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Agricultural transformation in Africa : Building on successes

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Agricultural transformation in Africa : Building on successes

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Context

The World Development Report (World Bank 2008) underscores the importance of growth in agriculture as a critical catalyst for economic growth and poverty reduction. The report points out that GDP growth from agriculture is shown to raise incomes of the poor 2-4 times more than GDP growth from non-agriculture. Sustainable agriculture plays a key role in tackling food insecurity especially in rural areas. According to the UNDP (2012b) increases in agricultural productivity and better nutrition are important for food security and human development. They argue that increased food production will increase food security by raising food availability and lowering food prices, thereby improving access to food. In addition, higher productivity will also increase peoples' incomes, which has positive effects on health and education (UNDP 2012a).

Agriculture continues to be the predominant source of employment in many regions, accounting for 63 % of rural household income in Africa,

62 % in Asia, 50 % in Europe and 56 % in Latin America. Historically, agricultural growth was the precursor to industrial growth in Europe and, more recently, in parts of Asia. However, agricultural growth also has much broader linkages or multipliers and allows poor countries to diversify their economies to sectors where growth may be faster and where labour productivity and wages are typically higher. Where agricultural productivity has grown slowly, as in many parts of sub-Saharan Africa, non-farm activities have also tended to grow slowly.²

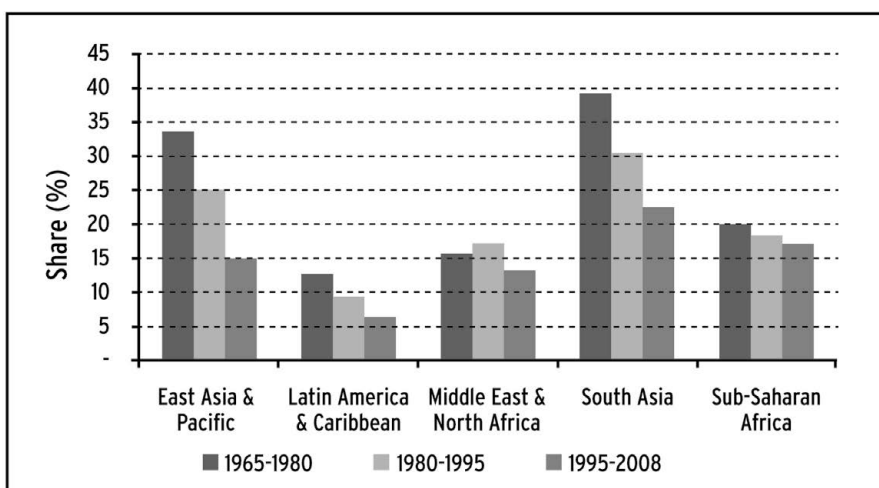
Sustaining agriculture, means sustaining the incomes of those directly farming or working in secondary activities connected to agriculture. As argued by FAO, the impact of agricultural growth on poverty reduction is two times bigger than in other sectors 'Provided income inequality is not excessive, agricultural growth reduces poverty among the poorest of the poor. In resource-poor low-income countries (excluding sub-

Saharan Africa), a given rate of GDP growth due to agricultural growth reduces poverty five times more than does an identical dose of GDP growth due to non-agricultural growth. In sub-Saharan Africa, agricultural growth is 11 times more effective. Thus, raising agricultural production and productivity remains crucial for reducing poverty in a cost effective manner, especially in low-income countries³.

Whilst in Asia food production almost doubled and South America experienced a growth of 70%, African agriculture showed modest performances if compared with the growth of its population in the last years.⁴ Notwithstanding a great variation exist among countries. Among all, 13 countries doubled their production in the last 20 years, among them Burkina Faso, Niger, Mali and Ghana where small scale farmers represent a great proportion of the population.⁵

Africa remains a marginal player in world trade, accounting for only 2.8 per cent of world exports (in current United States dollars) and 2.5 per cent of world imports in the decade from 2000 to 2010. The shares of both Africa and sub-Saharan Africa in world exports and imports have fallen significantly over the period from 1970 to 2011.⁶

Average share of agriculture in GDP



Sources: WDI 2009.

Many challenges for African agriculture

Agricultural production in Africa has increased only slowly over the last forty years. African Agriculture is challenged by a number of threats such as food price spikes, land and water not adequately exploited, rising energy and fertilizer prices

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and the impact of climate change on agriculture production and livelihoods. Increases in crop yields per hectare have been much slower in Africa than in any other region of the world. To some extent this may reflect low and falling soil fertility in some areas, but lack of technical innovation is commonly seen as a major factor. The Asian green revolution innovations and dissemination of improved varieties have not experienced the same success in Africa. Less has been spent on agricultural research and development in Africa than anywhere else (World Bank 2007, Binswanger et al. 2009). Slow progress in the use of irrigation — less than 4% of crop land is irrigated (Binswanger et al. 2009), despite its high unexploited potential (World Bank 2007) — is another element hindering increases in crop yields. Addressing climate change will

require important adaptation and mitigation efforts.

Northern subsidies tend to boost world production and press down international prices, lowering returns to African exporters — cotton is a prime case where exported US cotton produced with a subsidy lowers the world price — and making local markets vulnerable to cheaper imported food. Northern countries are sometimes accused of dumping their excess food on African markets, partly through subsidized commercial exports, and partly through food aid. Non-tariff barriers, typically in the form of stringent sanitary and phytosanitary standards, can be daunting; while ‘tariff escalation’, by which processed farm goods attract higher import duties than unprocessed goods, discourages value addition in exporting countries.⁷

Feeding more than 9 billion people by 2050 will require doubling food production on a sustainable basis. Therefore, agriculture should be resilient - able to withstand or recover from stresses and shocks. Developing resilient agriculture will require technologies and practices that build on agro-ecological knowledge and enable smallholder farmers to counter environmental degradation and climate change in ways that maintain sustainable agricultural growth.⁸ Financial markets and rural finance institutions are weak. Progress in science and technology is inadequate and agricultural research, agricultural extension, and agriculture education remain persistently underfunded.⁹ Lack of a coherent policy framework and low institutional capacities for policy implementation emerge also as key factors for the poor performance of aid in African agriculture (e.g. World Bank IEG 2007).



2. Overview of African agriculture

In Africa, there is insufficient domestic production, and the continent spends about \$30 billion to \$50 billion a year to import food. This deprives the continent of funds for needed expenditures on infrastructure and social and economic amenities. It is estimated that if continental food supplies do not increase, Africa will spend about \$150 billion on food imports by 2030.¹⁰

Agriculture remains the major sector in African economies. Even if accounting for only about one-fifth of African GDP, a great number of Africans make their living out of the primary sector. Agriculture in Africa is characterized by an high degree of diversity where big exploitation co-exist with a large share of small scale producers. According to Future Agriculture, African agricultural is made up almost 33 million small farmers, with a land size between 2 ha or less and produce the 90% of total agricultural (Wiggins and Leturque, 2010).

Africa suffers from chronic hunger. Following the food price spike of 2007/08, the FAO estimates that another 12% have been added to the numbers of undernourished people in Africa south of the Sahara, bringing the total to 265m, almost one third of the population. In the same region, more than a quarter (28%) of children under five were underweight in 2006.

Women's involvement in agricultural activities ranges from 20 to 70 per cent, yet it is also noted that their participation in agriculture-related activities is increasing in developing countries. The International

Assessment of Agricultural Knowledge, Science and Technology for Development (IASSTD 2008), recommends four steps for supporting women's activities in agriculture. These include supporting public services, particularly in rural areas to improve women's living and working conditions; creating or modifying policies targeted at technological development that recognise and address women's knowledge-enhancing skills and experience in food production; and assessing and reducing negative effects of farming practices and technologies that pose risks to women's health.

2.1. A variety of farming systems

Agriculture in Africa is characterized by different farming systems and different models of exploitation. Dixon et al., (2001) individuated 11 farming systems based on the access to natural resources, crop cultivated livelihood strategies in connection to markets, and the intensity of production activities.

- Irrigated farming system. It comprises large irrigations schemes coupled with rainfed agriculture or animal husbandry. Land-holdings can go from 22 to less than 0.1 ha, the main cultivated crops are rice, cotton, vegetables, rainfed crops. The incidence of poverty connected is lower than in other farming systems.
- *Tree crop farming system* is characterize the humid zones of West and Central Africa. Main

crop cultivated are commercial tree crops such as cocoa, coffee, oil palm and rubber. Intercropping is practiced for subsistence purposes. This farming systems are characterized by the presence of plantation, especially for rubber and palm oil. Poverty is limited to moderate and is concentrated among very small farmers and workers.

- *Cereal-root mixed crop faming system* this is extend through the dry region of West Africa and parts of central and southern Africa. According to the estimation the cultivated area would amount to 31 million ha, partly (0.4 m ha) irrigated. Livelihoods strategy are mainly based on the cultivation of maize, sorghum, millet, cassava, yam and legumes and on cattle rearing. Although cereals are important in this farming system roots and tubers are the main crop cultivated. Intercropping is also practiced and exists a good level of commercialization. According to the Dixon et al. this farming system has good potential of becoming competitive in the production of cereals and export crops.
- *Maize mixed farming system* is an important source of food for Central and Southern Africa. This farming system is particularly spread on plateau and highlands at altitudes between 800 and 1500 meters. The main food crop is maize, but livelihoods strategies are also based on the cultivation of cash crops such as tobacco, coffee and cotton and on migrant remittances.

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- Agro/pastoral millet/sorghum farming system. This system characterized the dry areas in Western, East and Southern Africa. Farming and livestock have the same importance. Main cultivated crops are sorghum, pearl millet and pulses. Sheep, goats and cattle rearing is also important. This farming system is characterized by high-levels of poverty and the main factor of vulnerability for agricultural production are droughts.¹¹

IFPRI classifies four groups of African countries based on their natural resource endowments and geographic characteristics: (1) coastal; (2) landlocked; (3) mineral-rich; and (4) less-favorable agricultural potential. These traits describe the immutable initial conditions in which agriculture and other economic activities must operate. The other two dimensions of the debate relate to agriculture's situation in the broader economy and its relationship to poverty reduction. One of the arguments in favor of agriculture playing a central role in development is its strong linkages to poor rural households.¹²

2.2. Food production and trade

Analyzing data from 1960 to 2007 FAO found that Africa had become a net importer of food and agricultural products. Africa imported in 2007 almost 50 million\$ of food per year to satisfy the demand of growing urban population.¹³ According to FAO 'overall between 1980 and 2007, Africa total net food import in real term grew at 3,4 percent per year

Typology of African countries

Rural poor more than half of poor population			
	Agriculture more than 30 percent of total GDP	Agriculture less than 30 percent of total GDP	Rural poor less than half of poor population
More-favorable agroecological conditions			
Coastal	Benin Ghana Tanzania Togo	Côte d'Ivoire Kenya <i>Mauritius</i> Mozambique Senegal	<i>South Africa</i> The Gambia
Landlocked	Burkina Faso Ethiopia Malawi Mali	Lesotho <i>Swaziland</i> Uganda Zimbabwe	
Mineral	Central African Republic Democratic Republic of the Congo Nigeria Sudan	Chad <i>Equatorial Guinea</i> Guinea Zambia	Angola Cameroon Republic of Congo
Less-favorable agroecological conditions			
	Burundi Niger Rwanda <i>Namibia</i>	Eritrea Madagascar Mauritania	<i>Botswana</i> Cape Verde

Sources: GDP and poverty data from World Bank (2010a, 2010b) Agroecological and geographic classifications from Diao et al. (2007).
Notes: Poverty shares use most recent available survey year and national poverty lines (not US\$1 per day). Only countries not rich in minerals were classified as landlocked or coastal. GDP = gross domestic product. Boldface denotes case-study countries. Italics denote middle-income status. Agriculture's share of GDP is for 2005 or closest year.

Source: Diao Xinshen, James Thurlow, Samuel Benin, and Shenggen Fan. 2012. *Strategies and priorities for African agriculture : economy wide perspectives from country studies*. IFPRI

mostly fuelled by urban population growth (2,6% per year), the increase in per capita food consumption was only about 0,8%' Among the causes of this, FAO found out that population growth, low and stagnating productivity in food and agricultural production and policy distortions, poor infrastructures and weak institutional support are among the main factors influencing food deficit in Africa. Imports are mainly cereals, and to a minor

extend livestock products, sugar and vegetable oils.¹⁴ From the export side, agricultural export are no longer the main source of foreign currency for many countries. Africa experienced a fall in agricultural exports over the total export, from 42% in the 60s to under 10% between 2001-2007. Most exported food keep on being coffee, tea and spices.¹⁵

Medium to long-term forecasts predict firm world food demand.

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Although increased demand can create tensions on food markets as abruptly reminded by the 2007/2008 food crisis, expanding world markets might well be a chance for African agriculture:

First, there are increasing market opportunities in Asia. Economic development and diet diversification boost demand for products which Africa may be in a good position to supply. Opportunities as well, including the likely strong demand for farm produce from growing and more urban populations within the continent and from Asia.

The second key opportunity is linked to biofuels expansion. It will be very difficult for OECD countries (the EU in particular) to reach their biofuels targets without significant imports. Those countries with underused land, such as Mozambique and Zambia, could well benefit from these expanding markets.

In addition to firm demand on traditional export markets, "high added value" exports (such as floriculture or fair trade products, etc.) are rapidly expanding, and the CMAOC expects value of these new exports to match

traditional exports value by 2030.¹⁶

Africa's own markets here population growth, urbanisation and economic growth should see significant growth of demand provide also an opportunity for farmers. (Binswanger 2009)...while demand for exports on commodities and high value should rise from US\$8bn and US\$3bn respectively in 2000 to around US\$20bn in 2030, it is expected that demand on domestic and regional agriculture markets will jump from US\$50bn to US\$150bn over the same period

Over the last forty years, food production in Africa has increased slowly while food production per person almost tripled in East Asia, in Asia it almost doubled, and in South America it rose by 70%, while in Africa food production per person has barely improved at all.

Overall African food production per head since the early 1980s has risen, by some 18%. But what is more striking is the difference between two regions that have done much better: Northern and Western Africa, with 52% and 46% increases respectively, and those for the rest

of Africa where food production per capita has fallen over this period. Indeed, Northern and Western Africa have not only raised production well ahead of population growth, but have also matched the record of Asia in raising food production per capita in this period. Concern over food production is not an Africa-wide problem but is rather concentrated in Eastern, Middle, and Southern Africa.

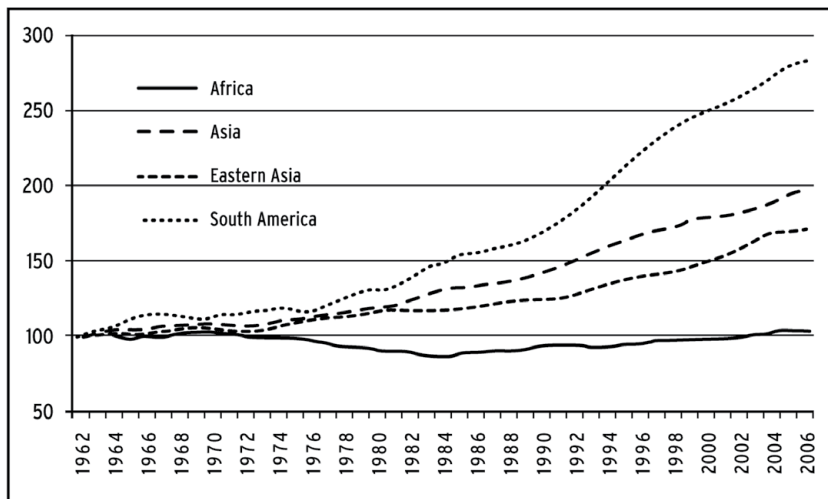
Food production in Africa, is dominated by tubers and roots. In 2011 cassava accounted for 15082964\$ produced and 145234201 metric tonnes. Followed by indigenous cattle meat and yam in value terms.¹⁷

Western Africa maintains the lead in cocoa production. In 2012, Ghana and Cote d'Ivoire together produced almost the 60% of world cocoa beans. The region performed well in 2012 also in the production of cereals, with an increase of 14.2% and this had a positive impact on the general situation of food security in the region.¹⁸ Notwithstanding, the Sahel food crises in 2011/12 had a negative outcome on households assets and savings, level of indebtedness of a great part of the population.¹⁹

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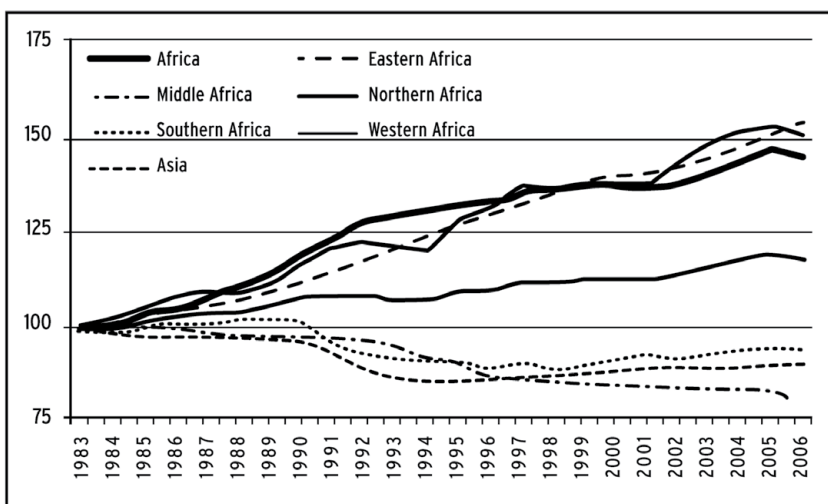


Food production per capita, 1962 to 2006 (compared to other regions in the world)



Sources: Data from FAOSTAT, FAO. Gross food production per capita, indices, taken as three-year moving averages and based to 1961/63.

Africa, food production per capita, 1982/84 to 2005/07



Sources: Data from FAOSTAT, FAO. Gross food production per capita, indices, taken as three-year moving averages and based to 1982/84.

