



Solutions

For a sustainable and desirable future

Published on *Solutions* (<http://www.thesolutionsjournal.com>)

[Home](#) > A Breadbasket for Africa: Farming in the Guinea Savannah Zone

A Breadbasket for Africa: Farming in the Guinea Savannah Zone

By: [Michael Morris](#), [Hans Binswanger](#), [Derek Byerlee](#), [John Staatz](#)

Volume 3: Issue 2: Page 44-49: Apr 23, 2012

In Brief:

Over the past five decades, African agriculture has failed to meet the demands of a continent set to become the most populous region on earth by 2025. During that half century, two relatively backward and landlocked agricultural regions—the Cerrado region of Brazil and the northeast region of Thailand—have developed at a rapid pace and have become leading agricultural exporters. The success of these regions defied the many skeptics who had asserted that their challenging agroecological characteristics, remote locations, and high levels of poverty would prove impossible to overcome. Similar perceptions for many years also fueled pessimism about the prospects for African agriculture, although this may now be changing. During the past decade, strong agricultural growth has been recorded in several African countries, and recent increases in international prices of agricultural commodities have opened up new opportunities. Africa's Guinea Savannah zone covers about 600 million hectares, of which about 400 million hectares could be used for crop agriculture. With sustainable and inclusive growth of commercial agriculture, this region has the potential to feed Africa and create a booming export business.

Key Concepts:

- The past half century has witnessed agricultural revolutions in the Cerrado region of Brazil and the northeast region of Thailand, turning two relatively backward and landlocked agricultural areas into leading agricultural exporters.
- The Guinea Savannah zone, covering about 600 million hectares of sub-Saharan Africa, has the potential to feed its burgeoning population and become an agricultural exporter.
- African producers should begin by targeting domestic and regional markets, where they enjoy a certain degree of natural protection; later as they become more competitive, they will be able to expand into international markets.
- The best way to achieve broad-based, poverty-reducing agricultural growth in the Guinea Savannah zone is by promoting smallholder-led commercialization models, rather than by focusing exclusively on large-scale commercial agriculture.

The United Nations' first global assessment of the planet's land resources makes for grim reading when it comes to agriculture. It warns that a quarter of all farmland is already highly degraded at a time when the world's population is growing exponentially. The UN estimates that farmers need to produce 70 percent more food by 2050, including an additional one billion tons of cereals to meet the needs of an estimated world population of nine billion.

Africa is due to bear the brunt of rapid population growth. At the same time, its agriculture has chronically underachieved over the past 50 years. Impending disaster in Africa can be averted with the fair and sustainable development of one of the earth's greatest, untapped agricultural reserves: the African Guinea Savannah zone, which covers about 600 million hectares, of which about 400 million hectares can potentially be used for crop agriculture.¹ Currently, less than 10 percent of this area is being cultivated. To use some of this land to feed Africa will require steady national and

international assistance and massive public and private investment. But as other developing countries like Brazil and Thailand have shown in recent decades, agricultural transformation is possible.

Long characterized as economically “backward,” the Brazilian Cerrado and northeast Thailand both started out with limited agricultural potential and poor infrastructure. Yet beginning in the 1960s, both regions showed remarkable, sustained growth over a 40-year period, allowing them to become highly competitive in world markets. In the Brazilian Cerrado, the transformation was led by soybeans, production of which jumped from 250,000 metric tons in 1961 to over 30 million metric tons in 2000. In northeast Thailand, cassava led the export takeoff, with the country’s production rising from 1.7 million metric tons in 1961 to 20.7 million metric tons in 1996. The initial successes achieved in low-value bulk commodities were subsequently extended to high-value commodities, including processed products (e.g., sugar, soybean oil, cotton lint, cassava starch, poultry, and cattle).

