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Review

The role of agricultural development policies in promoting Africa's structural transformation

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ABSTRACT: Agriculture plays a dominant role in promoting Africa's structural transformations with evolving policy measures such as the Structural Adjustment Programme (SAP), Comprehensive Africa Agricultural Development Programme (CAADP) and the Maputo Declaration signed by the African heads of State at the Second Ordinary Assembly of the African Union in 2003. These policy measures are geared towards raising Africa's Gross Domestic Product, (GDP) and inducing export promotion while cutting down on import goods. Raising the performance of the Africa's agriculture is, therefore, crucial to achieving sustained structural transformation in all sectors of African economy. The emergence of Forum for Agricultural Research in Africa (FARA) has also helped in alleviating most of the problems facing African farmers at a time and re-positioning African agriculture to embrace advanced structural changes for all inclusive transformation growth. The review therefore recommends African governments to fully maximize the benefits of these developmental policy measures to foster economic growth, development and impactful transformation across all sectors of the African economy.

Keywords: Africa, agriculture, development, growth, policies, structure, transformation.

INTRODUCTION

Agriculture is a dominant occupation in Africa accommodating over 70% of the populace which depend on it for their survival and livelihood. It constitutes about one-fifth of Africa's GDP and about half of the total value of its exports (Block, 1999). Raising the performance of the Africa's agriculture is therefore crucial to achieving sustained transformation leading to over all development of the agriculture sector and reduction in poverty which has ravished most of the African countries (Christiaensen et al., 2011).

Majority of the households in Subsaharan Africa reside in rural areas and has agriculture as their main source of livelihoods. Most of these households operate their own farms making use of family labour while few people are hired as paid workers. Farm size is majorly small in most African production contexts, with virtually all land sizes below 5 hectares (Eastwood et al., 2004). Similarly, in many other African countries, land holdings are even lower. For instance, Malawi's 2006-2007 National Census of Agriculture and Livestock found that only 8% of land holdings were 2 hectares or larger. In Rwanda's 2008 National Agricultural Survey, the corresponding figure was 6% of holdings of 2 hectares or more (Lofgren et al., 2002). Also, in Mozambique, 95% of farm holdings were lower than 4 hectares in the 2009-2010 agricultural census (MacDonald et al., 2013). Furthermore, in Nigeria land holdings are in the scale of 2 to 5 hectares. Empirically, these small sizes of farms achieve extremely high levels of productivity measured in output per unit land. Studies reveal that small farms achieve high levels of output per unit of land higher than large farms based on certain socio-economic factors (Christiaensen et al., 2011). In African agriculture, evidences have shown significant differences in living standards between rural and urban households. Information gathered from Sub-Saharan African countries

indicates that rural households are worse off relative to urban households in certain issues (World Bank, 2013). For instance, infant mortality rates in 40 sub-Saharan African countries are considerably higher in rural areas than urban areas, (80 deaths per 1,000 live births in rural areas, compared to 65 in urban). Rural areas equally have a higher rate of child stunting when compared to urban areas. Again, rural areas typically receive lower levels of public services and infrastructures than urban areas ascribable to higher per unit costs of service delivery in rural areas (Wade, 2003). Conversely, measures of academic quality and literacy levels are higher in urban areas. However, agriculture's cardinal role in the economy coupled with its importance for food security, in addition to the poor rural living standards makes the sector a prominent focus for policy direction in developing countries (Weng et al., 2013). Many African countries are concerned with moving the agricultural sector away from a subsistence level and placing it towards higher productivity and market preference. Others are concerned with the sector's capacity to absorb workers, in policy environment where urban occupations in the formal sector are in short supply. Still others focus on supporting the agricultural sector to meet domestic food needs and to avert over dependence on imported goods and services which have bedeviled most of the African countries over the past decades (World Bank, 2007).

