ENTERPRISE AFRICA!

MERCATUS POLICY SERIES

POLICY COMMENT No. 26

HALTING HUNGER: LONG-TERM SOLUTIONS TO SYSTEMIC PROBLEMS IN AFRICAN AGRICULTURE

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JULY 2009

MERCATUS CENTER
George Mason University

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About Enterprise Africa!

Enterprise Africa! is a research project that investigates, analyzes, and reports on enterprise-based solutions to poverty in Africa. The project is uncovering some of the hidden success stories in Africa—stories of people and policies that make a difference in the lives of Africa's people today. In essence, it documents African solutions to Africa's problems. These success stories involve intrepid, committed entrepreneurs across the continent who are developing an amazing array of businesses—from small-scale shops to multinational corporations—and the institutions that support them. These entrepreneurs are promoting economic growth and are an unheralded key to poverty alleviation. Enterprise Africa! is a joint initiative with the Free Market Foundation of Southern Africa and the Institute of Economic Affairs of London, England.

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Design: Joanna Andreasson
ISSN: 1943-6793

Cover illustration: Joanna Andreasson

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EXECUTIVE SUMMARY

The food crisis in mid-2008, which caused riots and protests and grabbed headlines around the world, was symptomatic of a much greater problem in Africa.

Africa's ability to feed itself has been in decline for the past four decades. Government intervention and interference in agricultural markets displaced and corrupted institutions in the agricultural sector, preventing the growth of commercial agricultural sectors and decreasing the ability of African farmers to improve their standards of living through agriculture.

To combat hunger and to encourage economic development, African governments need to embark on reforms that allow farmers to use agriculture to improve their lives. Where reforms have taken place, many have benefited. However, reforms are not easily achieved.

This Policy Comment demonstrates the disruptive influence of government involvement in agriculture across Africa and suggests what reforms are needed and how they can be achieved. With its focus on long-term solutions to agricultural development, this Policy Comment builds on Policy Comment no. 25 of the Mercatus Policy Series, *Fixing Famine*, which focused on immediate and short-term means to deal with hunger and economic development in Africa.

For more information about the Mercatus Center's Enterprise Africa! project, visit us online, www.mercatus.org/enterpriseafrica, or contact Karol Boudreaux, at (703) 993-4941 or kboudrea@gmu.edu.

ENTERPRISE AFRICA! RESEARCH APPROACH
Local Solutions from Local Knowledge

This study, as with all the studies conducted by the Enterprise Africa! research team, is based largely on information gathered in Africa from Africans. Our core research team was comprised of the Mercatus Center's Karol Boudreaux and Daniel Sacks and the South African-based Free Market Foundation's Eustace Davie, Temba Nolutshungu, and Jasson Urbach. The unique approach of the Enterprise Africa! team helps ensure that our studies reflect what's actually happening in the communities in which we work, rather than an outside view of how things might be.

Halting Hunger was inspired by work conducted in Kenya and Malawi in June of 2008, where Enterprise Africa! team members met with a wide variety of stakeholders in the agricultural industry: farmers, store owners, agribusiness operators, bankers, and government officials. Our fieldwork was cross-referenced with appropriate economic and political-science literature and other relevant data. Colleagues in Africa and North America captured and peer reviewed the picture that emerged.

The goal of our study is to provide a unique view of how the institutional environment created by local policy enables or inhibits productive enterprise-based solutions to poverty and ultimately affects the well-being of members of the community in question. Our research approach relies substantially on local experience and knowledge, ensuring that the picture we paint is tied to the world it intends to depict.

HALTING HUNGER: LONG-TERM SOLUTIONS TO SYSTEMIC PROBLEMS IN AFRICAN AGRICULTURE

I Introduction

In the spring and summer of 2008, stories of food riots and protests dominated the world's headlines. Though the immediate crisis subsided, the developing world—Africa in particular—still struggles to feed itself. Unlike the short-lived headlines, hunger is a long-term reality.

Growth in Africa's food production per capita has been declining since the 1970s.[1] African children are increasingly suffering from malnutrition, and in the past fifteen years, 30 million more people in Africa have been categorized as undernourished.[2]

Agriculture's contribution to economic growth in Africa has been incredibly limited. Most African farmers are only feeding their families and are not farming commercially on any significant scale.[3]

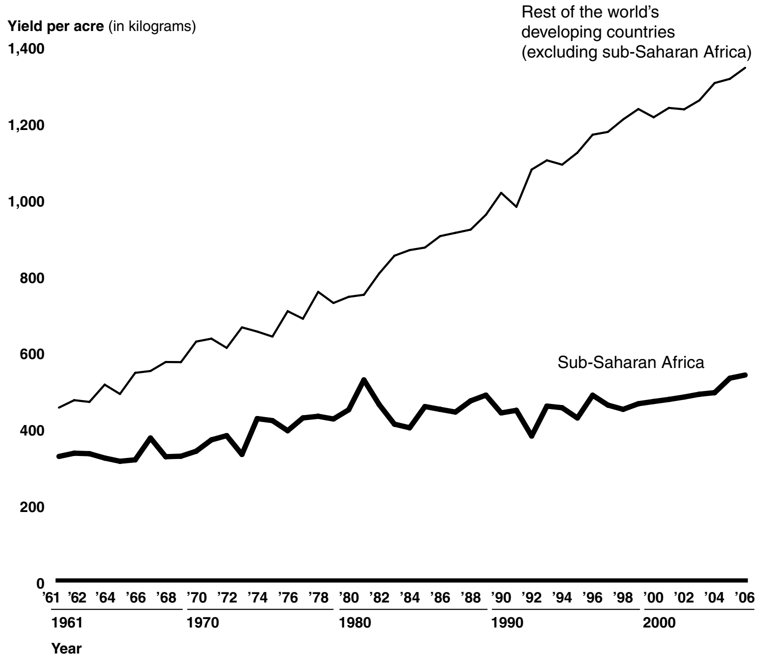
Improving agricultural productivity is a key component in economic development. As Africa's population is largely rural and agrarian, development across the country is principally tied to improving agriculture. Low agricultural productivity prevents resources from flowing to other activities that generate higher incomes.[4] For example, increases in agricultural productivity in China in the late 1970s and early 1980s advanced that country's economic development.[5]

Institutional constraints give African farmers little reason or ability to grow larger crops. Across the continent, government intervention in agriculture hinders farmers' opportunities. Less interference by governments in agricultural markets would increase productivity, reduce hunger, and raise incomes, eventually creating greater economic growth.

This Policy Comment extends the research presented in Mercatus Policy Series Policy Comment no. 25, *Fixing Famine: How Technology and Incentives Can Feed Africa*, which examines the immediate-term solutions to hunger and poverty in Africa.[6] Both papers build on field work conducted in Malawi and Kenya in June of 2008. This Policy Comment focuses on the longer-term processes required to alleviate hunger and increase economic development by first looking at Africa's declining agricultural productivity and then examining the continent's history of government involvement in agriculture. The Policy Comment goes on to examine the obstacles to improving agricultural development created by government involvement and presents policy recommendations that aim to improve agricultural productivity and economic development.

