

# **2016 African Transformation Report**

## ***Transforming Agriculture to Power Africa's Economic Transformation***

Concept Note

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## **ACET's Vision for a transformed agriculture in Africa:**

***To create within a generation, a modern, competitive, and environmentally sustainable agricultural sector that ensures food security, supports a middle-class lifestyle for a growing number of farmers, and that is driving overall economic transformation.***

### **1. Background and motivation**

Africa has nearly 60% of the world's arable, uncultivated land (Leke et al., 2010)<sup>1</sup>, yet the continent is a major net importer of food and currently one in four people living in Sub-Saharan Africa (SSA) suffers from undernourishment. In most SSA countries, nearly half of the employed work in agriculture and in many of these economies the share of agricultural employment is as high as two-thirds of total employment. Yet, in recent years agriculture's value added in production has contributed only about 20 percent to SSA's gross domestic product (GDP), which translates into low farmer incomes and high levels of poverty in rural areas.<sup>2</sup> With few exceptions, the performance of agriculture in Africa remains unsatisfactory and the sector has not experienced anywhere near the results obtained under the Green Revolution in Asia (Binswanger, 2010).<sup>3</sup>

Indeed, the recent high GDP growth on the continent has not been accompanied by a modernization of agriculture; the sector continues to be based primarily on peasant farmers who operate with traditional methods that generate low productivity, who focus mainly on a narrow range of traditional products for the domestic and export markets, and whose activities and products have limited linkages to the rest of the economy, particularly manufacturing. As we discuss in The African Center for Economic Transformation (ACET)'s 2014 African Transformation Report (ATR 2014), the upswing in growth on the continent is welcome, but it is not enough. What Africa needs is economic transformation, or growth with *depth*; that is growth with diversification of the economy, export competitiveness, substantially higher productivity, upgraded technology, and noticeably improved human well-being through, in particular, higher employment and income levels (see ATR 2014). Transforming agriculture by modernizing it is a necessary and critical part of this agenda.<sup>4</sup>

While there are several definitions of agricultural transformation, a useful and working definition provided by Quiñones and Diao (2011:5)<sup>5</sup> characterizes agricultural transformation as “a process of sustainably modernizing agriculture and such a process is often measured by significant improvement in land and labor productivity, greater market-orientation and increased production diversification, as well as increased domestic and international competitiveness.” However, this definition does not emphasize the connection between transformation in agriculture and the manufacturing sector. In our proposed work, we intend to also emphasize this link.

### **2. The case for transformation in African agriculture**

Agricultural productivity in Africa will have to rise significantly if we are to achieve mass poverty reduction and improve food security.<sup>6</sup> A transforming agricultural sector will also help spur manufacturing sector growth in African countries by: providing cheap raw materials for processing, helping moderate food price inflation and thereby industrial wage increases (which helps keep manufacturing internationally competitive), providing an expanded domestic market (arising from higher rural incomes) for manufactured goods, and providing higher levels of foreign exchange earnings and fiscal revenues to help finance imported inputs and public goods necessary for manufacturing and other sectors of the economy (ATR 2014, and Breisinger et al., 2011).<sup>7</sup>

Many studies have documented the important role of agriculture as an engine of growth and overall economic transformation and as a powerful instrument for poverty reduction (Johnston and Mellor, 1961; Schultz, 1964; Christiaensen et al., 2011),<sup>8</sup> with causality, in most cases, running from agricultural growth

to economy-wide growth at the early stages of transformation. Evidence from developed countries and the Green Revolution in Asia and Latin America clearly supports these findings; agricultural transformation and growth has been the precursor to the acceleration of industrial growth in such countries as Japan, South Korea, and Taiwan (Studwell, 2013),<sup>9</sup> and more recently in emerging markets such as China and Brazil. In Africa, agricultural productivity remains low and the reinforcing linkages between agriculture and manufacturing are yet to emerge.

### 3. Challenges and Opportunities in Transforming African Agriculture

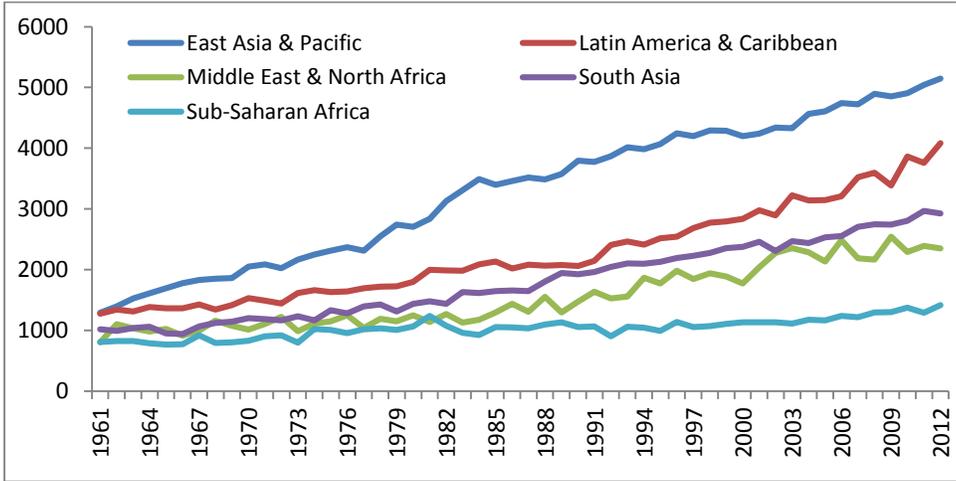
In seeking to transform its agriculture, Africa faces a number of overarching challenges that specific strategies will have to confront. However, the region is also faced with important opportunities that it can leverage. Below, we briefly outline the challenges and opportunities.

