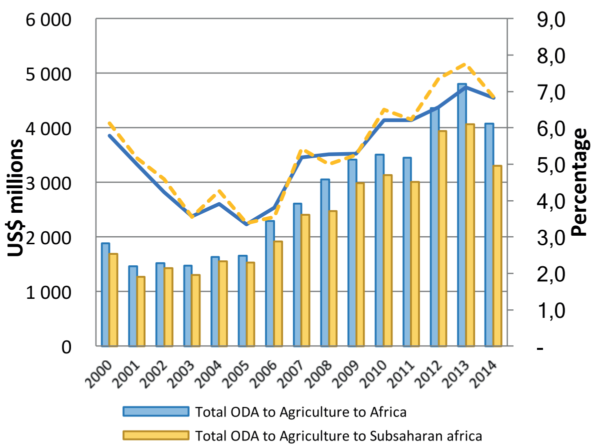
Africa, however, has a large infrastructure deficit, in particular in the power sector. According to the World Bank, the combined power generation of all 48 sub-Saharan African countries is roughly equivalent to that of Spain, which has a population of only 45 million. Africa's power consumption, which is 124 kilowatt hours per capita per year and barely powers a lightbulb for three hours, is only a fraction of that found in high- and middle-income countries. Power outage is a common problem across the continent where, according to the enterprise survey data, about 9 percent of sales value is lost due to power outages. The same is true with road density, as well as information communications technology. Today, only 2 out of 10 Africans have access to the internet, which is much less than the world average of 4 out of 10. With 71 percent subscription rate, the continent is, however, catching up with the rest of the world in terms of mobile cellular. Mobile technology is transforming the continent's payment systems and financial transactions, access to real-time and quality price and market information, health, government, and related services. However, Africa still needs to invest

US$75 billion per year; US$35 billion in order to rectify its infrastructure and US$37 billion to operate and maintain it. This is roughly 12 percent of its GDP. Currently, the continent has an infrastructure fund deficit of about US$ 35 billion.[31] Nurturing the agro-industry in the continent, therefore, necessitates Africa overcoming its infrastructure bottlenecks through bold strategies and smart investments.

4.2 Access to Finance

Access to finance is an archetypal problem that suppliers of agricultural raw materials, mainly small-scale farmers, face in Africa. For the development of a competitive agro-processing industry, an uninterrupted and efficient supply chain is required. However, African smallholding famers are constrained by low-productive and backward technologies; and lack of access to modern inputs, such as fertilizers, improved and drought-resistant seeds, and modern storage facilities. One of the most important factors that hinder farmers from improving their farm practices through adoption of modern technologies is their access to finance. Credit is often rationed, and when available, farmers often lack collateral required by banks, face high interest rates, and experience cumbersome and inefficient loan processing. More worrisome is the persistently low share of lending by commercial banks to the agricultural sector, which is much lower than the amount of credit extended to manufacturing, trade, and other services sectors. The share of commercial banks' lending in total agricultural credit is very low, ranging from 3 percent in Sierra Leone to 12 percent in Tanzania.

Figure 2 ODA to Agriculture
(commitments, constant 2014 US$ millions)



Source: OECD--DAC CRS online.

Additionally, the inadequate government expenditure for agriculture is a major concern for inclusive agricultural finance. In most African countries, the government budgetary support to the sector has been far below 10 percent of the fiscal expenditures recommended by the Maputo Declaration of 2003[32] and the Malabo Declaration of 2014.[33] Few countries have met this commitment. Nevertheless, many other countries have witnessed a marginal increase and in some cases reversal in public expenditure on agricultural finance. On average, only about 5 percent of domestic resources are being allocated to the agricultural sector. Moreover, the share of the official aid to agriculture in total aid has declined from 10 percent in 1999 to less than 7 percent in 2014 (Figure 2). More generally, reports show that achieving the goals stated in Agricultural Transformation in Africa (ATA) will require an additional investment of US$25—43.3 billion per year, and could unlock an annual revenue opportunity of US$ 85 billion by 2025.[34]

Gender and age bias to inclusive agricultural finance is also of a great concern. Access to credit is limited for women who do not have or cannot hold title to assets, such as land and property, or must seek male guarantees to borrow. These limitations often extend to a woman's ability to open a savings account and accumulate assets under her own name. In addition, age factors also constitute impediment to financial inclusions. Financial service providers usually target the middle of the economically active population, often overlooking the design of appropriate products for older or younger potential customers.