The pathway to growth was similar in both countries: Brazilian and Thai farmers initially were able to expand production by focusing on specific markets in which they enjoyed preferential access. After capturing economies of scale in production and processing, they were able to establish themselves as low-cost global producers who could compete virtually anywhere. Brazilian farmers achieved success by relying on large-scale mechanized production methods, whereas agriculture in the northeast region of Thailand was and remains essentially the domain of smallholders who have mechanized some tasks, such as land preparation. Several supply-side factors contributed to the successful commercialization experience in both countries:

1. Improved agricultural technology, often developed by national agricultural research organizations
2. Public and private financing for infrastructure
3. Rural credit and business development services
4. Stable policy environments that improved the investment climate and permitted the direct transmission of international-market signals to farmers

Demand-side factors also played an important role in both countries in the form of export opportunities. Strong growth in global demand for soybeans and soybean-derived products, beginning in the 1970s, resulted in the spectacular transformation of the Cerrado into a leading global supplier of soybeans, especially to China. Export opportunities in Thailand’s case resulted from growth in demand in the European Union for cassava pellets as an inexpensive substitute for cereal-based livestock feed. The resulting dramatic expansion of cassava production sparked broader agricultural and economic growth throughout the region.

Current and Potential Future Competitiveness in Africa’s Guinea Savannah

Despite significantly lower yields in the African countries, farm-level unit production costs in Mozambique, Nigeria, and Zambia are comparable to or lower than those in the Brazilian Cerrado and in northeast Thailand, thanks to very low labor costs and limited use of purchased inputs.² Although low unit-production costs help to make African producers competitive in the short run, they do not represent a sustainable path out of poverty over the long run, because at current, low productivity levels, agriculture is economically impoverishing and technically unsustainable.

The competitiveness of Africa’s producers at the farm level makes them generally competitive in domestic markets relative to imports. For example, Nigerian farmers can produce and deliver soybeans to Ibadan at 62 percent of the cost of imported soybeans, and Zambian farmers can deliver sugar to the market of Nakambala at 55 percent the cost of imported sugar. High international and domestic logistics costs provide a certain degree of “natural protection.” Since domestic and regional markets for many of the targeted commodities are large and growing rapidly, and since significant imports are already taking place, prospects for import substitution are bright, especially for rice, soybeans, sugar, and maize.

However, the same logistical barriers that protect the domestic markets also make the produce of African countries uncompetitive when it comes to exports. These barriers stem from widespread deficiencies in transport, processing, and storage infrastructure; lack of competition in vehicle import and trucking industries; cumbersome and costly transport regulations; and frequent extortion of bribes from truckers at border crossings and police checkpoints. To become internationally competitive in cassava, Mozambican farmers, for example, would have to cut domestic production and logistics costs by more than 80 percent. Noteworthy exceptions include cotton and, in some countries, sugar and maize, which can be exported profitably, at least in some years. With sufficient investment infrastructure, these bottlenecks can be overcome. Creating a flourishing domestic and regional market will be an important first step to conquering overseas markets.

Small versus Big

The question facing African countries is, What form should the commercialization of agriculture take? Brazil's option of large-scale farms has come at a cost. Ineffectual land policies and failed settlement programs, combined with subsidized credit and marketing interventions through the mid-1980s, resulted in a skewed distributional outcome in terms of land ownership and farm income that has not been corrected by the series of land reforms introduced since the 1990s. This contrasts sharply with the systematic land reform and land titling policies pursued by Thailand over the past 30 years, where, as a consequence, the overall poverty-reducing effects were much larger than in Brazil.

If not managed properly, large-scale farming in Africa could come at a similar social cost, as the continent's history attests. During the colonial era, commercial farms in eastern and southern Africa often relied on expropriating land from indigenous populations and were nurtured with a stream of preferential policies, subsidies, and supporting public investments. Some among the current flock of foreign investors looking to secure long-term leases on vast swathes of farmland may be looking to repeat the pattern, and so far there do not appear to have been any clear successes in promoting this form of agriculture.³ This is not to say that large-scale farming might not work for some commodities, such as sugarcane, provided the social impacts are appropriately managed. The economies of scale in processing, cold storage, and marketing make sense for commodities such as sugarcane. Similarly, heavy mechanization can be suitable in low-population-density areas.