#### A. Challenges

##### Low productivity levels

At the farm level, African agriculture is generally characterized by low productivity (Figure 1), reliance mainly on subsistence farming with low mechanization, and low use of good quality inputs (e.g., seeds and fertilizers). However, there are large disparities between a small group of countries (such as Egypt, South Africa, and Mauritius) with productivity, based on cereal yield, relatively high (compared to the average in Africa) and the majority of African countries where productivity is very low.

Figure 1: Cereal yield (kg per hectare) in different developing regions of the world



Source: World Bank World Development Indicators database online, accessed on December 26, 2013

In many African countries, productivity is still significantly below yield potentials, agricultural mechanization is weak and declining, and the state of the agribusiness industry is for the most part barely nascent. Although there have been some success stories in a small number of countries (in the southern and northern regions and in Kenya, for example), it is fair to say that economic growth in Africa is, for the most part, occurring without a transformed or transforming agriculture.

Raising agricultural productivity will require dealing with challenges in several areas, including: research, extension, availability of seeds and other material inputs, machinery, irrigation, rural roads, well-functioning input and output markets that generate proper price incentives, and credit.

## Labor, employment, and agricultural transformation

Currently, agriculture provides over 60% of employment in many African countries. As productivity in agriculture rises, fewer people will be needed in agriculture in the face of a rapidly expanding labor force. Where will the people that are no longer needed in agriculture be *productively* employed? In other sectors of the economy, particularly manufacturing and services along agricultural value chains. This will require a conscious strategy of linkages between agriculture and other economic sectors, which underscores the need to pursue agricultural transformation within an overall economic transformation strategy. It will also require increased fluidity in land (mainly rental) and labor markets to facilitate temporary and permanent migration within and out of agriculture as experienced in China (Zhai, Hertel, and Wang, 2003; Deininger and Jin, 2007) after the 1978 land reform and in Viet Nam (Deininger and Jin, 2003) after the 1988 land reform.<sup>10</sup>

A related labor and employment issue is that the farming population in Africa is aging. As more and more African youth go through school, they are unwilling to take up farming, a back-breaking operation that uses traditional methods with little relation to what they learn in school, and that does not produce high incomes. You add to this the relative lack of infrastructure (e.g., electricity, piped water, etc.) and other modern amenities in the countryside, and the educated youth prefer engagement even in unproductive and low-paying service activities in the informal sector in cities and towns to life on the farm. So, the question is: how do we entice and prepare a sufficient number of the educated youth to take up farming? In other words, how do we make farming a modern business that supports a middle class lifestyle for farmers? Clearly, this is also tied to how fast productivity can be raised: The faster productivity can be raised, the earlier farming can sustain a middle class lifestyle to attract the educated youth; and the earlier the educated youth can be attracted to farming, the faster agricultural productivity can be raised.

## Access to land and equity

Agriculture requires access to land. And transforming agriculture requires raising productivity, which requires making agriculture a modern business. The latter in turn requires that farmers have secured titles to their main farm asset—land—which would motivate them to make the investments necessary to raise productivity, and which will also enable them to use it as security for loans to finance the investments. Formalization of land rights (secure titles) would also help to incentivize part-time and low productivity farmers as well as elderly land owners to rent out their land to earn rental income and look out for better rewarding opportunities off the farm. This will facilitate land consolidation, access of the educated youth to farming land, a more efficient use of labor, and increased agricultural productivity (see references above in regard to experiences in China and Viet Nam). Most African countries are lucky in the sense that they do not have the phenomenon of a small number of large landholders with a mass of landless peasants. This is because land is communally owned, and almost all in the village have traditional access rights to some farming land. This has often been a very effective safety-net system that has helped avoid destitution in the African countryside. The other side of the coin, however, is that under this tenure system land cannot be used by an individual farmer as a personal business asset in which to invest or with which to secure loans. Also this tenure system makes it difficult to consolidate farming plots into sizes that would make modern commercial farming viable. For example, 60% of farm plots in Ghana are under 1.2 hectares and 85% are under 2 hectares (Owusu-Baah, 2012).<sup>11</sup> Another example is Uganda where 58 percent of farms are less than 1 ha (Byamugisha, 2014), which is the minimum required to commercialize and move out of poverty in Uganda (Zorya et al., 2011). In Zambia, 50 percent of farms are less than 2 ha, the minimum needed to commercialize and move out of poverty in Zambia (Chamberlin and Ricker-Gilbert, 2014).<sup>12</sup>

The land tenure system is therefore perhaps the biggest challenge to modernizing agriculture in Africa. The question is: how do we come up with a land tenure system that facilitates modern commercial

agriculture, and that also respects the ownership rights of communities and traditional smallholders? Related to this challenge are two issues of equity: (a) how do we ensure that as the tenure system changes, women have a fair and equal access to land; and (b) how do we ensure that large tracts of communal land are not sold to outside interests in transactions that lack transparency and do not fairly compensate members of the community (i.e., the so-called “land grab” phenomenon)?

