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**Introduction to African Successes, Volume IV: Sustainable Growth, Edited by Sebastian Edwards, Simon Johnson, and David N. Weil.**

All the volumes in this series deal with some dimension of the broad question: can recent African success – in terms of economic growth and human development – be sustained? At the time our research project was conceived, in the mid-2000s, there were many skeptics who thought that recent African growth was primarily a flash in the pan, largely driven by resource exports. As we write this, in mid-2014, African economic success – and the contrast with previous failure – is undeniable.

But an entirely reasonable question – and one that we discussed in detail at all our research meetings – is whether sub-saharan Africa can continue to grow as in the past two decades. Did the end of the cold war provide an extraordinary one-off peace dividend, for example because the superpowers stopped meddling (at best) or supporting proxy wars (at worst)? Or is there some deeper transformation of African economies that proved elusive immediately after independence but which is now firmly and irreversibly under way?

Volume I addresses this issue through chapters that look at the aftermath of civil war, the way in which political power operates, and how the private sector develops mechanisms to cope.

Volume II focuses on the progress manifest in public health – including against both malaria and HIV-AIDS. On this front, parts of Africa are already been experiencing a breakthrough.

Women's rights may also be on the rise, although here the progress is more tenuous. And whether existing educational systems can handle rising population numbers remains to be seen.

Volume III reports on the details of African development in the financial, mobile phone, and export sectors. The picture is mixed, but it is also far from gloomy. Africa's prospects seem real and the achievements to date are impressive. This is a huge reversal from what prevailed prior to the 1990s.

The current volume reports on research that looks more deeply at aspects of whether African growth will continue. We do not look at all aspects of sustainability – this project was not designed to produce a comprehensive picture, but rather to encourage outstanding research on

questions of important current interest. The scholars who we supported took a hard look at agriculture, market development, and some particularly informative case studies. They set high standards for quality research and we hope that other scholars will find it easy to stand on their shoulders.

The link between the papers is that they all examine whether growth can be sustained. The recurrent theme is potential limits or constraints on growth, although each set of authors took a different approach to that issue. These papers should be read, therefore, more as an inspiration to further high quality work – rather than as presenting any kind of definitive snapshot or comprehensive survey.

The authors' obviously also disagree on what is most important in the next stages of African economic development. We view this disagreement as a strong indicator of competition between ideas. Providing we do not lose track of the most definite basics (covered in Volume I and II), it is healthy and even a good thing to have distinct ideas competing for the attention of policymakers. Hopefully, African governments will be able to learn from each other's experiences, for example through the filter of high quality applied economic research.

## **Agriculture**

In Chapter 1, "The Decline and Rise of Agricultural Productivity in Sub-Saharan Africa Since 1961," Steven Block argues that agricultural productivity growth in sub-Saharan Africa has been much better than commonly supposed. The period immediately after independence witnessed slow or negative growth in output per worker and output per hectare in most of Africa. But total factor productivity growth increased rapidly from the early 1980s. In part this is explained by higher spending on relevant agricultural research and development, but better macroeconomic and sector-level policies have also played a role. In addition to his cross-country evidence, the author provides some more detailed insights into the particular experience of Ghana.

In Chapter 2, Douglas Gollin and Richard Rogerson root their analysis in the details of the quasi-subsistence sector in Uganda, but they also attempt to draw much more general implications. Specifically, in "Agriculture, Roads, and Economic Development in Uganda," they explore the links between high transportation costs, low productivity, and the size of the agricultural sector.

Their model has the striking result that the number of Ugandans stuck in low productivity agriculture is very much influenced by transportation costs. The possibility of strong positive complementarities between improvements in agricultural productivity and transportation needs more attention, particularly as this broadens the range of relevant potential policy actions.

One of the most dramatic success stories in this volume is contained in Chapter 3, “The Sahel’s Silent Maize Revolution: Analyzing Maize Productivity in Mali at the Farm level.” In Mali, production increased more than ten-fold and yields grew by about 2% a year since independence. Jeremy Foltz, Ursula Aldana, and Paul Laris find that in southern Mali’s maize growing regions, farmer adoption of increased fertilizer use has driven much of the productivity growth. The adoption of new seed varieties by itself does not have huge impact; any move in that direction needs to be complemented by increased use of fertilizers. Interestingly, cotton production contributes to food security through making it possible to obtain credit, which can in turn be used to buy fertilizer for use in maize cultivation. New drought resistant varieties have the potential to spread maize production into lower rainfall regions of Mali and give farmers there the potential to access the higher fertilizer responsiveness of maize compared to sorghum or millet. Countries such as Senegal, Gambia, Guinea, and Niger have so far been left out of this green revolution for maize, but this could change – presumably if the right policies and incentives are put in place.

There is also evidence of new, more efficient institutional arrangements evolving. For example, in contract farming, the buyer and the producer commit in advance. In most cases, the buyer provides credit, monitoring, and may be directly involved in part of the production process. In Chapter 4, “Contract Farming and Agricultural Productivity in Western Kenya,” Lorenzo Casaburi, Michael Kremer, and Sendhil Mullainathan use data from the administrative records of a large Kenyan sugarcane contract farming scheme to study participation and productivity among participants.

Their analysis suggests that, in the presence of labor market imperfections that make plantations inefficient, contract farming can enable producers to take advantage of economies of scale, while preserving the existing allocation of land property rights. In the presence of monitoring costs, a contractual form that preserves decentralized land holdings has important advantages over a plantation estate. On the other hand, the contract farming arrangement prevents some of the

failures that would likely arise in a fully decentralized market, such as underinvestment in inputs due to credit constraints or lack of commitment ability for a monopsonist buyer.