On balance, the economic and social evidence suggests that the smallholder-led commercialization strategy pioneered in Thailand is more compatible with the inclusive growth policies being pursued by most African governments. The increased incentives for family farmers to work hard and manage their enterprises efficiently are at the root of the productivity advantage of the family farm. Compared to large commercial farms, family farms and emerging commercial farms were typically found to have lower costs at the farm level and at the final distribution point.

Yet not all smallholders will be able to "farm their way out of poverty." Studies suggest that between one-third and two-thirds of all rural households in sub-Saharan Africa lack sufficient land and other resources to make a decent living from farming, leaving them trapped at an unacceptable level of poverty. For these households, the development of large-scale farms can generate demand for labor in both farming and off-farm portions of agricultural value chains.⁴ The development of the Guinea Savannah, while dominated by family farms, is likely to require a mix of small- and large-scale strategies.

The Environmental Cost

Whatever the mix of agricultural commercialization strategies employed in Africa, there is likely to be an environmental cost. In Brazil and Thailand, this cost has derived mainly from the conversion of forests, woodlands, and savannah to agricultural uses. If forests and woodlands occupy land with good agricultural potential, it is hard to see how some conversion can be avoided in the long run. The loss of biodiversity can be reduced by an appropriate system of forest reserves, as has been done in the Cerrado, where 5.5 percent of the land is protected and where farmers are legally required to set aside 35 percent of natural areas within their farms.

Conversion of forests, woodlands, and savannah to agricultural uses also brings the risk of other types of adverse environmental impacts: excessive use of fertilizers, problems associated with irrigation, salinization of cropland, release of sequestered carbon into the atmosphere, and pesticide pollution with impacts on human health.⁵ In Brazil, these problems have been mitigated through the widespread adoption of conservation farming techniques; the setting aside of forest strips, especially along streams and rivers; and, more recently, compliance with standards for exports of commodities such as soybean, beef, and sugar.⁶

Localized and sensitively managed environmental damage caused by intensive commercial agriculture may be acceptable if the economic and social benefits are sufficiently large, especially when the alternative to intensification—usually expansion of traditional agriculture into areas that were previously not cultivated—would exact even greater environmental damage elsewhere. The likely negative environmental impacts of commercial agriculture therefore need to be assessed in comparison to unsustainable practices associated with low-productivity subsistence farming practiced by smallholders who are forced by population pressure to clear forests, shorten fallows, or move to more fragile areas.

Bright Prospects and Reality

With the appropriate social and environmental safeguards, the prospects for launching an agricultural revolution in Africa's Guinea Savannah appear bright. Demand for agricultural commodities from the region is being fueled by several factors, including the following: (1) accelerating rates of income growth in Africa, combined with still high population growth rates and rapid urbanization; (2) import substitution opportunities arising from the large and growing food imports

of many African countries; (3) growing food demand in Asia and Africa; and (4) new markets for biofuels that have driven up international agricultural prices.

The macro-economic environment in many African countries has also improved, as reflected by low inflation, declining real interest rates, and market-determined exchange rates. Net taxation of agriculture has fallen. Under the African Union's New Partnership for Africa's Development, most countries in sub-Saharan Africa have endorsed the Comprehensive Africa Agriculture Development Programme (CAADP), which calls for a minimum of 10 percent of national budgets to be allocated to agricultural development and for more favorable and inclusive policies toward agriculture. Technologies for increasing productivity, such as conservation tillage and integrated soil fertility management, are already much more prevalent in Africa today than they were a generation ago.

Many African countries suffer from weak leadership and poor governance, which often means that government programs, no matter how well-intentioned, have a greatly reduced impact. Administrative red tape remains high, and investment in basic infrastructure is low. Yet this situation has not prevented the recent influx of domestic and foreign capital into African agriculture and related value chains. Much of this investment has gone toward the acquisition of land leases for agricultural production of biofuels and high-value exports, which attests to the viability of export markets.