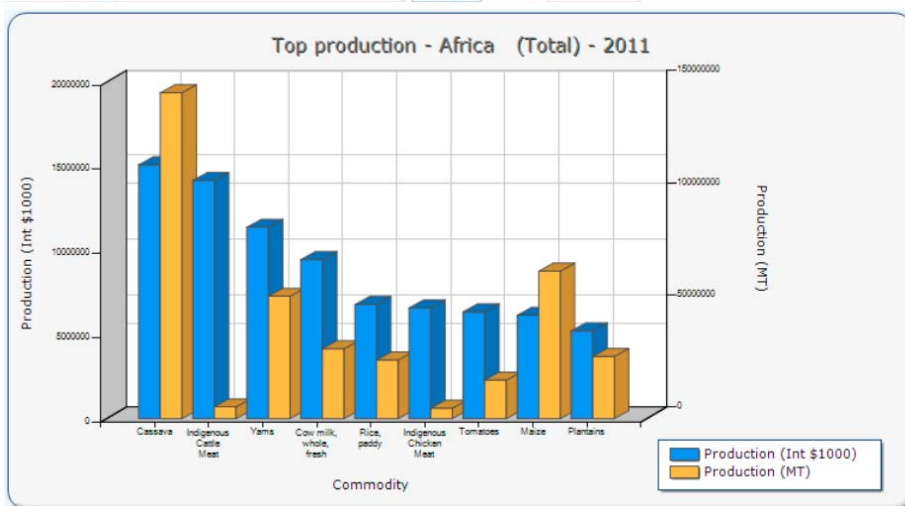
Central African countries²⁰, if Cameroon is excluded, are characterized by great dependence over imported food to satisfy local consumption. The situation is particularly severe in CAR, DRC, Chad and Congo due, inter alia,

to the armed conflicts in CAR and in Kivu region, DRC, and people displacement. Cereals production is stagnant in the region with the only exception of Chad that doubled its production last year.²¹

2.3. Regional Trade: the new driver

Africa is spending US\$30 billion to \$50 billion annually on imports of agricultural products, and in doing

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Source: FAOSTAT 2011. FAO

so losing huge opportunities, not just in foreign exchange but most importantly in terms of lost jobs. Even half of that figure could transform Africa's agriculture if spent on its own products. Africa trades more with the rest of the world than within itself. Available figures indicate that intra-Africa trade is about 7 percent to 10 percent, compared with about 40 percent within Europe and about 60 percent within North America. A number of barriers exists that hamper progress in expanding intra-African trade. Foremost among them is deficient state of infrastructure in Africa. Road density in Africa is 2.5 times less than in Latin America and 6.0 times less than in Asia. Only about one-third of Africans living in rural areas are within two kilometers of an all-season road, compared with two-thirds of the population in other developing regions. Obviously, high transport costs are arguably the most important impediment to intra-African trade. According to

some estimates, an investment of US\$32 billion to upgrade the main intra-African road network would result in trade expansion of about US\$250 billion over 15 years.²²

Intra-African trade has enormous potential to create employment, catalyze investment and foster growth in Africa. Over the period from 2007 to 2011, the average share of intra-African exports in total merchandise exports in Africa was 11 per cent compared with 50 per cent in developing Asia, 21 per cent in Latin America and the Caribbean and 70 per cent in Europe. Furthermore, available evidence indicates that the continent's actual level of trade is also below potential, given its level of development and factor endowments. There are several reasons for the weak regional trade performance in Africa, one of which is that the approach to regional integration on the continent has so far focused more on the elimination of trade barriers and less on the

development of the productive capacities necessary for trade.

The limited role of the private sector in regional integration initiatives and efforts has also contributed to the weak trade performance of the continent.

Scale, trends and composition of African trade

Despite its fast growth in merchandise trade, Africa remains a marginal player in world trade, accounting for only 2.8 per cent of world exports (in current United States dollars) and 2.5 per cent of world imports in the decade from 2000 to 2010. The shares of both Africa and sub-Saharan Africa in world exports and imports have fallen significantly over the period from 1970 to 2011. This downward trend can be observed in almost all regions in Africa and almost all African regional economic communities.²³

The level of intra-African trade has grown in nominal terms, rising from \$45.9 billion in 1995 to \$130.1 billion in 2011. It experienced positive growth in all years except for 1998-2001 and 2009. Such negative growth spells coincided with world recessions, indicating a potential sensitivity of intra-African trade to world economic conditions.

In developing Africa, the share of intraregional exports amounted to 10.9 per cent of world African exports in the period from 2007 to 2011, while the share of intraregional imports to world African imports was 12.7 per cent. These shares are lower than those in other developing

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regions, namely developing America and developing Asia.

Major fuel exporters in Africa tend to be highly dependent on extra regional markets and consequently their intra-African share is very low. What Africa produces and exports matters for intra-African trade. The narrowness of African production and export structures and relative dependence on primary commodities are inhibiting factors to the boosting of intraregional trade in Africa. The higher intra-trade share among non-fuel exporters in Africa supports the argument that a production base, more diversified away from fuels towards non-fuel production, such as manufacturing, could provide an impetus to a deepening of regional trade in Africa.

In the discourse on regional integration in Africa, the consensus view is that intra-African trade is very

low. This conclusion is based on a comparison of the share of regional trade in total African trade to those of other continents, based on official available data. This method however is problematic because it does not account for informal trade, which by most accounts is relatively large in Africa.

Ugandan informal exports to the Democratic Republic of the Congo, Kenya, Rwanda, the Sudan and the United Republic of Tanzania represented \$224 million or 83 per cent of its total recorded trade to these countries in 2006. Furthermore, estimates of informal cross-border trade in West Africa show that it could represent 20 per cent of GDP in Nigeria and 75 per cent of GDP in Benin (Afrika and Ajumbo, 2012).

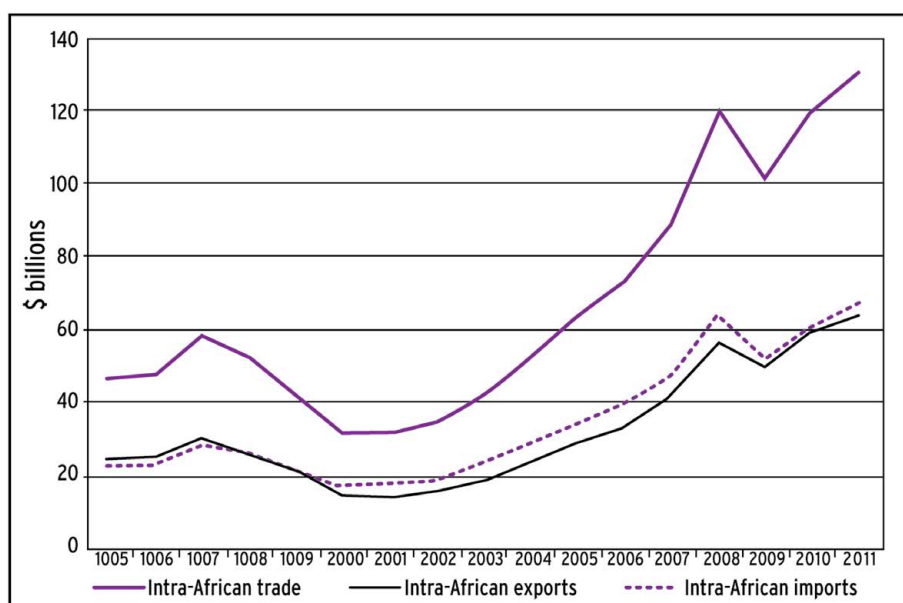
With the exception of the Economic Community of Central African States (ECCAS), for each African

regional economic community, a significant part of their trade with Africa takes place within their own regional trade bloc. This confirms that the formation of regional blocs in Africa has facilitated the creation of trade among its member countries (Cernat, 2001). However, with the exception of the Common Market for Eastern and Southern Africa (COMESA), these shares have been falling compared to the period from 1996 to 2000. In fact, the level of trade of each African regional economic community with Africa more than doubled from 2001–2006 to 2007–2011. SADC had the largest level of trade with Africa, averaging \$53.8 billion in the period from 2007 to 2011, followed by CEN-SAD (\$46.1 billion), despite the fact that CEN-SAD is the biggest trade bloc in terms of number of countries and size of GDP.

The importance of intra-African trade varies significantly between national economies. For instance, in the period from 2007 to 2011, 9 countries (Benin, Djibouti, Kenya, Mali, Rwanda, Senegal, Togo, Uganda and Zimbabwe) exported at least 40 per cent of their goods to Africa, compared to only 5 countries in the period from 1996 to 2000. On the import side, 11 countries (Botswana, Burkina Faso, the Democratic Republic of the Congo, Lesotho, Malawi, Mali, Rwanda, Sierra Leone, Swaziland, Zambia and Zimbabwe) imported at least 40 per cent of their goods from Africa in the period from 2007 to 2011, compared to 9 countries in the period from 1996 to 2000.

Over the period from 2007 to 2011, Africa traded only 14.9 per cent of its

Intra-African trade 1995-2011



Sources: UNCTAD stat database.

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world trade in primary commodities and 17.7 per cent of its world trade in fuels within Africa.

Many African countries which need to import primary commodities and fuels are doing so by sourcing outside the region rather than within it.

This issue of unexploited opportunities in intra-African trade is particularly evident in the area of agriculture. Africa is the continent which has the greatest percentage of unused arable land; it is estimated that about 50 to 60 per cent of the world's unused arable land is in sub-Saharan Africa. However only 16.9 per cent of African world trade in food and live animals (SITC 0) and only 14.8 per cent of African agricultural imports took place within the continent in the period from 2007 to 2011, denoting that both agriculture and intra-African trade in agriculture remain significantly underdeveloped. In the period from 2007 to 2011, intra-African agricultural imports amounted on average to \$10 billion and the top ten intra-African agricultural imports, representing 46 per cent of the total, consisted of the following subproducts: sugar, molasses and honey, fish (fresh, chilled or frozen), tobacco, edible products and preparations, unmilled maize, vegetables, alcoholic beverages, tea and mate, coffee and coffee substitutes and fixed vegetable fats and oils (see figure below).

Intra-agricultural exports take place within a narrow range of only 34 products, of which some are covered by very few countries. For example, based on that analysis, only Benin and Botswana export meat to the

continent. Burkina Faso, Djibouti, Ethiopia, Mali, the Niger, Rwanda and the Sudan are the only countries to count live animals among their top five exports to the rest of the region. By the same measure, rice is exported only by Benin and Cape Verde; maize only by Malawi and vegetables only by Eritrea, Ethiopia, the Niger and Somalia.

Thirty one African countries are net exporters of agricultural raw materials to the world while 37 countries are net importers of food items from the world. All countries that were net food importers from (or net food exporters to) the world were also net food importers from (or net food exporters to) Africa except for Benin, Djibouti, Egypt, Mauritania, Morocco, the Niger, Senegal and Tunisia, which had net exports to Africa but imported from the world, and Ghana, Guinea-Bissau, Madagascar and Swaziland which had net imports from Africa but exported to the world. In aggregate, however, Africa imported only 15 per cent of its food items from the rest of Africa in 2007–2011.

Given the availability of arable land in Africa and the import demand for food, there should be scope for broadening the range of agricultural goods produced and traded within Africa through appropriate agricultural and agro-industrial policies.

Countries such as Ghana and South Africa, which run large net trade surpluses on food items with the world, do not currently have agricultural products as their main five exports to Africa. This signals that there exists scope to better meet African food demand

from within the region through an upscaling of domestic agricultural production in African countries.

The share of manufacturing in intra-African trade is higher than its share in African extraregional trade. However the importance of manufacturing in intra-African trade has been falling over the last decade. The share of manufactured goods in total intra-African trade averaged 42.6 per cent in the period from 2007 to 2011, compared to 53.6 per cent in the period from 1996 to 2000.

In the period from 2007 to 2011, the share of manufacturing in trade between regional economic communities was highest in EAC (58.3 per cent), followed by SADC (51.4 per cent), COMESA (44.8 per cent), IGAD (39.1 per cent), AMU (35.2 per cent), CEN-SAD (34.3 per cent) and ECOWAS (25.7 per cent). These variations in numbers can again be associated with the differing levels of manufacturing development of the member countries of the regional blocs.

Africa as a marginal player in world trade, with low levels of intraregional trade. However, they also demonstrate that both intra-African trade and African trade with the rest of the world have been growing vibrantly, displaying nominal growth rates that are comparable to those in other regions. The empirical analyses also show that significant regional trade opportunities remain to be exploited in multiple sectors, including primary commodities, manufacturing and agriculture. Regarding investment, the evidence

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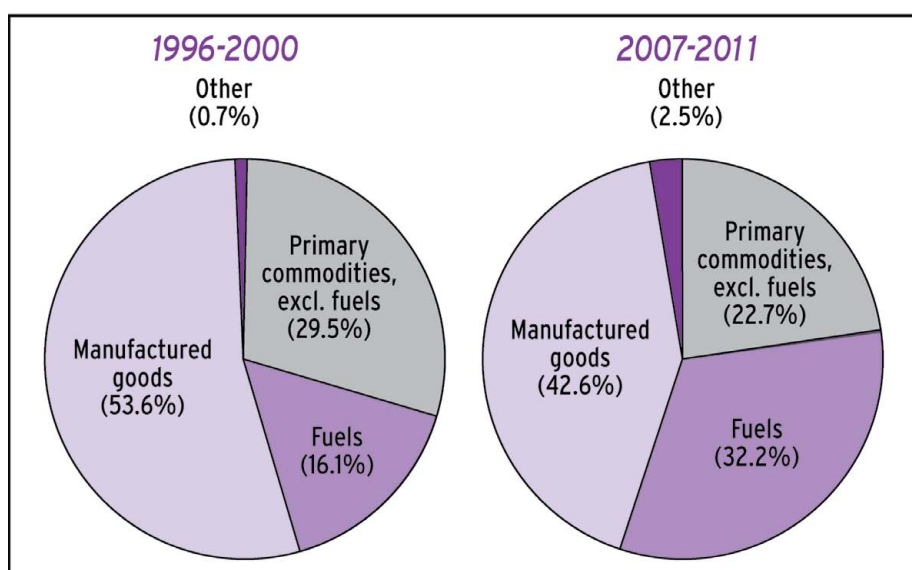


suggests that there has been a significant increase in the number of new intra-African FDI projects, driven mainly by Kenya, Nigeria and

South Africa. However, most of the new deals relating to intra-African greenfield investments were in the services sector. Furthermore, South

Africa remains the only African country in the top 20 investors in Africa, as reported by investing economies.

Distribution of intra-African trade by main product category, 1996-2000 and 2007-2011



Sources: UNCTAD stat database.

2.4. Under-performances of interregional trade in Africa

Poor competitiveness in production and trade

Intra-African trade is hampered by the weak supply response to regional market opportunities and lack of export competitiveness. Firms in most African countries face high production costs due to poor access to production factors such as electricity, credit, skilled labour and other inputs. As a result, they find it difficult to produce competitively. Africa lags behind other developing-

country regions in terms of physical and social infrastructure. Road density on the continent is 7.2 kilometres per 100 square kilometres of arable land compared to 127 for non-African developing countries. Electricity production is 398 megawatts per million population compared to 2,475 for non-African developing countries. Furthermore, only 67 per cent of the population have access to water and 35 per cent have access to improved sanitation facilities. The corresponding figures for non-African developing countries are 85 and 70 per cent respectively (Beck et al., 2011). The continent also has a very low Internet penetration rate: 3 per cent relative to the world average of 14 per cent. In addition, infrastructure services cost

twice as much in Africa as in other developing-country regions.

Africa is spending US\$30 billion to \$50 billion annually on imports of agricultural products, and in doing so losing huge opportunities, not just in foreign exchange but most importantly in terms of lost jobs. Even half of that figure could transform Africa's agriculture if spent on its own products. Africa trades more with the rest of the world than within itself. Available figures indicate that intra-Africa trade is about 7 percent to 10 percent, compared with about 40 percent within Europe and about 60 percent within North America. A number of barriers exists that hamper progress in expanding intra-African trade. Foremost among them is deficient state of infrastructure in Africa. Road density in Africa is 2.5 times less than in Latin America and 6.0 times less than in Asia. Only about one-third of Africans living in rural areas are within two kilometers of an all-season road, compared with two-thirds of the population in other developing regions. Obviously, high transport costs are arguably the most important impediment to intra-African trade. According to some estimates, an investment of US\$32 billion to upgrade the main intra-African road network would result in trade expansion of about US\$250 billion over 15 years.²⁴

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Product and market concentration

The external trade of African countries is concentrated around a limited range of products. While the narrow production base in Africa restricts regional trade, it does not fully explain intraregional trade dynamics. In ECOWAS, for example, despite the existence of a narrow range of exported products, an index of the region's comparative advantage shows that exports from countries within the region differ considerably from their imports. Hence, there is potential for increasing intraregional trade, particularly in food and agricultural products where African countries have a current comparative

advantage. Regionalism increases the potential for trade, owing to economies of scale, product differentiation and intra-industry trade. Product concentration may therefore be seen as a short-term constraint to intra- African trade. Over time, the existence of a large market can alter existing patterns by developing new products, reallocating resources towards new industries and rationalizing existing ones (UNCTAD, 2009; Keane et al., 2010). Hence, the political commitment to boosting intra-African trade will need to go hand in hand with measures to boost industrialization and intra-industry trade development.

