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The Land Grabbers

The New Fight over Who Owns the Earth

FRED PEARCE

Beacon Press
BOSTON

INTRODUCTION

"Buy land. They're not making it any more."

—*Mark Twain*

Soaring grain prices and fears about future food supplies are triggering a global land grab. Gulf sheikhs, Chinese state corporations, Wall Street speculators, Russian oligarchs, Indian microchip billionaires, doomsday fatalists, Midwestern missionaries, and City of London hedge-fund slickers are scouring the globe for cheap land to feed their people, their bottom lines, or their consciences. Chunks of land the size of small countries are exchanging hands for a song. So who precisely are the buyers—and whose land is being taken over?

I spent a year circling the globe to find out, interviewing the grabbers and the grabbed on every continent, from Jeddah, London, and Chicago to Sumatra, Paraguay, and Liberia. Almost everyone seems to be a land grabber today. My cast of characters includes super-financier George Soros and super-industrialist Richard Branson; Colombian narco-terrorists and Italian heiresses; an Irish dairy farmer in the Saudi desert and the recent commander of British land forces, now tilling soil in Guinea; gun runners and the couple who sold the world high fashion with the Patagonia brand before buying the wild lands of the same name.

I discovered how logging concessions in central Africa may have helped elect Nicolas Sarkozy as president of France; what Lord Rothschild and a legendary 1970s asset stripper are doing in the backwoods of Brazil; who is buying Laos and Liberia, and who already owns Swaziland; how Goldman Sachs added tens of millions to the world's starving; the dramatic

contrast between Kenya's Happy Valley and Zimbabwe's Hippo Valley; who grabbed a tenth of the new state of South Sudan even before it raised its flag; why Qatar is everywhere; and what links a black-skinned Saudi billionaire to Bill Clinton, Ethiopia's ex-freedom-fighting prime minister, and rich cattle pastures at the head of the Nile.

I found an evangelical American ex-prison boss draining bogs on the shores of Lake Victoria; a dapper English banker plowing up the Brazilian *cerrado* grasslands; Saudi sheikhs in Sudan, extending the world's largest sugar farm; the Moonies seeking "heavenly life" by grabbing Paraguayan jungles; and Gaddafi's doomed henchmen annexing black earth in Ukraine and yellow sands in Mali. The Kidmans and Windsors and Gettys and Khashoggis and Oppenheimers are in there too—and most likely you, or at least your pension fund, have a slice of the action.

Some regard the term *land grabbers* as pejorative. But it is widely used, and the subject of academic conferences. I use it here to describe any contentious acquisition of large-scale land rights by a foreigner or other "outsider," whatever the legal status of the transaction. It's not all bad, but it all merits attention. And that is the purpose of this book.

I have been in awe at the grabbers' sheer ambition, and sometimes at their open-hearted altruism too. Some want to save their nations from a coming "perfect storm" of rising population, changing diets, and climate change. Others look forward to making a killing as the storm hits. Many believe they will do good along the way. But I have been appalled at the damage that often results from their actions.

Their hosts share much of the blame for what goes wrong. After years of neglecting their agriculture, African governments are suddenly keen to invest. Their desire for a quick fix to deep-seated problems makes foreign investors, with their big promises, attractive. Many governments ask few questions when investors come calling. They clear the land of existing inhabitants, and often don't even ask for rent. There is often an unspoken cultural cringe, in which foreign is always considered best. The investment, ministers believe, will inevitably bring food and jobs to their people. But such easy assurances rarely work out, for reasons that are social, environmental, economic, geopolitical—and sometimes a toxic mix of all four.

There is much uncertainty about how much land has been "grabbed," and how firm the grasp of the grabbers is. In 2010, the World Bank came up with a figure of 120 million acres. The Global Land Project, an international research network, hazarded 150 million acres. The Land Deal Politics Initiative, another network of researchers that helped organize a conference in Britain on land grabbing in mid-2011, totted up 200 million acres. Within weeks, Oxfam, an aid agency, published its own estimate of 560 million acres. The truth is nobody knows. There is no central register; there is little national transparency. Some of the largest deals were done in secret and unknown even to the most diligent NGOs, while other deals have attracted headlines but have never come to fruition. I have tried to disentangle the truth about individual projects, but I have not attempted any global figure.

I hope I have reported fairly. I did find new mega-farms with thoughtful managers who make sure to offer secure jobs, food, and basic social services to their workers and their families. I found others with vibrant "out-grower" schemes that supported nearby peasant farmers and bought their produce. I found investors with a long-term view. But I also found poor farmers and cattle herders who woke up to find themselves evicted from their ancestral lands; corporate potentates running enclave fiefdoms oblivious to the country beyond their fences; warlords selling land they don't own to financiers they have never met; hungry nations forced to export their food to the wealthy; and speculators who buy land and then disappear without trace. I was reminded repeatedly of scenes from books like John Steinbeck's *Grapes of Wrath* and Joseph Conrad's *Heart of Darkness*.

This is not about ideology. It is about what works. What will feed the world and what will feed the world's poorest. But what works has to do with human rights and access to natural resources, as well as maximizing tons per acre. As one agribusiness proponent, James Siggs of Toronto-based Feronia, admitted at an investment conference in 2011, "exclusively industrial-scale farming displaces and alienates peoples, creates few jobs and causes social disruption."

