Agricultural growth offers a potentially powerful tool for spearheading broad-based poverty reduction in Africa. In a continent where 70 percent of the poor work in agriculture, an upsurge in farm productivity contributes directly to broad increases in rural income. In addition, a prosperous agriculture generates powerful growth linkages to the rest of the economy, providing cheap food, raw materials, and a growing demand for nascent processing and service industries. Even the urban poor, who spend the majority of their income on food, see their real incomes rise when growing agricultural productivity and output enable reductions in staple food prices. Consequently, growing agricultural productivity attacks poverty from three different directions. It increases the productivity and incomes of the majority of Africa’s poor, who work primarily in agriculture. It reduces food prices, which govern real incomes and poverty in urban areas, and generates important spill-overs to the rest of the economy.
Recognizing these potential gains, a growing contingent of African leaders and development specialists has become convinced that enhanced agricultural performance will constitute a necessary centerpiece for broad-based poverty reduction efforts. African leaders, through the African Union’s New Partnership for Africa’s Development (NEPAD), have launched a Comprehensive African Agricultural Development Program to spearhead agricultural development efforts at a continental level. In 2003, they pledged to nearly double budget allocations for agriculture, from 6 percent to 10 percent. Many donors, private foundations and Africa specialists, likewise, consider agriculture fundamental to broad-based economic growth and poverty reduction in Africa.

A recent book published for IFPRI by the Johns Hopkins University Press, *Successes in African Agriculture: Lessons for the Future*, explores the conditions under which Africa can successfully accelerate agricultural growth and thereby contribute to broad-based economic expansion and poverty reduction. Instead of cataloging failures, as many past studies have done, the book identifies episodes of successful agricultural growth in Africa, a series of region- and commodity-specific booms, many of which have lasted for decades. By examining a series of instances in which important advances have occurred in the past in African agriculture, the book, edited by Steven Haggblade and Peter B. R. Hazell, aims to identify promising avenues for achieving success more consistently in the future.

**PAST PERFORMANCE**

Since the middle of the 20th century, agricultural performance in Africa has lagged behind other developing regions. During the past 45 years, the value of aggregate agricultural output has increased by 2.4 percent annually in Sub-Saharan Africa compared to 2.8 percent in Latin America and 3.6 percent in developing Asia. Africa’s marginally slower growth rate aggravates two very serious problems. First, Africa’s aggregate performance has lagged at the same time it confronts the most daunting demographic challenge of any developing region. Since 1960, Africa has had to contend with population growth rates of 2.6 percent per year, 0.5 to 0.7 percent faster than in Latin America and developing Asia. Consequently, comparisons of per capita production performance across continents during the past 45 years reveal deteriorating agricultural performance in Africa alone (Figure 1). As per capita food production has fallen, Africa has turned from a food exporter to a net food importer.

Second, the slow growth in aggregate output has been accompanied by slow growth in both labor and land productivity, which remain far below other developing regions. Given stagnant productivity, Africa’s meager output gains have come mainly from area expansion. This extensification, coupled with shortened fallow periods and minimal input use, has led to nutrient mining and declining soil fertility.

This bleak aggregate picture contrasts with periodic bursts of more promising region- and commodity-specific performance. Though inadequate in number and scale to counter Sub-Saharan Africa’s daunting demographic challenge, African farmers and agricultural policymakers have achieved a series of significant successes in agricultural development. Malian cotton production has grown at 9 percent per year for the past 40 years, while Kenyan horticultural exports have increased five-fold since 1975. Farmers and researchers have launched literally hundreds of innovative soil and water-conservation initiatives in a wide variety of locations to contend with declining soil fertility and declining fertilizer subsidies. Work by cassava scientists across Africa has countered deadly disease and pests attacks and converted these threats into opportunities for significant subsequent rapid production growth, benefiting tens of millions of small farmers and making it one of the continent’s most powerful poverty fighters to date.