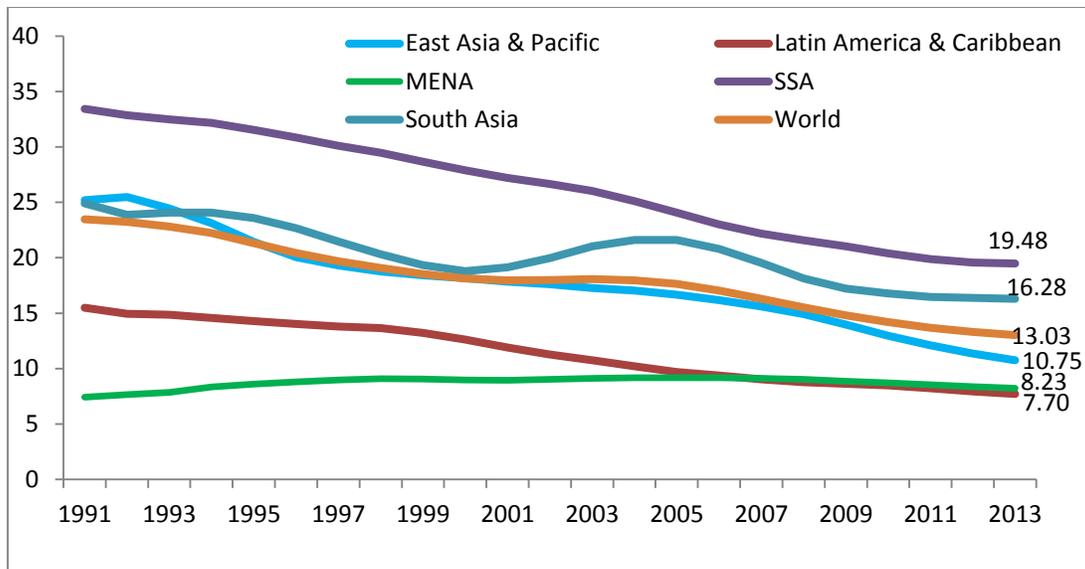
### **Supporting both traditional smallholders and modern commercial farmers**

Farmers in Africa are predominantly traditional smallholders, the bulk of whom are uneducated and aging. Modernizing agriculture requires enticing and equipping the young and educated to take up farming as a modern commercial enterprise. However, for years to come the majority of farmers will continue to be the traditional smallholders. So making progress on transformation also requires supporting traditional smallholders with knowledge and other critical inputs and services in order to raise their productivity and income levels while also reducing volatility in their incomes. The issue then is: how do you promote a new class of commercial farmers in ways that are also consistent with helping traditional smallholders? In reality, most of the emerging class of African commercial farmers will likely be smallholders (farm size of ten-to-fifteen hectares), so what may be required to help them respond to their challenges may not be that different from what it would require to support traditional smallholders. Furthermore, the new class of commercial farmers could be early adopters of new farm methods and serve as practical demonstration models for the traditional farmers to emulate. Where large commercial farms exist, promoting linkages between them and smallholders—traditional and modern commercial—will also help spur agricultural transformation.

### **Enhancing food security and nutrition while improving agriculture’s export competitiveness**

In many African countries, a large part of agriculture is oriented towards export commodities that do not form part of the local food basket. Meanwhile imports of food that could be efficiently produced locally are rising, and food security and nutrition standards are becoming a concern. In addition, consumption of traditional food crops, such as sorghum and millet, which are very nutritious, are falling with the rise of urbanization and the middle class.<sup>13</sup> Indeed, one of Africa’s greatest challenges in the next decades will likely be food security.<sup>14</sup> SSA remains the region with the highest proportion of undernourished people (Figure 2). Food imports in SSA as a whole rose to 14.13% of total merchandise imports and 4.19% of GDP in 2011, from 10.11% and 2.15%, respectively, in 1975, registering an increase of almost 40% in the share of food in merchandise imports and nearly doubling the share of food imports in GDP.<sup>15</sup> Clearly, many SSA countries are currently unable to produce enough food for their citizens.<sup>16</sup> OECD-FAO projections for 2013-2022 show that Africa will have a significant trade deficit in all types of agriculture-based food, but especially cereals, throughout the next two decades.

Figure 2: Prevalence of undernourishment (% of population)



Source: World Development Indicators database online, accessed on March 5, 2016

So a key issue as African countries transform their agriculture is how to balance the need to take better opportunities in export markets (through adding value to existing exports and expanding non-traditional exports) with the production of food for domestic markets to enhance food security and nutrition.

### **Making agricultural transformation environmentally friendly**

How do we ensure that agricultural transformation, which will entail more intensive use of agricultural lands, higher levels of mechanization and greater use of fertilizers and other chemicals, does not lead to land degradation, soil nutrient mining (through inadequate use of fertilizers), and pollution of water bodies? The challenge is made all the more acute with the looming climate change that is expected to heavily impact Africa. For example, under various warming scenarios, Africa could experience, by 2099, a 20–30% decrease in water availability in vulnerable areas and Southern Africa, in particular, could suffer a 30–50% decline in water availability. Under a low-warming scenario, crop yield is expected to fall by 5–10%, while the decline is 15–25% under a high-warming scenario (Brown et al., 2009),<sup>17</sup> which would put millions of Africans at risk of hunger.

