

A New Agriculture for the New Africa

Africa has become today a continent of opportunities where dreams are not only possible but are coming true. At the heart of Africa's promise is what Africa will do with its agriculture. And what Africa will do with its agriculture is no longer about Africa. For that matter, what Africa will do with its agriculture is no longer about agriculture, at least in the narrow sense. Rather it is about the aspirations of Africa's entrepreneurs, women, and youth, the emergence of Africa's industries, and the expansion of Africa's infrastructure. Why Africa? Why now? Why agriculture?

Why Africa, Why Now?

Reasons internal and external to Africa suggest that it is Africa's time. Let us start with the internal. Two decades of improved governance and better policies and investments in social sectors are paying off in the past five years of solid economic performance and growth. Indeed, according to forecasts by *The Economist* and the International Monetary Fund, 7 of the top 10 fastest-growing

economies in the world between 2010 and 2015 will be in Africa: Ethiopia, Mozambique, Tanzania, Democratic Republic of the Congo, Ghana, Zambia, and Nigeria. Africa is the region with the fastest-growing mobile telephone usage in the world. Africa is home to a population of one billion and growing, whose incomes are on the rise and whose previously untapped potential as consumers is just beginning to surface. The rising majority of this population is made up of the youth of Africa, whose energy, hopes, and ingenuity, if channeled appropriately, will be the backbone of Africa's future. Africa's women are joining the ranks of the educated, with an increasing number of women represented in business, academia, and politics, not to mention the women who have always been the mainstay of Africa's agriculture. Africa is becoming recognized as a place of technological innovation, having introduced the concept of mobile-money transfers to the world, with more to come. Africa is the only remaining continent with vast untapped potential in mineral and metal resources, energy and water resources,



A woman smiles as she checks maize crops on a small farm in Chinhamora, about 50 kilometers north of Harare, Zimbabwe. For more than a decade, most rural Zimbabweans have depended on food aid to survive, but good rains brought an abundant harvest in 2011. | AFP Photo: Alexander Joe

and an abundance of uncultivated land. Indeed, an incredible three-quarters of Africa's arable land is not currently under cultivation.

Externally, the global economy has experienced commodity and financial crises that have changed the order of things, resulting in the push for better alignment of market fundamentals, more transparency, and innovative instruments to manage risk. These crises are changing Africa's role in the global economy. Many believe that the key driver of the commodity crisis is the historical running down of global food stocks and rising excess demand, leading to increased price volatility and heightened speculative activity, in turn creating more upward price shocks. Whether one agrees with this sequence of effects or not, it is clear that the debate is unified on one point—the

need to increase global commodity stocks through increased production and to ensure better delivery systems to reduce loss. And this is where Africa's role as the last remaining frontier of agricultural growth becomes extremely critical. Thus, the recent and dramatic interest in commercial agriculture under what some refer to as “land-grab” schemes is no historical coincidence, but closely linked to the global commodity crisis. Moreover, concerns about climate change are driving “smart” agriculture, with pressure to increase productivity in a sustainable manner. For the “agro-pessimists,” the message is clear: Agriculture in Africa is here to stay.

Why and How Agriculture?

The two forces described above, both internal and external, converge to create the perfect conditions

for a dramatic and rapid agricultural transformation in Africa. What do we mean by agricultural transformation? If we consider more broadly the concept of a *structural transformation*, this describes the process by which an economy transforms itself from a primarily agrarian subsistence-oriented economy, with a majority of its labor force in agriculture, to a modern, service- and industry-based economy, with a majority of its labor force in non-agricultural activity.

One of the key forces driving this process of structural transformation is the dramatic increase in on-farm productivity that sets the transformation path in motion and drives men and women into non-farm sector employment. Increased productivity, or intensification of farm production, raises farm incomes. This generates demand over time for non-agricultural goods, which in turn leads to investments in non-agricultural goods and services, which then absorbs on-farm surplus labor. Higher labor productivity means that labor is freed up. In other words, an *agricultural transformation*, or what

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can be called a Green Revolution, in many countries has been a pre-requisite to the forces of motion that result in an economy's structural transformation.