4.3 Access to Market, Entrepreneurial, and Managerial Skills

Lack of access to international and regional markets hinders the development of the agro-industry in Africa. Although there has been considerable progress in liberalization of trade in agricultural commodities since the 1980s Uruguay Accord of the GATT, the agricultural sector remains one of

[31] http://go.worldbank.org/SWDECPM5S0
[32] In 2003, the Heads of State of African countries launched the Comprehensive Africa Agriculture Development Programme (CAADP), in Maputo, Mozambique, where African governments made some commitments, including, the commitment to invest 10 percent of total government expenditures in the agriculture sector. This commitment is generally known as the Maputo Declaration.
[33] In 2014, the African Heads of State came together again in Malabo, Equatorial Guinea and made declarations, including a declaration of using at least 10% of their national budgets for agriculture. This declaration is generally known as the Malabo declaration 2014.
[34] Ojukwu (2016), Feed Africa: The Road to Agricultural Transformation in Africa, Being a paper presented at the African Development Bank Annual Meeting, Lusaka Zambia on 24 May, 2016.

the most protected and distorted sectors in the world. Advanced economies continue to generously subsidize their rich farmers and impose heavy tariffs on developing countries' exports of agro-processed commodities such as food, textiles and leather products. Furthermore, the high quality and traceable standards set forth by advanced countries, mainly multinational retail chains, makes access to the international markets difficult for medium- and small-scale agro-enterprises in Africa.[35] Similarly, the agro-industry faces challenges in accessing regional markets within the continent. This is primarily due to low level of intra-Africa trade which has been stunted due to lack of infrastructure, lack of harmonized customs and transit services, etc. Although, efforts are underway to promote regional integration, the amount of intra-Africa trade in agro-industry remains very small.

Lack of entrepreneurial and managerial skills is also a key constraint that needs to be addressed. For the agro-industry to be competitive in the global market, technology-augmented enterprise managerial skills for efficiency and productivity are needed. These include efficient information management system, such as learned management, production planning, work methods, plant layout, process control, just-in-time systems, etc.[36]

4.4 Other Challenges—Environment, Property Rights, Gender

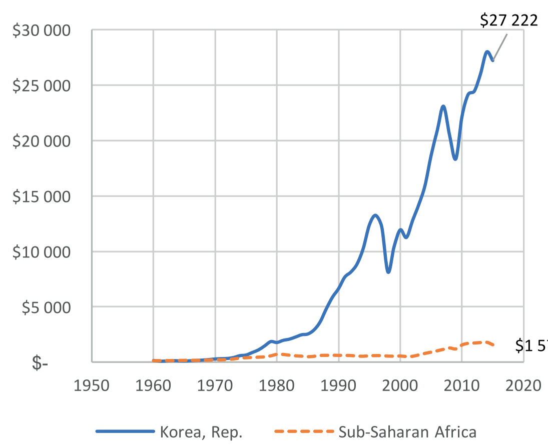
Despite the significant role that agro-industries play in the economy, many of the activities pose serious environmental effects, which if left unchecked, could create environmental pollution, emissions and the use of dangerous machineries which are safety and health hazards—including discharge of organic or hazardous wastes into water supplies and emission of dust and gases that affect air quality and produce toxic substances. Reasonable environmental policies and regulations, institutional capacity, and legal and monitoring systems should be put in place to protect the environment and to ensure different actors in the sector play by the rules. Furthermore, fair legal and property rights institutions, such as modern land administration systems to demarcate, formalize, and certify land ownership, should be put into place to protect the poor from exploitation—such as land grab and involuntary displacement of farmers—which could ultimately lead to ethnic conflicts, political, and social unrest. This is particularly important in Africa where women work largely on family-owned land with little or no remuneration, and they seldom are entitled to land ownership. As African countries transform their economies through agro-industrialization, empowering women and protecting their rights should be part of the equation.

In general, it is important to note that many of the challenges in the agro-industry are apparently the familiar nemeses that have been hindering the continent's economic prosperity. Unless African policymakers and stakeholders devise clever strategies and sequentially attack these challenges, prospects of the agro-industry could be dashed. In light of the challenges and opportunities, policymakers and stakeholders can draw upon the experiences of other countries that have successfully transformed their economies from agrarian to the top of global value chain. A case in point is the experience of South Korea, which is discussed next.

5 | The South Korean Experience

South Korea, one of the top four "Asian Tigers," along with Hong Kong, Taiwan, and Singapore, transformed itself from a predominantly agrarian society into an advanced economy in just a generation. In 1967, South Korea and sub-Saharan Africa had the same level of per capita GDP at US$156. Today, in less than 50 years, an average Korean earns seventeen times higher than the average earnings in sub-Saharan Africa where the average per capita income is US$1,571. Smaller than Benin in total surface area and an estimated

Figure 3 GDP Per Capita (Current US$)



Source: The World Bank, http://data.worldbank.org/

[35] Yumkella et al. (2011).
[36] Ibid.

population of 50 million, Korea had a GDP of US$1.4 trillion in 2015, slightly less than the total sub-Saharan African GDP which was US$1.6 trillion. These huge differences in economic progress between sub-Saharan Africa and Korea within a relatively short period of time could be attributed to several factors.