### **Linking the farm to other sectors—processing and agribusiness**

African agriculture is currently based primarily on traditional smallholders producing food items for own consumption or local consumption through traditional markets or for exports in unprocessed products. As we have seen in other economic transformation experiences, agriculture has provided the raw material inputs to feed processing plants in industry, and has also provided domestic markets for manufactures—as intermediate inputs, capital inputs or consumer products. How do we start or scale up the processing industry that will add value to agricultural produce and also provide employment? In general, how do we stimulate agribusiness in Africa?

### **State capacity and institutions**

As in overall economic transformation, the state has important roles to play in the early stages of economic transformation. Addressing all the challenges outlined above would require effective state institutions designing and implementing the right policies, providing the required public goods (e.g., rural roads and major irrigation works), providing the facilitating services (research, extension, credit, etc.), and institutions (e.g., effective input and output markets, income-smoothing or safety net programs, etc.).

While agriculture ministries in most African countries would require strengthening, much more would be needed in terms of institutional strengthening. And equally as important is improvement of coordination between all the government agencies that are critical for agricultural transformation, including many that are outside the agricultural sector (e.g., the Central Bank, Ministries of Education; Science and Technology; Environment; Road and Transport; Water Supply, etc.). Given existing constraints on financial and human resources, and on administrative capacity, how can this institutional strengthening and improved coordination be brought about in a focused way to support agricultural transformation?

## **B. Opportunities**

Despite the challenges, Africa has opportunities that it can leverage to facilitate agricultural transformation. The key ones are highlighted below.

### **Abundant arable land**

As already mentioned, close to 60% of the world's uncultivated arable land is in Africa. If Africa can address the issues of tenure as discussed above, this land endowment will clearly be a significant asset for agricultural transformation. And as other areas of the world begin to face shortages in arable land, the comparative advantage of Africa's land endowment will rise in the global economy providing export market opportunities and most likely rising prices for Africa's agricultural products.

In addition, new technologies especially satellite and ICT, have the potential to reduce costs of land administration, especially the costs of securing land as well as land transaction costs (Byamugisha, 2013). Second, the surge in commodity prices and global interest in large scale land-based investments especially after 2008 have increased returns to investing in land administration and agriculture as a whole (Byamugisha, 2013).<sup>18</sup>

### **Heightened policy interest in agriculture**

Policy interest in developing African agriculture has risen in recent years, thanks in large part to the work of the Comprehensive Africa Agriculture Development Program (CAADP). Launched in 2003 and steered by the New Partnership for Africa's Development (NEPAD) of the African Union (AU). CAADP, supported by some of Africa's development partners (e.g., the Bill & Melinda Gates Foundation and the Kofi Annan Foundation as well as the traditional multilateral and bilateral partners), has succeeded in raising awareness of and support for agricultural transformation among Africa's policy makers. In fact the AU's theme for 2014 is "Agriculture and Food Security", and the Summit of AU Heads of State and Government (in Malabo, Equatorial Guinea in June 2014) called for agricultural transformation on the continent, and highlighted the importance of making agriculture attractive to the continent's youth, and of agro-processing. The time is therefore right for coming up with practical solution proposals to the challenges of African agricultural transformation to help translate this clear policy intent into action.

### **Recent economic growth in Africa can benefit agricultural transformation**

The recent growth in many African countries has been driven mainly by sectors outside agriculture, but it can nonetheless help propel agricultural transformation. First, GDP growth has increased fiscal revenues, which enhances the ability of governments to raise their contributions towards the investments and programs needed for agricultural transformation. Second, the income growth of the population coupled with rising urbanization is expanding the urban middle class, leading to rising consumer spending. Accenture (2011) estimates that consumer spending has been growing at over 4% per annum over the last decade reaching about \$600 billion in 2010. This has also spawned demand for consistent supply, quality, and convenience when shopping for food and other consumer goods; an experience that is best delivered by supermarket chains (Mergenthaler et al., 2009).<sup>19</sup> This is the key driver of the supermarket revolution currently underway in Africa<sup>20</sup> (Coe et al., 2009).<sup>21</sup> Supermarkets have been developing rapidly

and they are, indeed, gaining ground in agrifood systems (Rao et al., 2012). Supplying the supermarkets could help pull both traditional and modern commercial smallholders into domestic and sub-regional value chains (i.e., supplying to other African countries), and potentially raise their incomes. Indeed, there is already evidence (e.g., from Kenya) that supermarkets are associated with the emergence of modern and medium-sized farms (Neven et al., 2009).<sup>22</sup> In a 2013 study on the rise of supermarkets in West Africa, ACET found several trends emerging, including the establishment of farms with the specific intention of matching the quality of produce demanded by supermarkets.<sup>23</sup> However, the rise of supermarkets could also pose challenges to traditional processors and markets.<sup>24</sup>

Clearly, urbanization and rising middle class are creating new and dynamic food markets. How to respond to this opportunity is a challenge. The growth of imports has been fuelled by this shift. Traditional foods have failed to respond adequately. However in the case of cassava, it appears the opportunities are being seized due mainly to innovations in processing technologies and product development. For instance *gari* has been able to capture the urban poor ready-to-eat food market and odorless *fufu* the middle class markets in parts of West Africa.