1. Mylène Kherallah, Christopher Delgado, Eleni Gabre-Madhin, Nicholas Minot, and Michael Johnson, *The Road Half Traveled: Agricultural Market Reform in Sub-Saharan Africa* (Washington, DC: International Food Policy Research Institute (IFPRI), 2000), 14.
2. See U.S. Government Accountability Office, *International Food Security: Insufficient Efforts by Host Governments and Donors Threaten Progress to Halve Hunger in Sub-Saharan Africa by 2015*, GAO-08-680 (Washington, DC: GAO, May, 2008), 11, http://www.gao.gov/new.items/d08680.pdf.
3. African Green Revolution, "Impact on Society—and Poverty Reduction," Yara International, http://www.africangreenrevolution.com/en/african_agriculture/impact/index.html.
4. Douglas Gollin, Stephen Parente, and Richard Rogerson, "The Role of Agriculture in Development," *The American Economic Review* 92, no. 2 (May 2002): 160, 164.
5. Jeffrey Sachs, *The End of Poverty: Economic Possibilities for Our Time*, 1st ed. (New York: The Penguin Press, 2005), 158–161.
6. Daniel Sacks and Jasson Urbach, *Fixing Famine: How Technology and Incentives Can Feed Africa*, Mercatus Policy Series Policy Comment no. 25, (Arlington, VA: Mercatus Center at George Mason University, 2009).

FIGURE 1: GRAIN YIELD GROWTH IN SUB-SAHARAN AFRICA COMPARED WITH THE REST OF THE WORLD'S DEVELOPING COUNTRIES, 1962 TO 2006



U.S. Government Accountability Office, International Food Security, 20.

2 Declining Agricultural Productivity in Africa

Compared to other developing regions, Africa's agricultural productivity is frighteningly low—its grain productivity per capita is a mere 40 percent of other developing areas.[7] East Asian and Latin American countries have respectively doubled and tripled their agricultural yields in the past four decades, while African countries languished well behind. The Food and Agriculture Organization estimates that Africa's average cereal yield per hectare is about one-third of the yield per hectare in Asia and less than half of the yield in Latin America.[8]

Compared to developed countries, the difference is even starker. According to the UN Food and Agriculture Organization's statistics group (FAOSTAT), American farmers harvest an average of 9.6 tons per hectare while Kenyan maize farmers harvest 1.6 tons per hectare and Malawian maize farmers harvest 0.8.[9] This gap is widening as other countries improve and Africa continues to lag behind.[10]

3 History of Government Involvement in Agriculture

During colonialization in Africa, governments intervened heavily in national economies, almost always targeting the agriculture sector.[11] Agriculture was the main economic activity of most African nations, and agriculture markets became the main source of government revenue.[12]

7. U.S. Government Accountability Office, *International Food Security*, 19–20.

8. Jaques Diouf, "Statement to the Conference of Ministres for Agriculture of the African Union on NEPAD," (Director-General's statement, Maputo, Mozambique, July 2, 2003), http://www.fao.org/english/dg/2003/NEPAD0207.htm.

9. Robert Paarlberg, *Starved for Science: How Biotechnology Is Being Kept Out of Africa*, 1st ed. (Cambridge, MA: Harvard University Press, 2008), 81.

10. U.S. Government Accountability Office, *International Food Security*, 19–20.

11. Kherallah, et al., *The Road Half Traveled*, 5.

12. Robert H. Bates, *Markets and States in Tropical Africa: The Political Basis of Agricultural Policies* (Berkeley, CA: University of California Press, 1981), 13, 18.

In the 1930s and '40s, colonial governments manipulated agricultural markets in order to benefit European settlers and their enterprises. In many African colonies, European governments established parallel markets—one for Europeans and one for native Africans. In order to generate revenues to subsidize European production, colonial governments taxed the African market.[13] Taxes discouraged Africans from growing a surplus, as all sales were subject to taxation.

After African countries achieved independence and embarked on economic reforms, governments remained involved in agriculture. Though in past decades the tight grip first imposed by the colonial governments loosened, government interventions continue to disrupt market forces and incentives, dramatically affecting agricultural productivity and economic growth.[14]

For example, many independent African governments perpetuated the parallel markets but shifted the divide, creating different markets in urban and rural areas. To maintain this separation, the government restricted the ability of African farmers to move grain and other staples. Goods from rural areas could not be brought to urban areas and vice versa. These restrictions prevented farmers with a surplus from reliably selling their excess to traders (or to those in need of food) in other regions.[15] The taxes and movement restrictions discouraged farmers from growing more than they could eat, as they did not derive any benefits from producing extra.

Two major interventions are still having a large impact on farming in Africa. Government-run or supported marketing boards have disrupted price incentives in commercial farming, and government changes in land ownership have shifted incentives away from investing in improvements to the productivity of land.

3.A. Marketing Boards Interfere with Market Incentives

From the early days of colonial regimes until the present day, African governments have used agencies called marketing boards to control the import and export of agricultural goods.[16] These agencies captured large amounts of revenues and foreign currency by controlling the sale of exports to foreign countries. For example, when commodity prices boomed in the 1950s, these agencies became the wealthiest parts of their countries' economies, due primarily to their accumulation of foreign currency from selling exports on the world market.[17]

African marketing boards generated revenue by purchasing the goods at a low price—set through an administrative process—and then reselling the goods on the world market. The difference between the price the marketing boards paid for goods and the market rate was large—often half the world market rate—and the difference would be captured by the government.[18]

A marketing board acted as a monopsony buyer, controlling all purchases of a particular good, or goods, in a market. Sellers had little choice but to accept the price set by the board as the marketing boards were, by law, the only outlet for farmers to sell their export crops.[19]

Supposedly intended to generate funds to develop farming practices and increase outputs, the money often supported government spending in other sectors, particularly those with revenue shortfalls.[20] For example, in the years following Nigeria's independence, much of the government's funding came from revenue captured by export boards instead of from new taxes.[21] It was also common for individuals or groups within governments to use these funds to enrich themselves or to maintain their political positions.[22] Government agents accepted bribes and allocated resources for their own benefit. Today, government parastatals, particularly those that

13. Thomas S. Jayne and Stephen Jones, "Food Marketing and Pricing Policy in Eastern and Southern Africa: A Survey," *World Development* 25, no. 9 (1997): 1507.
14. Ibid.
15. Ibid., 1507, 1509, 1515.
16. Kherallah, et al., *The Road Half Traveled*, 9.
17. Bates, *Markets and States in Tropical Africa*, 13, 18.
18. Kherallah, et al., *The Road Half Traveled*, 8.
19. Bates, *Markets and States in Tropical Africa*, 12.
20. Ibid., 14–15.
21. Ibid., 13, 15, 17.
22. Thomas S. Jayne and Melinda Smale, "Maize in Eastern and Southern Africa: 'Seeds' of Success in Retrospect," (EPTD discussion paper no. 97, International Food Policy Research Institute (IFPRI), Washington, DC, January, 2003), 29. See also Karol Boudreaux, *State Power, Entrepreneurship, and Coffee: The Rwandan Experience*, Mercatus Policy Series (Arlington, VA: Mercatus Center at George Mason University, 2007).

supply agricultural inputs, continue to be manipulated to the benefit of government workers or their allies.[23] In turn, farmers did not receive the promised benefits, and in effect the marketing boards were taxing farmers at a high rate but provided little in return.[24]

Farmers responded to the low prices and implicit taxation imposed by the marketing boards by shifting away from farming export crops and into subsistence farming, freeing themselves from the burdens and regulations associated with commercial farming.[25] By removing farmers' incentives to grow commercial crops, export-oriented marketing boards prevented farmers from using agriculture as a means to develop economically. In response, governments legally mandated the growing of certain crops.[26] In Rwanda, as Karol Boudreaux's research shows, from colonial times law required all farmers to grow coffee. The government controlled the purchase and sale of coffee, using the revenues to maintain power.[27]

Marketing boards in domestic markets also affected farmers' incentives. Instead of purchasing goods at low prices like monopsony buyers, domestic grain marketing boards bought goods at above-market prices, subsidizing production. Ostensibly designed to encourage grain production, newly independent African governments used the domestic marketing boards and other agencies to gain support for the government from rural constituencies.[28]

Maintaining above-market prices for grains and providing subsidies and credit to smallholder farmers was an expensive proposition for African governments.[29] In Zambia in the 1980s, the large monetary demands of these programs affected macroeconomic variables such as the "rates of inflation, interest, and currency exchange."[30]

Not only were the domestic support programs expensive, they were also inefficient, harming farmers' production.[31] Expecting subsidies and high prices, farmers planted crops supported by the domestic marketing boards—typically grains. However, government agencies that promised to supply inputs did not do so reliably, as budget constraints and bureaucratic inefficiencies delayed or prevented the deliveries. Because the government was, by the law, the only supplier of the inputs, food production suffered.[32]

Both forms of marketing boards stunted the growth of agricultural markets in Africa and limited farmers' abilities to use agriculture as a means for economic development.