AGRICULTURAL DEVELOPMENT POLICIES IN AFRICA

Before now, there was no policy in place aimed at mobilizing resources specifically for raising productivity in the agricultural sector and ensuring food security. Over the years African countries have evolved a number of policies geared towards strengthening the agricultural sector (Tombe, 2012). The emergence of Forum for Agricultural Research in Africa (FARA) since 2000 has helped in alleviating most of the problems facing African farmers at a time. It helped in developing agricultural policies which focus on large farms and modernization through the supply of improved inputs such as fertilizers and hybrid seeds. Crop marketing and agricultural credit schemes were organized through public institutions like State run co-operatives, marketing boards and parastatals aimed at assisting farmers secure credit facilities to expand production. The Structural Adjustment Progammes (SAP) of the 1980's and early 1990s aimed to reduce public expenditures through privatization and liberalization through the abolishment of price controls, the reduction of trade barriers and the scrapping of fixed exchange rates. Through SAP, African governments were able to set up an enabling environment for the agricultural markets to encourage private players to take over the marketing of both inputs and outputs (Swinnen, 2011). Hence, these medium increased inputs availability and accessibility. Moreover, there was a lot of resistance to the reduction of existing State support and the liberalization programmes and this perhaps impaired full implementation in most countries in sub-Saharan Africa. Consequently, the signing of the Maputo Declaration in 2003 in response to African agricultural development policies saw a revitalization of interest in agricultural sector. Pan-African agricultural policies and the Maputo Declaration of the African Union of 2003 are widely perceived to be significant milestones in the development of the agricultural sector in Africa (Tiffin and Irz, 2006). The Comprehensive Africa's Agricultural Development Programme (CAADP) and the Maputo Declaration were signed by the African heads of state at the Second Ordinary Assembly of the African Union in 2003 laying the foundation for the CAADP and the Maputo Declaration, Pan-African agricultural policies. The main driving force behind this initiative was the need to address the structural food gap in sub-Saharan Africa, where a high share of agricultural imports co-exists with a large incidence of undernourishment and hunger, and to drive the structural transformation process as envisioned by the African Union Agenda (Thurlow and Van-Seventer, 2002). The CAADP was divided into two periods: the first decade of the programme (2003-2013) and the second decade (2015-2025). After the first decade of the programme, the African Union decided to shift its policy focus and put a more intensive monitoring mechanism into place. The primary objective of the first CAADP was to increase investment in agriculture and generate growth in the agricultural sector. In the Maputo Declaration, African governments pledged to allocate 10% of the national public expenditures to agriculture and generate 6% agricultural GDP growth per year (Stifel et al., 2012). The CAADP should be seen as a set of guidelines for a process to shape agricultural policies within countries and across countries, in collaboration with and supported by a wide range of actors. The aim is to foster an inclusive process bringing onboard diverse stakeholders, such as farmers' organizations, the private sector and women's associations, to gain consensus for a national agricultural policy (Stifel and Minten, 2008). The first step in any national CAADP process is stock taking and round table discussions, whereby relevant stake-holders in the country discuss agricultural conditions and policy priorities. Subsequently, the stakeholders jointly sign a CAADP country compact, followed by the develop-ment of national agriculture and food security investment plans. These plans provide the detailed blueprints for achieving the goals and targets in the CAADP compacts. Again, the New Partnership for Africa's Development (NEPAD), African National Planning and Coordinating Agency (ANPCA) is the facilitating unit, ensuring that countries write up investment plans that are consistent with the CAADP objectives. In addition, the Regional Economic Communities (RECs), such as the Southern African Development Community (SADC) and the Common Market for Eastern and Southern Africa (COMESA), play a role to push for the implementation of CAADP in the countries themselves, while coordinating region wide investments through the regional CAADP