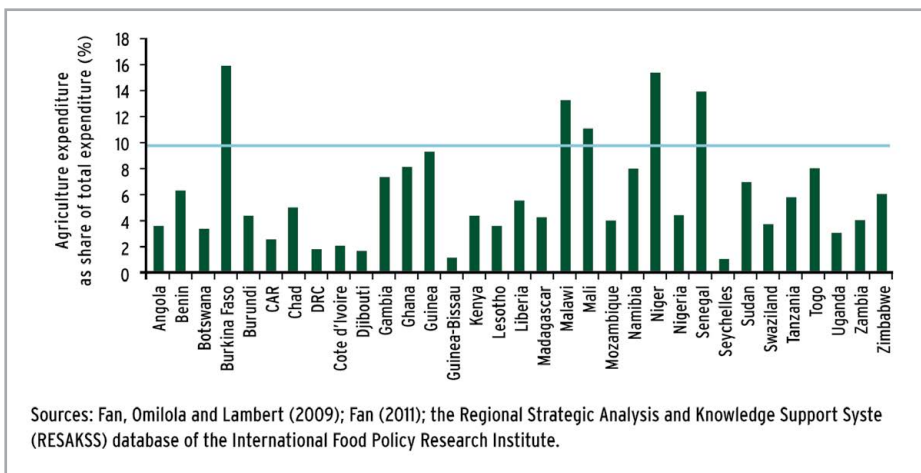
External factors

Globalization and trade liberalization in Africa have intensified competition. What used to be local and regional markets are now part of a relatively open global market. African consumers have become more exposed to imported products, including from the emerging economies in the South, that are cheaper alternatives to locally or regionally produced goods (Kaplinsky and Morris, 2008; Ighobor, 2013). This has contributed to deindustrialization, as evidenced by the fact that the share of manufacturing in African GDP fell from 15 per cent in 1990 to 10 per cent in 2008 (UNCTAD and UNIDO, 2011).



3. Revitalizing agriculture in Africa: the Comprehensive Africa Agriculture Development Programme (CAADP)

Public expenditure on agriculture as share of total budgetary expenditure, selected countries, 2007



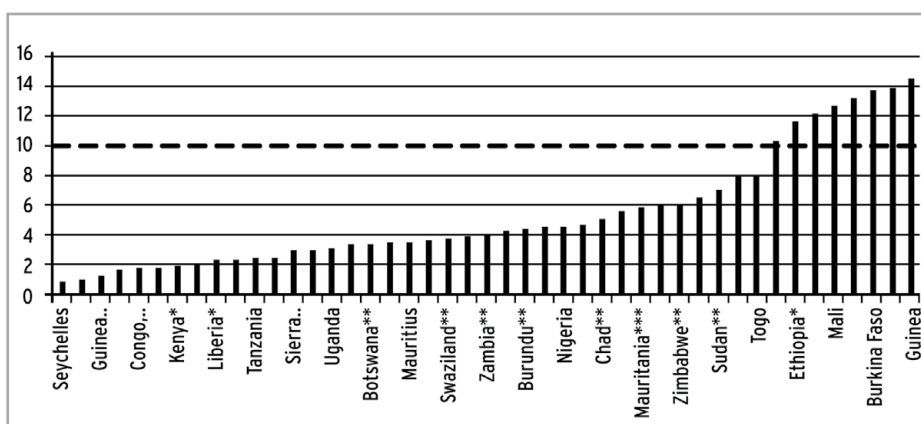
offers the opportunity to sustain and deepen the recovery process. If, through CAADP, a large number of countries manage to maintain a 6 percent growth trajectory, living conditions on the continent would change dramatically within a generation. At the beginning of the last decade, only 5 countries exceeded the CAADP agricultural growth target of 6 percent. By the middle of the decade, the number had grown to 9. In 2009, the average agricultural growth rate for Africa as a whole as well as for two sub-regions (North and Southern Africa) exceeded the 6 percent target (ReSAKSS 2011). It is worth noting that this level of agricultural growth is similar to that witnessed by India during much of its Green Revolution.²⁶

Revitalization of agriculture and increased productivity in Africa have to feature prominently in Africa's future growth agenda.²⁵ Fortunately, this viewpoint is also shared by African leaders, who in

2003 launched the Comprehensive Africa Agriculture Development Programme (CAADP).

The broad adoption and implementation of the CAADP

Agricultural expenditure shares (latest in percent)



Successful implementation of CAADP can help African countries boost productivity in the agricultural sector and reverse the patterns of productivity-reducing structural change discussed above. However, this would require continued commitment to the agenda by African countries, leadership and ownership by African governments and stakeholders, and full alignment by the international development community.²⁷

Sources: IReSAKSS 2011.

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3.1. Evolution of the CAADP

The Comprehensive Africa Agriculture Development Policy (CAADP) is an agricultural policy framework aiming at accelerating agricultural growth in Africa. It is an initiative of the African Union (AU) and of the New Economic Partnership for Agricultural Development (NEPAD).

In early July 2003, in the first conference of Ministers of Agriculture of the AU in Maputo, Mozambique, a CAADP Plan of Action for national and regional levels was drafted and presented to the participants. In the second Ordinary Session of the Assembly of the AU in mid-July 2003 in Maputo, CAADP was approved by the HSG²⁸ and the Maputo Declaration on Agriculture and Food Security in Africa was adopted.²⁹

In the Maputo declaration the Head of States and of Government commit themselves to implement the CAADP and to achieve, by 2015: (i) increase of agricultural output by 6% annually, at national level; (ii) allocate ten percent of national budget to agriculture.

‘The goal of CAADP is to “help African countries reach a higher path of economic growth through agriculture-led development, which eliminates hunger, reduces poverty and food insecurity, and enables expansion of exports.” The original focus was to promote immediate interventions that best respond to the widely recognized crisis situation of African agriculture. Thus, CAADP had been cast to deliberately focus on investment in the three pillars that

were deemed to make the earliest difference to African agriculture’s dire situation: i) sustainable land use, ii) rural infrastructure and trade related capacities, and iii) food security. At the request of Africa’s Agricultural Ministers, a “Research and Technology” pillar was added and subsequently incorporated into the CAADP main document.³⁰

‘Since 2005, a new approach was designed which takes CAADP principles more seriously into account. Under the leadership of the RECs, country processes are suggested that follow certain steps: i) taking stock of existing policies and strategies in the country and modeling whether they are adequate to achieve the CAADP objectives, ii) developing strategies to fill any gaps identified, and iii) facilitating dialogue among various stakeholders at a roundtable conference organised to discuss policies and investment opportunities, develop partnerships, harmonise development assistance and develop a framework for review and accountability. The final outcome of a national CAADP process is a document called the Compact, which is signed during the roundtable by all groups of stakeholders (including the ministry of finance) and donors in agricultural policy and commits them to implement the Compact.³¹

‘The CAADP is centred around the definition of national and regional plans (‘Compacts’), an agreement between all stakeholders (public, private as well as donors) serving as a framework for partnerships, alliances, and dialogue to design and implement the required policy interventions and investment programmes. The formulation of

national and regional investment plans is one of the most important activities to implement CAADP after the definition and signature of the Compact.’³²

3.2. Main areas of intervention of CAADP

The main areas of intervention that CAADP intends to stimulate are organized in 4 pillars and two cross cutting issues.

Pillar 1: *Extending the area under sustainable land management and reliable water control systems.* This pillar recognises the importance of water and its managed use in raising the productivity of agriculture and ensuring sustainable and predictable outputs. Major efforts need to be undertaken to build up fertility and the moisture holding capacity of agricultural soils and to rapidly increase the area equipped with irrigation, especially small scale water control.

Pillar 2: *Improving rural infrastructure and trade-related capacities for market accesses.* Africa’s rural infrastructure is inadequate by any standard and its road network is particularly underdeveloped. Under this pillar, a major focus will be put on complementary investments in rural infrastructure, particularly rural roads, storage, and processing and marketing facilities that will be required to support the anticipated growth in agricultural production

Pillar 3. *Increasing food supply, reduce hunger, and improve*



responses to food emergency crises.

Hunger still remains widespread in Africa. Two approaches are thought to have the potential to make an immediate impact on farmers' livelihoods: (a) provision of safety nets; and (b) food security through agricultural production enhancement.

Pillar 4: Improving agriculture research, technology dissemination, and adoption In Africa,

as elsewhere in the world, agriculture will need a scientific and technological underpinning to maintain sustained productivity gains which are necessary to remain competitive. Several lines of action will be necessary, including: (a) increasing investments in research and technology development; (b) increasing the share of private sector funding of agricultural research; and

(c) institutional and financial reforms for greater research sustainability.

Cross cutting issue 1: Capacity strengthening for agriculture and agribusiness: academic and professional training.

The need for increasing capacity in agricultural science as well as agricultural and development economics in Africa arises out of the fact that Africa is experiencing a significant capacity shortage. The capacity gap must be addressed if the advances made thus far in agriculture-led poverty reduction in the continent are to continue and the regions currently experiencing serious declines in food security are to reverse their situation.

Cross cutting issue 2: information for agricultural strategy formulation and implementation.

An important

part of strategy and policy formulation and implementation is to have access to adequate benchmarks, best practices, statistical information, and other relevant technical information. This access is lacking in most African countries. The situation can be remedied by using modern communication technologies to collect, store, and expand access to the above information. Doing so collectively at the regional level would allow economies of scale and encourage mutual learning and exchange of experiences. It is also critical to achieve consistency of long-term development efforts in African countries and in particular to maintain the focus on poverty reduction through higher productivity and incomes among the poorer segments of the population.

4. Financing agriculture

In the late 1980s official development assistance to agriculture Sub-Saharan Africa was estimated at US\$4bn: by the early 2000s it had fallen to just US\$1bn. (Binswanger & McCalla 2008 using OECD data). Donors have moreover often been inconstant in their efforts, not supporting efforts long enough for them to take root. The external factors include the shift of more donor resources to other sectors, such as infrastructure and the social sector. Abundance in food production in the 1990s led to low food prices in the international markets and less support to agriculture in developing countries. Agriculture was also seen as a contributor to natural resource destruction and environmental pollution (World Bank 2007).

The internal factors, specific to the agricultural sector, that led to declining share of aid, included delays in completion of agricultural projects in less developed countries and the associated cost, poor road and market infrastructure, undeveloped financial sectors, and higher weather related and disease risks. Added to this is the weak governance and institutional capacity structures entrusted to design, administer, and implement projects in an efficient manner in these countries (World Bank 2010: xi). This meant that donors on the one hand had to spend time building these institutions, and on the other hand resulted in delays in disbursement. Together these factors led donors to shift focus to policy reforms, both sectoral and macro, thus increasing policy-based

lending as against direct lending to agriculture.³³

4.1. Support to agricultural Research and Development

During the past 50 years, agricultural science in many developing countries has benefited greatly from support from industrialized countries. Donors have provided financial support to national agricultural research systems, supported scientific training at foreign universities, organized in-country training programs, allocated staff to assist in training and research, and helped develop an international architecture that facilitates the movement of knowledge and materials for agricultural research and development (R&D). Donor support was withdrawn in many countries due to concerns over inefficient and competition for funding with health, education, and other social-sector investments, and because of complacency over high global food surpluses and low commodity prices (Christensen 1994; World Bank 2008). Recent analysis shows that public investments in agriculture and agricultural R&D in many Sub-Saharan African countries have started to move away from crisis. New commitments from governments and foreign donors over the past decade have put agriculture back on the agenda and attracted new resources to the task, sizable portions of which have been

channeled to Sub-Saharan Africa. Unfortunately, the quality of data on levels and trends in donor funding makes it difficult to analyze these changes precisely: estimates of donor funding for agricultural R&D in Sub-Saharan Africa vary widely. The Organisation for Economic Co-operation and Development (OECD 2011) estimates commitments (not disbursements) for 2009 at just \$67.1 million (in constant 2009 prices), inclusive of bilateral (the Development Assistance Committee [DAC]) and multilateral assistance. However, the OECD estimates omit commitments from private donors, such as the Bill and Melinda Gates Foundation (BMGF). A study by Morton (2010) estimates donor funding for agricultural R&D in Sub-Saharan Africa in 2009 at approximately \$450 million. Coppard (2010) places the 2008 figure at about \$245.6 million (in constant 2007 prices).

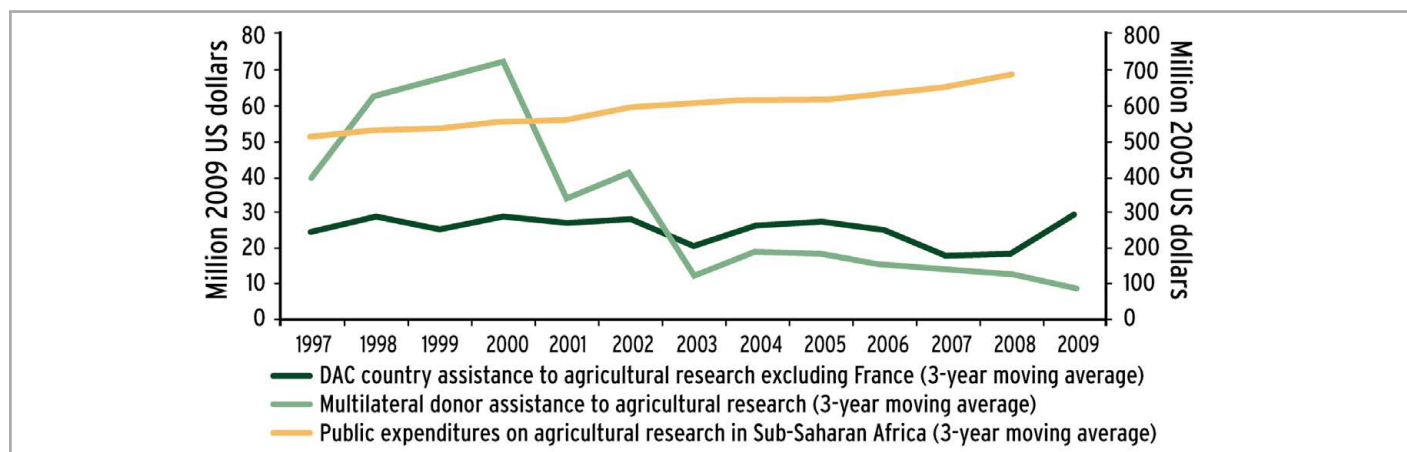
These gains were partly the result of traditional donors returning to agriculture during the first decade of the new millennium, but they were also the result of new donors entering the landscape. Renewed, expanded, and more diversified funding contributed much to this increase in public expenditure on agricultural R&D in Sub-Saharan Africa and other developing regions.

Nonetheless, donor funding to agricultural R&D in Africa remains tenuous at best. Funding still tends to be fairly volatile from year to year and uncoordinated among donors at regional and national levels.³⁴

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Selected donor commitments and governments spending on agricultural research in Sub-Saharan Africa 1997-2009



Source: Spielman David J., Zaidi F. and Flaherty K., based on data from OECD (2011) and Beintema and Stads (2011)

Note: Development Assistance Committee (DAC) and multilateral assistance to agricultural research are measured on the left-hand scale; public expenditures on agricultural research are measured on the right-hand scale. DAC country assistance figures do not include France due to unexplained discrepancies in OECD data, which record official development assistance to agricultural research as climbing steadily from US\$7.3 million in 1995 to US\$63.5 in 2006, followed by a massive increase to US\$297.6 in 2007 before dropping to US\$29.9 in 2008 (all in nominal terms). OECD's multilateral donor trend does not include the African Development Bank and the International Bank for Reconstruction and Development.

The return of USAID to the agricultural development landscape in 2002-03 came with new programs, such as the 2002 Initiative to **End Hunger in Africa** and the 2004 **Linking Producers to Markets strategy** (IRG 2005). Domestic, regional, and international market and trade policy became key priorities alongside engagement with nonstate actors, such as community-based producer organizations. Science and technology remained a high priority, carrying over the commitment to agricultural research from previous eras. The Obama Administration's **Global Hunger and Food Security Initiative**, launched in 2008, has attempted to heighten this support to agricultural development and agricultural research. In 2009, the **Feed the Future (FTF) initiative** committed \$3.5 billion to agricultural development and

food security programs over three years, while also leveraging additional donor commitment to integrated programming around inclusive, agriculture-led growth and nutritional improvement bridging humanitarian relief, sustainable development strategic coordination, and accountability (FTF 2011).

Other donors have demonstrated a long-term commitment to supporting the region's agricultural research systems: United Kingdom's Department for International Development (DFID), the Canadian International Development Agency (CIDA), the International Development Research Center's (IDRC), the Japan International Cooperation Agency (JICA), and Germany's Federal Ministry for Economic Cooperation and Development, among many others.

DFID, along with the Italian government, the European Commission, and the World Bank, also supports the **Sub-Saharan Africa Challenge Program**, an initiative that began in 2004 to support R&D specifically focused on supporting smallholders across the region. Current funding levels for the program total approximately US\$5 million per year.

IDRC funds the Agriculture and Food Security program, which is designed to find good practices that link new agricultural technologies to existing farming systems in Sub-Saharan Africa and South Asia. Funding for the program was on the order of C\$25-30 million in 2010-11 (IDRC 2010). The International Finance Corporation (IFC), the private investment arm of the World Bank group, is also involved in agricultural

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development, although little in their lending portfolio directly suggests a focus on investing in R&D companies or programs. Still, in recognition of the potentially strong development impact of agribusiness, IFC sharply increased its activity in the sector with commitments of approximately \$100 million to the agribusiness sector in Sub-Saharan Africa in 2010–11 compared with an annual average in the previous decade of just \$18 million per annum (IFC 2010).

Between September 2003 and June 2011, the Bill and Melinda Gates Foundation awarded 269 grants totaling US\$1.822 billion for agricultural development). these, 152 grants totaling US\$1.142 billion were partly or entirely for agricultural development in Africa, and 80 grants totaling US\$642 million were partly or entirely directed to agricultural R&D in the region.⁶ In a few short years, the Foundation has invested over 40 percent of its sizable portfolio on African agricultural development and agricultural R&D; its investments have changed the donor landscape dramatically.

An important investment by the Bill and Melinda Gates Foundation is the Alliance for a Green Revolution in Africa (AGRA), established in 2006 as an initiative owned and driven by African priorities. AGRA has received funding from the Foundation on the order of US\$4.2 million per year and, at present, is a large and influential funder throughout the region with strong connections to NEPAD, a leadership position among donors and development agencies working on agricultural R&D in the region, and a diversified range of investments in agricultural science, capacity

building, and market development (Morton 2010).