3.B. Land

While marketing boards deeply affected production incentives, laws enacted by colonial and post-independence governments affecting land-ownership rights diminished African farmers' productive capacity. These laws had three major effects: moving native Africans to low-quality land, removing or disrupting tenure security, and stifling land markets.

During colonization, European governments forcefully resettled native Africans onto crowded marginal tracts of land, taking the best land for themselves and discouraging Africans from farming. The colonial governments hoped that displaced natives would turn to other employ-

23. The World Bank, *World Development Report 2008: Agriculture for Development* (Washington, DC: The World Bank, 2007), http://siteresources.worldbank.org/INTWDR2008/Resources/WDR_00_book.pdf, 254.

24. Bates, *Markets and States in Tropical Africa*, 18–19. See also, Jock R. Anderson, Donald Larson, and Panos Varangis, "Agricultural Markets and Risks: Management Of The Latter, Not The Former," (seminar in honor of Ronald C. Duncan, Pacific School of Economics and Management, Australian National University, Canberra, July, 2001), 3.

25. Jayne and Jones, "Food Marketing and Pricing Policy in Eastern and Southern Africa," 1510; Kherallah, et al., *The Road Half Traveled*, 8.

26. Boudreaux, *State Power, Entrepreneurship, and Coffee.*

27. Ibid.

28. Jayne and Smale, "Maize in Eastern and Southern Africa," 17, 24.

29. Ibid., 18, 24–25.

30. Jayne and Jones, "Food Marketing and Pricing Policy in Eastern and Southern Africa," 1510.

31. Ibid., 1523.

32. In farming, the timing of the use of credit and inputs is very important; if inputs like fertilizer are not provided at the right time, their usefulness is reduced. See Kherallah, et al., *The Road Half Traveled*, 8.

ment opportunities and would form an inexpensive labor force for European mining, manufacturing, and agricultural enterprises.[33]

When colonialism ended, elites from new ruling parties often replaced colonial elites as owners or occupiers of the best land.[34] The poor-quality land that most African farmers occupy today is a result of colonial government policies maintained by subsequent post-independence governments. For example, in 1974, Cameroon passed a lands ordinance with the intent to create a middle class of farmers who owned their own land. Instead, government elites and businessmen captured nearly 83 percent of the titles.[35] Continued use of such poor-quality farmland across the continent greatly diminishes Africa's productive capacity.

The relocation of native Africans was one of a number of changes to land tenure brought about by government policies during the 20th century, most of which weakened tenure security.[36] Two types of laws are most notable: First, colonial regimes often gave only usage rights to native Africans, with local chiefs overseeing distribution.[37] Laws of this kind made tenure insecure as individual ownership was not clear. Second, approximately 20 African states nationalized land from the late 1960s to the early 1980s.[38] The nationalization process put government officials in control of land distribution, making ownership of land insecure for a majority of African farmers.[39] As described below, when tenure is insecure, investment in land is low, resulting in low productivity. Colonial policies banning the sale or purchase of land were common. These policies prevented the evolution of land markets across Africa.

4 Obstacles and Solutions to Increased Agricultural Production

There are many obstacles preventing increased agricultural production in Africa, and with it, increased economic development. Some of these obstacles are the legacies of colonialism's attempts at popular control and continued government interventions, while others result from manipulations of markets to serve narrow interests.

4.A. Partial Reforms Often Fail

Since the 1980s, most sub-Saharan African countries have undertaken economic reforms in an attempt to bolster growth rates and spur economic development. Typically, these reforms included attempts to lessen the role the government played in the agricultural sector. However, these reforms have been partially or wholly unsuccessful.[40] In many countries, reforms took place only in a de jure manner, while de facto government involvement and patronage relationships continue.[41] Often, governments withdrew from only the least-profitable sub-sectors and remained involved in areas where profits could be easily captured.[42] Governments typically did not withdraw from countries' export sectors, continuing to capture revenues

33. Jayne and Jones, "Food Marketing and Pricing Policy in Eastern and Southern Africa," 1507; Klaus Deininger, *Land Policies for Growth and Poverty Reduction* (London: Oxford University Press; Washington, DC: World Bank, 2003), 11; Michael Roth and Dwight Haase, "Land Tenure Security and Agricultural Performance in Southern Africa," (working paper, Madison: Broadening Access and Strengthening Input Market Systems (BASIS), June 1998), 5.

34. Roth and Haase, "Land Tenure Security and Agricultural Performance in Southern Africa,"5.

35. Kathryn Firmin-Sellers and Patrick Sellers, "Expected Failures and Unexpected Successes of Land Titling in Africa," *World Development* 27, no. 7 (1999): 1118. See also, Roth and Haase, "Land Tenure Security and Agricultural Performance in Southern Africa," 5.

36. Land tenure can be described as "the social relations and institutions governing access to and the use of land." See Daniel Maxwell and Keith Wiebe, "Land Tenure and Food Security: Exploring Dynamic Linkages," *Development and Change* 30 (1999): 826.

37. Gershon Feder and Raymond Noronha, "Land Rights Systems and Agricultural Development in Sub-Saharan Africa," *Research Observer* 2, no. 2 (July 1987): 148.

38. Deininger, *Land Policies for Growth and Poverty Reduction*, 2. See also, The World Bank Group, "Managing Urban Growth in Sub-Saharan Africa," *Findings*, 7 (1993),

39. Roth and Haase, "Land Tenure Security and Agricultural Performance in Southern Africa," 6.

40. Kherallah, et al., *The Road Half Traveled*, 5, 7, 9.

41. Jayne and Smale, "Maize in Eastern and Southern Africa," 37. Thomas Jayne, Jones Govereh, Anthony Mwanaumo, J.K. Nyoro, and Anthony Chapoto, "False Promise or False Premise? The Experience of Food and Input Market Reform in Eastern and Southern Africa," *World Development* 30, no. 11 (2002): 1975, 1981; Elliott D. Green, "Patronage, Pork and Power in Rural Africa: Examining Urban Bias with Evidence from Rwanda and Uganda," (paper presented at the APSA 2008 Annual Meeting, Hynes Convention Center, Boston, MA, August 28, 2008), 14–15.

42. Jayne, et al., "False Promise or False Premise," 1976.

and foreign exchange. State-owned enterprises dominate input markets, as in Malawi, where the government is the largest supplier of fertilizer.[43]

In some cases, African governments reversed reforms after partially or fully implementing them.[44] In Zambia, the government simply replaced fertilizer marketing boards with parastatals and continued sales at extremely discounted prices, preventing private firms from entering the market. In Kenya, government marketing boards maintain high maize prices in certain areas from which the government draws its political support.[45]

Governments stopped liberalization efforts when economic conditions changed, when domestic support for the reforms disappeared, or when they satisfied conditions set by international donors.[46] In other cases, donors themselves stopped advocating for reforms because the reforms were ineffective, agricultural reforms were a part of a larger package of reforms that donors did not want to delay, or donors lacked the ability to enforce the conditions.[47]

4.B. Solutions to the Partial-Reform Problem—Credible Commitment

The largest challenge to improving agriculture in Africa is the need for governments to follow through with agricultural-sector reforms. African policy makers and elites tend to be heavily involved in the agriculture sector, profiting from their roles operating parastatals, controlling contracts, and allocating resources. Clearly, this is a large challenge.