**LEARNING FROM PAST SUCCESSES**

Sometimes, things go right; and when they do, we may benefit from asking why. The book summarizes efforts by IFPRI to systematically identify instances of superior agricultural performance in Africa, and to study and learn from them. In doing so, the book aims to identify processes, practices, and policies that have successfully stimulated agricultural growth in Africa. “Success” is defined here as: a significant, durable change in agriculture resulting in an increase in agriculturally derived aggregate income, together with reduced poverty and/or improved environmental quality.

In order to identify common ingredients and processes that underlie agricultural “success,” the IFPRI research team first identified episodes of strong performance in African agriculture, along with contrasting instances, over time or space, where performance has lagged. It also targeted IFPRI’s extensive contact list of African and Africanist agricultural specialists and asked: “What do you consider the most successful instances of improved agricultural performance in Sub-Saharan Africa?” The team received more than 250 nominations, ranging broadly in geographic and historical scope. From this list, the analytical team and an external advisory group selected a dozen cases for in-depth review. Drawing on detailed primary datasets, secondary literature, and supplementary field appraisals, the team produced a set of richly detailed historical case studies. The individual case-study results were then presented to groups of experienced African agricultural specialists (including farmers, government representatives, and private-sector agribusiness operators) in order to extract cross-cutting general...
lessons emerging from this body of collective experience. Through facilitated small-group sessions, participants worked together to: a) summarize key lessons learned from past successes in African agriculture; b) realistically assess the domestic and international policy environment within which African decisionmakers currently operate; and c) identify priorities for future policy action necessary to trigger sustained agricultural growth in Africa.

CASE STUDIES

African farmers, agribusinesses, and agricultural policymakers have achieved a series of substantial successes in agricultural development, although in recent decades these have proven inadequate in number and scale to counter Sub-Saharan Africa's heavy demographic pressure. Despite their temporal and regional dispersion, many have endured for decades, as the following thumbnail sketches suggest.

**Cassava.** Cassava breeding and pest control efforts over the past three decades have triggered broad productivity gains for producers of Africa's number two staple food. A stream of improved cassava varieties, the Tropical Manioc Selection (TMS) series released beginning in 1977, has invigorated breeding programs across Africa, increased on farm yield gains by over 40 percent without purchased inputs, and permitted rapid responses to recurring viral attacks (Figure 2). Given the improved cassava's high productivity, low purchased input requirements, and well-recognized drought tolerance, this cassava transformation has been dubbed "Africa's best-kept secret."

**Maize in East and Southern Africa.** The development and diffusion of modern, high-yielding varieties of maize have transformed this imported cereal from a minor crop in the early 1900s into the continent’s major source of calories today. Maize breeding in Zimbabwe and Kenya launched the first major breakthroughs during the 1960s, when Africa's breeders produced the first double-cross hybrids in the world. The breeding breakthroughs have improved productivity of millions of small and large farms throughout Africa, while moderating food prices for tens of millions of urban consumers. Although the breeding breakthroughs have proven an undeniable success, the expensive public-sector input and marketing subsidies that accompanied these maize promotion programs have proven fiscally unsustainable.

**Cotton in West Africa.** Since independence in the 1960s, West African cotton production and exports have both grown rapidly, at a compound annual rate of 9 percent per year (Figure 3). As a result, Francophone Africa’s share in world exports has grown from nearly zero to 14 percent, making it the world’s third largest cotton exporting block after the United States and the former USSR. Long-term, regionally coordinated investments in agricultural research have fueled a steady release of improved varieties, inputs, and pest-management systems. As a result, seed cotton yields have risen from 225 kg/ha in 1960 to roughly 1 ton per hectare in 2006. Strong coordination of input supply and output marketing have guaranteed farmer outlets and enabled high rates of capital accumulation among smallholder cotton households.