compacts (Robinson, 2011). The Regional Strategic Analysis and Knowledge Support System (RSAKSS) are responsible for monitoring national and regional progress through the provision and analysis of key data, supported by the International Food Policy Research Institute (IFPRI). NEPAD estimated that $251 US billion was needed to implement the CAADP for the period 2002 to 2015. According to the latest figures from NEPAD, 42 out of 54 African Union member states had signed a CAADP compact by November 2015. Regarding the regional organizations, ECOWAS, IGAD, ECCAS and COMESA have signed regional compacts between 2010 and 2014, of which one is already under implementation by November 2015. However, the initiation and signing of the compacts have been a slow process. The first country compact was signed in 2007 by Rwanda, four years after the Maputo declaration. In 2009, more countries followed, mostly from West Africa. In 2007/2008 food riots following the global food price crisis spread across a number of African countries, reigniting an interest in agricultural policy and leading to more active participation in CAADP (Ravallion and Datt, 2002). The strategy outlined in the policy framework document of CAADP stresses the role of smallholder farmers' in fulfilling the dominant goals of the Maputo Declaration. The agricultural development policies cum structural transformation pillars focused on small holders. For the first pillar of, Land and water management, irrigation benefiting smallholders (including informal irrigation systems) is central. The second pillar focuses on the crucial role of infrastructure and the importance of rural roads in connecting smallholders to markets. In addition, the strategy mentions soft infrastructure, notably communication and price and market information for farmers. The importance of involving the private sector to spur market access is established. The third pillar concerns raising food supply and reducing hunger, and improved technology among small scale farmers and the creation of an enabling environment for the provision of extension services and rural development. Structural safety nets, in the form of basic food or cash to support vulnerable groups in society are put forth as a component of reducing hunger and poor nutrition. The fourth pillar - agricultural research and dissemination – focuses on enhanced extension to producers, and risk and cost reduction of technology adoption for small holders specifically. Notably greater efforts are envisaged to better reach women farmers, as in the past communication strategies were not effective. Regional collaboration in agricultural research is highlighted as a way to enhance efficiency and achieve economies of scale, allowing national research institutes to specialize in a few research areas (Jacoby and Minten, 2009).

AGRICULTURE AND STRUCTURAL TRANSFORMATIONS IN AFRICA

The economic literature has often used the developing role of agriculture to explain different stages in a country's development. As noticed in advanced countries, it is believed that countries undergo certain structural changes as they transit from one level of development to another. In Africa, one of the observable structural changes is the changing share of agriculture in both GDP and total employment (Larson et al., 2014). This emerges with development thinking that, at the early stages of development, countries tend to have a larger share of their GDP generated from agriculture. As they advance to higher levels of development, the role of agriculture tends to decline. Similarly, the majority of employment is in the agricultural sector during this early stage of development. Due partly to low productivity in agriculture, this early stage of development is characterized by a large disparity between the share of agriculture in GDP and the share of agriculture in employment (World Bank, 2007). As countries transition to higher levels of development, the share of agriculture in both GDP and employment shrinks. Manufacturing and service sectors take prominence as the rural labour force moves into urban areas. Agricultural productivity increases with more science-based innovation (Marenya and Barrett, 2007). This phenomenon has been observed in Europe, America and in some parts of Asia. The current declining contribution of agriculture in both output and employment seems to suggest that Africa is following this traditional development path: The role of agriculture is declining and industry and service sectors will become the engines of growth. However, structural transformation in Africa saw the shift away from agriculture at a time when production and productivity in agriculture had increased due to science-based technologies (McCullough, 2015). This allowed reallocation of labour to non-agricultural sectors with little or no consequences for food security. In Africa, low agricultural productivity plus an increasing population calls for ongoing improvements in this sector to sustain growth, poverty reduction and food security. The timing of resource reallocation between sectors of the economy matters for the development outcomes of structural transformation. When resources move from one sector of the economy to another, it should improve development outcomes due to more efficient use of those resources (Mundlak, 2000). The current relocation of labour from agriculture to the service sector tends to imply this efficiency outcome, since labour productivity in service sectors exceed that in the agricultural sector. However, in Africa, the reallocation of labour across sectors needs to be understood not only from current efficiency measures but also in the broader development plans of the continent. How much labour can agriculture release? Has African agriculture attained production levels that permit withdrawing labour? Is this labour being replaced my mechanisation? All these concerns loom as policymakers devise strategies to address the huge migration of young people from villages to cities, and as the increasing population puts more pressure on food prices (Paarlberg, 2002). In 2011, food imports for sub- Saharan Africa alone were as large as $43.6 US billion. Food

imports for sub-Saharan Africa in 2012 were $16 US billion more than those of India, even though India is much larger in terms of population. In fact, it appears that most of Africa's rural agriculture is subsistence, producing just what is sufficient for home consumption. This seems particularly the case for rural small-holder farmers. For most Sub-Saharan African countries, more than 40% of households depend on their own produce. This means that food production is limited to consumption needs for most households. This raises concerns about the food security consequences of the movement of labour out of agriculture, especially the young and therefore the most productive labour (McMillan and Harttgen, 2014). Though productivity per worker in the sector has increased in some African countries, it is still far below what holds in other regions of the world (Kahneman, 2003).