African governments lack credibility regarding their ability to follow through with their reforms, which can have a number of negative effects. When the commitment to reform policies is unclear, private companies have difficulty justifying the risk of entering an unstable market and will not invest.[48] More directly, private firms will not enter the market where nepotism and patronage are rampant, as they cannot be assured of a level playing field.[49]

The greatest hope for completion of reforms is the realization, by governments and their constituents, that reforming the agricultural sector stands to benefit the population in a number of ways and can reward policy makers who implement these broad benefits. Ideally, a demand for full reforms will grow from the knowledge that in cases where reforms have been completed, both producers (i.e. farmers) and consumers have gained. However, due to the large extent the status quo benefits government elites, serious change is hard to accomplish. Though both South Africa and Rwanda present examples of successful, complete reforms, it is telling that these reforms took place in the face of massive societal change.

South Africa underwent agricultural market reforms from the mid-1980s to the mid-1990s due to the high cost of maintaining its complicated system of supports, taxes, and tariffs. Not only did these reforms succeed in alleviating fiscal burdens on the government, but they also benefited farmers and consumers. South Africa abolished marketing boards while reducing price controls and eliminating trade controls and tariffs on agricultural goods. Removing government influence from the market had a number of positive effects: Farmers shifted towards growing higher-value crops, increased their productivity and yields, and saw their incomes rise.[50] Though the South African reforms demonstrate a clear model for the benefits of agricultural reforms, it is also worth noting that South Africa is home to much more accountable and transparent system of government than that found in most other African countries.

Rwanda began to dramatically liberalize its coffee industry after the 1994 genocide as it searched for a means to increase the state's income. Today, coffee farmers operate free of almost all the constraints imposed upon them since the colonial era, and Rwanda's coffee farmers' incomes and standard of living have increased. By

43. Kherallah, et al., *The Road Half Traveled*, 12. Mylène Kherallah, Christopher Delgado, Eleni Gabre-Madhin, Nicholas Minot, and Michael Johnson, *Reforming Agricultural Markets in Africa* (Baltimore: John Hopkins University Press, 2002), 152.
44. Kherallah, et al., *The Road Half Traveled*, 9.
45. Jayne, et al., "False Promise or False Premise?" 1970–1971.
46. Kherallah, et al., *Reforming Agricultural Markets in Africa*, 6, 9, 11.
47. Ibid., 154.
48. Kherallah, et al., *The Road Half Traveled*, 9. See also Jayne, et al., "False Promise or False Premise?" 1981.
49. Ibid., 1974–1975.
50. Nick Vink and Johan Kirsten, *Deregulation of Agricultural Marketing in South Africa: Lessons Learned*, Free Market Foundation Monograph no. 25, (Sandton, South Africa: Free Market Foundation, 2000), 16, 19, 43.

privatizing or simply removing marketing boards and exporters, the Rwandan government increased the opportunities for farmers to profit from growing coffee. Today, coffee farmers in Rwanda produce a high-quality product that can reach prices of approximately $25 per pound; this is a monumental increase from the prices coffee fetched before the reforms.[51]

The lessons learned from these reforms should be appreciated by other African states, even though these success stories are not perfectly analogous to the situations in many African countries today. Though unlikely, complete reforms have large-scale, widespread benefits that cannot be achieved by partial or short-lived reform attempts.

Another hope for more complete and credible commitments to agricultural reforms is the incentives provided by the so-called *Doing Business* and MCC "Effects." Some argue that states change policies, regulations, and laws in search of higher rankings in the World Bank's *Doing Business* reports or to be eligible to receive funding from the U.S. government's Millennium Challenge Corporation (MCC).[52] Though the existence and value of these effects have been debated, there is evidence that governments are changing policies in order to receive a higher rating or funding.[53] If this is the case, the "Registering Property," "Getting Credit," and "Trading Across Borders" indicators in the *Doing Business* report and the MCC's "Land Rights and Access," "Regulatory Quality," and "Trade Policy" selection criteria for the MCC could encourage states to commit to long-standing agricultural reforms.

4.C. The Land-Tenure Problem

The government policies described above created problems with land ownership and land markets that repress agricultural productivity and incomes in most African countries and result in many African smallholder farmers not owning the land they farm.[54] Insecure or incomplete tenure reduces agricultural productivity by removing incentives to invest in land and by preventing land markets from forming.

Tenure security encourages farmers to think beyond the short-term prospects for their land. When a farmer has secure rights over his land, the farmer can be confident that he will realize the gains from investments in the land, either through increased productivity during the continued use of the land or through a higher price when the land is sold.[55] Investments in land also make farming more productive, allowing farmers to earn greater incomes. When land tenure is insecure, farmers are discouraged from making investments as their land may be taken from them before they reap the benefits of any improvements.

Lack of secure property rights—including the ability to buy and sell land—contributes to other problems in food production and food security. In many cases, land is subdivided for inheritance with each passing generation, and as the size of these plots shrinks over time, each generation inherits smaller and less-productive pieces of land. With each generation, those who are tied to the land they inherit will be less able to use their land to generate enough wealth to escape poverty.[56] Because these people cannot buy more land or sell what little land they have, these people have little prospects for economic development in the future.

Today, even where tenure is secure, markets may not have evolved to handle transactions in land. In much of Africa, land is not formally titled, meaning that ownership is not formally recognized, and this can contribute to limited tenure security. When the ownership of land is not clear, the rental or sale of land becomes much more complicated, if not impossible.

51. Boudreaux, *State Power, Entrepreneurship, and Coffee*, 14.

52. *Doing Business* 2009 (The World Bank, 2008), vii; Lex Rieffel and James W. Fox, "The Millennium Challenge Corporation: An Opportunity for the Next President," (Global Economy & Development Working Paper No. 30, Brookings Institute, December 2008), 16.

53. Benito Arrunada, "Pitfalls to Avoid when Measuring Institutions: Is *Doing Business* Damaging Business?" *Journal of Comparative Economics* 35, no. 4 (2007): 729–47.

54. Maxwell and Wiebe, "Land Tenure and Food Security," 826.

55. Shem E. Migot-Adholla, George Benneh, Frank Place, and S.Y. Atsu, "Land, Security of Tenure, and Productivity in Ghana," in *Searching for Land Tenure Security in Africa*, J.W. Bruce and Shem E. Migot-Adholla, eds. (Dubuque: Kendall/Hunt Publishing Company, 1994), 108. See also, Timothy J. Besley, "Property Rights and Investment Incentives: Theory and Evidence from Ghana," *Journal of Political Economy* 103, no. 5 (1995): 903–937.

56. Thomas S. Jayne, Takashi Yamano, Michael Weber, David Tschirley, Rui Benfica, David Neven, Anthony Chapoto, and Ballard Zulu, "Smallholder Income and Land Distribution in Africa: Implications for Poverty Reduction Strategies," (MSU International Development Paper, Department of Agricultural Economics and Department of Economics, Michigan State University, 2001), 28.

Large-scale, successful commercial farms in the developed world and Africa exist because of tenure security and working land markets. Such farms likely would not be "possible without secure and freely transferable land title."[57] In Zimbabwe, government-led land grabs made tenure incredibly insecure, and food production suffered accordingly.[58] As long as tenure continues to be insecure across much of Africa, the prospects for large-scale commercial farming and related economic development are limited.