Foundation funding to agricultural development in 2009 was US\$273 million, 43 percent of the comparable investment by the U.S. Agency for International Development (USAID) that year, and about 11 percent of the \$2.6 billion committed to agriculture by multilateral and bilateral donors. Moreover, these figures may overestimate the relative contribution of the Foundation, as many of its grants are multiyear commitments that suggest lower levels of total funding when measured annually.

South-South ODA

A less heralded trend in donor funding to agricultural R&D has been the growth of South-South official development assistance, notably from Brazil, China, and India to Sub-Saharan Africa. China's most significant engagement in Africa's development was set forth in 2000 by the Forum on China–Africa Cooperation (FOCAC), via the ambitious “Program for China–Africa Cooperation in Economic and Social Development” (AATF 2010; FOCAC 2009). Beyond its commitments to canceling debts, reducing trade barriers, and increasing development assistance for African countries, the program committed resources to training African agricultural scientists and establishing agricultural technology demonstration centers with the support of Chinese expertise. Between 2003 and 2008, more than 4,000 African students traveled to China for short-term (three-week to three-month) courses related to agriculture (Brautigam 2009). A significant part of China's

commitment to African agricultural development is contained in a donation of US\$30 million to the Food and Agriculture Organization of the United Nations (FAO) in 2009. The aim of this donation was to expand China's contribution to FAO-led efforts to eradicate hunger and poverty by assisting developing countries to improve agriculture and food production under the umbrella of FAO's Special Program for Food Security (SPFS). China, along with other developing countries, uses SPFS as a vehicle to provide experts, technicians, and technical support to national and regional food security activities (FAO 2010). Technology transfers and spillover effects are an implicit outcome of the program design, with the potential to parallel other donor initiatives and programs, such as AGRA (Brautigam 2009).

Brazil's engagement in Sub-Saharan Africa is also expanding. Its research linkages with the region were strengthened in 2006 with the opening of an international office for the Brazilian Agricultural Research Corporation (Embrapa) in Accra, Ghana. This office has pioneered a number of technology transfer partnerships across the region and has been followed by the Africa Brazil Agriculture Innovative Marketplace launched in 2010 during the Brazil–Africa Dialogue on Food Security, Fighting Hunger, and Rural Development. The marketplace aims to benefit smallholders by enabling Africa–Brazil research partnerships (Barka 2011).

A key change in the bilateral and multilateral donors' approach to agricultural development relates to their increased commitment to

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coordinating their funding. Efforts to this end include, for example, the Global Agriculture and Food Security Program (GAFSP), a financial intermediary fund for which the World Bank serves as Trustee. With an available US\$521 million (of US\$925 million pledged by most of the world's major donors), GAFSP seeks to support strategic investment plans for national and regional agriculture and food security through both public- and private-sector financing (GAFSP 2011). Agricultural extension, training, and research figure significantly in GAFSP's investment portfolio, although exact figures on their allocations are not publicly available.

A related effort to this end is the donor community's continued efforts to strengthen the Consultative Group on International Agricultural Research (CGIAR), which received donor funding on the order of US\$606 million in 2009. Donors have worked closely with the CGIAR in recent years to initiate wide-ranging reform. The aim of this work is to strengthen the CGIAR system's capacity to provide a more systematic and coordinated approach to generating high-impact research for development.

Funding to Regional and Subregional Research Organizations³⁵

Increasingly, donors are investing in regional and subregional agricultural R&D organizations and networks, for example, the Forum for Agricultural Research in Africa (FARA), the Association of Strengthening Agricultural Research in Eastern

and Central Africa (ASARECA), and the West and Central African Council for Agricultural Research and Development (CORAF/WECARD). The original intent of developing and funding these entities was largely to capture knowledge spillovers from R&D between large and small countries in an integrated and coordinated manner. In effect, these organizations were seen as a more effective and efficient way of organizing and developing research networks across the continent (Mrema 1997). Interestingly, many of these organizations have evolved from fairly basic coordinating bodies into management units charged with overseeing complex regional R&D projects. Still, estimates from FARA (2006) suggest that just 1 percent of all funding for Africa's agricultural productivity programs (including both public and private expenditures at local, national, subregional and global levels) are administered by these regional and subregional organizations.

The World Bank has taken an innovative spin on this regionalized approach to agricultural R&D. Two such investments, the East Africa Agricultural Productivity Program (EAAPP) and the West Africa Agricultural Productivity Program (WAAPP), aim to enhance capacity strengthening and technology transfers through knowledge sharing and regional specialization in agricultural research (World Bank 2007, 2009, and 2010). EAAPP involves four countries, Ethiopia, Kenya, Tanzania, and Uganda and an investment of US\$90 million over six years. The original phase

involved three countries in West Africa, Ghana, Mali, and Senegal (US\$51 million), followed by a second phase focused in Burkina Faso, Côte d'Ivoire, and Nigeria (US\$119 million); a third phase was recently approved to include Benin, The Gambia, Liberia, Niger, Sierra Leone, and Togo (US\$84 million), all implemented in six year phases (World Bank 2011b).

The programs will establish commodity-specific regional "centers of excellence" charged with conducting R&D of immediate relevance not only to the host country, but also to the wider region. For some of these smaller countries, rather than centers of excellence, program activities will focus on capacity strengthening of national research agencies and technology generation, dissemination, and adoption. Implementation of the programs is being overseen by ASARECA and CORAF for their respective subregions. A Southern African productivity program is planned to follow the establishment of a similar agricultural R&D coordinating body for the Southern Africa Development Community (Nyirenda 2011). Donors are increasingly interested in funding an expansion of private-sector involvement in developing-country agricultural R&D.

Growing donor reliance on regional and subregional organizations and networks may help countries capture knowledge spillovers from regional R&D, but the capacity limitations of these organizations and networks are important.

5. Successes and opportunities for African Agriculture

5.1. Drivers of success: a combination of factors

Success stories can be found among African countries, in particular in the processing of local food staples such as cassava in Nigeria and millet in Senegal. The scope for enterprise growth and innovation in the staples sector should be significant in Sub-Saharan Africa, judging from the projected rise in urban demand for local food to \$150 billion by 2030. The same projections indicate potential income gains of \$30 billion for local smallholders, should African countries succeed in positioning domestic sectors competitively in these markets (NEPAD 2009).³⁶

Examples of successes include the very rapid growth in small-scale production of first coffee, in the 1950s, and then tea, from the 1960s, in highland Kenya. Farmers were allowed from 1954 onwards to plant these crops and did so with success and enthusiasm, supported by co-operatives for coffee and a highly effective state company for tea, the Kenya Tea Development Authority. Farmers did not devote all their land to the cash crops: they continued to grow maize, beans and other food crops. Maize production was improved by widespread adoption of hybrid maize varieties bred for Kenyan conditions. Some farmers were also able to invest in a few cows and intensive, stable-fed dairying was added to the portfolio.

In the last two decades many farmers have also produced horticultural

crops, some for export — Kenyan green beans, for example, can be seen on the shelves of supermarkets in Europe — but even more for the increasingly large domestic market in Nairobi. Did intensification in this case lead to over-use of natural resources? No: on the contrary, with productive fields, farmers invested in terraces, in planting trees on field boundaries, using more manure and fertiliser.

On the other side of the continent, in West Africa, cotton production expanded rapidly in the 1980s and 1990s across the guinea savannah zone — north of the forest belt and south of the Sahel. In this case, production was organised by state-owned textile development companies that supplied inputs on credit and collected the crop.

Many of the more recent growth spurts have seen food produced for domestic markets: in the 1980s, examples include hybrid maize in Zimbabwe, the Southern Highlands of Tanzania, and Northern and Eastern Provinces of Zambia — in all cases with small farm production organised by state agencies. Smaller-scale booms in marketed food crops include rice in the Malian inland delta of the Niger, open-pollinated varieties of maize in the middle belt of Nigeria, and peri-urban production of dairy, fruit and vegetables for the city of Kano.³⁷

IFPRI surveyed specialists to identify successes in African agriculture where there had been “a significant, durable change in agriculture resulting in an increase in agriculturally derived

aggregate income, together with reduced poverty and/or improved environmental quality”. (Haggblade et al. 2003, 10; see also Gabre-Madhin and Haggblade 2001). They reported many technical advances, including hybrid maize varieties in Zimbabwe and Kenya, as well as open-pollinated maize in West Africa; use of improved bananas in East Africa; horticulture and fruit produced by smallholders on contract in Kenya; cassava resistant to pests and diseases that had contributed to large increases in cassava production in West Africa and parts of south-eastern Africa; cotton in West Africa; and smallholder dairying in Kenya.

Not all of these successes have been sustained. On the contrary, they have often been sensitive to prevailing prices, in some cases linked closely to world market prices, as well as to state support and organisation. On the other hand, one of the most remarkable stories of long run progress comes from Burkina Faso, where cereals production — in a poor, landlocked, Sahelian country frequently best by drought — has increased over forty years by the same amount as Vietnam, generally regarded as a green revolution success in Asia.³⁸ Burkina Faso success managed to conserve soil and water by use of stone bunds and improved traditional planting pits (‘zai’) to retain water and topsoil; plant trees, keep livestock in semi-intensive systems and apply manure to the fields; multiply collective institutions to manage wells, natural resources, village cereal banks, and schools

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Advances in farm technology

Advances in farm technology, improved varieties have been adopted by the majority of farmers in certain areas and for specific crops: hybrid maize in Zimbabwe in the 1980s and in Kenya since the 1960s are good examples. More recent examples include advances with cassava and rice: In one year in Uganda mealy bug led to a 90% loss in the country's cassava harvest. However, IITA has developed cassava varieties that are resistant to the mealy bug, which has triggered considerable increases in cassava production in the continent. WAREDA has also developed the NERICA rice variety, which has overcome a longstanding constraint that African rice varieties have lower yield and poorer taste than Asian varieties, but the latter are less resistant to African pests and diseases. So far NERICA looks extremely successful at increasing yields, and there are high growth rates of adoption in eastern Africa as well as western Africa.

Use of additional inputs

Although the average use of manufactured fertilizer may be low in Africa, in some areas such as highland Kenya use is similar to levels seen in Asia. Obstacles to use are less technical, more matters of logistics and the ratio of prices between the local cost of fertilizer on farm and the value of the crops grown. Recent promising developments include micro-dosing, where fertilizer is applied more precisely in time and space, thereby economising on fertilizer and gaining greater impacts on yields per unit

of chemical. This makes more sense when fertilizer is relatively expensive compared to labour.

Experiences from Kenya and Malawi provide examples of what can be done. In 2005/06 the Malawian government implemented a universal subsidy on a rationed amount of maize seed and fertilizer, despite the strong disapproval of donors such as the Bank and the IMF. In the four subsequent seasons, harvests have exceeded national requirements and records have been broken. But the costs have risen from an initial US\$50m to over US\$200m, prompting questions of how sustainable this is, and what the opportunity cost of the programme is (FAC 2009).

Less well publicised is the Kenyan experience of liberalising fertilizer markets in the early 1990s. The response from private importers, wholesalers, and local input suppliers has been good. Small farmers now can obtain fertilizer at an average distance of 3.4km, down from the previous 8.1km. The cost of getting fertilizer from Mombasa to the growing areas has been much reduced as logistics have been improved. More small farmers now apply fertilizer than before and it has contributed to increased yields. All this has been achieved at virtually no cost to the public budget (Ariga & Jayne 2009).

Soil and water management

Although less than 4% of the crop area is currently irrigated, the limitations may be as much economic as technical. Where there are prospects of growing high value

crops in dry seasons, farmers can be quick to improve their irrigation, as seen in the Fadama valley lands in areas close to Kano where farmers have introduced diesel pumps to lift water to their plots where previously there were only shadufs in use. Some irrigation schemes that previously had disappointed in the yields achieved have been revitalised when better management has been introduced, as seen in the Office du Niger rice-growing scheme of Mali.

Investments in soil and water conservation have been undertaken, but only when it has been proved that it is profitable to do so. Good examples are the fanya juu terracing of Machakos and other parts of upland Kenya, and the planting pits and bunds deployed on the central plateau of Burkina Faso. In the fight against pests and diseases, major successes have been scored in vaccinating cattle against rinderpest, producing cassava that resists mosaic virus, and in clearing the West African savannah of the black fly that causes river blindness in humans and so deterred use of potential arable land.

Potential of uncultivated land

Africa's land potential has again been recognised. The World Bank published (2009a) an assessment of the potential of the Guinea Savannah, a vast area of some 700m ha² that covers more than a third of the continent, and of which less than 7% is currently under crops. Until now the Guinea Savannah has been largely ignored, partly since the productive potential is medium rather than high, but largely since much of it was relatively inaccessible

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for lack of road access and there was little effective demand for what it could produce.

Areas geographically similar in Northeast Thailand and the Cerrado of Brazil have been transformed into major agricultural exporters: with investment and the right policies, argues the Bank, the experience could be repeated in Africa. Given future increased demand within Africa, the potential to displace currently imported food, plus possible future markets in biofuel feedstock and supplying the rapid increase in demand in Asia for vegetable oils, animal feed and other produce, large tracts of the Guinea Savannah could be tilled creating jobs, incomes and export earnings.³⁹

Information and communication technologies

Increasingly, African farmers live in areas covered by the networks and can get access, albeit through loan or hire, to mobiles. Although the prime use of phones may be social, they are being used to convey market information and even to transfer money. There is clear potential for passing farmers and land managers information on physical conditions, and above all short-range weather forecasts.

Information technologies have already delivered some benefits to farmers through mobile phones in delivering economic information. There may be further applications through remote sensing with information on physical conditions passed rapidly to farmers and other land managers through cell networks.

Use of biotechnology

Although some applications are controversial, biotechnology may allow progress in solving some of the less tractable issues in crop breeding, such as improving drought resistance and encouraging nitrogen fixation. A key part of the challenge to scaling up research, development, and extension efforts will be to strengthen institutions that deliver innovations adapted to African agriculture and to build effective private-public partnerships (Binswanger 2009). There is broad agreement that investment in research pays off (World Bank 2007) and that they should be increased (Chicago Council on Global Affairs, 2009).

Making use of traditional practices encouraging sustainable agriculture

Previous development strategies to increase agricultural productivity were predominantly based on the industrial agriculture model which has often proven to be environmentally, socially and/or economically unsustainable.

Sustainable agriculture shifts away from artificial methods of increasing yields towards focusing on the growing capacity of the natural inputs. This can be achieved by using a variety of techniques without affecting the environment, e.g., crop rotation, soil enrichment, and natural pest predators. Crop rotation involves growing different crops in the same field instead of planting the same crop every season. This helps to ensure the long-term health of the soil because rotating crops with nitrogen-fixing

crops replace nutrients back into the soil (Khan 2011; UN 2012). With the concept of sustainable agriculture, many development agencies have sought to combine the three factors of environmental, social, and economic sustainability. Agricultural sustainability aims to apply a systems approach to address different aspects of food security. It addresses above all the economic, social, and environmental dimensions of agricultural production. Thereby a systems approach is pursued, where a system consists of the interaction of different individuals and institutions—such as researchers, unions, retailers, consumers, policy makers—that need to be considered (Amekawa 2010; ASI 2012). This way different causes and impacts of agriculture and food insecurity can be identified as well as addressed.⁴⁰

Market- and private sector-led agricultural growth

Market- and private sector-led agricultural growth refers to the idea that agricultural growth must be market-led by reducing the role of the public sector and promoting public-private partnerships.

Like the 'green revolution' in Asian countries, the new green revolution for Africa involves improving and diversifying crops, improving irrigation systems, and advancing technologies (UK Food Group 2008). This also involves strategies to achieve minimum reliance on external inputs. For example, following a sustainable agriculture perspective means addressing scope and yield stability, stable food prices, and prices of fertilizers to meet economic



sustainability (Amekawa 2010). Another aspect of economic sustainability is to diversify farms to avoid monoculture, thereby mitigating the risks of economic losses and responding to extreme price fluctuations associated with changes in supply and demand (ASI 2012). Yet, this also requires a commitment to changing public policies, economic institutions, and social values.

Another important focus of sustainable agriculture is the policy level, i.e., enhance or introduce policies that promote environmental health, economic profitability, and social as well as economic equity. For example, supporting commodity and price programmes to allow farmers to realise the full benefits of the productivity gains. Another strategy is to modify tax and credit policies to encourage family farms

rather than corporate concentration. It is important to address these policies at the local, regional, national, and global level, where the last is particularly important to facilitate international trade.

6. Moving forward: Agriculture and Structural Transformation in Africa

6.1. Structural transformation

Structural transformation is the movement of labor from less to more productive sectors, such that overall labor productivity rises even with constant sectoral productivity levels. The problem in developing countries, as has been shown here for African countries, arises when: (i) labor migration stalls because of slow growth in the rest of the economy and/or rapid population growth; and/or (ii) value added in low productivity sectors such as agriculture fails to rise fast enough to erase the intersectoral productivity gaps. Countries with successful structural change have universally achieved two things: moving labor from lower to higher productivity sectors and raising output in lower productivity sectors. Progress has to be achieved in three key areas to lead to this outcome: labor movement, productivity growth, and trade competitiveness. The movement of labor between lower to higher productivity sectors raises average productivity and incomes in the economy, even without any changes in sector productivity levels. This effect is magnified when accompanied with concomitant sectoral productivity growth.⁴¹

Structural change during most of the first five decades of post-independence Africa has been productivity-reducing. It has been driven by negative diversification reflected in labor migrating from the underperforming, yet higher-productivity agricultural sector into

an oversized, lower productivity service sector. In the aftermath of the failure of the first generation of import substituting, inward-oriented industrialization efforts of the 1960s, African governments had all but given up on the search for practical industrial policies. Meanwhile, agriculture continued to be confronted with significant policy and institutional challenges, moving from an environment marked with heavy direct and implicit taxation into an era of the controversial structural adjustment policies that significantly curtailed services support to the sector. The combined effect resulted in stagnation in the manufacturing sector and forced specialization in the primary sector.