### Latecomer advantages in technology

Although many technological challenges remain to be addressed in African agriculture, the continent enjoys advantages by virtue of being a latecomer to agricultural transformation and having the opportunity to use or adapt technological solutions pioneered by others. Already, the yield gap (i.e., between what has been demonstrated in research demonstration plots and what is attained on African farms) is considerable for many crops. For example, the yield gap (potential/actual) was estimated at 3.3 for millet and 3.3 for sorghum in the West and Central African countries, 4.7 for potatoes and 4.5 for bananas (Nin-Pratt et al. 2011) In addition, technologies pioneered by other countries or the international agricultural research (CGIAR) system or approaches that have proved successful in other areas could be adapted for Africa (e.g., transferring and adapting Brazil's "Miracle of the Cerrado" experience to similar savannah regions in Africa as in the Japan-Brazil-Mozambique "ProSAVANA" project in Mozambique).<sup>25</sup>

Another important latecomer advantage is the possibility of leveraging information and communications technology (ICT) to facilitate agricultural transformation. The potential includes the use geographic information systems (GIS) to accurately map soil characteristics of farm plots to enable a more effective application of fertilizers; microprocessor technology for better regulation of water application in irrigation systems; the use of video, cellphone, and internet technology to extend the reach of extension agents in providing information to farmers; and the use of the cellphones by farmers to access information on market prices, etc.

### Regional trade and integration

The expansion of the middle class in African cities provides market opportunities for farmers in their own countries as well as for farmers in other countries within the region. Thus, the rising poultry industry in Angola and Senegal could be supplied with feed by soybean producers in Nigeria or Zambia (ATR 2014). And Zambian vegetable and beef farmers supply not only supermarkets in Zambia, but also those in other African countries through South African supermarket chains. These are nascent but encouraging developments that could be further leveraged through more progress in opening regional markets so African countries can derive greater benefits from their differences in comparative advantage.

## 4. The 2016 African Transformation Report

### Objective

The main objective of ATR 2016 is to help advance Africa's quest for agricultural transformation by: (a) providing analysis and recommendations to help address the challenges and take advantage of the opportunities outlined above; and (b) to raise the awareness of policymakers, farmers, investors, and the African development community to the solutions and opportunities in African agriculture.

### Nature of the report

The report will look at the development of agriculture through the lens of national economic transformation. The aim is not to conduct research aimed at original results. Rather it is to assemble and synthesize existing knowledge, and to supplement it with commissioned studies in order to highlight the central role of agricultural transformation to national economic transformation, and to present practical examples and lessons on how to promote agricultural transformation. The target audience of the report will therefore go beyond Ministries of Agriculture and people in the agricultural sector, to include Heads of State and Governments, Ministers of Finance and Planning, and the general community of policy makers and experts interested in promoting faster economic transformation in Africa.

### Uniqueness

The unique value-added of the report will be its analysis of agricultural transformation within an overall economic transformation agenda (as discussed in ACET's 2014 African Transformation Report). In particular, reciprocal linkages between agriculture and manufacturing will be emphasized. We also see our work as helping advance the agricultural transformation vision expressed by African Heads of State and Governments at their June 2014 Summit in Malabo, Equatorial Guinea.

### Approach

We aim to achieve these objectives by: (a) reviewing, analyzing, and synthesizing existing knowledge using the transformation lens; (b) conducting country case studies and specific value-chain studies to ground the analyses and recommendations in concrete examples in Africa; (c) convening forums that bring together policy makers, farmers, farmers representatives, agricultural and development experts, and investors to dialogue on the challenges and opportunities facing agricultural transformation in Africa; (d) synthesizing the results of the reviews, country and value-chain studies, and dialogues into sharp analyses and practical recommendations for the way forward for policy makers, farmers, investors, and development practitioners; and (e) disseminating and advocating in selected countries once the report is out.

The reviews, analyses, and syntheses will be done by ACET staff and by consultants (i.e., subject area experts) commissioned by ACET. We will seek collaboration on research with international organizations focusing on agriculture and food security, such as AGRA, FARA, IFAD, IFPRI and FAO, whose staff could conduct or oversee some of the reviews and studies. We also hope to benefit from work done by the AU (CAADP), the AfDB and the World Bank. In general, fieldwork will be undertaken in collaboration with local experts and institutions (both domestic and international organizations working in the country). We will also seek partnerships on funding for specific parts of this project from several major foundations and organizations.

A Steering Group of international agricultural and development experts, policy makers, farmer representatives, and actors in agribusiness will be constituted to help refine the issues and the approach, and to advise on implementation.

We plan to launch the report in late 2016.

## 5. Themes in the report and proposed chapter outlines

To address the challenges and opportunities of agricultural transformation as outlined above, the report will (tentatively) be organized as outlined below.

### Overview—Agriculture in Africa’s economic transformation

The experience of many countries clearly shows that agricultural transformation is central in the early stages of overall economic transformation. This role of agriculture could be even more important in Africa, given the continent’s relative land abundance, the large share of its population in rural areas, and temperatures that could allow year-round cultivation. So what is the vision for agriculture in Africa’s economic transformation?

Agriculture in Africa is currently characterized by: (a) a large traditional smallholder sector (over 80 %) with farmers generally uneducated and operating without use of modern inputs or commercial orientation, and with low productivity; (b) a very small large-scale and modern commercial farm sector (often owned by ethnic minorities, settlers or foreign firms); (c) a tiny and struggling small and medium-size modern commercial sector owned and operated by nationals (i.e., the “missing middle” sub-sector); and (d) little domestic processing of agricultural products and weak linkages between agriculture and other sectors of the economy.