4.D. Land-Tenure Reform

Achieving land-tenure reform is a complex and complicated task. Years of failed and partial reforms demonstrate that there is no *one* solution for the problems associated with land administration and land ownership.[59] It requires the completion of a series of gradual steps and must be tailored to local conditions in each country. Further, and perhaps most importantly, countries must be willing and capable of taking on land reform. The most important barrier to overcome, as with other areas where reform is need, is achieving a clear, credible commitment to reform from governments whose interests may be in direct opposition to reform.

Reform is also difficult because people have very visceral reactions when discussing land ownership issues.[60] When changes are made to the ownership structure of land, there are, by default, those who stand to gain and those who lose some element of control. These feelings are complicated by political considerations.

Across Africa, there have been many changes to the legal structures that surround land ownership but few changes to the distribution of land.[61] A number of problems plague attempts at land reform: Beyond the high financial and political complexity, simply identifying who owns what land can be difficult.[62]

Land-tenure reform—even if fully implemented—does not guarantee increases in productivity or access to capital (via credit), particularly in the short run. Policy makers should also recognize that replacing customary or communal tenure systems with individual private property rights in no way ensures an increase in output.[63]

There are three areas to consider when thinking about land reform: information problems, rights, and markets.

4.D.1. Information

In most sub-Saharan African countries, information problems surround the use and ownership of land. In many places, it is not clear who owns what land, how long they have used the land, or if they have any formal claim to the land.[64] To change the structure of ownership and to open this land to markets, these information problems must be solved.

Cataloging land-use rights is a critical first step in the reform process because it documents claims to land and determines who has which rights to land.[65] However, determining what land is owned or used by whom is not always a simple task. In countries or regions where land has been administered by custom for decades or even centuries, there may not be written record of land ownership or a distinct pattern of use that can identify an individual or family as the sole owner. In other places, where the sale of land is formally banned, land may have changed hands but records of these transactions may not exist.[66]

57. Roth and Haase, "Land Tenure Security and Agricultural Performance in Southern Africa," 8.

58. Craig Timberg, "In Hungry Zimbabwe, Pet Food is a Priority," *The Washington Post*, March 3, 2008, http://www.washingtonpost.com/wp-dyn/content/article/2008/03/02/AR2008030202530.html.

59. Chistian Lund, Rie Odgaard, and Espen Sjaastad, *Land Rights and Land Conflicts in Africa: A Review of Issues and Experience*, (Danish Institute for International Studies, Copenhagen, Denmark), 2006, 3, http://www.diis.dk/graphics/Publications/Andet2007/rod_landrights_SOA.doc.pdf; Liz Alden Wily, *Governance and Land Relations: A Review of Decentralisation of Land Administration and Management in Africa (London:International Institute for Environment and Development*, 2003), 7, table 2.

60. Lund, Odgaard, and Sjaastad, *Land Rights and Land Conflicts in Africa*, 5.

61. Maxwell and Wiebe, "Land Tenure and Food Security," 827.

62. Jayne, et al., "Smallholder Income and Land Distribution in Africa," 26.

63. Maxwell and Wiebe, "Land Tenure and Food Security," 827; Roth and Haase, "Land Tenure Security and Agricultural Performance in Southern Africa," 9.

64. Clarissa Augustinus and Klaus Deininger, "Innovation in Land Tenure, Reform and Administration in Africa," in *Land Rights for African Development: From Knowledge to Action*, (CAPRi Policy Brief, 2006), 14.

65. Deininger, *Land Policies for Growth and Poverty Reduction*, 52.

Therefore, it becomes critical to consult with those already occupying the land—those with local, tacit knowledge—during the process of formal cataloging. Consultations with those occupying the land not only capture knowledge, but also ensures the involvement of local people in the land-reform process.[67]

Once the land is cataloged, these records need to be compiled in land registries. Though registries do exist in many countries, they are often out-of-date or otherwise nonfunctional. Registries are rendered useless when they are poorly administered or when using a registry is more costly than not registering a transaction or simply squatting. Land registries should be decentralized so the costs of visiting the registry to retrieve information or register a transaction do not prevent the use of the registry.[68]

4.D.2 Rights

Once land has been cataloged and registered in functioning, decentralized registries, the next component of an effective property-rights system is a clear definition of what those property rights mean and what entitlements their holders receive. Ideally, land tenure should be secure, long-lasting, equitable, and absolute.[69]

However, changing land rights create an information problem of their own—those who have been granted greater rights may not know what these rights represent. In order to fully benefit from them, those receiving new rights need to be educated as to what their rights mean.[70]

Though the strength and breadth of these rights vary across Africa, in only a few countries are rights sufficient enough to ensure tenure security, enable land markets, or encourage sufficient investment in land—all key elements in creating commercial opportunities in agriculture.[71]

Tenure security should be as wide as possible. Currently, in many African nations, the ability to own land is limited only to men.[72] For women, inheriting land or maintaining possession of family land after their husbands pass away can be incredibly challenging, if not impossible.[73]

Perhaps the most important reform to land-tenure security is the allowance of property rights of a sufficient duration.[74] The duration of property rights is particularly important in agriculture, as landholders will not invest in their land if they are unsure if they will benefit from these investments. Ideally, there should be no temporal limit to property rights—owners should be able to hold their land for as long as they wish. However, governments may be unwilling to cede their ownership of land absolutely; in this case, long-term leases should be established for as long as possible.

Similarly to the land registries described above, dispute-resolution mechanisms must be accessible to those with disputes, or they will seek lower-cost alternatives to the status quo, where conflicts arise or exchanges do not take place.[75]

Changes to the legal system that clearly define secure property rights should be accompanied by reforms that make property transferable at a reasonable cost.[76] Again, if the costs of using the formal system are high, transactions will take place outside the formal system. In such situations, the up-front cost may be lower. However, over the long term, costs for the parties involved, particularly the buyer, could be increased by informality. Informal land transactions are often not recorded in registries (particularly if the registries are similarly inaccessible), and without record of the transactions, conflict can arise over multiple claims to the same land.

66. Pauline E. Peters, "Challenges in Land Tenure and Land Reform in Africa: An Anthropological Perspective," (working paper no. 141, Center for International Development at Harvard University, March 2007), 7.

67. Deininger, *Land Policies for Growth and Poverty Reduction*, 56.

68. Ibid. Even in urban areas, where distance is not a factor, land titles and transactions will not be registered if the costs are high. For example, in Langa Township in Cape Town, South Africa, informal cash transactions recorded by affidavits are preferred to formal transfers due to the high costs surrounding formal transfers. See Karol Boudreaux, *The Effects of Property Titling in Langa Township, South Africa*, Mercatus Policy Series (Arlington, VA: Mercatus Center at George Mason University, 2006).

69. Ibid., 8, 23, 52.

70. Ibid., 56.

71. Alden Wily, *Governance and Land Relations*, 73–77, table 21.

72. Ibid., 58, table 15.

73. Ibid., 60.

74. Deininger, *Land Policies for Growth and Poverty Reduction*, 8, 26.

75. Ibid., 35, 57.

76. Ibid., 57.

INFORMAL FORMALIZATION

Another hope for land reform comes from farmers themselves. In many African countries, such as Uganda and Burkina Faso, farmers did not wait for parliaments to pass land-reform acts or for governments to begin registering land and issuing titles. Particularly in francophone Africa, a process of "informal formalization" is underway, leading to the creation of new markets in land and increased opportunities for entrepreneurial farmers.[1]

To avoid laws and regulations preventing the formal sale of land—or to circumvent the inefficient and costly systems set up by governments—some farmers created their own property rights in land. These farmers conduct sales via affidavit or by written contract, in some cases skirting the law by not mentioning the words "sell" or "buy" in writing. Local government officials and customary or traditional authorities sometimes sign these documents to add validity. Local leaders often keep their own registries, which are used to settle disputes.[2]

Informal formalization addresses many of the existing information and rights problems that prevent markets in land. However, due to the informal nature of the process, tenure may not be fully secured.