The economic recovery of the last 15 years provides strong hope that African countries are starting to turn the page. The focus now should be on sustaining and accelerating the recovery process, enacting policies to raise productivity in the agricultural and service sectors, and revitalize the modern industrial sector. A good start is the continent-wide effort under the Comprehensive Africa Agriculture Development Programme (CAADP) to encourage evidence based policy planning and implementation and to increase investment in agriculture. However, it needs to be complemented with innovative industrialization policies to develop comparative advantage in higher-valued manufacturing goods. Future development strategies should seek to raise productivity in the service sector, which now has a large and growing share of low productivity labor. The objective

of these strategies should be to modernize production processes and to promote innovation in the production of domestic and household goods ranging from metalwork to wood and leather processing to a host of handicraft products.

Managing a successful economic transformation poses two key challenges: (i) to raise labor productivity sustainably in the agricultural sector and the rural economy, while (ii) diversifying into higher valued goods outside agriculture in emerging higher productivity, urban-based manufacturing and service sectors. The factors determining the success or failure of countries to transform successfully are linked to the adequacy of human and physical assets, institutional and technological resources, as well as policy and coordination capacities.⁴²

The patterns of structural transformation marked by an oversized, low productivity service sector and underperforming agricultural sector implies that African countries need a labor productivity raising strategy for the service sector; this strategy needs to go alongside smallholder-friendly agribusiness development. Industrialization strategies must therefore target, in the short and medium run, entrepreneurship growth in the informal service sector and the traditional agricultural sector. Technology and innovation policies should seek to enhance technical capabilities and entrepreneurship in both agribusiness and informal



sector industries. The current growth recovery is producing a rapidly growing middle class, and a sustained demand for processed urban food, housing, and related household equipment. The example of palm oil and rubber in Malaysia and cassava in Thailand demonstrate amply the significant potential for innovation and entrepreneurial growth in the agribusiness sector.

Technology and innovation policies also need to address the needs of the farming segment of the agribusiness value chain. African countries will in particular need to start investing heavily in the training, research laboratories, and other infrastructure required to develop biotechnological capabilities in order to compete in domestic and global agricultural markets. The current debate on genetically modified organisms is particularly unhelpful and distracting in this respect. The real strategic issue facing African countries should not be whether or not to allow or ban genetically modified organisms (GMO) based food. The real issue is whether or not African societies have enough capabilities in the broader field of biotechnology to catch up with the rapid developments around the world. They will otherwise be wiped out of the future global food systems.

The service sector has become a major reservoir of low productivity labor due to the pattern of structural change discussed earlier. Growth in that sector would therefore play an important role in employment creation and productivity growth among African countries. In their studies of endogenous industrialization, Sonobe and

Otsuka (2006; 2011) identify key sources of market failures that hamper modernization and growth in the informal sector. They include transaction costs related to information asymmetry and contract enforcement, innovative knowledge spillovers, and insufficient managerial capital. They propose the cluster based approach that has played a key role among Asian countries as a possible option for Africa. Required organizational competencies and other productive capabilities among enterprises in the informal sector are often tacit and not codified. Replication and imitation are therefore limited unless facilitated through clustering, which allows skill transfer through movement of labor.

In their recent comparative study of clusters between Asian and African countries, including Kenya and Ethiopia, Sonobe and Otsuka (2011) found that clusters in the latter countries tended to suffer from declining profitability as they expand through new entrants. The reason is that lack of continued innovation and the emergence of larger enterprises mean that the number of enterprises keeps growing and profitability keeps falling. Growth within the cluster eventually ceases. The leather industry in Ethiopia was the only exception. Given the lack of effective industrialization strategies, CBI or otherwise, it should not be a surprise that the authors did not encounter successful clusters. The lessons from Asia do point to some potential for CBI to work in Africa's informal sector. The double challenge of addressing productivity both in the informal and agricultural sector in Africa requires CBI strategies to also include the agribusiness

sector. CBI in agribusiness would focus on areas and sectors with confirmed high productivity and technology spillover potential, such as peri-urban processing industries, river basin areas, and other high agro-climatic potential areas, as well as regional transport corridors. CBI activities would target industry-centered technology research, quality management infrastructure, regulatory services, trading infrastructure, smallholder integration, and vocational training. In particular, CBI would promote agribusiness value chain development through the development of a variety of activities—adapted packaging and processing technology, quality management services, institutional design of procurement and distribution networks, production technology and practices, and financial intermediation services.⁴³

6.2. The role of agriculture in the transformation process

During the first three decades following independence, the ratio of food import costs to agricultural export revenues of African countries was nearly identical to the ratio between food imports and total foreign exchange earnings, implying that resources to pay for the excess demand for food came almost entirely from the agricultural sector (Badiane 1991). Foreign exchange resources earned from agriculture help to meet the import cost of capital goods needed in other parts of the economy.

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Agriculture plays another important role as the main source of fiscal revenue for financing road and power infrastructure, health, education, and other investments needed to stimulate growth in the rest of the economy. Finally, agriculture generates a large share of the income that fuels demand for goods produced in the emerging manufacturing sector. When agriculture grows and all the above linkages function properly, labor is released from the agricultural sector to meet demand for manpower in the expanding and higher productivity manufacturing sector. The migration of labor out of a growing agricultural sector also raises productivity in that sector. As a result, average productivity in the economy rises and so do per capita incomes.

A historical review of the growth performance of the agricultural sector reveals that even if the most labor-intensive techniques are used, the achievable rate of agricultural growth is unlikely to be high enough to absorb the growing labor force (Mellor 1986). Analysis of industrialization by Syrquin (1989) in 100 countries has shown that the growth rate of value added and input use in agriculture is about 40 to 50 percent less than in manufacturing. While this finding underlines the fact that progressive industrialization is the engine for sustained long-term growth, development policy practitioners and analysts during the time of independence for African countries in the late 1950s and early 1960s failed to recognize the centrality of agriculture in stimulating growth in the industrial sector itself.⁴⁴

Johnston and Mellor (1961) define

three phases, from early to late development stages, with distinct policy priorities in order to reconcile the above contradictions. In Phase 1, when the sector is dominated by subsistence agriculture, the focus should be on social innovation to remove institutional, social, and cultural constraints to improved farming practices. Programs dealing with land tenure, education, and related institutional infrastructure are required to align cultural and social practices with the need for future modernization of the sector. In Phase 2, emphasis is put on technological innovation and required systems for the provision of modern inputs and services to raise productivity and expand production based on labor-intensive, capital saving technologies. Key elements of the technical innovation systems include research and development and related education systems to expand production possibilities, cost-competitive input procurement and distribution systems, output marketing systems, plus the required public investment in necessary infrastructure and institutions. In Phase 3, when the opportunity costs of most inputs, in particular labor, are high and rising, the focus should move to deeper penetration into mainstream financial services markets in order to meet the considerable resource needs of a transition to capital-intensive labor saving technologies. Programs that are implemented in all three phases have to be cost effective and fiscally sustainable. Otherwise, they can become a burden on the rest of the economy and are bound to be abandoned. Sustainability is particularly problematic during the first two phases, when withdrawal

of such programs can lead to a total collapse in the sector and loss of decades-worth of development. This outcome was typical in Africa in the years leading up to and through the period of structural adjustment programs of the 1980s and 1990s.⁴⁵

African countries have been undergoing a remarkable agricultural and economic recovery process since the mid 1990s. Average growth rates for the agricultural sector and the overall economy have been hovering around 5-6 percent. Even during the recent crises in global food and financial markets, African economies have managed to maintain positive growth rates while economies in all other regions were contracting. More strikingly, the growth recovery has not only accelerated, it has also spread broadly across all major regions of the continent (Badiane 2008). The recent performance is taking place in the aftermath of low economic growth and stagnation during most of the preceding decades. Sustaining and accelerating the current growth recovery, therefore, requires a closer look at the process of economic transformation during the latter period and the factors underlying it.

Trends in economic sophistication among African countries

An important part of structural change is that economies acquire greater capabilities as they mature to produce more sophisticated, higher valued goods. The basket of goods a country ends up producing competitively determines its level of economic performance and overall income level. Goods for which demand expands globally as

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incomes rise around the world can be exported in larger quantities and at high prices for a long time. Such goods are associated with higher levels of productivity and incomes. The more a country succeeds in producing such goods, the more wealth it will build, and the richer it gets over time. Using the expression by Hausmann et al. (2006), “countries become rich by producing rich-country goods”. In other words, “countries become what they produce”.⁴⁶

The lack of progress toward product sophistication in the agricultural sector has real strategic implications. First, it is hard for the sector to raise labor productivity and incomes if it fails to achieve comparative advantage in higher valued products with greater income elasticity. Greater product sophistication would allow African countries not only to raise the overall and unit value of export to global markets, but it would allow them to capture a greater share of the fast growing demand for urban food in regional markets.⁴⁷

The potential of agribusiness⁴⁸

Agriculture and agribusiness together account for nearly half of GDP in Africa. Agricultural production is the most important sector in most African countries, averaging 24 percent of GDP for the region.

Agribusiness input supply, processing, marketing, and retailing add about 20 percent of GDP. Global experience suggests that with growing incomes and urbanization driving the commercialization

of agriculture, the shares of both downstream and upstream agribusiness activities are poised for rapid growth.

There exist strong growth opportunities for the agribusiness sector. Both domestic and global markets are experiencing strong demand, which is likely to continue even as domestic demand accelerates. The return to economic growth in Africa since the 1990s, burgeoning urbanization, and buoyant global commodity markets now provide unprecedented market opportunities for Africa to develop a competitive agribusiness sector. Urban food markets are set to increase fourfold to exceed US\$ 400 billion by 2030, requiring major agribusiness investments in processing, logistics, market infrastructure, and retail networks. The growing middle class is also seeking greater diversity and higher quality in its diets. The most dynamic sectors overall are likely to be rice, feed grains, poultry, dairy, vegetable oils, horticulture, and processed foods for import substitution, along with the traditional tropical exports and their derived products (especially cocoa, rubber, cashews, and palm oil), together with some higher-value horticultural crops, fish, and biofuels for export.

Private sector interest in African agribusiness is unprecedented.

The past decade has witnessed an upsurge in interest from the private sector in African agriculture and agribusiness, including interest from foreign investors and investment funds. The challenge is to harness investors' interest in ways that generate jobs, provide opportunities

for smallholders, respect the rights of local communities, and protect the environment. Going forward, a key challenge is to curb speculative land investments or acquisitions that take advantage of weak institutions in African countries or disregard principles of responsible agricultural investment.

Despite the enormous potential of agribusiness development, still different constraints exist. According to World Bank, they can be grouped in 4 categories:

- Erratic policies in agricultural output and input markets and trade
- Limited access to land and respect for community land rights (see Deininger and Byerlee 2011).
- Poor infrastructure and high transportation costs; see the World Bank flagship report on Africa's infrastructure (World Bank 2010).
- Difficulties for smallholders and small firms to access technologies, information, skills, and finance; see the World Development Report on agriculture (World Bank 2007d).

The agenda for overcoming the constraints

In order to improve the performance of output markets, the World Bank report suggests to accelerate the regional integration of markets by implementing trade liberalization schemes; facilitate access to modern information and communication technologies to increase market



exchange and get better price information and apply upgrading strategies in food markets' value chains by upgrading processing, packaging, quality, and branding.

Facilitating access to inputs and technology would facilitate the growth of a competitive agribusiness sector. This would entail and broader and facilitated use of improved seeds, fertilizers and other inputs. Inputs markets, per se represent another agribusiness opportunity.

Enhancing access to land and tenure security. Agribusiness will falter unless communities' and individuals' land rights are formalized and governance of land resources improves. Sometimes quick wins can come from clarifying the tenure status of abandoned state or private farms and auctioning the rights to that land to investors. For the longer term, governments urgently require a decentralized, transparent, and participatory process to allocate land, rapidly formalize community

and individual rights, build community capacity to negotiate fair deals with investors, and reduce the transaction costs and tenure insecurity that discourage investors.

Upgrading infrastructure using public-private partnerships where possible. Irrigation is critical to increase and stabilize production, reduce risks, and provide the basis for higher-value agriculture. Given the severe constraints on public sector resources and capacity, tapping private capital and management skills will be essential to accelerate investment in irrigation.

Financing agribusiness. There are now much better opportunities to tap private sector financing. Companies can provide financing directly through interlinked value chains, provided that contracts can be enforced, especially for high-value exports and some products that require immediate processing. Although formal banks currently lend little to the sector, recent

experiences show that agricultural and agribusiness lending can become a profitable business for established banks.

Capacity building, new e-banking technologies, incentives to open rural offices or mobile banking, and flexible rules on collateral are expanding lending to the sector.

Building skills and entrepreneurship. A major constraint on competitive commercial agriculture and agribusiness is the lack of skills at all levels, from vocational to postgraduate education, including management and entrepreneurial capacity.

Ensuring inclusive investments. Africa has a huge challenge to create jobs, especially for the 25 million young people who will enter the labor force each year by 2025. Private investments in the sector should ensure the creation of good jobs that are available to local communities through local training programs.

Conclusion

Following decades of stagnation and even decline, African economies are growing again. Growth has been strong, broadly based, and sustained over more than a decade. Underneath the recovery are troubling trends that will need to be addressed effectively. The pace and pattern of economic transformation over the preceding decades suggest that structural change has been historically productivity-reducing. The reason has been the movement of labor out of an underperforming agricultural sector to an oversized, low-productivity service sector. The problem was made worse by the lack of effective industrialization strategies that prevented African economies from diversifying into higher productivity goods. Sustaining and building on the current recovery process to raise incomes and reduce poverty among African countries would require innovative strategies to revitalize agricultural growth.

Such strategies would have to consolidate the progress under CAADP. They would include a new approach to rural development with greater synergies between social service provision and productivity enhancing investments in order to maximize the impact of public expenditures on labor productivity in rural areas. A new approach to industrialization policies is also needed to promote transition of African economies to higher valued products. In addition to conventional priority areas such as improved macroeconomic policies and

infrastructure investment, there is a need for technology and innovation policies to support enterprise growth not just in the formal industrial sector, but also the informal sector.⁴⁹

Binswanger-Mkhize, McCalla, and Patel note hopeful signs for African agricultural development despite structural transformation having not yet occurred. Hopeful signs include the recent renewed economic growth, an end to the circular decline in agricultural prices, growing food demand at the national and regional levels, and increasing agricultural commitments by African governments. The authors recommend that countries seize the moment to support economic growth through country specific sound macroeconomic policies, removal of disincentives in the agricultural sector, increased agricultural technology investments, and improved agricultural institutions and services for farmers. The importance of aligning these strategies with the ongoing Comprehensive Africa Agriculture Development Programme implementation agenda is highlighted.⁵⁰

The African ownership and leadership of NEPAD and CAADP played a key role in putting agriculture squarely on the regional and national development agendas.⁵¹ Unfortunately, recent expenditure reviews suggest that budgetary support to agriculture is not meeting the CAADP target in most countries. Only Burkina Faso, Malawi, Mali, Niger, and Senegal surpassed the 10 percent

target in 2007, while a large majority of countries are still budgeting for agriculture at levels between 5 and 10 percent (Fan, Omilola, and Lambert 2009). A number of issues ranging from low stakeholder participation in the CAADP process to poor data availability and quality have further exacerbated the challenges of meetings these targets (Morton 2010).

Nonetheless, **CAAPD put agricultural development back on the agenda through a process of African ownership.** As a result, other complementary efforts were made to strengthen the contribution of agricultural science, technology, and innovation in the region's agricultural development. A hallmark of these efforts is the 2006 Framework for African Agricultural Productivity (FAAP), which provides a roadmap to improving agricultural productivity by enabling and accelerating innovation. FAAP responds to CAADP Pillar IV, which provides a strategy for revitalizing, expanding, and reforming Africa's agricultural R&D capacity and shifting away from a technological package approach to a more integrated innovation system approach that actively engages public, private, and civil society stakeholders (FARA 2006). Importantly, FAAP encouraged bilateral and multilateral donors to take a more coordinated approach to funding agricultural development programs; responding to stakeholder priorities; and harmonizing activities at the country, program, and project levels.



GLOSSARY

Adaptation to Climate Change

Initiatives and measures to reduce the vulnerability of natural and human systems against actual or expected climate change effects. Various types of adaptation exist, e.g. anticipatory and reactive, private and public, and autonomous and planned. Examples are raising river or coastal dikes, the substitution of more temperature-shock resistant plants for sensitive ones, etc.

Commodity

A commodity is a tangible good (usually a raw material, metal or basic agricultural products) that has value and can be exchanged in international trade.

Employment

Persons in employment comprise all persons above a specified age who during a specified brief period, either one week or one day, were in the following categories: paid employment; self employment.

FAO Food price index

The FAO Food Price Index is a measure of the monthly change in international prices of a basket of food.

Farming system

A population of individual farm systems that have broadly similar resource bases, enterprise patterns, household livelihoods and constraints, and for which similar development strategies and interventions would be appropriate. Depending on the scale of analysis, a farming system can encompass a few dozen or many millions of households.

Food access

A household's ability to acquire adequate amounts of food regularly through a combination of production, purchases, barter, borrowing, food assistance or gifts.

Food availability

The amount of food that is present in a country or area through all forms of domestic production, imports, food stocks and food aid.

Food consumption

The food consumption refers to the amount of food available for human consumption as estimated by the FAO Food Balance Sheets. However the actual food consumption may be lower than the quantity shown as food availability depending on the magnitude of wastage and losses of food in the household, e.g. during storage, in preparation and cooking, as plate-waste or quantities fed to domestic animals and pets, thrown or given away.

Food Insecurity

Food insecurity exists when people are undernourished as a result of the physical unavailability of food, their lack of social or economic access to adequate food, and/or inadequate food utilization. Food-insecure people are those individuals whose food intake falls below their minimum calorie (energy) requirements, as well as those who exhibit physical symptoms caused by energy and nutrient deficiencies resulting from an inadequate or unbalanced diet or from the body's inability to use food effectively because of infection or disease.