While it would be easy to feel overwhelmed by the many constraints facing African farmers, the experiences of Brazil and Thailand provide important lessons about how these constraints can be overcome. National governments must encourage the private sector to lead on many of the critical investments needed to drive agricultural commercialization. The business climate is especially important to commercial agriculture in general and to private input suppliers and agro-processing companies in particular. Strong farmer organizations and vigorous private sector and civil society organizations are vital. Successful commercialization of agriculture depends on well-functioning markets. The greatest challenge for commercial agriculture is putting in place the institutions to make markets more efficient and less risky.

Given the underdeveloped state of markets, the state needs to provide certain critical services that the private sector currently has few incentives to provide, such as market information, agro-business advising, food safety regulations, the development of marketing and port infrastructure and formal commodity markets, and relief in the case of natural disaster. The needed actions will vary by commodity and country, and adaptation will be essential to the development of appropriate approaches. As markets for some of these services mature, the state may eventually be able to step aside and give greater scope to the private sector.

One advantage for African policy is the knowledge, derived from the Thai and Brazilian experiences, that smallholders and large-scale commercial farmers both can drive agricultural revolutions. The evidence suggests that, on balance, the fruits of those revolutions are more widely shared when smallholders participate, not only through direct effects on employment and land ownership, but also through second-round consumption linkages. Larger smallholder farms will need appropriate labor saving technologies to emerge as viable commercial farmers.

Further ground for optimism comes from the knowledge that if the development of smallholder-based commercial agriculture begins solidly, the process can be self-reinforcing. As the Thai experience illustrates, those who initially gain in the process (commercial farmers, farmer organizations, and agribusiness firms) will be motivated to lobby for policies and investments that can sustain the commercialization process, while at the same time generating some of the needed financial resources. As commercialization proceeds, larger private-sector actors will have increasing incentives to invest in infrastructure and support services for value-chain coordination, thereby reducing the burden on government. At the same time, political leaders must continue to play an active role by providing the vision, strategy, consistent implementation, and long-term commitment needed to make agricultural transformation a reality.

References

1. World Bank. *Awakening Africa's Sleeping Giant: Prospects for Commercial Agriculture in the Guinea Savannah Zone and Beyond* (World Bank and FAO, Washington DC, 2009).
2. Keyser, JC. *Definition of Methodology and Presentation of Templates for Value Chain Analysis: Competitive Commercial Agriculture in Africa (CCAA)* (World Bank, Washington DC, 2006).
3. Poulton, C et al. *All-Africa Review of Experiences with Commercial Agriculture: Lessons from Success and Failure* (World Bank, Washington DC, 2008) [online]. siteresources.worldbank.org/INTAFRICA/Resources/257994-1215457178567/CCAA_Success_failure.pdf.
4. Staatz, J & Dembélé, NN. Agriculture for development in sub-Saharan Africa. Background paper prepared for World Bank. *World Development Report 2008: Agriculture for Development* [online] (2007). siteresources.worldbank.org/INTWDR2008/Resources/2795087-1191427986785/StaatzJ&DembeleN_AgriForDevInSSA_ve19.pdf.

5. De Muro, P et al. *Mozambique, Nigeria, and Zambia Case Studies: Social and Environmental Impact Assessments* (Università degli Studi Roma Tre, Rome, 2007) [online]. siteresources.worldbank.org/INTAFRICA/Resources/257994-1215457178567/CCAA_Soc_Env_Impacts_Main.pdf.
6. Farley, J, Schmitt, A, Alvez, J, Ribeiro de Freitas Jr., N. How Valuing Nature Can Transform Agriculture. *Solutions* 2(6) 64-73 (2011). www.thesolutionsjournal.com/node/1014.

Source URL: <http://www.thesolutionsjournal.com/node/1080>