While many sub-Saharan African countries experience political unrest, coup d'état, and extended periods of civil wars and economic stagnation after independence, Korea implemented a series of economic reform staring in the 1960s. Korea started with import substitution in the 1960s and implemented as series of reforms through export promotion in light industries in the late 1960s and early 1970s, promotion of heavy and chemical industries in the 1970s, export promotion and openness in mid-1980s and 1990s, and globalization with special focus on heavy industrial development strategies geared towards conglomerates in the 2000s. The result of this sequence of economic reforms was phenomenal, propelling the peninsula into the top of the global value chain in less than a generation.

Korea's heavy and export-oriented industrial strategies are not the only contributing factors for its success. Korea's agricultural policies and the widely popular New Village (Saemaul Undong—SU) Movement launched by President Park Chung-hee and pursued during the 1970s have played a considerable role in transforming the country's agricultural and rural spaces. The SU movement was a community-driven development (CDD) program based on the "Saemaul spirit," encompassing three basic principles: diligence, self-help, and cooperation. The major aim of the SU movement was to overcome rampant rural poverty and was a key program in the country's long-term economic development initiative.

Like today's sub-Saharan Africa, the Korean Republic, once grappled with rural poverty, low productivity agriculture and shortage of food in the 1960s. But it achieved self-sufficiency of staple foods through extensive adoption of new high-yielding *Indica* and *Japonica* hybrid rice varieties, upgrading of the agricultural production infrastructure, modernization of rural dwellings, and improved access to electricity and telecommunications in rural villages. Furthermore, agricultural cooperatives extended subsidized credits to farmers, which can be repaid post-harvest.

The key lesson that African countries and policymakers can learn from Korea is the central role that the SU movement played in transforming the once peasant society riddled with food shortage and sporadic hunger into food self-sufficiency with a high level of agricultural and rural development. By changing the mindset of the Koreans, the movement improved lives though increasing incomes; improving access to modern infrastructure and services; mechanized farming; electrification; improvement in the quality of housing and health services; and child care provided by Saemaul nurseries during the planting, cultivation, and harvesting seasons; empowerment of local communities and building social capital; community participation of youth; and empower women through changing attitudes toward women in terms of overall social participation, management of household budgets, and part-time employment as wage earners.[37]

Some of the lessons from the SU movement can be replicated by African countries. At the heart of the movement could be changing the mindset of Africans through diligence, self-help, and cooperation; educating the rural society by setting up training and educational camps, removing traditional barriers and biases against women and empowering them through the introduction of male–female paired leadership in rural villages; and improve access to finance through microfinances.

6 | Concluding Remarks and the Way Forward

6.1 Concluding remarks

Africa has enjoyed a buoyant economic performance over the past decade and half. However, in terms of key development indicators, such as decent paying jobs, poverty, and inequality, food security, etc., the continent is not progressing as much. The lackluster economic growth in the past two years following the fall in commodity prices, mainly of oil and agricultural commodities, is a reminder that African countries need to diversify their economies and the composition of their exports. These are also symptoms of fundamental problems relating to the lack of structural transformation, which is a movement of labor from the low-productivity agricultural sector to high-productivity secondary and tertiary sectors. This is a troubling trend challenging the "Africa Rising" narrative and needs to be given priority. If its growth momentum is to be sustained, Africa has to undergo proper structural transformation. In light of the low performing agricultural sector and the minimal size of manufacturing and expansion of services

[37] ADB (2012).

mainly in the non-tradable sectors, the agro-industry could be the next natural stage that could help the continent achieve structural transformation and propel it along the global value chain.

The continent has all the right ingredients for the development of agro-industries: untapped agricultural raw materials, a cheap and readily available labor force, huge demand for agro-processed commodities particularly of processed food and garments, changing global sentiment towards Africa's manufacturing, etc. In addition, as China is expected to shed up to 85 million jobs and offshore its labor-intensive industries, mainly of garments and footwear businesses, Africa has the comparative advantages to seize them. Hence, with the right policies and political will, Africa can transform its economy through agro-industries. However, glaring challenges remain. These include lack of infrastructure such as roads and railways, energy and electricity, water and communications; lack of access to finance; lack of access to markets; lack of entrepreneurial and managerial skills; lack of proper environmental policies and regulations; lack of property rights; and a gender gap in several aspects. These are the typical challenges that have been hindering the continent's economic progress and need to be addressed.