Food Loss (FL)

The term 'food loss' can be defined as any reduction in food available for human consumption taking place in the food chain from the moment of harvest until the moment of consumption. 'Food loss' is a subset of PHL and represents the part of the edible share of food that is available for consumption at either the retail or consumer levels but not consumed for any reason. It refers to the decrease in food quantity or quality, which makes it unfit for human consumption. It is important to note that not all food that is lost is suitable for consumption, such as banana peels or skins from vegetables.

Food security

A condition that exists when all people, at all times, are free from hunger. Food security involves four aspects: (1) availability; (2) access; (3) utilization; and (4) stability

Food Supply Chain (FSC)

A food supply chain (FSC) is 'a network of food-related business enterprises through which food products move from production through consumption, including pre-production and post-consumption activities'. Links that are typical in the FSC are Inputs producer distributor wholesaler retailer consumer. The food supply chain connects three important sectors of the economy – agriculture, the food processing industry and the distribution sectors'.

Food Waste (FW)

At later stages of the FSC, the term 'food waste' is applied and generally

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relates to behavioral issues. Food waste' is the subset of food loss that is potentially recoverable for human consumption and can be divided into two categories – avoidable (edible or edible before spoilage/damage) and unavoidable (inedible food material like vegetable peels, bones, etc.). A more clear definition of food wastage refers to the 'deliberate discarding of food that is fit to be eaten.

Foreign direct investment

Foreign investment establishes a lasting interest in or effective management control over an enterprise. Foreign direct investment can include buying shares of an enterprise in another country, reinvesting earnings of a foreign-owned enterprise in the country where it is located, and parent firms extending loans to their foreign affiliates. International Monetary Fund (IMF) guidelines consider an investment to be a foreign direct investment if it accounts for at least 10% of the foreign firm's voting stock of shares.

GNP per capita

A country's gross national product (GNP) divided by its population. Shows the income each person would have if GNP were divided equally. Also called income per capita. GNP per capita is a useful measure of economic productivity, but by itself it does not measure people's well-being or a country's success in development. It does not show how equally or unequally a country's income is distributed among its citizens. It does not reflect damage made by production processes to natural resources and

the environment. It does not take into account any unpaid work done within households or communities or production taking place in the gray (shadow) economy. It attributes value to anything being produced whether it harms or contributes to general welfare (for example, medicines and chemical weapons). And it ignores the value of such elements of people's well-being as leisure or freedom.

Gross Domestic Product (GDP)

GDP is Gross domestic product. For a region, the GDP is "the market value of all the goods and services produced by labor and property located in" the region, usually a country. It equals GNP minus the net inflow of labor and property incomes from abroad.

Gross national product (GNP)

The value of all final goods and services produced in a country in one year (gross domestic product) plus income that residents have received from abroad, minus income claimed by nonresidents. GNP may be much less than GDP if much of the income from a country's production flows to foreign persons or firms. But if the people or firms of a country hold large amounts of the stocks and bonds of firms or governments of other countries, and receive income from them, GNP may be greater than GDP.

Household

All the persons, kin and non-kin, who live in the same dwelling and share income, expenses and daily subsistence tasks.

Informal economy

The informal economy refers to all economic activities by workers and economic units that are – in law or in practice – not covered or insufficiently covered by formal arrangements. Their activities are not included in the law, which means that they are operating outside the formal reach of the law; or their activities are not covered in practice, which means that – although they are operating within the formal reach of the law, the law is not applied or not enforced; or the law discourages compliance, because it is inappropriate, burdensome, or imposes excessive costs.

Labour market

The labour market is the arena in which jobs and workers are matched, or where labour is exchanged for wages or payment in kind, whereas the labour force comprises the supply of workers to that market. Strictly speaking, the labour market is the context in which the labour force is constituted – the sea in which the labour force swims, so to speak. But the labour force is necessarily shaped by trends in the labour market (such as globalization and the informalization of labour). The labour market and its institutions are not neutral, but reflect power relations in the economy and society at large. Changes in the labour market are therefore gendered and produce changes in the gender structure of the labour force, for instance in occupational segregation, women and men's relative participation in employment, and so on.

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Least Developed Country (LDC)

Least Developed Countries are those assessed as having particularly severe long-term constraints to development. Inclusion on the list of Least Developed Countries is now assessed on two main criteria: economic diversity and quality of life.

Low Income Countries

Countries in the Low Income Group, as defined in Income Groups

Millennium Development Goals (MDGs)

A set of eight international development goals for 2015, adopted by the international community in the UN Millennium Declaration in September 2000, and endorsed by IMF, World Bank and OECD.

Poverty Reduction Strategies

Poverty Reduction Strategies are prepared by developing country

governments in collaboration with the World Bank and International Monetary Fund as well as civil society and development partners. These documents describe the country's macroeconomic, structural and social policies and programmes to promote growth and reduce poverty, as well as associated external financing needs and major sources of financing.

Price

The amount of money required for the exchange of a good or service to take place. Prices are an important source of market information, providing the incentive for market actors' decisions. There are different types of prices:

Farm-gate price: the price a farmer receives for a product at the boundary of the farm, not including transport costs or other marketing services.

Wholesale price: the price of a good purchased from a wholesaler.

Wholesalers buy large quantities of goods and resell them to retailers. The wholesale price is higher than the farm-gate price because of the marketing margin.

Retail price: the price of a good purchased from a retailer by a consumer. The retail price is higher than the wholesale price because of the marketing margin.

Import parity price: the price paid for an imported good at the border, not including transaction costs incurred within the importing country.

Export parity price: the price received for an exported good at the border, including transaction costs incurred within the exporting country.

Purchasing power

The quantities of goods and services that can be bought with a given amount of money. It depends on income and prices.

ACRONYMS

AAFT	African Agricultural Technology Foundation
AfDB	African Development Bank
AGRA	Alliance for a Green Revolution in Africa
ASARECA	Association for Strengthening Agricultural Research in Eastern and Central Africa
AU	African Union
BIPPs	Bankable Investment Project Profiles
CAADP	Comprehensive Africa Agriculture Development Programme
CBA	Community-based Adaptation
CBO	Community-based Organization
CC	Climate Change
CCA	Climate Change Adaptation
CEMAC	Commission de la Communauté Economique et Monétaire de l'Afrique Central
CGIAR	Consultative Group on International Agricultural Research
CIDA	Canadian International Development Agency
CILSS	Comité permanent Inter-états de Lutte contre la Sécheresse dans le Sahel
CMAOC	Conference of Agriculture Ministers of West & Central Africa
COMESA	Common Market for Eastern and Southern Africa
CORAF/WECARD	West and Central African Council for Agricultural Research and Development
CSO	Civil society organizations
DAC	Development Assistance Committee
DIE	Deutsches Institut für Entwicklungspolitik
DFID	United Kingdom's Department for International Development
EAAPP	Eastern Africa Agricultural Productivity Program
EAFF	East African Farmers' Federation
EBA	Everything but Arms

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ECA	United Nations Economic Commission for Africa
ECOWAS	Economic Community of West African States
EDF	European Development Fund
EIARD	European Initiative for Agricultural Research for Development
EMBRAPA	Brazilian Agricultural Research Corporation
EPAs	Economic Partnership Agreements
EU	European Union
FAAP	Framework for African Agricultural Productivity
FAO	Food & Agriculture Organisation of the United Nations
FARA	Forum for Agricultural Research in Africa
FFI	Feed the Future Initiative
FMNR	Farmer-managed natural regeneration
FNS	Food and Nutrition Security
FOCAC	Forum on China-Africa Cooperation
FTF	Feed the Future initiative
GAM	Global Acute Malnutrition
GAFSP	Global Agriculture and Food Security Program
GDP	Gross Domestic Product
GFAR	Global Forum on Agricultural Research
GMO	Genetically Modified Organism
HEA	Household Economy Analysis
IAASTD	International Assessment of Agricultural Knowledge, Science and Technology for Development
ICTs	Information and Communication Technologies

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IDRC	International Development Research Centre
IFAD	International Fund for Agricultural Development
IFC	The International Finance Corporation
IFPRI	International Food Policy Research Institute
IITA	International Institute of Tropical Agriculture
ILO	International Labour Organization
IMF	International Monetary Fund
IUF	International Union of Food workers
JICA	Japan International Cooperation Agency
LDCs	Least-developed countries
LICs	Low Income Countries
MDG	Millennium Development Goal
MICs	Middle Income Countries
MFI	Microfinance Institution
NEPAD	New Partnership for Africa's Development
NGOs	Non-governmental organizations
NMTIP	National Medium-Term Investment Programmes
NRM	Natural Resource Management
ODA	Official development assistance
OECD	Organisation for Economic Co-operation & Development
PAEPARD	Platform for African European Partnership on Agricultural Research for Development
PAFO	Pan-African Farmers' Organisation
PROPAC	Regional Platform for Small Farmer Organisations of Central Africa
PRS	Poverty reduction strategy

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PRSP	Poverty Reduction Strategy Paper
R&D	Research and Development
RECs	Regional Economic Communities
ROPPA	Réseau des organisations paysannes et de producteurs de l'Afrique de l'Ouest
SACAU	Southern African Confederation of Agricultural Unions
SADC	Southern African Development Community
SSA	Sub-Saharan Africa
UEMOA	Union Economique et Monétaire Ouest Africaine
UMAGRI	Union Magrebine des Agriculteurs / Farmers Union of the Maghreb
UN	United Nations
UNDP	United Nations Development Programme
UNECA	United Nations Economic Commission for Africa
USDA US	Department of Agriculture
USAID	United States Agency for International Development
WASH	Water, Sanitation and Hygiene
WB	World Bank
WFP	World Food Programme
WTO	World Trade Organization

RESOURCES

AATF

AATF (African Agricultural Technology Foundation). 2010. *A Study on the Relevance of Chinese Agricultural Technologies to Smallholder Farmers in Africa*. Nairobi, Kenya: African Agricultural Technology Foundation.
<http://aatf-africa.org/userfiles/AATF-Chinese-technologies-report.pdf>

ACTION AID

ActionAid 2013. *Fair Shares: is CAADP working?* ActionAid report
http://www.actionaid.org/sites/files/actionaid/fair_shares_caadp_report.pdf

Tibbett, S. 2011. *'CAADP. A Toolkit for Civil Society Organization, Engagement and Advocacy'*. Johannesburg: ActionAid International.
http://www.actionaid.org/sites/files/actionaid/caadp_toolkit_to_print.pdf

AFRICAN DEVELOPMENT BANK

Barka, H.B. 2011. *Brazil's Economic Engagement with Africa*. Africa Economic Brief. The African Development Bank Group.
http://www.afdb.org/fileadmin/uploads/afdb/Documents/Publications/Brazil%27s_Economic_Engagement_with_Africa_rev.pdf

Binswanger-Mkhize, Hans & Alex F. McCalla, 2008, *'The Changing Context and Prospects for Agricultural and Rural Development in Africa'*, Background Paper, AfDB-IFAD Joint Evaluation of ARD in Africa. Tunis: African Development Bank & Rome: International Fund for Agricultural Development

<http://www.ifad.org/evaluation/jointevaluation/docs/annex1.pdf>

AFRICAN ECONOMIC RESEARCH CONSORTIUM

Gollin, D. 2009. *Agriculture as an Engine of Growth and Poverty Reduction*. Commissioned paper for the African Economic Research Consortium, Project on Understanding Links Between Growth and Poverty Reduction in Africa. Nairobi, Kenya: African Economic Research Consortium.

CENTER FOR GLOBAL DEVELOPMENT

Elliot, K., and E. Collins (2012). *'Assessing Quality of Aid for Agriculture'*. Policy Paper 010, 2012/08. Washington, DC: Center for Global Development.

Timmer, P. 2009. *A World without Agriculture: The Structural Transformation Process in Historical Perspective*. Washington, DC: American Enterprise Institute Press. Also available as Timmer, T., and S. Akkus. 2008. *The Structural Transformation as Pathway from Poverty: Analytics, Empirics, and Politics*. Working Paper No. 150. Washington, DC: Center for Global Development.

CTA

Brussels Briefing No. 30, CTA. *Agricultural Resilience in the Face of Crisis and Shocks*.
http://brusselsbriefings.files.wordpress.com/2013/03/cta-reader-30_agricultural-resilience-eng-rev-21.pdf

Brussels Briefing No. 28, CTA. *Addressing Food Wastes in Times of Crisis*.

<http://brusselsbriefings.files.wordpress.com/2012/07/reader-br-28-addressing-food-waste-in-times-of-crisis.pdf>

Brussels Briefing No. 25, CTA. *Food Price Volatility*

<http://brusselsbriefings.files.wordpress.com/2012/10/br-25-reader-br-25-food-price-volatility-eng.pdf>

Brussels Briefing No. 24, CTA. *Major drivers for rural transformation in Africa*

<http://brusselsbriefings.files.wordpress.com/2009/02/r18en1.pdf>

Brussels Briefing No. 23, CTA. *Addressing ACP nutrition security. The key role of agriculture*

http://brusselsbriefings.files.wordpress.com/2012/10/br-23-en_reader.pdf

Brussels Briefing No. 21, CTA. *Geopolitics of Food: Implications for ACP*

<http://brusselsbriefings.files.wordpress.com/2012/10/br-21-reader-geopolitics-eng.pdf>

ECDPM

Roquefeuil, Q. de. 2013. *The CAADP and emerging economies: The case of Ghana and Brazil*. (ECDPM Discussion Paper 146).

[http://www.ecdpm.org/Web_ECDPM/Web/Content/Download.nsf/0/62DBA2A17D0C7112C1257B9800301BA1/\\$FILE/DPI146ECDPM%20study_CAADP%20Ghana%20and%20Brazil.pdf](http://www.ecdpm.org/Web_ECDPM/Web/Content/Download.nsf/0/62DBA2A17D0C7112C1257B9800301BA1/$FILE/DPI146ECDPM%20study_CAADP%20Ghana%20and%20Brazil.pdf)

Agricultural transformation in Africa : Building on successes

Lui D., Rosengreen A. and de Roquefeuil Q. 2013. *Emerging Economies and the Changing Dynamics in African Agriculture: what role for CAADP?* ECDPM no. 145 Discussion paper.

[http://www.ecdpm.org/Web_ECDPM/Web/Content/Download.nsf/0/B6CEBF334AF699AFC1257B91002C9563/\\$FILE/DP%20145%20Emerging%20Economies%20and%20the%20Changing%20Dynamics.pdf](http://www.ecdpm.org/Web_ECDPM/Web/Content/Download.nsf/0/B6CEBF334AF699AFC1257B91002C9563/$FILE/DP%20145%20Emerging%20Economies%20and%20the%20Changing%20Dynamics.pdf)

Rosengren, A. 2013. *The CAADP and emerging economies: The case of Tanzania. (ECDPM Discussion Paper 147).*

[http://www.ecdpm.org/Web_ECDPM/Web/Content/Download.nsf/0/09CB2DFD994AF61C1257BA20026F954/\\$FILE/DP%20147%20CAADP%20and%20Emerging%20econ%20Tanzania.pdf](http://www.ecdpm.org/Web_ECDPM/Web/Content/Download.nsf/0/09CB2DFD994AF61C1257BA20026F954/$FILE/DP%20147%20CAADP%20and%20Emerging%20econ%20Tanzania.pdf)

Afun-Odigian, D. 2012. *Taking stock of CAADP in West Africa: state of play and challenges ahead for the region. GREAT Insights, Volume 1, Issue 2. March-April 2012*

http://www.ecdpm.org/Web_ECDPM/Web/Content/Content.nsf/7732def81dddfa7ac1256c240034fe65/15199b121100a24cc12579d1003fbf99?OpenDocument

Rampa, F., J. van Seters and D. Afun-Ogidan. 2012. *Regional approaches to food security in Africa: The CAADP and other relevant policies and programmes in SADC (ECDPM Discussion Paper 128b).*

[http://www.ecdpm.org/Web_ECDPM/Web/Content/Download.nsf/0/9C6033B64C526EB2C1257A3700564AB3/\\$FILE/DP128b%20final%2023-04.pdf](http://www.ecdpm.org/Web_ECDPM/Web/Content/Download.nsf/0/9C6033B64C526EB2C1257A3700564AB3/$FILE/DP128b%20final%2023-04.pdf)

Seters, J. van, D. Afun-Ogidan, and F. Rampa. 2012. *Regional approaches to food security in Africa: The CAADP*

and other relevant policies and programmes in ECOWAS (Discussion Paper 128d). Maastricht: ECDPM.

[http://www.ecdpm.org/Web_ECDPM/Web/Content/Download.nsf/0/D8D56321D5797162C1257A2400616D89/\\$FILE/DP128d%20final%2023-04.pdf](http://www.ecdpm.org/Web_ECDPM/Web/Content/Download.nsf/0/D8D56321D5797162C1257A2400616D89/$FILE/DP128d%20final%2023-04.pdf)

EIARD

Morton, J. 2010. European Initiative for Agricultural Research for Development (EIARD). *Analysis of donor support to CAADP Pillar 4 -Phase 1.* Brussels: European Initiative on Agricultural Research for Development.

FAO

FAO, 2013. *'Crop prospects and food situation.'*

<http://www.fao.org/docrep/018/aq114e/aq114e.pdf>

FAO, 2012 *'Why Africa has become a net food importer'*

http://www.fao.org/fileadmin/templates/est/PUBLICATIONS/Books/AFRICA_STUDY_BOOK_REVISIED_low_res.pdf

FAOSTAT. 2011. Food and Agricultural Organization of the United Nations.

<http://faostat.fao.org/site/291/default.aspx>

FAO. 2011. <http://www.fao.org/docrep/015/an177e/an177e00.pdf>

Collier, P., and S. Dearcon. 2011. *"African Agriculture in 50 Years: Smallholders in a Rapidly Changing World?"* Paper prepared for the Food and Agriculture Organization of the United Nations (FAO) Expert Meeting on How to Feed the World in 2050, Rome, June 24–26, 2009.