This chapter will set a clear vision of the transformed agriculture that we are aiming at. The vision is:

***To create within a generation, a modern, competitive, and environmentally sustainable agricultural sector that ensures food security, supports a middle-class lifestyle for a growing number of farmers, and that is driving overall economic transformation.***

This transformed agricultural sector will be characterized by:

- a traditional smallholder sector, which though still mainly traditional, has better access to inputs, services, and knowledge, and therefore operating with raised productivity and more resilience;
- an expanded small and medium-size modern commercial sector owned and operated by educated young Africans, with equal opportunities for women as well as men (i.e. filling in “the missing middle”);
- a small large-scale commercial farm sector that is well-regulated to preserve the environment and the rights of small landholders, and that is integral to promoting growth and transformation of the whole economy (rather than acting as an export enclave);
- mutually beneficial linkages between traditional smallholder farmers, small and medium-scale commercial farmers; and large commercial farmers; and
- expanding two-way linkages between agriculture and the rest of the economy, particularly manufacturing (i.e., growing agro-processing and “agribusiness” in general).

This transformed and higher productivity agricultural sector will power overall economic transformation in several ways, including:

- feeding African households and providing enough quality and reliable inputs to propel agro-processing industries
- keeping the cost of living low (through adequate provision of food staples), and thereby helping wages to remain globally competitive for industrial and overall economic growth

- expanding employment and raising incomes for both men and women throughout the agribusiness value chain thereby creating prosperity, reducing poverty and providing expanded demand for other sectors
- expanding agricultural exports, substituting food imports, and improving the balance of payments

To realize this vision, a number of key challenges need to be addressed and promising opportunities seized. This will be the focus of the report, which will comprise the following chapters:

- Chapter 1--Raising productivity on farms; creating a “green revolution” in Africa
- Chapter 2--Creating the educated modern farmer & filling in the “missing middle”
- Chapter 3--Producing food for households and inputs for agro-processing industries
- Chapter 4--Powering industrialization up and down the value chain
- Chapter 5--Expanding employment, raising incomes, reducing poverty, ensuring women participate and benefit equally
- Chapter 6--Sustaining the environment and responding to climate change
- Chapter 7--Making it happen—Political economy

A brief outline of each chapter is provided below.

## **Chapter 1—Raising productivity on farms; creating a “green revolution” in Africa**

Increased use of modern inputs and technology

- Improved seeds and fertilizers—delivering “technical packages to farmers
- strengthening research and extension to get viable new seed varieties to farmers and to support them in correct application (Focus will be research and extension for key crops— e.g. maize, rice, cassava, etc. rather a general discussion of research and extension systems).
- Use of other agro-chemicals (Herbicides and Pesticides)
- The correct use of herbicides and pesticides to minimize adverse impacts on soil and food
- Other environmental considerations

Irrigation

- Potential
- Performance
- Investment requirements to realize potential

Agricultural Mechanization

- Opportunities and challenges for ownership of agricultural machinery/implements
- Existence/experiences and effectiveness of machine- hiring services
- Capacity building considerations

GMOs, part of the solution?

- The science behind GMOs
- The debate around risks
- Improving key institutions to raise productivity
  - Land tenure systems and land markets—access and security of tenure to enable modern commercial agriculture; reforming communal tenure systems in consensual and equitable ways, improving functioning of land markets

- Agricultural output markets
- Agricultural input markets—focus on improving access to credit to raise farmers’ ability to afford “technical packages” and other improvements
- Insuring against risks (to encourage farmers to innovate).

## **Chapter 2—Creating the educated modern farmer and filling the missing middle**

- Strengthen extension and training programs for existing farmers (mostly smallholders with little or no formal education)
- Create post-secondary school training programs to motivate and prepare educated youth for agriculture
- Launch Agricultural Area Development Programs with a coordinated approach to addressing the challenges discussed in Chapter 1 (i.e. access to modern inputs and effective institutions to support raising of productivity).
- Make special efforts to identify and remove barriers faced by women so they have equal access to all programs.

## **Chapter 3—Producing food for households and inputs for industries**

- Focus farm productivity-raising efforts on key food products-- maize, rice, cassava, poultry and cattle/dairy—to improve food security and external the trade balance; maintain low cost of living and wage competitiveness, and increase supply of quality and reliable inputs to food processing industries.
- In addition to increased farm productivity and production need:
  - better post-harvest management
  - better logistics from farms to urban areas
  - functioning markets (efficient intermediation, linked local, national and regional markets)
  - to take advantage of the “supermarket” revolution
  - Create equal opportunities for women in value chains

## **Chapter 4—Agriculture Powering Industrialization up and down value chains**

- Agro-processing
  - Role in economic transformation
  - Status today in Africa: how much is processed
  - Opportunities for increasing processing
  - Opportunities for intra-African trade
  - Policies, institutions, incentives required
- Agricultural input manufacturing (fertilizers, farm implements and machinery, and packaging materials for agro-processing)
  - Role in economic transformation
  - Status today in Africa: how much is produced
  - Opportunities for increasing production
  - Opportunities for intra-African trade
  - Policies, institutions, incentives required

## Chapter 5—Expanding employment, raising incomes, reducing poverty with gender balance

Agriculture will become less labor absorbing as productivity rises; but efforts to attract educated youth into commercial agriculture will mean a younger labor force in the sector. More importantly, greater employment will be created in the off-farm agricultural value-chain activities. Results:

- Improving incomes of smallholders through higher productivity (about 40 percent of population are farmers, of which 80 percent are smallholders)
- Expanding employment (and incomes) along the agriculture value chains (agro-processing, input manufacturing, logistics, transportation and other agriculture related services, etc.)
- Ensuring women participate and benefit equally
- Quantitative estimates and examples of the potential employment impacts in various forms—on the farm; agro-processing; and other value-chain activities. Gender disaggregation of data, where possible.