African countries can learn a great deal from the experiences of South Korea, particularly of the SU movement. In addition to the country's aggressive export-oriented and heavy industries-focused policies and reforms, the SU movement helped transform South Koreans from a predominantly peasant society into an affluent nation in less than a generation. It changed the mindset of the South Koreans, particularly of rural peasants through three core principles: diligence, self-help, and cooperation. There is no reason why such a grass-root movement cannot be replicated in Africa.

6.2 Policy recommendations and AfDB's Role

In order to materialize Africa's potential for agro-industrialization, policymakers and development practitioners need to focus on getting the fundamentals right. Emphasis should be given on increasing competitiveness through closing the infrastructure gap, skills gap, reforming regulations and institutions, deepening value chains, attracting foreign direct investment through preferential taxes, and creation of industrial clusters and SEZs for agro-allied industries.

As the premiere development financing institution in Africa, the AfDB has been at the forefront of agro-industrialization. The Bank recognizes that agriculture can make an impact in African economies only when its production and distribution chains are substantially developed, its links to markets reinforced, and its transition to business-oriented activities accelerated. This requires interventions in agriculture infrastructure, agro-processing, and agricultural value chains. Cognizant of the pivotal role of strengthened agro-industrialization for Africa's development, the AfDB has invested massively in agribusiness operations across the continent. Between 2006 and 2014, the Bank has carried out 198 operations in agriculture and agribusiness, amounting to US$6.5 billion, thereby reinforcing its catalytic role in the continent's development. Moreover, at the core of its "High-5" development agendas, especially "Feed Africa" and "Industrialize Africa" priorities, the Bank's support of Africa's agro-industrialization will substantially be strengthened and scaled up in the coming years.

Under its newly approved "Feed Africa: Strategy for Agriculture Transformation in Africa, 2016—2025", the Bank intends to scale up its agro-industrialization interventions through the creation of mechanization programs and agro-processing zones and corridors, the coordination and financing of agriculture infrastructure projects at national and regional levels, and support to the development of warehouse receipts systems. Accordingly, the Bank plans to raise its annual agriculture investments fourfold, from US$612 million between 2011 and 2015 to US$2.4 billion between 2016 and 2025. Such a substantial increase in the Bank's interventions represents about 7.5 percent of the US$32 billion needed to be mobilized annually to drive Africa's agricultural transformation. Moreover, over the period 2016—2019, the bank plans to fund projects amounting to US$1.2 billion on industrial parks, agripoles, and agro-processing corridors across the continent. This also means that interventions from other development partners will be of utmost importance to achieve the goal of transforming Africa's agriculture into a strong agribusiness and market-oriented sector.

Increasing the number of African youth accessing agribusiness employment and economic opportunities is yet another pillar of the Bank's current agro-industrialization agenda. Although, accounting for the largest share of the population, youth in sub-Saharan Africa are the most vulnerable to unemployment, underemployment, and job informality with their unemployment being double of that of adults. Accordingly, through its "Jobs for Youth in Africa" and "Feed Africa" Strategies, the Bank envisions leveraging the continent's demographic dividend and youth bulge by putting youth employment at the forefront of its projects and interventions.

With the "Youth Strategy", the Bank envisages, for instance, improving integration of youth in agribusiness activities, strengthening their innovation capabilities, and catalyzing private sector investments in favor of African youth. These interventions are expected to create permanent jobs for 25 million youth and reach another 50 million people between 2016 and 2025. On the other hand, under the "Feed Africa" strategy, the Bank's project lending pipelines over 2016—2019 for youth employment in agriculture and agro-industrialization amounts to US$1.3 billion and the number of African youth targeted to access agri-business economic opportunities is expected to increase from 40,000 in 2020 to 200,000 in 2025.

Finally, given women's contributions to Africa's agriculture and food security, the Bank has committed itself to ensuring that growth is inclusive of women. It has increased its interventions in women-empowering projects and reducing gender inequalities in African agriculture. As the champion of gender mainstreaming and woman empowerment, the Bank aims at promoting female agribusiness entrepreneurs along the value chain, through improved access to financing and credit, and funding of agricultural infrastructure projects led by women. Indeed, at least 50—60 percent of all Bank projects have now fully mainstreamed gender. Moreover, in the horizon of 2025, the number of women receiving SMEs credit for agriculture due to Bank interventions is expected to reach 300,000, up from 150,000 expected in 2015.

Overall, AfDB is uniquely positioned to support RMCs in their quest to transform their agriculture sector into a competitive, market-oriented, agro-industrial sector that is capable of feeding the African population and exporting the food surpluses and high-value garments and footwear with "Made in Africa" labels on them. The Bank's long experience and the scale of its agriculture projects and interventions over the last two decades underscore its comparative advantage in leading the agro-industrialization revolution on the continent. However, given the scale of the challenge, concerted efforts from other partners—African governments, multilateral and bilateral donors, and private sector—will be required for broader results.

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