The "informal formalization" of land is a clear sign that African farmers understand and want the benefits of individual and secure land tenure, including the ability to buy and sell land. Though they may not be able to create these rights on their own, farmers have found ways around the law. The "informal formalization" process shows that, perhaps, changing the structure of land ownership in Africa may not be that distant a dream.

1. See Peters, "Challenges in Land Tenure," 14–16. See also Lund, Odgaard and Sjaastad, "Land Rights and Land Conflicts in Africa," 21.
2. Lund, Odgaard, Sjaastad, "Land Rights and Land Conflicts in Africa," 22; G. Pascal Zachary, "The Coming Revolution in Africa," *Wilson Quarterly*, Winter 2008, 57.

These legal reforms often have to take place at a high level of government. In some countries, constitutional changes are needed for this to work. The required legal reforms may be so different from the status quo that wholesale reforms to the legal system are necessary to establish the rights and rules that are needed for tenure reform. It is important to remember that these reforms are likely complex and may take a long period of time to implement, and they often require buy-in from government officials and representatives whose personal interests may not be served by reforms.

4.D.3. Markets

In many African countries, including Ethiopia, Malawi, and Botswana, the government owns or holds of much of the land, and though this land may be inhabited, the purchase, sale, or rental of plots is formally banned.[77] Though land transactions may take place informally, as part of its legal reform, governments should formally allow land transactions.

Opening trade in land can have at least two significant effects. First, those farmers who want to increase the size of their farms and can afford to do so are able to buy more land and expand their operations. Second, markets tend to transfer land from less- to more-efficient farmers, increasing output overall.[78] As better farmers acquire more land, a greater percentage of land is being used productively, resulting in more food for local markets or for exports.

Opponents of opening land markets have expressed concerns that allowing the sale of land will increase landlessness. This is a valid concern, but today, people—particularly women—are forced off their land by others without receiving any compensation. In other cases, where land transactions are taking place informally, land is being sold, but since these transactions are not legal, there are no means of reconciliation if there is a problem with the transaction.[79]

However, if tenure is secure, land transactions may create greater freedom. Allowing the sale of land gives people the ability to move to another area where economic opportunities are in greater supply.[80] In the long term, if land-tenure reform leads to the commercialization of agriculture, the demand for labor will increase. If the selling of one's farm leads to a job on that land, this may not be a poor trade-off for rural smallholders.[81]

Achieving land-tenure reform is by no means an easy or quick process, whether attempted formally or informally (see box). However, the benefits over the long term can lead to substantial gains for smallholder farmers. African governments that have spent decades interfering in their countries' agricultural markets need to turn their attention to land-ownership reforms that will let farm-

77. Oxfam, *Independent Review of Land Issues*, 2004–05, Volume III, Martin Adams and Robin Palmer, eds. (London: Oxfam, June 2007), http://www.oxfam.org.uk/resources/learning/landrights/downloads/independent_review_land_issues_eastern_and_southern_africa_2006_07.pdf.
78. Lund, Odgaard, and Sjaastad, *Land Rights and Land Conflicts in Africa*, 13; G. Pascal Zachary, "The Coming Revolution in Africa," 57. *Wilson Quarterly*, Winter 2008, 57.
79. Deininger, *Land Policies for Growth and Poverty Reduction*, 40, 58.
80. Ibid., 31.
81. Joachim von Braun, J. Msuya, and S. Wolf, "On the 'How To' Agricultural Growth Promotion and Improved Food Security: Implications for Southern Africa in a Regional and International Context," Agrekon South Africa 38 (1999): 9.

ers thrive. Though time consuming and costly, ultimately, land-tenure reform builds exactly the kinds of institutions that promote agricultural and economic development.

4.E. Lack of Formal Financial Systems

Most smallholder farmers in Africa have difficulty accessing formal financial services like credit or insurance, in part due to government laws and regulations both inside and outside of the credit sector. For example, farmers in Malawi cannot get a loan formally, while informally the largest loan they can receive is approximately $3.[82] Limited access to credit prevents farmers from investing in their farms because an overwhelming portion of their incomes are spent on food for themselves and their families, and little is available to invest.[83] In the past, government agencies claimed to be providing these services to farmers but failed to do so. Today, private enterprises are trying to reach out to smallholders with mixed results.

When access to credit is constrained or very costly, investments are not made, and farmers spend less on inputs than they otherwise would.[84] However, beyond making investments in their farms, credit constraints can have a much more direct affect on families' food security. When families experience food shortages due to poor harvests or bad weather, a loan can help purchase food to supplement a meager harvest. Where or when credit is scarce, families may not be able to borrow in times of need.[85]

Where credit is available, a variety of financial services are sold as long as the cost is affordable.[86] Agricultural credit for smallholders can be a profitable and successful sector if businesses are allowed to operate freely. Farmers with access to credit can use it to improve their farms, increase their productivity, and improve their standard of living.

Like other government agencies involved in agriculture, government credit and insurance agencies failed to serve smallholders. Corruption and inefficiency became endemic as elites manipulated these agencies to gain some financial advantage or political support. To gain or maintain political support, some governments simply did not collect the money owed for the repayment of loans.[87] Though farmers may have gained from these "free" loans in the short-term, in the long-run, uncollected loans did not educate farmers on how to use financial services or how to budget to repay a loan.

In addition to doing a poor job providing credit, African governments created barriers to private firms entering the sector. Exchange-rate regulation and limits on interest rates prevented private firms from doing business profitably.[88]

Today, a number of issues make access to credit difficult and have limited the number of private firms supplying credit. Lack of tenure security is one element that contributes to a general lack of credit. Secure land rights are directly tied to the availability of credit in rural areas, as "a land title is often a prerequisite for commercial or official bank loans."[89] When titles are rare, as they are in much of rural Africa, farmers can struggle to access loans.[90]

Another limit to the availability of credit is the risky nature of the agricultural business. Because exogenous factors (like rainfall) can dramatically affect harvests, success is never guaranteed. The relatively high risk involved in agriculture discourages some banks from providing credit to farmers.[91] In the developed world, insurance is used to mitigate risk. However, the implementation of agricultural insurance in the developing world has been limited. Attempts by governments to provide such services have generally been unsuccessful, usually because of poor design. Private firms face better incentives to design more-functional programs. Some

82. Manohar Sharma and Manfred Zeller, *Rural Finance and Poverty Alleviation* (report, International Food Policy Research Institute (IFPRI), June 1998), 8, 13, http://www.ifpri.org/pubs/fpr/fpr25.pdf, 13.
83. Ibid., 8, 13.
84. Feder and Noronha, "Land Rights Systems and Agricultural Development in Sub-Saharan Africa," 145.
85. Sharma and Zeller, "Rural Finance and Poverty Alleviation," 13.
86. Ibid., 7.
87. Ibid.
88. Ibid., 15.
89. Feder and Noronha, "Land Rights Systems and Agricultural Development in Sub-Saharan Africa," 144.
90. Karol Boudreaux, "Urbanisation and Informality in Africa's Housing Markets," *Economic Affairs* 28, no. 2 (June 2008): 20.
91. Jayne and Jones, "Food Marketing and Pricing Policy in Eastern and Southern Africa," 1520.

microlenders are experimenting with providing micro-crop insurance to address these needs (see below).