ROLE OF AGRICULTURAL DEVELOPMENT POLICIES IN PROMOTING AFRICA'S STRUCTURAL TRANSFORMATION

The CAADP which was established by the Africa Union assembly in 2003 recognizes that a structural transformation of African agriculture is crucial to any strategy for inclusive economic growth and poverty reduction on the continent. African governments agreed through CAADP to increase public investment in agriculture to a minimum of 10 percent of their budgets (Jensen, 2007). Uneven compliance with this pledge notwithstanding, this renewed commitment has sparked complementary efforts in cooperation with international donors, nonprofit organizations, and research institutions. This measure has increased agricultural labour productivity leading to agricultural sector growth. Sub-Saharan Africa (SSA) use to be the world region with the lowest agricultural growth but this ugly trend has been reversed through rewarding agricultural development policies (Kahneman, 2003). Before now, tracking progress on labor productivity growth as it relates to structural transformation is a challenge in African context because total labor productivity growth represents an aggregate of (i) the increase of labor productivity within existing economic activities via technological change, capital accumulation, or shifts in the terms or trade, as well as (ii) the movement of labor from low- to high-productivity sectors. This challenge is exacerbated in SSA because of limited data (Lanjouw and Feder, 2001). But several recent efforts through the development of agricultural policies such as CAADP, Maputo declaration, NEPAD, etc., have significantly advanced our understanding of labor productivity, the gaps between productivity levels in agricultural and non-agricultural sectors, and what stands to be gained from a structural transformation in Sub-Saharan Africa. These policy measures have equally impacted greatly on Africa's industrial development, accounts for accelerated growth in agricultural technology advancement since 2000, and have contributed to overall productivity growth in African agriculture (Block, 2010). Furthermore, efficient allocation of scarce resources from agriculture has led to further development of other sectors of the economy thereby engendering positive structural transformation across African countries (McMillan and Harttgen, 2014). These policy trends have equally been linked to increase per capita growth in Africa real GDP. The implication of agricultural policies has ushered in structural transformation even in the non-agricultural sectors of the economy. Agricultural transformation, based on productivity growth, improved market functioning and growth in the rural non-farm economy, remains essential to achieve the goal of inclusive growth and prosperity in SSA. Representative countries that have benefited from these inclusive agricultural development policies include Ethiopia, Malawi, Nigeria, Niger, Tanzania, and Uganda, etc. Moreover, these policies provide an update to our understanding of African agricultural growth transformations in rural areas, including the potential gains and inhibitors to agricultural productivity. Sheahan and Barrett (2014) noted that most African smallholder farmers still use modern inputs, although pockets of high use across and within several countries exist, particularly for chemical fertilizer and agro-chemicals. Country-level factors, embodying policy and enabling environment, appear most important in driving agricultural input transformations. Dillon and Barrett (2015) found high rates of participation of rural households in land and labor markets, coupled with strong evidence of pervasive factor market growth that are not specific to a given sub-population but rather appear general and structural in nature. Agricultural development policies have swept through all African countries and its intensification has resulted to vagaries of structural transformations. The current evidence reinforces the longstanding impression that non-farm income sources are crucial to structural transformation in rural Africa (Barrett et al., 2001). Agricultural development policies have increased agricultural productivity growth in Malawi and enabled farmers to increase the gross value of agricultural output apart from input intensification. The 21st century Agricultural development policies has brought significant progress in agricultural productivity growth in some parts of sub-Saharan Africa after decades of decline or stagnation (Block, 2014), albeit with important divergence between countries (Barrett and Upton, 2013). In spite of seemingly more frequent droughts and floods in some part of African region, land productivity growth advanced significantly in each of sub-Saharan Africa's regions between 2000 and 2009, with some increase in labor productivity and sector growth. Part of the accelerated productivity growth is attributable to renewed African government commitments to promoting and improving the agricultural sector, as reflected in the CAADP goals related to promoting agricultural markets and regional integration, improving farmers' access to markets, combating