FAO–OECD with contributions from IFAD, IMF, UNCTAD, WFP, World Bank, WTO, IFPRI, and UN HLTF. 2011. *Price Volatility in Food and Agricultural Markets: Policy Responses: A Policy Report.* <http://www.oecd.org/trade/agricultural-trade/48152638.pdf>

Collier P. and S. Dercon. 2009. *African agriculture in 50 years: Smallholders in a rapidly changing world?* FAO Expert meeting on how to feed the world in 2050. Food and Agriculture Organization of the United Nations Economic and Social Development Department.

<ftp://ftp.fao.org/docrep/fao/012/ak983e/ak983e00.pdf>

FAO, 2011. *State of Food Insecurity,* Rome.

<http://www.fao.org/docrep/014/i2330e/i2331e00.pdf>

Brown, M. 2009. *'Rapid Assessment of Aid Flows for Agricultural Development in Sub-Saharan Africa.'* FAO Investment Centre Division Discussion Paper 2009/09. Rome: Food and Agriculture Organization of the UN.

FAO, 2001 *'Farming systems and poverty. Improving farmers' livelihood in a changing world'*

<ftp://ftp.fao.org/docrep/fao/004/ac349e/ac349e00.pdf>

FARA

FARA (Forum for Agricultural Research in Africa). 2006. *Framework for African Agricultural Productivity.* Accra, Ghana.

http://www.fara-africa.org/media/uploads/File/FARA%20Publications/FAAP_English.pdf

Agricultural transformation in Africa : Building on successes

FUTURE AGRICULTURES CONSORTIUM

Berhanu K. 2013, *CAADP Ethiopia: A New Start?* Working Paper 060, Future Agricultures Consortium.

Poulton, 2012 *'The State and performance of African Agriculture and the Impact of structural change.'* Working Paper, Future Agricultures Consortium.

Wellard, Kate and Hughes, David, 2011. *Policy into Use: Accelerating Agricultural Growth through CAADP.* CAADP Policy Brief, Future Agricultures Consortium.

FAC, 2009, *Fertiliser Subsidies: Lessons from Malawi for Kenya*, Briefing Paper, February 2009, Brighton UK: Future Agricultures Consortium

FAC, 2008, *The Malawi Fertiliser Subsidy Programme: politics and pragmatism*, Briefing Paper by Blessings Chinsinga, February 2008, Brighton UK: Future Agricultures Consortium.

GFAR

Lele, U., J. Pretty, E. Terry, and E. Trigo. 2010. *Transforming Agricultural Research for Development.* Report for the Global Forum for Agricultural Research (GFAR) Global Conference on Agricultural Research (GCARD) 2010, Montpellier, March 28–31, 2010.

IFAD

Poole, N. 2006. *Innovation Challenges, Constraints and Opportunities for the Rural Poor.* Rome: International Fund for

Agricultural Research. <http://www.ifad.org/events/gc/29/panel/e/poole.pdf>

IFPRI

IFPRI. 2011. Washington, DC. <http://www.ifpri.org/sites/default/files/publications/pr24.pdf>

IFPRI, 2010 'Innovation in Rural And Agriculture Finance'. Focus 18, Brief 4 <http://www.ifpri.org/sites/default/files/publications/focus18.pdf>

Kwadwo Asenso-Okyere and Samson Jemaneh. Increasing Agricultural productivity and enhancing food security in Africa. <http://tinyurl.com/nfnp3cj>

Badiane, O., S. Odjo, and J. Ulimwengu. 2011. . IFPRI Discussion Paper. <http://www.ifpri.org/sites/default/files/publications/ifridp01145.pdf>

Badiane, O. 2011. *Agriculture and Structural Transformation in Africa.* Stanford Symposium Series on Global Food Policy and Food Security in the 21st Century. Stanford, CA: Freeman Spogli Institute for International Studies. http://woods.stanford.edu/sites/default/files/files/Stanford-Synthesis-Volume-on-Global-Food-Policy-and-Food-Security-in-the-21st-Century_0.pdf

Badiane, O. and J. Ulimwengu. 2009. *The growth-poverty convergence agenda: optimizing social expenditures to maximize their impact on agricultural labor productivity, growth, and poverty reduction in Africa.* IFPRI Discussion Paper No. 906. Washington D.C.:

IFPRI. <http://www.ifpri.org/sites/default/files/publications/ifridp00906.pdf>

Badiane, O. 2008. *Sustaining and accelerating Africa's agricultural growth recovery in the context of changing global food prices.* IFPRI Policy Brief No. 9. Washington D.C.: IFPRI.

<http://www.ifpri.org/sites/default/files/pubs/pubs/bp/bp009.pdf>

Barrett C., M. Carter and P. Timmer (2010), "A century-long perspective on agricultural development", American Journal of Agricultural Economics, Vol. 92, No. 2, OUP, Oxford, July.

Beintema, N. M., and G. J. Stads. 2006. *Agricultural R&D in Sub-Saharan Africa: An Era of Stagnation.* ASTI Background Paper. Washington, DC: International Food Policy Research Institute. http://www.asti.cgiar.org/pdf/AfricaRpt_200608.pdf

Binswanger-Mkhize, H. P., and A. F. McCalla. 2009a. *The Changing Context and Prospects for agricultural and Rural Development in Africa.* Rome and Tunis: International Fund for Agricultural Development and African Development Bank. <http://www.asti.cgiar.org/pdf/conference/Theme1/Binswanger.pdf>

Diao Xinshen, James Thurlow, Samuel Benin, and Shenggen Fan. 2012. *Strategies and priorities for African agriculture : economy wide perspectives from country studies.* IFPRI <http://www.ifpri.org/sites/default/files/publications/oc73.pdf>

Agricultural transformation in Africa : Building on successes

Diao, X., P. Hazell, D. Resnick, and J. Thurlow. 2007. *The Role of Agriculture in Development: Implications for Sub-Saharan Africa*. Research Report 153. Washington, DC: International Food Policy Research Institute.
<http://www.ifpri.org/sites/default/files/pubs/pubs/abstract/153/rr153.pdf>

Diao, X., and P. Hazell. 2004. *Exploring Market Opportunities for African Smallholders*. 2020 Africa Conference Brief 6. Washington, DC: International Food Policy Research Institute.
<http://www.ifpri.org/sites/default/files/pubs/pubs/ib/ib22.pdf>

Eicher, C.K. 2003. ". Paper presented at: International Policy Conference on 'Successes in African Agriculture: Building for the Future', Pretoria: South Africa. <http://www.ifpri.org/events/conferences/2003/120103/papers/paper16.pdf>

Fan, S. 2011. *Smallholder Farming and Food Security in Africa: Opportunities and Challenges*. Presentation to the Collaborative Masters Program in Agricultural and Applied Economics (CMAAE), Kampala, Uganda,

Fan, S., B. Omilola, and M. Lambert. 2009. *Public Spending for Agriculture in Africa: Trends and Composition*. ReSAKSS Working Paper No. 28. Washington, DC: Regional Strategic Analysis and Knowledge Support System, IFPRI.
<http://www.resakss.org/sites/default/files/pdfs/public-expenditure-tracking-in-africa-trends-and-c-42375.pdf>

Gabre-Madhin, Eleni Z. & Steven Haggblade, 2001, *Successes in African agriculture: results of an expert survey*, International Food Policy Research Institute, Washington DC.
http://www.ifpri.org/sites/default/files/publications/syn04_survey.pdf

Haggblade S., P. B. R. Hazell. 2010. *Successes in african agriculture. Lessons for the Future*. IFPRI issue brief 63.

Haggblade, Steven Peter Hazell, Ingrid Kirsten and Richard Mkandawire, 2003, '*African Agriculture: Past Performance, Future Imperatives*', Conference Paper No. 2, presented at the InWEnt, IFPRI, NEPAD, CTA conference, "Successes in African Agriculture", Pretoria, December 1-3, 2003.
<http://www.ifpri.org/sites/default/files/pubs/events/conferences/2003/120103/papers/paper2.pdf>

Hans P. Binswanger-Mkhize, Derek Byerlee, Alex McCalla, Michael Morris, and John Staatz. 2011. *The Growing Opportunities for African Agricultural Development*. ASTI/IFPRI – FARA Conference. IFPRI
<http://www.ifpri.org/sites/default/files/publications/binswanger.pdf>

Pratt, A. N., and B. Yu. 2008. *An Updated Look at the Recovery of Agricultural Productivity in Sub-Saharan Africa*. IFPRI Discussion Paper 00787. Washington, DC.
<http://www.ifpri.org/sites/default/files/pubs/pubs/dp/ifpridp00787.pdf>

ReSAKSS. 2011. *Agricultural trends and outlook report 2010*. Washington, DC: IFPRI.

<http://www.resakss.org/sites/default/files/pdfs/trends-and-spatial-patterns-in-agricultural-product-53115.pdf>

Timmer P., M. McMillan, O. Badiane, D. Rodrik, H. Binswanger-Mkhize and F. Wouterse. 2012. *Patterns of growth and structural transformation in Africa. Trends and lessons for future development strategies*. Thematic research note 02, West & Central Africa Office IFPRI
<http://www.ifpri.org/sites/default/files/publications/wcaotn02.pdf>

Ulimwengu J., T. Badibanga. 2012. *The sophistication and diversification of the African Agricultural Sector. A product space approach*. IFPRI discussion paper 01156, West & Central Africa Office IFPRI
<http://www.ifpri.org/sites/default/files/publications/ifpridp01156.pdf>

Ulimwengu, J., and P. Sanyal. 2011. *Using a Spatial Growth Model to Provide Evidence of Agricultural Spillovers between Countries in the NEPAD CAADP Framework*. Discussion Paper 1069. Washington, DC: IFPRI.
<http://www.ifpri.org/sites/default/files/publications/ifpridp01069.pdf>

Von Braun, J., and R. Meinzen-Dick. 2009. *Land Grabbing by Foreign Investors in Developing Countries: Risks and Opportunities*. IFPRI Policy Brief 13. Washington, DC: IFPRI.
<http://www.ifpri.org/sites/default/files/publications/bp013all.pdf>

NEPAD-CAADP

NEPAD (2003). '*Comprehensive Africa Agriculture Development Programme*.' New Partnership for

Agricultural transformation in Africa : Building on successes

Africa's Development publication 2003/07. Midrand: NEPAD)
<http://www.nepad.org/system/files/caadp.pdf>

NEPAD-CAADP. 2010. *Accelerating CAADP Country Implementation*.
http://www.caadp.net/pdf/CAADP_imp_guide_WEB.pdf

Accélérer la mise en oeuvre du PDDAA au niveau pays : Guide des acteurs. 2009.

Cooksey, Brian, 2013. *The Comprehensive Africa Agriculture Development Programme (CAADP) and Agricultural Policies in Tanzania: Going with or against the grain?* FAC Political Economy of Agricultural Policy in Africa (PEAPA).

FAC CAADP Policy brief. *From technology transfer to innovation systems: sustaining a Green Revolution in Africa*.

Mwape F. 2009. *How are countries measuring up to the Maputo declaration?* CAADP Policy briefing. NEPAD
<http://www.nepad-caadp.net/pdf/How%20are%20countries%20measuring%20up%20to%20the%20Maputo%20declaration.pdf>

New Partnership of Africa's Development. 2009. *The framework for trade-related infrastructure development and market Access (FIMA)*. NEPAD.
<http://www.nepad-caadp.net/pdf/CAADP%20Pillar%20II%20FIMA%20Full%20Document.pdf>

ODI

Steve Wiggins & Henri Leturque,

2010. *Helping Africa to feed itself. Promoting agriculture to address poverty and hunger*. A Development Policy Forum (DPF). Discussion paper.
<http://www.odi.org.uk/sites/odi.org.uk/files/odi-assets/publications-opinion-files/6265.pdf>

Wiggins, Steve & Sharada Keats, 2009, 'Current state of food security in Africa and the Africa-EU partnership on the Millennium Development Goals', Paper for Second Joint Experts Group Meeting, Africa-EU MDGs Partnership, 24 March 2009, Pretoria. London: Future Agricultures Consortium & ODI, London
http://www.fanrpan.org/documents/d00953/UA-UE_MDG_partnership-Food_Security_Paper.pdf

Steve Wiggins and Priya Deshingkar, 2007. *Rural Employment and migration: In search of decent work*, ODI Briefing paper 27.
<http://www.odi.org.uk/sites/odi.org.uk/files/odi-assets/publications-opinion-files/6.pdf>

OECD

OECD-FAO (Organisation for Economic Co-operation and Development and Food and Agriculture Organization of the United Nations). 2011. *Agricultural Outlook, 2011-2020*. Paris and Rome.
<http://www.oecd.org/site/oecd-faoagriculturaloutlook/48202074.pdf>

UK FOOD GROUP

UK Food Group. 2008. *More Aid for African Agriculture. Policy implications for Small scale Farmers*. London: UK Food Group.

http://www.ukfg.org.uk/docs/More_Aid_for_African_Agriculture_MAIN_REPORT.pdf

UNITED NATIONS

Sundaram J. K., O. Schwank and R. von Arnim. 2011. *Globalization and development in sub-Saharan Africa*. United Nations Department of Economic and Social Affairs UN/DESA Working Paper no. 102.
http://www.un.org/esa/desa/papers/2011/wp102_2011.pdf

Umbadda S. and Elgizouli I. *Foreign aid and sustainable agriculture in Africa*. WIDER Working Paper No. 2013/081. UNU-WIDER. 2013

UNCTAD. 2013. *The Economic Development in Africa Report 2013*.
http://unctad.org/en/PublicationsLibrary/aldcafrica2013_en.pdf

UN Office of the Special Advisor on Africa. 2010. 'Aid to Africa 2010'. *Policy Brief 1, October*. New York: UN Office of the Special Advisor on Africa.

UNECA (United Nations Economic Commission for Africa). 2009. *Economic Report on Africa 2009: Developing African Agriculture through Regional Value Chains*. Addis Ababa, Ethiopia: UNECA.
http://www.uneca.org/sites/default/files/publications/era2009_eng_full.pdf

United Nations Department of Economic and Social Affairs (2012). 'Food Security and Nutrition and Sustainable Agriculture'. *New York: UN Division for Sustainable Development*.

Agricultural transformation in Africa : Building on successes

<http://sustainabledevelopment.un.org/index.php?menu=258>

United Nations Development Programme 2012. *Towards a Food Secure Future*. Africa Human Development Report. New York: United Nations Development Programme.

<http://www.undp.org/content/dam/undp/library/corporate/HDR/Africa%20HDR/UNDP-Africa%20HDR-2012-EN.pdf>

United Nations. 2013. *The Rise of the South: Human Progress in a Diverse World*. Human Development Report. New York: United Nations Development Programme.

http://hdr.undp.org/en/media/HDR_2013_EN_complete.pdf

WORLD BANK

Byerlee, D., X. Diao, and C. Jackson. 2005. *Agriculture, Rural Development and Pro-Poor Growth: Country Experiences in a Post-Reform Era*. Agriculture and Rural Development Discussion Paper 21. Washington, DC: World Bank.

http://siteresources.worldbank.org/INTARD/Resources/PPG_final.pdf

Keyser, J. C. 2006. *Definition of Methodology and Presentation of Templates for Value Chain Analysis: Competitive Commercial Agriculture in Africa (CCAA)*. Washington, DC: World Bank.

Michael Morris, edited by Gunnar Larson. 2009. *Awakening Africa's Sleeping Giant: Prospects for Commercial Agriculture in the Guinea Savannah Zone and Beyond*. The World Bank

<http://siteresources>.

worldbank.org/EXTARD/Resources/336681-1231508336979/SleepingGiantFinal.pdf

Ndulu, B., with L. Chakraborti, L. Lijane, V. Ramachandran, and J. Wolgin. 2007. *Challenges of African Growth: Opportunities, Constraints and Strategic Directions*. Washington, DC: World Bank.

http://siteresources.worldbank.org/AFRICAEXT/Resources/AFR_Growth_Advance_Edition.pdf

Poulton, C., G. Tyler, P. Hazell, A. Dorward, J. Kydd, and M. Stockbridge. 2008. *All-Africa Review of Experiences with Commercial Agriculture: Lessons from Success and Failure*.

http://siteresources.worldbank.org/INTAFRICA/Resources/257994-1215457178567/CCAA_Success_failure.pdf

Staatz, J., and N. N. Dembélé. 2007. *Agriculture for Development in Sub-Saharan Africa. Background paper prepared for the World Development Report 2008: Agriculture for Development*.

World Bank, 2013 'Growing Africa. Unlocking the potential of agribusiness'

<http://siteresources.worldbank.org/INTAFRICA/Resources/africa-agribusiness-report-2013.pdf>

World Bank-IFC (International Finance Corporation). 2011. *Doing Business 2011, Making a Difference for Entrepreneurs*. Washington, DC.

<http://www.doingbusiness.org/-/media/fpdkm/doing%20business/documents/annual-reports/english/db11-fullreport.pdf>

World Bank. 2011. RuralStruc Program:

http://www.nepad.org/system/files/RuralStruc%20presentation_Rural%20Futures_Addis-May%2025%202011.pdf

World Bank. 2011. Fact Sheet: The World Bank and Agriculture in Africa. <http://go.worldbank.org/GUJ8RVMRLO>

World Bank. 2011. West Africa Agricultural Productivity Program APL (WAAPP-1C). http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/AFR/2013/08/31/090224b081d69895/1_0/Rendered/PDF/Africa00West00Report000Sequence004.pdf

World Bank. 2010. West Africa Agricultural Productivity Program APL (WAAPP-1B). http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/AFR/2011/12/10/0EF67687A778361E85257962005DDCC3/1_0/Rendered/PDF/P1171480ISR0Di010201101323536713508.pdf

World Bank. 2010. *Growth and Productivity in Agriculture and Agribusiness*. Washington, DC: World Bank. http://www.thehindu.com/multimedia/archive/00271/Overview__Growth_an_271573a.pdf

World Bank, 2009b, *World Development Report 2010. Development and Climate Change*, Washington DC: World Bank

World Bank. 2009. *African infrastructure: A time for transformation*. Washington, D.C. <http://infrastructureafrica.org/>

Agricultural transformation in Africa : Building on successes

[system/files/Africa%27s%20Infrastructure%20A%20Time%20for%20Transformation%20FULL%20TEXT.pdf](#)

World Development Indicators (WDI). 2009. Washington DC: World Bank.