Financial institutions are wary of servicing the agricultural market for a variety of other reasons. The cyclical nature of agriculture creates a large demand for loans at one time (before planting) and a large tendency to save at another (immediately after the harvest). For banks with limited portfolios, this pattern creates risk. Banks also have to overcome the same problems that limit farmers' ability to access new technology and sell their surpluses.[92] Banks also have to overcome issues of distance and infrastructure that raise transaction costs. Great distances between farmers and poor infrastructure make the spread of information and services costly.[93]

4.F. Providing Better Financial Services

4.F.1. Credit and Institutions

Beyond legal reforms that allow the private provision of credit, governments can make a number of changes to increase the availability of credit. As a first step, legal institutions that protect contracts can expand the availability of credit by assuring lenders that legal recourse is an option to help collect unpaid loans, making extending those loans a less-risky proposition.[94] Secondly, land-tenure reform can supply farmers with titles that may help them access credit.

Beyond creating institutions that allow for the growth of the credit industry, governments and private-sector lenders need to embrace flexibility in extending loans to smallholder farmers. Allowing lenders to accept collateral beyond land titles could create many more credit opportunities. In Uganda, livestock, personal guarantors, land without titles, household items, and business equipment are accepted by the Centenary Rural Development Bank as collateral.[95]

The government should not hold a monopoly over or restrict access to credit. Financial-services groups, microfinance institutions, NGOs, and local savings groups need to be allowed to extend credit to smallholders.[96]

Private firms should be able to extend credit, as in Kenya, where suppliers of agricultural goods are a main source of credit for smallholder farmers. As agricultural markets develop, credit plays an increasingly important role. Farmers, suppliers, and buyers develop complex relationships involving credit.[97] Farmers can use loans to buy more fertilizer, better seeds, or invest in capital improvements like irrigation systems or greenhouses, increasing the quality and quantity of their crops.[98]

There is a profit to be made in providing credit, even to smallholder farmers. Equity Bank in Kenya has succeeded remarkably in providing credit to rural farmers.[99] Equity's model is an example for other banks across Africa.

4.F.2. Micro-Insurance

Micro-insurance is a tool that can help smallholder farmers overcome the vast risk they face. The term "micro-insurance" denotes that the insurance is a microfinance service available at a price within the budget of smallholder farmers. Though not widespread for a variety of reasons, the development of micro-insurance can help farmers improve their conditions and overcome obstacles they face in growing their farms.

Insurance reduces the risk borne by farmers and removes disincentives that discourage farmers from embracing

92. Sharma and Zeller, "Rural Finance and Poverty Alleviation," 15.

93. Jasson Urbach and Daniel Sacks, *Fixing Famine*, Mercatus Policy Series (Arlington, VA: Mercatus Center at George Mason University, 2009), 9, 11.

94. Jayne, et al., "False Promise or False Premise?" 1980.

95. Robert Peck Christen and Douglas Pearce, *Managing Risks and Designing Products for Agricultural Microfinance: Features of emerging model* (Rome: International Fund for Agricultural Development (IFAD), 2006), 10.

96. Sharma and Zeller, "Rural Finance and Poverty Alleviation," 19.

97. Jonathan Beynon, Stephen Jones, and Shujie Yao, "Market Reform and Private Trade in Eastern and Southern Africa," *Food Policy* 17, no. 6 (1992): 405.

98. Joachim von Braun, Peter Hazell, John Hoddinott, and Suresh Babu, "Achieving Long Term Food Security in Southern Africa: International Perspectives, Investment Strategies and Lessons" (Southern Africa Regional Conference on "Agricultural Recovery, Trade and Long-Term Food Security," Gaborone, Botswana, March 26–27, 2003), 4; Sharma and Zeller, "Rural Finance and Poverty Alleviation," 7.

99. Urbach and Sacks, *Fixing Famine*, Mercatus Policy Series (Arlington, VA: Mercatus Center at George Mason University, 2009), 10.

farming commercial crops. By purchasing insurance, farmers can be guaranteed a minimum income for the year, meaning that they can invest in new technology or focus on particular crops with a lower chance of losing their income or going hungry.[100]

One of the major barriers for smallholder farmers' economic development is the amount of risk these farmers must bear. Farmers who have little savings, particularly those who are net buyers of food, are incredibly vulnerable to drought, floods, and other disasters as well as market shifts that may be related to these calamities. Limited access to markets, lack of market stability, and a lack of a commercial approach to agriculture place a large amount of risk on smallholder farmers.[101]

The risk-avoidance measures used by smallholders can interfere directly with their economic development. For many beneficial reasons, African farmers often plant a variety of crops instead of concentrating on one or two crops; however, this means that they forgo the benefits associated with specialization. Farmers also often do not invest in technology, thinking the risk is too great.[102]

When faced with disaster and subsequent crop failure, smallholders' options are few. As most farmers lack any significant savings, they need to take action to make up for the income lost with the failed crop. Farmers will sell off valuable farm animals or other assets, take children out of school (to work or to save on school fees), or reduce expenditures by spending less on inputs or forgoing savings. All of these responses, while necessary in the short-term, reduce the farmers' capacity for future development and trap them in poverty.

Making matters worse, crop failures tend to be widespread, as the causes of the failures typically have a broad impact. When entire villages or regions struggle, the typical coping mechanisms are usually less effective than when the struggles are isolated to a single household. When multiple families sell off similar assets to raise funds, the price of those goods is reduced and families receive less for them.[103]

There are two main models for agricultural micro-insurance used in developing countries. Both disaster insurance and index-based insurance tie payouts to the occurrence of specific events. Where disaster insurance pays out if specific disasters (such as drought or flooding) take place, index-based insurance connects the payout to specific indices, such as rainfall or prices.[104]

The index model ties specific amounts of rainfall or crop prices to certain levels of production. The model assumes that rainfall below a certain amount will significantly reduce production. Similarly, if the index is tied to prices, the payout is triggered if commodity prices fall below a certain point.[105]

The market for agricultural insurance is not limited to smallholder farmers. American farmers have been purchasing similar types of insurance for years.[106] Exporters and producers can buy insurance, as can governments and NGOs. The World Food Programme took out insurance against crop failure in 2007 in Ethiopia and used the payout to purchase food aid.[107]

Insurance can also enhance existing agricultural markets, even for those not necessarily receiving payouts. If crops fail in a certain area, payouts will be given to those insured against the failure. These families will still need

100. Ibid., 4.
101. Anderson, Larson, and Varangis, "Agricultural Markets and Risks," 9.
102. Peter Hazell and Jerry R. Skees, "Insuring Against Bad Weather: Recent Thinking," in *India in a Globalising World: Some Aspects of Macroeconomy, Agriculture and Poverty*, R. Radhakrishna, et al., eds. (New Delhi: Academic Foundation; Hyderabad: Centre for Economic and Social Studies (CEES), 2006), 2.
103. Jerry R. Skees and Benjamin Collier, "The Potential of Weather Index Insurance for Spurring the Green Revolution in Africa," (working paper, GlobalAgRisk Inc., Lexington, KY, 2008), 3.
104. Both the disaster- and index-based models of agricultural insurance are designed to separate potential crop failure from the actions of the farmer and instead base the payout on a factor exogenous to farming, reducing the chances of a farmer intentionally raising a poor crop in order to receive a payout. Jerry R. Skees, "Challenges for the Use of Index Based Weather Insurance in Lower-Income Countries," *Agricultural Finance Review* 68, no. 1 (Spring 2008): 2.
105. Skees and Collier, "The Potential of Weather Index Insurance for Spurring the Green Revolution in Africa," 6.
106. "Challenges for the Use of Index Based Weather Insurance in Lower-Income Countries," 7.
107. Skees, and Collier, "The Potential of Weather Index Insurance for Spurring the Green Revolution in Africa," 14.