inequality, and advancing agricultural technology. The largest strides have been made where concerted investments have taken place. For example, the New Rice for Africa (NERICA) program, led by Africa Rice, an international research center based in Benin, introduced and promoted new, inter-specific cultivars of rice developed through tissue culture techniques to cross African and Asian varieties that do not naturally interbreed. The resulting varieties have generated significantly greater yields and spread widely in West Africa over a short period of time. Meanwhile, a global initiative successfully eradicated rinderpest, a disease that affects cattle and can be disastrous for sub-Saharan African pastoralists; the last outbreak was reported in 2001, While private sectors; research and development have also played a growing role to date, the vast majority of progress in developing improved plant and animal genetic material and natural resources management practices for sub-Saharan African agriculture have come from publicly or philanthropically funded national or international research efforts. Fertilizer use has also expanded substantially in sub-Saharan Africa over the past decade, fueled in part by government subsidy programs and high-level attention occasioned by the 2006 Africa Fertilizer Summit in Abuja (Davis et al., 2014). While fertilizer application rates remain very low in many countries in the World, it has become substantial in several African countries (Sheahan and Barrett 2014). The release of new crop varieties and rates of farmer-level adoption of improved varieties also increased noticeably from 1997–1998 to 2009–2010, perhaps signaling some progress in agricultural research and development and its impacts in sub-Saharan Africa that bode well for the years ahead (Alene et al. 2011). Population growth, urbanization, income growth, and increased connectivity have all fueled growing demand for food across Africa, and increased agricultural market integration, as food marketing channels are showing early signs of value chain transformations similar to what occurred in Latin America and Southeast Asia over the past 20 years (Reardon and Timmer 2007). These food marketing channels are domestically tailored, due to the attention paid to export promotions which puts a check on food imports. Thus, due to improved agricultural development policies, the share of domestic food production consumed at home between 1980 and 2009 routinely exceeded 90 percent. As global prices and sub-Saharan Africa food demand have increased, the region continues to rely heavily on its own output to feed its population. Net imports have increased slightly, but most of the region's added food demand has been met by expanded sub-Saharan Africa food production through the development of agricultural policies. The long-standing differences between coastal and land-locked countries have become more pronounced in the past decade, with the land-locked sub-Saharan Africa states now obtaining up to 95 percent of total food from domestic production. The highly domestic orientation of SSA agriculture accentuates the necessity of structural transformation and of development of viable food value chains to efficiently move food from farms to growing cities and as structural transformation trends continue to pick up in Africa, an impending diet transformation will quickly follow adding new jobs to the agri-business sector in turn (Timmer, 2009). Furthermore, promoting the structural transformation of African agriculture and of the rural spaces within which most agricultural activities occur is essential to advance an inclusive growth agenda in Africa. However, developmental agricultural policy measures in promoting Africa structural transformation are geared towards investment in physical and institutional infrastructure to remedy deficiencies that differentially penalize agriculture. For decades, a deep urban bias led to a distorted pattern of investment in much of Africa, with too much public and private capital invested in urban areas and too little in rural areas (World Bank, 2009). This was true for infrastructure, such as roads and water, for public services, such as education and police protection, and for private services, such as finance. In response, rural households and firms still hold too much capital in liquid and unproductive forms as a strategy to manage risk in the face of thin and highly imperfect credit and insurance markets, and invested too little in productivity-increasing capital, such as education, irrigation or machinery, and variable inputs, such as improved seed or fertilizer. Through developmental agricultural policy measures, SSA governments had learnt from the experience of countries that successfully launched shifted investment priorities in favor of rural growth and benefited from the pre-existing disequilibrium in rates of return, at least initially, as real value added per farm worker increased rapidly due to both increased factor productivity and to increased efficiency in factor allocation across sectors (Pender and Fafchamps, 2006). Policy evolution has addressed the water and soil constraints that hold back agricultural productivity. Agricultural productivity depends uniquely on the productivity of the natural resource base on which the sector depends. SSA is by far the world's least irrigated agricultural region, largely because it remains too expensive for farmers to withdraw groundwater given the cost of fuel and limited access to credit to invest in pumps and pipes. With developmental agricultural policy measures, emergent technologies, such as solar-powered methods for withdrawing abundant groundwater supplies during periods of extreme draught have been put in place to alleviate the suffering of most arable crop farmers during periods of extensive draught (Burney et al., 2009). Through agricultural policy measures, efforts are made to promote the integrated use of agro-forestry, fallows, inorganic fertilizers, legumes, and manure which has the potential to fix carbon, restore soils, and even combat desertification. Again, through agricultural policy measures, African states have improved the security of resource tenure generally and the terms and transparency of land contracts and deals specifically. Continued increase in external demand for land and water will spark