<http://data.worldbank.org/sites/default/files/wdi-final.pdf>

World Bank. 2008. 'Development Report. Washington, DC: World Bank.

http://siteresources.worldbank.org/INTWDR2008/Resources/WDR_00_book.pdf

World Bank (IEG), 2007, *World Bank Assistance to Agriculture in Sub-Saharan Africa, an Independent Evaluation Group (IEG) Review*,

Washington DC: World Bank
<http://www.givewell.org/files/DWDA%202009/Interventions/Agriculture/World%20Bank%20Assistance%20to%20Agriculture%20in%20Sub-Saharan%20Africa.pdf>

OTHER RESOURCES

African Economic Outlook 2013.

<http://www.undp.org/content/dam/rba/docs/Reports/African%20Economic%20Outlook%202013%20En.pdf>

AGRA. 2013. *Africa Agriculture Status Report. Focus on staple crops.*

<http://reliefweb.int/sites/reliefweb.int/files/resources/agrafinalaugust20akim.pdf>

Ariga, Joshua & T.S. Jayne, 2009, *Private Sector Responses to Public Investments and Policy Reforms: The Case of Fertilizer and Maize Market Development in Kenya*, Revised version 2: September 21, 2009

ASTI (Agricultural Science and Technology Indicators Initiative).

2010. Data Procedures and Methodology.

<http://www.asti.cgiar.org/methodology>

Brautigam, D. 2009. *The Dragon's Gift: The Real Story of China in Africa*. New York: Oxford University Press.

<http://www.american.edu/sis/faculty/upload/Brautigam-Chinese-Aid-in-Africa.pdf>

Coppard, D. (2010). 'Agricultural Development Assistance. A Summary Review of Trends and the Challenges of Monitoring Progress'. San Pedro: One Development Group.

Fuglie, K. 2010. "Total Factor Productivity in the Global Agricultural Economy: Evidence from FAO data," in *The Shifting Patterns of Agricultural Production and Productivity Worldwide* (J.M. Alston, B. Babcock, and P.G. Pardey, eds.). Ames, Iowa: Midwest Agribusiness Trade and Research Information Center.

http://www.card.iastate.edu/books/shifting_patterns/pdfs/shifting_patterns_book.pdf

Fuglie, K., and D. Schimmelpfennig. 2010. "Introduction to the Special Issue on Agricultural Productivity Growth: A Closer Look at Large, Developing Countries." *Journal of Productivity Analysis* 33 (2010).

<http://naldc.nal.usda.gov/download/45471/PDF>

IMF (International Monetary Fund). 2011. *World Economic Outlook*. Washington, DC. <http://www.imf.org/external/pubs/ft/weo/2011/02/pdf/text.pdf>

Losch, Bruno, 2008, *La recherche d'une croissance agricole inclusive au coeur de la transition économique africaine*. In *Defis Agricoles Africains*, Ed. Jean-Claude Deveze, Karthala, Paris. http://publications.cirad.fr/une_notice.php?dk=545783

Reij, C.P. & E.M.A. Smaling, 2008, 'Analyzing successes in agriculture and land management in Sub-Saharan Africa: Is macro-level gloom obscuring positive micro-level change?', *Land Use Policy* 25 (2008)

Sonobe, T. and K. Otsuka. 2011. *Cluster-based industrial development: A comparative study of Asia and Africa*. New York: Palgrave Macmillan.

Spielman David J., Zaidi F. and Flaherty K. 2011. Changing donor priorities and strategies for agricultural R&D in developing countries. *Evidence from Africa*.

Spielman, D. J., F. Hartwich, and K. von Grebmer. 2010. *Public-private Partnerships and Developing-Country Agriculture: Evidence from the International Agricultural Research System*. *Public Administration and Development* 30 (4): 261-276. http://www.future-agricultures.org/farmerfirst/files/T2a_Spielman.pdf

Saint-Martin, Gilles, 2009, 'Europe's World', Spring 2009. <http://www.europesworld.org/NewEnglish/Home/Article/tabid/191/ArticleType/ArticleView/ArticleID/21359/Default.aspx>

Timmer, C. Peter. 2009. *A world without agriculture: The structural transformation in historical perspective*. Henry Wendt Lecture.

Agricultural transformation in Africa : Building on successes

Washington, D.C.: American
Enterprise Institute.

Ulimwengu, J. and T. Badibanga. 2011.
*Sluggish African economic growth: Is
lack of technological jump the cause?*
Mimeo.

(2009) Zimmermann *et*
al. "Agricultural Policies in Sub-
Saharan Africa. Understanding
CAADP and APRM Processes"
Deutsches Institut für
Entwicklungspolitik.
[http://www.die-gdi.de/CMS-
Homepage/openwebcms3.
nsf/%28ynDK_contentByKey%29/
ANES-7X8J53?Open](http://www.die-gdi.de/CMS-Homepage/openwebcms3.nsf/%28ynDK_contentByKey%29/ANES-7X8J53?Open)

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WEBSITES

European Institutions

European Commission-EuropeAid
Development and Cooperation-
Agriculture and rural development
[http://ec.europa.eu/europeaid/
what/development-policies/
interventionareas/ruraldev/index_
en.htm](http://ec.europa.eu/europeaid/what/development-policies/interventionareas/ruraldev/index_en.htm)

European Commission -Agriculture
and rural development
[http://ec.europa.eu/agriculture/index_
en.htm](http://ec.europa.eu/agriculture/index_en.htm)

European Parliament - Committee on
Development
[http://www.europarl.europa.eu/
activities/committees/homeCom.
do?language=EN&body=DEVE](http://www.europarl.europa.eu/activities/committees/homeCom.do?language=EN&body=DEVE)

African and international organizations

African Union
www.africa-union.org

African Development Bank
<http://www.afdb.org/en/>

CTA
<http://www.cta.int/>
<http://brusselsbriefings.net>
<http://agritrade.cta.int>
<http://knowledge.cta.int>
<http://Spore.cta.int>

FAO. Rural Infrastructure and Agro-
Industries Division
[http://www.fao.org/ag/ags/
agsdivision/en/](http://www.fao.org/ag/ags/agsdivision/en/)

FAO. Rural Gender-equitable rural
employment
[http://www.fao.org/economic/esw/
esw-home/esw-genderdevelopment/
esw-ruralemployment/en/](http://www.fao.org/economic/esw/esw-home/esw-genderdevelopment/esw-ruralemployment/en/)

FAO-ILO website Food, Agriculture &
Decent Work
<http://www.fao-ilo.org>

IFAD-Gender Portal
<http://www.ifad.org/gender/index.htm>

IFAD-Youth Portal
[http://www.ifad.org/media/
events/2010/youth/index.htm](http://www.ifad.org/media/events/2010/youth/index.htm)

IFAD-Market access Portal
[http://www.ifad.org/english/market/
index.htm](http://www.ifad.org/english/market/index.htm)

IFAD-Rural institutions Portal
[http://www.ifad.org/english/
institutions/index.htm](http://www.ifad.org/english/institutions/index.htm)

ILO-Decent work portal
[http://www.ilo.org/global/topics/
decent-work/lang--en/index.htm](http://www.ilo.org/global/topics/decent-work/lang--en/index.htm)

ILO/FAO-Food, Agriculture & Decent
Work
[http://www.fao-ilo.org/news-ilo/
detail/en/news/19919/icode/4/?no_
cache=1](http://www.fao-ilo.org/news-ilo/detail/en/news/19919/icode/4/?no_cache=1)

OECD-FAO. Agricultural outlook.
[http://www.oecd.org/site/oecd-
faoagriculturaloutlook/](http://www.oecd.org/site/oecd-faoagriculturaloutlook/)

IMF (International Monetary Fund)
[http://www.imf.org/external/index.
htm](http://www.imf.org/external/index.htm)

NEPAD
<http://www.nepad.org>

NEPAD-CAADP. The Comprehensive
Africa Agriculture Development
Programme
<http://www.nepad-caadp.net/>

UNECA- The United Nations
Economic Commission for Africa
<http://www.uneca.org/>

UNDP-United Nations Development
Programme
<http://www.undp.org/>

UNESCAP-United Nations Economic
and Social Commissions for Asia &
the Pacific
<http://www.unescap.org/>

UNSCN- United Nations System
Standing Committee on Nutrition
<http://www.unscn.org/>

USAID
<http://www.usaid.gov/>

World Bank- Agriculture and rural
development portal
[http://web.worldbank.org/WBSITE/
EXTERNAL/TOPICS/EXTARD/0,,men
uPK:336688-pagePK:149018-piPK:149
093-theSitePK:336682,00.html](http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTARD/0,,menuPK:336688-pagePK:149018-piPK:149093-theSitePK:336682,00.html)

World Bank-Data on agriculture and
rural development
[http://data.worldbank.org/topic/
agriculture-and-rural-development](http://data.worldbank.org/topic/agriculture-and-rural-development)

NGOs, Think Tank and networks

AATF (African Agricultural
Technology Foundation).
<http://www.aatf-africa.org/>

ACTION AID
<http://www.actionaid.org/>

Action against Hunger
[http://www.actionagainsthunger.org./](http://www.actionagainsthunger.org/)

OXFAM
<http://www.oxfam.org/en>

Research Organisations

African Economic Research
Consortium
<http://www.aercafrica.org/>

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Center for Global Development
<http://www.cgdev.org/>

CIRAD
<http://www.cirad.fr/>

CGIAR-Consultative Group on
International Agriculture Research
<http://www.cgiar.org>

ECDPM
<http://www.ecdpm.org/>

EIARD
<http://www.eiard.org/>

FARA-Forum for Agriculture
Research in Africa
<http://www.fara-africa.org/>

IIAASTD-International Assessment of
Agricultural Knowledge, Science and
Technology for Development
<http://www.agassessment.org>

IFPRI-International Food Policy
Research Institute
<http://www.ifpri.org/34>

INRA - French National Institute for
Agricultural Research
<http://www.international.inra.fr/>

ODI -Rural employment and
migration portal
[http://www.odi.org.uk/resources/
search.asp?database=resources&the
me=448](http://www.odi.org.uk/resources/search.asp?database=resources&theme=448)

Future agricultures
<http://www.future-agricultures.org/>

Future agricultures-portal for youth
employment
[http://www.future-agricultures.org/
index.php?option=com_content&view
=category&layout=blog&id=1568&Ite
mid=1034](http://www.future-agricultures.org/index.php?option=com_content&view=category&layout=blog&id=1568&Itemid=1034)

GFAR
<http://www.egfar.org/>

IITA. The International Institute of
Tropical Agriculture
<http://www.iita.org/>

Other websites

ASTI (Agricultural Science and
Technology Indicators Initiative)
<http://www.asti.cgiar.org/>

GAFSP (The Global Agriculture and
Food Security Program)
<http://www.gafspfund.org/>

IAASTD. United Nations Environment
Programme environment for
development. Division of Early
Warning and Assessment.
International Assessment of
Agricultural Knowledge, Science and
Technology for Development.
[http://www.unep.org/dewa/
Assessments/Ecosystems/IAASTD/
tabid/105853/Default.aspx](http://www.unep.org/dewa/Assessments/Ecosystems/IAASTD/tabid/105853/Default.aspx)

UK FOOD GROUP
<http://www.ukfg.org.uk/>

*Feed the Future. The U.S.
Government's global hunger and
food security initiative*
<http://www.feedthefuture.gov/>

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Endnotes

- 1
- 2 Peter Timmer and Selvin Akkus, The Structural Transformation as a Pathway out of Poverty: Analytics, Empirics and Politics, Centre for Global Development, Working Paper Number 150, July 2008.
- 3 FAO, 2011 The state of food and Insecurity . <http://www.fao.org/docrep/014/i2330e/i2381e00.pdf>
- 4 Poulton, 2012 'The State and performance of African Agriculture and the Impact of structural change.' Working Paper, Future Agricultures Network.
- 5 Future Agriculture Network 2011
- 6 UNCTAD, 2013 'Economic Development in Africa - Unlocking private sector dynamism'
- 7 Steve Wiggins & Henri Leturque, Helping Africa to feed itself. Promoting agriculture to address poverty and hunger. A Development Policy Forum (DPF). Discussion paper. 2010.
- 8 The Montpellier Panel. 2012. Growth with Resilience: Opportunities in African Agriculture. London: Agriculture for Impact.
- 9 The growing opportunities for African Agricultural Development. Hans P. Binswanger-Mkhize, Derek Byerlee, Alex McCalla, Michael Morris, and John Staatz. ASTI. 2011
- 10 Kwadwo Asenso-Okyere and Samson Jemaneh. Increasing Agricultural productivity and enhancing food security in Africa. New Challenges & Opportunities. IFPRI.2012.
- 11 FAO, 2001 'Farming systems and poverty. Improving farmers' livelihood in a changing world'
- 12 Diao Xinshen, James Thurlow, Samuel Benin, and Shenggen Fan. 2012. Strategies and priorities for African agriculture : economy wide perspectives from country studies. IFPRI
- 13 World Bank, 2008. 'World Development Report'
- 14 FAO, 2012 'Why Africa has become a net food importer'
- 15 ibid
- 16 Steve Wiggins & Henri Leturque, Helping Africa to feed itself. Promoting agriculture to address poverty and hunger. A Development Policy Forum (DPF). Discussion paper. 2010
- 17 FAO Stat 2011 <http://faostat.fao.org/site/339/default.aspx>
- 18 ibid
- 19 FAO, 2013. 'Crop prospects and food situation.'
- 20 Cameroon, the Central African Republic (CAR), Chad, the Republic of Congo, Equatorial Guinea, Gabon, DRC, and São Tomé and Príncipe.
- 21 ibid
- 22 Kwadwo Asenso-Okyere and Samson Jemaneh. Increasing Agricultural productivity and enhancing food security in Africa. New Challenges & Opportunities. IFPRI.2012
- 23 UNCTAD. 2013. The Economic Development in Africa Report 2013.
- 24 Kwadwo Asenso-Okyere and Samson Jemaneh. Increasing Agricultural productivity and enhancing food security in Africa. New Challenges & Opportunities. IFPRI.2012
- 25 Badiane, O. 2011. Agriculture and Structural Transformation in Africa. Stanford Symposium Series on Global Food Policy and Food Security in the 21st Century. Stanford, CA: Freeman Spogli Institute for International Studies
- 26 Badiane, O. 2011. Agriculture and Structural Transformation in Africa. Stanford Symposium Series on Global Food Policy and Food Security in the 21st Century. Stanford, CA: Freeman Spogli Institute for International Studies.
- 27 Badiane, O. 2011. Agriculture and Structural Transformation in Africa. Stanford Symposium Series on Global Food Policy and Food Security in the 21st Century. Stanford, CA: Freeman Spogli Institute for International Studies.
- 28 Head of States and government (2009) Zimmermann et al. "Agricultural Policies in Sub-Saharan Africa. Understanding CAADP and APRM Processes" Deutsches Institut für Entwicklungspolitik.
- 29 ibid
- 30 ibid
- 31 ibid
- 32 Lui D., Rosengren A. and Q. de Roquefeuil 'Emerging Economies and the changing dynamics in African Agriculture: what role for CAADP?'
- 33 Umbadda S. and Elgizouli I. Foreign aid and sustainable agriculture in Africa. WIDER Working Paper No. 2013/081. UNU-WIDER. 2013
- 34 Spielman David J., Zaidi F. and Flaherty K. Changing door priorities and strategies for agricultural R&D in developing countries. Evidence from Africa. 2011
- 35 Spielman David J., Zaidi F. and FlahertyK. Changing door priorities and strategies for agricultural R&D in developing countries. Evidence from Africa. 2011
- 36 Badiane, O. 2011. Agriculture and Structural Transformation in Africa. Stanford Symposium Series on Global Food Policy and Food Security in the 21st Century. Stanford, CA: Freeman Spogli Institute for International Studies.
- 37 Steve Wiggins & Henri Leturque, Helping Africa to feed itself. Promoting agriculture to address poverty and hunger. A Development Policy Forum (DPF). Discussion paper. 2010
- 38 Ibid
- 39 Steve Wiggins & Henri Leturque, Helping Africa to feed itself. Promoting agriculture to address poverty and hunger. A Development Policy Forum (DPF). Discussion paper. 2010
- 40 Umbadda S. and Elgizouli I. Foreign aid and sustainable agriculture in Africa. WIDER Working Paper No. 2013/081. UNU-WIDER. 2013
- 41 Badiane, O. 2011. Agriculture and Structural Transformation in Africa. Stanford Symposium Series on Global Food Policy and Food Security in the 21st Century. Stanford, CA: Freeman Spogli Institute for International Studies.
- 42 Ibid
- 43 Ibid
- 44 Badiane, O. 2011. Agriculture and Structural Transformation in Africa. Stanford Symposium Series on Global Food Policy and Food Security in the 21st Century. Stanford, CA: Freeman Spogli Institute for International Studies.
- 45 Ibid
- 46 Ibid
- 47 Badiane, O. 2011. Agriculture and Structural Transformation in Africa. Stanford Symposium Series on Global Food Policy and Food Security in the 21st Century. Stanford, CA: Freeman Spogli Institute for International Studies.
- 48 World Bank, 2013 'Growing Africa. Unlocking the potential of agribusiness'
<http://siteresources.worldbank.org/INTAFRICA/Resources/africa-agribusiness-report-2013.pdf>
- 49 Badiane, O. 2011. Agriculture and Structural Transformation in Africa. Stanford Symposium Series on Global Food Policy and Food Security in the 21st Century. Stanford, CA: Freeman Spogli Institute for International Studies.
- 50 Binswanger-Mkhize, H., A.F. McCalla, and P. Patel. 2010. Structural transformation and African agriculture. Global Journal of Emerging Market Economies 2(2): 113-152.
- 51 Spielman David J., Zaidi F. and FlahertyK. Changing door priorities and strategies for agricultural R&D in developing countries. Evidence from Africa. 2011



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