## Chapter 6—Sustaining the environment and responding to climate change

- How do we ensure that in raising farm productivity by “intensification”—i.e. greater use of modern seeds, fertilizers and other chemical inputs, irrigation, and mechanization—we also sustain the quality of soils and the environment in general?
- How do we take climate change into account in our choice and implementation of agricultural intensification strategies to raise productivity?

## Chapter 7—Conclusion: Making it happen

- Clarify state and private sector roles
- Increase the capacity and coordination of public institutions
- Highlight opportunities for public-private collaboration
- Harness interest groups to shape agricultural policy and support transformation
- Potential role of external actors—private sector; donors
- The political leadership dimension—(a) country level (government commitment and funding...etc.); (b) continental level (AU, NEPAD, CAADP...etc.)

## 6. What makes this project different from recent major reports?

There has been a number of recent reports focusing on transforming Africa’s agriculture, but very few are on the theme of transforming African agriculture to power overall economic transformation. As already mentioned above this is the uniqueness of our report. It will make use of many of the recent reports, and make a contribution by adding a sharp and clearly articulated overall economic transformation dimension to the sectoral story.

## 7. ACET’s strengths

In addition to its demonstrated expertise on overall economic transformation issues, ACET has also been engaged in studies on agricultural transformation, aimed at addressing some of the issues outlined above. ACET’s unique strengths for undertaking this project can be summarized as follows.

1. There is major work program on agriculture transformation already being undertaken at ACET, including:

- a. a completed Gates Foundation financed study covering the value-chains of 20 agricultural products in 5 African countries, that examined: how to increase traditional smallholder productivity and to improve post-production value (storage, processing, and market access—domestic and foreign) in order to improve the incomes and food security; how to encourage the emerging African small modern commercial farming sector; how to promote processing; how to encourage linkages between traditional smallholders, the emerging commercial farmers and processors; and also how to increase agriculture’s contribution to overall economic transformation that reduces poverty;
  - b. a study, financed by a DFID research grant, where we are investigating how agricultural market structures and farm constraints affect the development of dynamic food and cash crop sectors and whether these sectors can contribute to economic transformation and poverty reduction;
  - c. a study funded by the USAID AMA-BASIS research grant which seeks to promote use of rainfall insurance to expand access to credit and increase adoption of improved production practices among African smallholders. The study conducts a Randomized Controlled Trial (RCT) to test whether rainfall insurance backed contingent credit can reduce the impact of widespread agricultural loan defaults in the wake of drought/flood, allowing lenders to expand access to credit among smallholders and reduce interest rates; and
  - d. a number of agro processing studies which sought to identify the value added opportunities in coffee, cotton, cocoa, fruits, oil palm, sugar, soybean in Africa with the goal of identifying the necessary policies to break the different value chain bottlenecks;
2. ACET’s Advisory and Advocacy units will also be very important to this project. These units have already established their effectiveness in catalyzing and helping implement reforms in a number of African countries (e.g., Liberia, Sierra Leone, Ghana, etc.).
  3. Drawing on ACET’s extensive and excellent resource network, we will establish an advisory council of key individuals who have done significant work on African agriculture and are highly respected in this field. The advisory council will work with us throughout the project and its first task will be to help us refine the scope and issues we need to focus on.
  4. We can leverage ACET’s extensive network of affiliates and consultants.

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<sup>1</sup> Leke, a., Lund, S. Roxburgh, C., and van Wamelen, A. (2010). What’s driving Africa’s growth? *McKinsey Quarterly* (June).

<sup>2</sup> According to World Bank data the share of SSA’s agriculture value added in GDP was 14.3% in 2012 and declined to about 9.9% in 2013.

<sup>3</sup> Binswanger, Hans (2010): “Structural Transformation and Agriculture”. (Background note prepared for ACET).

<sup>4</sup> While agriculture-led rural transformation may not be a priority everywhere in Africa because of regional heterogeneity of rural situations across and within countries (Dercon and Gollin, 2014), it does apply in the case of many regions or countries in Sub-Saharan Africa with large share of agricultural production and employment.

<sup>5</sup> Quiñones, E. J., and Diao, X. (2011). *Assessing Crop Production and Input Use Patterns in Ghana: What Can We Learn from the Ghana Living Standards Survey (GLSS5)?* GSSP Working Paper No. 0024. Washington, DC: International Food Policy Research Institute.

<sup>6</sup> The 2008 World Development Report on agriculture cites several studies, which show that welfare gains from growth originating in agriculture are substantially larger for households in the poorer five expenditure deciles. For example a cross-country study of 42 developing countries over 1981–2003, showed that a 1% GDP growth originating in agriculture increased the expenditures of the three poorest deciles at least 2.5 times as much as growth originating in the rest of the economy (Ligon, Ethan, and Elisabeth Sadoulet, 2007, Estimating the Effects of Aggregate Agricultural Growth on the Distribution of Expenditures. Background paper for the WDR 2008.)

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<sup>7</sup> Breisinger, C., Diao, X., Kolavalli, S., Al Hassan, R, Thurlow, J. (2011). A New Era of Transformation in Ghana - Lessons from the Past and Scenarios for the Future. IFPRI Research Monograph, Washington, DC: International Food Policy Research Institute.