food. Because they have money to spend (from the payout), farmers from outside the area with crops to sell will be encouraged to sell their crops (often at a higher price) to those whose crops failed, which results in stronger agricultural markets and less hunger.[108]

Agricultural insurance faces a few constraints that have prevented its widespread use. First, government provision of agricultural insurance in Africa has generally failed and has prevented the spread of private insurance until recently. Second, modeling the indices requires a large amount of data that is not always available, as the relevant records may not have been kept. Third, in agricultural insurance, the insurer must have a diverse body of clients, particularly geographically, as the factors that farmers are insuring against (rainfall, drought) are not very localized, but instead occur broadly. Rarely in these cases would a single farmer make a claim—a number of farmers from the same area would be making claims at the same time. Micro-insurance firms may have trouble attracting a broad enough customer base in order to bear the risk effectively.[109]

For agricultural insurance firms to succeed, the data constraints need to be overcome, and firms need a wide base of clients to maintain a diverse portfolio and minimize their own risk. As unsuccessful ventures in the past demonstrate, no single entity should be able to maintain a monopoly over the provision of insurance—least of all the government. Governments should instead focus on creating a supportive business environment for insurance, where providers and clients can be sure contracts will be enforced.[110] Agricultural insurance, particularly when provided as a micro-financial service, can play a major role in mitigating the risk faced by smallholder farmers and increasing their chances of economic development.

5 The Problem of Developed-World Influence

The developed-world agricultural sector creates many obstacles that hamper the success of developing-world farmers. The developed world spends billions of dollars every year supporting agricultural production in their own countries. These supports make developing-world agricultural products less competitive while raising the costs of agricultural products.[111]

Fully removing subsidies and barriers in farm goods is estimated to reduce poverty in 13 countries.[112] According to World Bank estimates, such reforms "would inject as much as US $850 billion annually into the global economy."[113]

The OECD estimates that in 2005, OECD governments paid approximately US $400 billion to farmers in the form of supports—29 percent of farm receipts.[114] Most of the support goes to large-scale farming enterprises, while some government aid "leaks" to unintended beneficiaries, such as agricultural goods suppliers or people who own, but do not farm, land.

Developed-world countries need to strongly consider the costs and benefits of their agricultural policies. The costs are high not only for their taxpayers, but also for people in developing countries around the world. Reducing or removing these supports would dramatically improve the lives of millions of people while negatively affecting a much smaller number.

Developed-world governments should reduce the amount of money they spend on agricultural supports to create opportunities for more developing-world countries, such as those in Africa, to export their goods and earn an income from farming.

108. Ibid., 17
109. Ibid., 9, 11.
110. Ibid., 7.
111. *Agricultural Policies in OECD Countries: Monitoring and Evaluation 2005* (OECD, 2005), 7, http://www.oecd.org/dataoecd/33/27/35016763.pdfdocument/9/0,3343,en_2649_33727_35015433_1_1_1_1,00.html.
112. Thomas W. Hertel, Roman Keeney, Maros Ivanic, and L. Alan Winters, "Distributional Effects of WTO Agricultural Reforms in Rich and Poor Countries," *Economic Policy* 22 (2007): 289–337.
113. Bradley Klapper, Jennifer M. Freedman, and Warren Giles, "EU Offers 60% Cut In Farm Tariffs," *Business Day*, July 22, 2008, http://www.businessday.co.za:80/articles/topstories.aspx?ID=BD4A806452.
114. Organisation for Economic Co-Operation and Development, *Agricultural Policies in OECD Countries: Monitoring and Evaluation* 2005, http://www.oecd.org/document/9/0,3343,en_2649_33727_35015433_1_1_1_1,00.html.

> **BONAVENTURE MWHAGANIA–RACEMES**
>
> Bonaventure Mwhagania–Racemes employs 125 workers on a 60-hectare farm in central Kenya, which mostly grows flowers for export to Holland. His products are transported by refrigerated truck from his farm in the Naivasha area to Nairobi, where they are then flown to Holland. Three days after they are harvested, Bonny's flowers are for sale in Europe.
>
> Before starting his own business, Bonny spent 16 years working in the horticulture industry. In this time, he raised a small amount of capital, but more importantly, he built a network of contacts and gained experience in the industry, including with exporters. Having that experience not only gave Bonny an education about how to farm, but it also gave him contacts in the industry, increasing his access to credit and inputs.
>
> When Bonny started his own business, he leased 10 hectares of land from a much-larger farm. The land came with irrigation equipment installed and access to water in place. As part of his lease, Bonny was not required to pay rent for the first three months he occupied the land, giving him time to begin production before his rent was due. Bonny rented tractors and other equipment and began planting one hectare a week. By the time his rent was due, Bonny was exporting to Holland.
>
> Though Bonny is primarily a horticulture exporter, he also grows cabbages in rotation with the flowers. By growing two crops, Bonny reduces his risk of crop failure. Rotating crops also exposes the soil to different nutrients and preserves its fertility. Bonny plants the cabbages using seed plugs and is able to irrigate most of his cabbage plot.
>
> By applying his experience and education capturing the benefits of technology, secure land tenure, credit, and access to markets, Bonny has created a very successful business that employs over a hundred people and provides food for local markets as well as goods for export. Bonny is just one example of how productive farming can be in Africa.

Outside of agricultural supports, developed-world countries that provide aid could do a great deal to support the growth of developing-world agricultural markets by changing how they operate their food-aid programs. Instead of buying food within their countries and then paying expensive shipping costs to transport that food to developing nations, food-aid purchases could be bought locally, in the countries where aid is to be provided, or in neighboring countries. This change would reduce the cost of administering these programs while also strengthening developing-world agricultural markets.[115]

When farmers can capture the benefits of technology and have access to land, credit, and education, they can have amazing success and improve not only their own lives, but the lives of those around them.

6 Conclusion

Agriculture is a means to economic development underutilized in Africa. Government policies begun in the colonial era and continued by independent African governments disincentivized increasing productivity and the farming of commercial crops. Instead, government policies encouraged subsistence farming, reducing smallholder farmers' ability to increase their standard of living through the use of their land.

Today, government interests in agricultural sectors continue to limit agricultural opportunities across the continent. Increased government withdrawal from agricultural markets would lead to increased opportunities and reasons for farmers to embrace commercial farming. Reforms to agriculture in South Africa and Rwanda have been incredibly beneficial to farmers in those countries. However, agriculture continues to serve as a source of income and opportunity for agents within government. Reform will be complicated as long as these interests are intact.

Commercial farming can increase farmers' incomes and can be a means for farmers to reduce their vulnerability to food crises and rise out of poverty.[116] In order to engage in commercial farming, farmers need to face incentives to do so. Moreover, they need property rights, financial services, roads, and open competition on world markets.

Africa continues to struggle to feed itself. The policies that have limited Africa's economic development are also responsible for the limited productivity across the continent that contributed to many of the causes of the food crisis of 2008. If these policies and their effects are not reversed, the potential for further crises remains great.

115. Karol Boudreaux and Daniel Sacks, *Starving for Change*, Mercatus on Policy (Arlington, VA: Mercatus Center at George Mason University, November 2008).

116. *World Development Report 2008*, 73.

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Country Briefs present an institutional perspective of critical issues facing countries in which Mercatus scholars have worked and provide direction for policy improvements.

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