further large-scale land acquisitions to bring more uncultivated arable land into production (Bruinsma, 2011). These investments have the potential to boost agricultural productivity through judicious investments that might close yawning yield gaps in undercapitalized African agriculture and generate environmentally and socially sustainable food supplies for domestic and regional markets. Land deals and enhanced tenurial security may lead to farmland consolidation, which can help stem the growth in farms too small to be commercially viable and to effectively absorb surplus labor (Jayne et al., 2003). The yawning productivity gap between African smallholder agriculture and farmers elsewhere in the world offers the promise of productivity growth on the existing resource base. This will necessarily take a different form than the earlier Green Revolution in Asia, which developed and disseminated a few blockbuster improved seed varieties along with mass-produced inorganic fertilizers and standardized irrigation methods across focus as much on the post-harvest value chain and the rural non-farm economy as on farm-level production. The appropriate mode of organization of the post-harvest value chain varies dramatically by crop and location, but whether it is vertical integration, coordination mechanisms through out-grower schemes or contract farming arrangements, or other forms, the emergence of new modes of linking farmers to consumers is slowly bearing fruit in African agriculture, not least of which by promoting uptake of modern inputs, innovation in natural resources management and post-harvest practices, and upgrading of quality control (Reardon et al., 2009). At the same time, the rapid expansion of telecommunications and electrification into secondary towns is stimulating robust growth in the non-farm sector that appears to have greater productivity boosting and poverty reducing effects than does rural-to-urban migration (Christiaensen and Todo, 2014). Agricultural policy measures had engendered the emergence of rural financial institutions and products to help African farmers and traders manage risk more efficiently. The agricultural sector is subject to far greater risks than are other sectors, especially in SSA (Hardaker et al., 2004), and the biological lags intrinsic to agricultural production, especially of higher-value perennials and livestock, create a significant delay between investment and payoff that commonly requires financial intermediation. So, whether for credit or insurance, the agricultural sector commonly needs reliable access to financial services more per unit value added than do other sectors (Dercon and Christiaensen et al., 2011; Barrett and Carter, 2013).

CONCLUSION AND RECOMMENDATIONS

African countries have evolved a number of policies geared towards strengthening the agricultural sector and other sectors growth inclusive. The emergence of Forum for Agricultural Research in Africa (FARA) has helped in alleviating most of the problems facing African farmers at a time. These helped in developing agricultural policies which focused on large farms and modernization through the supply of improved inputs such as fertilizers and hybrid seeds. The CAADP and the Maputo Declaration signed by the African heads of state at the Second Ordinary Assembly of the African Union in 2003 saw the evolution of structural transformation in African agriculture as well as other sectors of the economy with advanced technological impacts. The driving force behind this developmental policy measures was the need to address the structural food gap in sub-Saharan African countries where a high share of agricultural imports co-exists with a large incidence of undernourishment and hunger, and further drive the structural transformation processes as envisioned by the African Union Agenda. The study, therefore, recommends African governments to fully maximize the benefits of these developmental policy measures to foster economic growth, development and impactful transformation of all sectors of the African economy.

CONFLICT OF INTEREST

The authors declare that they have no conflict of interest.

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