<sup>8</sup> Johnston, B., Mellor, J. (1961). The Role of Agriculture in Economic Development. *American Economic Review* 4, 566–593.

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Christiaensen Luc, Demery, L., Kuhl, J. (2011). The (Evolving) Role of Agriculture in Poverty Reduction—An Empirical Perspective. *Journal of Development Economics* 96 (2011) 239–254.

<sup>9</sup> Studwell, J. (2013.) *How Asia Works: Success and Failure in the World's Most Dynamic Region*. New York: Grove Press.

<sup>10</sup> Zhai, F., T. Hertel, and Z. Wang. 2003. "Labor market distortions, rural-urban inequality and the opening of China's economy." Working Paper No. 27, GTAP.

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<sup>11</sup> Owusu-Baah, Kwaku, Ghana Case Study, in Chang, Ha-Joon (ed.), 2012, *Public Policy and Agricultural Development*. Routledge ISS Studies in Rural Livelihoods.

<sup>12</sup> Byamugisha, F. F. K. 2014. "Land reform and investments in agriculture for socio-economic transformation of Uganda", Paper presented at the National Development Policy Forum, Kampala, Uganda. July 2014.

Zorya, S., V. Kshirsagar, M. Gautam, W. Odwongo, J. Verbeek and R. Sebudde, 2011. Agriculture for Inclusive Growth in Uganda. Inclusive Growth Policy Note 2. An input into: World Bank, 2012. *Uganda Making Growth More Inclusive: Transforming Farms, Human Capital and Geography, a Synthesis Report*. Washington DC: World Bank.

Chamberlin, J. and J. Ricker-Gilbert. 2014. "Rural land rental markets in Southern Africa: trends, drivers, and impacts on household welfare in Malawi and Zambia". Selected paper for presentation at the Agricultural and Applied Economics Association 2014 Annual Meeting in Minneapolis, Minnesota, July 27-29, 2014.

<sup>13</sup> Millet is highly nutritious—among cereals, perhaps only quinoa can provide a higher level of nutrition.

<sup>14</sup> While Ethiopia has posted 8% agricultural growth over the last 10 years, it has been reported in early February 2014 that "Some 2.7 million Ethiopians are threatened by acute food shortages in spite of the reported bumper harvest of 231 million quintals of grains in the 2013 fiscal year." (<http://en.starafrica.com/news/food-shortages-threaten-2-7-million-ethiopians-report.html>)

<sup>15</sup> With relative land abundance, Africa should be net exporters of agricultural products, including food. If Africa is failing to do this, and is instead even importing, then it is a problem. This is a comparative advantage argument, distinct from the other political and security arguments that some make for food security.

<sup>16</sup> Part of the increase in imports is the diet shift that has seen demand for traditional crops slump while demand for rice rises, mainly due to urbanization and rising middle class.

<sup>17</sup> Oli Brown et al (eds), *Climate change and security in Africa*, Nordic African Ministers of Foreign Affairs Forum, 2009 ([http://www.iisd.org/pdf/2009/climate\\_change\\_security\\_africa.pdf](http://www.iisd.org/pdf/2009/climate_change_security_africa.pdf); accessed on July 7, 2014).

<sup>18</sup> Byamugisha, F. F. K. 2013. *Securing Africa's Land for Shared Prosperity: A program to Scale up Reforms and Investments*. Africa Development Forum Series. Washington DC. World Bank.

<sup>19</sup> Mergenthaler, M., K. Weinberger, and M. Qaim. (2009). "The Food System Transformation in Developing Countries: A Disaggregate Demand Analysis for Fruits and Vegetables in Vietnam". *Food Policy* 34(5): 426–436.

<sup>20</sup> For instance Shoprite is planning to expand from 13 stores (projection for 2013) to 700 stores in Nigeria in the near future (WATs, 2013).

<sup>21</sup> Coe, N.M. and Wrigley, N. (eds). *The Globalization of Retailing Vols. I & II*. Cheltenham: Edward Elgar, 2009.

<sup>22</sup> Neven, D., Odera, M. M., Reardon, T., and Wang, H. (2009). Kenyan Supermarkets, Emerging Middle-Class Horticultural Farmers, and Employment Impacts on the Rural Poor. *World Development*, 37(11), 1802-1811.

<sup>23</sup> ACET, West Africa Trends: <<http://acetforafrica.org/publications/west-africa-trends-newsletter/supermarkets-the-future-of-the-west-african-marketplace/>>

<sup>24</sup> Reardon and Gulati (2008) point out that the rise of supermarkets is a double edged sword. On the one hand, they lower prices for consumers and create opportunities for farmers and processors to gain market access to quality differentiated food products and thus raised incomes. On the other hand, they can create challenges for

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small retailers, farmers and processors who are not equipped to meet new competition and requirements from supermarkets.

<sup>25</sup> Hosono, Akio (2013) “Fostering Innovation through South-South Cooperation” ([http://jica-ri.jica.go.jp/event/assets/SID\\_Hosono\\_TriangularCooperation.pdf](http://jica-ri.jica.go.jp/event/assets/SID_Hosono_TriangularCooperation.pdf)); and Makino, Koji (2013), “Boosting Sustainable Agricultural Growth in Sub-Saharan Africa”. Chapter 2 in: *For Inclusive and Dynamic Development in Sub-Saharan Africa*. JICA Research Institute, June 2013.