**Horticulture exports from East Africa.** From the early 1970s onward, Kenya’s private traders have steadily expanded high-value exports of fruits and vegetables from Kenya. During the ensuing 30 years, horticultural exports have increased fivefold in real terms to become the country's third largest source of foreign exchange after tourism and tea (Figure 4). Private traders have led in the development of these highly lucrative export markets, with little direct government involvement. A stable exchange rate, favorable macroeconomic policies and the availability of frequent air freight cargo to Europe, as a byproduct of growing tourist traffic, have enabled private-sector traders to organize the production and marketing of highly perishable, high-cost, high-value products.

**Dairy production in Kenya.** Dairy production in Kenya has grown rapidly in recent decades, resulting in per capita production double the levels found elsewhere on the continent. Today 600,000 small farmers operating 1 to 3 dairy cows produce 80 percent of Kenya’s milk. By 2003, nearly 70 percent of Kenyan smallholders produced milk and it had become their fastest growing income source, with net dairy earnings averaging $370 per year and returns to labor of $3 to $5 per day. Long-term public...
and private investment in improved dairy breeds, tick control, and improved feeds have resulted in a milk production per cow triple that in neighboring Ethiopia. Kenya’s longstanding network of support institutions, many run by private farmer groups, continues to actively support artificial insemination services, livestock disease control, and improved feed and forage practices, all of which contribute to higher productivity and higher incomes for Kenyan dairy farmers. Public marketing controls, abandoned in 1992, have triggered rapid growth in raw milk sales, which now account for 85 percent of national consumption. 

Sustainable soil fertility management. In response to declining soil fertility, increasing land pressure, and rising mineral fertilizer costs, African farmers and researchers have experimented with a series of improved soil-fertility management systems. The book reviews two pairs of soil-management systems. The first pair, arising independently in Zambia and Burkina Faso, involves farmer-led development and dissemination of planting basins—minimum tillage systems that emphasize water harvesting, soil organic matter retention, crop rotations, and strategic additions of manure and chemical fertilizers. The second pair, a system of managed fallows using leguminous shrubs, emerged in Eastern Zambia and Western Kenya, often initiated by farmers, formalized by agricultural researchers and refined through extensive on-farm trials conducted in collaboration with farmers and nonprofit agencies.

Collectively, the case studies reviewed in the book suggest two key determinants of outstanding agricultural performance: a) sustained, productivity-enhancing research, and b) favorable market incentives for farmers and agribusinesses. Successes have emerged at places and times where these two ingredients converge. Where agriculture has performed poorly, one or both of these pre-conditions has been absent.

Achieving these two preconditions for success requires that several underlying drivers be in place. Given the long lead times required to develop most new agricultural technologies, their availability requires sustained investment in research and development over time. Uptake at the farm level also requires effective extension, input supply, and credit systems that enable farmers to access needed inputs such as improved seeds or breeds of animals, planting materials, fertilizers, and veterinary medicines. Positive market incentives require good macro, trade, and agricultural sector policies that do not discriminate against agriculture; sufficient infrastructure to enable farmers to access markets and inputs in timely and cost effective ways; and marketing and pricing policies that encourage private trade, storage, and processing. Finally, all these factors must come together in a coordinated way, a daunting challenge for agricultural policymakers. The availability of improved technologies will make little difference if farmers cannot access key inputs, or if they do not have access to markets at prices that make adoption of the improved technology profitable. Effective public institutions are a prerequisite for coordinating agricultural development strategies and implementing key components.

Collectively, the case studies affirm that it is indeed possible to create conditions under which African agriculture can flourish for protracted periods of time. Typically, episodes of strong agricultural performance have emerged where technological improvements and favorable incentive systems converge. Stable, favorable incentives enable the ‘slow magic’ of agricultural research to drive productivity and output growth over time. This suggests that government commitment to enabling policies and to sustained investments in agricultural research will provide the crucial building blocks for future successes in African agriculture.

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