And what does it take for this agricultural transformation to take off? To achieve the virtuous circle described above, all Green Revolutions have been based on a holistic set of interventions. Indeed, despite conventional perception that Asia's

Green Revolution was singularly driven by the adoption of improved seeds, intensified fertilizer use, and irrigation, the Asian historical experience was also greatly influenced by other key interventions, such as:

- Marketing and trade policies that established minimum support prices and marketing outlets (including export markets)
- The promotion of key absorptive industries (such as agro-processing)
- Policies to enhance rural small and medium enterprises
- Concerted efforts to engage rural energy and water management
- The promotion of producer cooperatives and other forms of collective action in both resource management and input and output distribution
- Major investments in vocational training, rural education, extension, family planning, and health programs

So key lessons from the Green Revolution across history are that while the central driving force for the entire process is the ability to increase and sustain increases in on-farm labor productivity, there are a broader set of interventions that are of critical importance. Nor is agricultural transformation limited to a "Green" Revolution based on crop production. Rather, what we know to be Asia's Green Revolution for food crops was soon followed by a "White Revolution," as the Indian subcontinent harnessed tremendous growth in dairy; the "Blue Revolution," as East Asia saw tremendous growth in aquaculture; and the "Brown Revolution," as much of Asia witnessed tremendous growth in poultry and swine production. Another lesson is that the "Green Revolution" is really an array of possible transformations, underpinned by higher productivity, rapid overall agricultural growth, and the transition to non-agricultural labor. Essentially, it is the process by



Produce brought to a USAID post-harvest center by Haitian farmers is ready to be cleaned, packaged, and prepared for sale. | Photo: Janice Laurente/USAID

which agriculture works itself out of a job. As John Mellor famously put it, “the faster agriculture grows, the faster its relative share declines.”

Africa’s Own Agricultural Transformation

What are the conditions and terms for Africa’s Green Revolution, and how will it be different from others? While the basic principles may remain unchanged, shifting global and internal circumstances will dictate an African Green Revolution unique to Africa’s moment.

First, the forces of globalization suggest that Africa’s Green Revolution will be an information-savvy, technology-driven, and more “connected” transformation, relying on far greater exchanges of information and people and goods than ever

seen before. Second, the forces of market liberalization suggest that Africa’s Green Revolution will be driven more by private industry and markets, even for Africa’s smallholder farmers who must link to markets and be plugged into value chains. This implies that, not only should we ensure a conducive environment for the private sector, but we must also devise market-based instruments to manage the ensuing market risk. Third, Africa’s Green Revolution will be significantly influenced by its weaker starting point in infrastructure and infrastructure services, particularly in storage, transport, and logistics, which require explicit attention. Fourth, Africa’s Green Revolution will inevitably be influenced by the fact that women play a significant role as primary rather than secondary players in agriculture and that a concerted



A Sudanese man weeds a field of sorghum raised for seed near the South Sudanese capital of Juba.

AFP Photo: Jose Cendon

focus on their engagement in enhanced productive activity will be a pivotal factor in determining the outcome for agriculture in Africa. Fifth, Africa's Green Revolution will depend on its demographics, with an explicit focus required to harness the large number of youth in Africa to reap what we can consider to be a demographic dividend. Sixth, Africa's Green Revolution must be climate-smart, and thus will require an explicit focus on environmental sustainability. Finally, Africa's Green Revolution will go beyond crops, tapping into its vast potential in livestock, dairy, and fisheries.

So, in addition to the basic tenets of intensifying

agricultural production, an African Green Revolution said to be unique to Africa requires an understanding and explicit focus on information technology and global connectedness; industry and market linkages, infrastructure and linked services; women and youth; climate; and what happens beyond crop.

Africa's Green Revolution, or what can be better framed as Africa's New Agriculture, will likely not be "Green" in a cropping sense, but rather green in an eco-friendly sense. More importantly, Africa's New Agriculture will be as much or more about what is outside of agriculture than what is considered within agriculture.