Chapter 5 integrates thinking about agricultural development with the broader political economy themes that feature more prominently in Volume I of our series. Nathan Nunn and Nancy Qian present evidence on what determines food aid – and report that some of the stated objectives of these programs have been met while others have not. In “The Determinants of Food Aid Provisions to Africa and the Developing World,” the authors examine the supply-side and demand-side determinants of global bilateral food aid shipments between 1971 and 2008. Overall, domestic food production in developing countries is negatively correlated with subsequent food aid receipts, suggesting that food aid receipt is partly driven by local food shortages. However, food aid from some of the largest donors is the least responsive to production shocks in recipient countries. U.S. food aid is partly driven by domestic production surpluses, while former colonial ties are an important determinant for European donor countries, especially in the case of African recipients. Further, aid that flows to former colonies is particularly unresponsive to recipient country production.

Food aid and its impact on developing countries is a well-established topic. The impact of cellphones on development is a new topic – and one that was covered in part in Volume III. In the context of their study, “International and Intra-national Market Segmentation and Integration in West Africa” (Chapter 6), Jenny Aker, Michael Klein, and Stephen O’Connell find significant international border effects dividing and disconnecting agricultural markets in Niger and Nigeria. But this effect is lower when participants in cross-border markets have access to mobile phones. As the authors put it succinctly, “the Walrasian auctioneer can be heard across the Niger-Nigeria border. Her voice carries especially well in a common language, or with the aid of a mobile phone.”

## **Country Studies**

This volume and, in some sense, our project concludes with some case studies that shed light on particular sustained growth experiences. In Chapter 7, “Cape Verde and Mozambique as

Development Successes in West and Southern Africa,” Jorge Braga de Macedo and Luís Brites Pereira provide a narrative of Cape Verde and Mozambique’s long-term development. They stress the importance of moving towards a market economy; opening up to regional and global trade; increasing economic and political freedom; pursuing macroeconomic stability and financial reputation; ensuring policy continuity (especially in the industrial and trade sectors); and focusing on human development (especially education and poverty reduction).

Jeffrey Frankel draws broadly similar conclusions in Chapter 8, “Mauritius: African Success Story.” The country has mostly followed policies supportive of economic growth: creating a well-managed Export Processing Zone, conducting diplomacy regarding trade preferences, spending on education, avoiding currency overvaluation, and facilitating business.

As is often the case, policies conducive to economic growth can in turn be traced back to the underlying institutional environment. In this case, the author emphasizes: forswearing an army, protecting property rights (particularly non-expropriation of sugar plantations), and creating a parliamentary structure with comprehensive participation (in the form of representation for rural districts and ethnic minorities, the “best loser system,” ever-changing coalition governments, and cabinet power-sharing). But from where did the good institutions come? This is hard to say with great certainty, but it appears to help that the ancestors of everyone who lives on the island arrived from somewhere else during relatively recent historical times.

Chapter 9 uses the case study method to flesh out a mechanism through which colonialism may have had persistent negative effects on economic development. In “Indirect Rule and State Weakness in Africa: Sierra Leone in Comparative Perspective,” Daron Acemoglu, Isáías Chaves, Philip Osafo-Kwaako, and James Robinson argue that a fundamental problem for economic development is that most poor countries have weak states, which are incapable or unwilling to provide basic public goods such as law enforcement, order, education, and infrastructure. In Africa this is often attributed to the persistence of indirect rule from the colonial period. The authors discuss ways in which a state constructed on the basis of indirect rule is weak and the mechanisms through which this weakness has persisted since independence in Sierra Leone. Indirect rule excessively empowered traditional rulers at the expense of post-colonial elites.

## **Conclusion**

The six papers in this volume that look at agriculture are, taken as a whole, among the most optimistic pieces of our project. No measure of economic success is more fundamental than whether people have enough to eat, and there are plenty of pessimistic observers of the African scene who worry about the continent's ability to feed itself in the long run.

Recent successes seem to have several causes. New technology, either directly related to agricultural production (new crop varieties) or useful in making markets more efficient (mobile phones in Niger) are part of the story. The same institutional changes that bear fruit in other economic dimensions – macroeconomic stability, reduced transport costs, improved communication – also lead to more productive farms. Similarly contract farming – not a technology, but a potentially useful innovation -- provides an efficient solution to many of the institutional problems in African agriculture.

Two of the three case studies included in this volume can also be said to be relatively optimistic. The cases of Mozambique and Cape Verde (taken together in chapter 7) show the benefits of sensible economic policies and reasonably good governance, accompanied by regional surveillance and “peer pressure,” in terms of GDP growth (following, it must be acknowledged, a horrific civil conflict in Mozambique that ended in the early 1990s). The case of Mauritius is a more unalloyed success.

Of course we would not be fully representing the complexity and heterogeneity of the African experience if all the countries we studied were successes, and the final paper, on Sierra Leone, certainly tells a mostly unhappy story regarding the persistence of weak state institutions.

As a fitting demonstration that economists rarely agree, that further research is always needed, and that only time really will tell, volume IV concludes with the relatively pessimistic view of Acemoglu, Chaves, Osafo-Kwaako, and Robinson, which stands in complete contrast to the paper by Casey, Glennerster, and Miguel that opens the first volume of this project.