To achieve this New Agriculture, we need to re-think the very nature of what we consider it takes to create an agricultural transformation. Our traditional model of agricultural development is focused on soil and water management, seed, fertilizer, irrigation, extension systems, post-harvest management, and, of late, marketing. However, the New Agriculture concept builds on the above but also requires an explicit focus on industrial and demand linkages, transport and storage infrastructure, logistics, energy, telecommunications and information technology, finance, private investment, climate, health, and the role of women and youth. New Agriculture is more complex, but also more dynamic, more vibrant, and more holistic.

Another important dimension of the New Agriculture is the explicit recognition of the role of commercial large-scale agriculture in Africa. While smallholder agriculture is a major element of African agriculture, there is need to consider the growing role of large-scale, private-investor-owned and possibly foreign-investor-owned agriculture. Although upward of 80% of cultivated land in Africa is currently held by small-scale producers, it is likely that some significant proportion of new land coming under cultivation will be large-scale, capital-intensive production systems. The

emerging duality of Africa's New Agriculture is not one in which the production is *either* small-scale *or* large-scale but rather may well innovate new models in which large-scale commercial systems link to smallholder production through technology, financing, and know-how spillovers. An emerging policy concern is how to devise mechanisms to ensure that positive benefits of large-scale agriculture accrue to small farmers. Creative policies may foster these linkages through promoting innovative outgrower schemes that support modern input provision and extension advisory by large-scale farms to the small-scale farming communities nearby, for example.

Engaging for the New Agriculture

The scope and reach of the New Agriculture for Africa requires a broadening of engagement of types of actors and interventions beyond that required in the traditional model of agricultural development. Thus, New Agriculture requires aiming beyond ministries of agriculture and national agricultural research systems to engaging with the private sector, trade organizations and outlets, end users and processing industries, telecommunications providers, energy sector, infrastructure service providers, the financial sector, and information content providers, as well as educational institutions and civil society.

In turn, the New Agriculture requires a new organizational approach in development interventions. In other words, development institutions engaged in promoting agricultural transformation for a New Agriculture in the New Africa must look and feel different than institutions organized around traditional thinking regarding agricultural development. Thus, an orientation toward a more tech-savvy and business-oriented agricultural transformation must be more corporate- and business-minded itself. And the internal

profile of skill sets, perspectives, and approaches must also adapt to more cross-cutting, business-minded, investment-ready mindsets and development approaches. A more cohesive and integrated approach is required within relevant development institutions. This is, of course, an immediate and perhaps vexing challenge when most of these institutions have spent decades building narrow silos with refined tunnel vision on topics such as plant breeding, soil technology, water conservation, and post-harvest management, among others.

To achieve the cohesive perspective required, there is perhaps merit to the Integrated Rural Development approaches of the 1970s, in which multidisciplinary teams sought to work on common concerns. The key difference in the present, however, is that the unifying principle is the market-driven approach and engagement with the private sector. This approach leads to interesting synergies, such as the case of a value chain linking large-scale global buyers like Walmart, who may set product standards and specify agronomic practices; in-country market institutions that enable delivery of goods; domestic industries that provide value-added processing; public-sector agricultural agencies that support the delivery of seeds and inputs; and even NGOs to support extension service delivery.

A change in strategic orientation is also required. Because the New Agriculture is by its very nature a model of integrating different actors and interventions into a common and coherent framework, the orientation of agricultural development organizations must be seen themselves as catalysts, knowledge brokers, and coordinators of action, rather than sole implementers. In other words, the traditional agricultural development model in which the development-institution-managed programs and projects, such as a seed multiplication project or a post-harvest

management project, must give way to taking on the role of the “broker” of integrated solutions that involve the roles of private seed companies, NGOs (as development partners working with extension agents), technology companies (creating new mobile or other solutions to link actors along the chain), private-public schemes (for innovative financing), and end-user entities (providing know-how and uptake on the post-

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harvest output). Thus, in the above example of the value chain, development institutions can play an important role in linking the actors together and supporting the success of the whole chain’s performance rather than focusing on interventions with one or more links within the chain. Key concepts for development interventions to achieve the New Agriculture are partnerships, leveraging, and innovation.

Investing in the New Agriculture

Leveraging. Agricultural development institutions need to be aggressive in their pursuit of sustainable impact that is oriented toward the New Agriculture. Much like their private investor counterparts, public development institutions need to intelligently seek out winning ideas to find those that will produce tangible and sustainable results. These institutions’ roles are no longer to

create often-unsustainable agricultural projects but rather to fill the gaps in providing the needed financial and technical support to partnerships that ensure the best possible sustainable returns on investments in New Agriculture. Such an investor orientation requires a precise knowledge orientation and a clear focus on the bottom line. The notion of maximizing returns in terms of impact outcomes is based on the core idea of leverage through brokered joint initiatives with private and non-private partners.

Such an investment mindset also requires casting the net wide to incubate winning ideas but also the ability to quickly hone in on what works and what does not to make early triage decisions. To effect this transition in approach, core institutional capabilities in leading agricultural development institutions would need to be strengthened in terms of sharp business acumen, a keen performance-monitoring capability, and a relentless focus on results. An investor mentality would aggressively seek partnerships and innovative mechanisms to deliver ever-improving results. This might entail, for example, leveraging the “Manual Distribution Channels” that put bottles of Coca-Cola in the hands of consumers across rural Africa to similarly enable the efficient distribution of small sacks of fertilizer and seeds. It might entail leveraging Africa’s mobile-money revolution to enable production financing or linking to a private weather-satellite service provider to create a mobile application aimed at weather forecasting. Another example of innovative investment would be to create a variant of Linux open-access source code for the development of on-farm breeding trials. In the case of software development, open-access software is made publicly available on the Internet, enabling anyone to copy, modify, and re-distribute the source code without paying royalties or fees, as a form of

community cooperation. This approach has led to many important technology applications, and beyond, in health and science. Applied to plant breeding, it could allow sharing of innovation and a more rapid spread of knowledge.

Innovation. In the somewhat organic approach in which complex actors and interactions form the fabric of the New Agriculture, innovation is key. Innovativeness requires drawing on new energy and new sources of inspiration and leadership, particularly through tapping the roles of youth, women, and entrepreneurs, young and old, male and female. Innovation is not a top-down, hierarchical matter. Rather, innovation emerges from within the logic of the partnerships and the key conduits that enable these partnerships to thrive and sustain themselves. A perfect example of this is the crowdsourcing that has changed the way news reporting is carried out, with power shifted from the external journalistic eye observing and reporting on an event to the collective experience of those reporting as participants within the event. Similarly, perhaps it is Africa's farmers themselves who lead the way in driving innovation in the New Agriculture, rather than those whose external expertise has conceived the problem and the solution from afar. Perhaps it is the synergy that emerges between private service providers and those who use the market mechanisms that is the ultimate driver of change rather than either of the parties themselves.

But an innovation mindset also requires a willingness to take on risk. In the process of constant re-invention and continuously new configurations, an important role for the enabling public-sector development institution is to provide a means to absorb some of the risk associated with innovation. For example, much like the Sand Hill Road venture capitalists spawned the Silicon Valley dot.com entrepreneurs by creating the conditions

for technology innovation labs, public-sector agricultural development institutions can promote such innovations through creatively devised innovation grants and incubator projects.

Leadership

Finally, what of the leadership required for the realization of this ambition of the New Agriculture for the New Africa? Leadership in its many forms, from political to organizational, will drive the required change in mindset and the necessary re-structuring of development institutions and policies in this arena. Coherence is not easy to achieve and requires dogged commitment from the top.

Leadership and vision are required to bring about a New Agriculture mindset that reflects the dynamic, youth-oriented, cutting-edge, technology- and market-savvy agricultural transformation that is sought. It is this leadership that is critical for bringing about the infrastructure, education, policy reform, and implementation needed. Within development organizations, ministries, and private-sector partners, talent acquisition is all important in this effort to enable the New Agriculture to be driven by Africa's brightest and best, those who are ambitious and eager to make a difference, are passionate about the power of transformation, and dream of an aid-dependence-free, prosperous new Africa.

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