Yet industrial-scale farming is what most land grabbers have in mind. According to Graham Davies, consultant to the British private equity company Altima Partners, the "vast majority" of investors in Africa are only interested in commercial Western-style agriculture, "largely ignoring" the continent's 60 million small farms that produce 80 percent of sub-Saharan Africa's farm produce.

It is important to know what agribusiness can and cannot deliver. But it is equally important to be angered by the appalling injustice of people having their ancestral land pulled from beneath their feet. And to question the arrogance and ignorance surrounding claims, by home governments and

Western investors alike, that huge areas of Africa are "empty" lands only awaiting the magic of foreign hands and foreign capital. And to balk at the patina of virtue that often surrounds environmentalists eagerly taking other people's land in the interests of protecting wildlife. What right do "green grabbers" have to take peasant fields and pastures to grow biofuels, cordon off rich pastures for nature conservation, shut up forests as carbon stores, and fence in wilderness as playpens and hunting grounds for rich sponsors? They are cooking up a "tragedy of the commons" in reverse.

Over the next few decades I believe land grabbing will matter more, to more of the planet's people, even than climate change. The new land rush looks increasingly like a final enclosure of the planet's wild places, a last roundup on the global commons. Is this the inevitable cost of feeding the world and protecting its surviving wildlife? Must the world's billion or so peasants and pastoralists give up their hinterlands in order to nourish the rest of us? Or is this a new colonialism that should be confronted—the moment when localism and communalism fight back?

I began and ended my journey round the world in the cockpit of the greatest land grab in history—the unfenced plains of Africa, where governments, corporations, and peasants seem set to fight for the soil of their continent. I started with a man called Omot.

CHAPTER 27

London, England

Feeding the World

The specter of Malthusian famines has returned to haunt the world. The British government's chief scientist, John Beddington, forecasts a "perfect storm"—a combination of climate change, rising world population, disintegrating ecosystems, and land and water shortages. The storm will trigger a global food crisis that could see hundreds of millions starve. "We are at a unique moment in history," he says. "We have twenty years to deliver 40 percent more food . . . this is really urgent."

Who will deliver that food? The answer, according to Beddington, is agribusiness. "Small scale is not going to feed the world." And he is part of a chorus of Western experts arguing that it is only by handing over the world's farmland to the land grabbers that the world can be fed. The World Bank's former research director, Paul Collier, author of influential books like *The Bottom Billion* and *The Plundered Planet*, says that "peasant farming is not well suited to innovation and investment" and that the "most realistic way" of bringing down world food prices "is to replicate the Brazilian model of large, technologically sophisticated agro-companies." There are, he says, "still many areas of the world—including large swathes of Africa—that have good land that could be used far more productively if it were properly managed by large companies."

Investors are keen. The perfect storm is a perfect opportunity for land grabbers, says Richard Ferguson, head of global agriculture at the investment bank Renaissance Capital, and a cheerleader for mechanized, globalized, agricultural giantism. "The latest great industrialization process is under way. Farms will get much bigger and more industrial," he says. "A free market with transparent pricing, enforceable property rights, and lib-

eralized trade would solve just about every agricultural problem under the sun." Ferguson predicts that Africa and its food future will be transformed by "industrial-sized farms of a million hectares."

Let's pick all this apart, starting with Beddington's planetary threats. They are real, but need to be seen in perspective. The actual outcomes of climate change are far from certain. It could cut farm yields in some parts of Africa by 50 percent by mid-century, and trigger monsoon failures in south Asia. But other regions, particularly the northern hemisphere outside the tropics, could see increased yields. Much will also depend on how cleverly farmers respond to changing weather by switching crops, and how good science is at developing more heat- and drought-tolerant varieties. World population will probably stabilize by mid-century at 9 billion or so people. That is still 2 billion more than today, and sub-Saharan Africa's population may double. But the head counts in many countries outside Africa will probably be contracting by then, including most of Europe and much of Asia, including China.

Water shortages are worsening. Farms use most of our water, especially in the drier places. Many rivers tapped for irrigation are running dry. Cities are also demanding ever more. Water grabs could trigger water wars. But the potential for using water more efficiently, and for recycling urban wastewater for irrigation, is immense. Ecosystems, especially forests, underpin much agriculture by maintaining climate, river flows, soils, and coastlines, and by providing more esoteric services such as pollinating insects. But the impact of their local degradation is hard to predict.

Finally, good new land fit for the plow is running short in some countries. But we won't "run out" of land. Only 12 percent of the world's land is currently used for cultivation, much of it at very low yields. Most agree we need to protect forests and wetlands from encroachment. But a critical question is how much of our unfenced and commonly owned grasslands and grazing pastures we want to, or can safely, give up. That, of course, has huge ramifications for the land grab debate, as we saw in the previous chapter. But there are choices. So what choices should we make? Do we need to hand over those commons, along with millions of cultivated smallholdings, to agribusiness in order to feed the world? Or is that part of the mythology behind the land grab?

For modernists such as Collier and Beddington, feeding a world of 9 billion or more requires an urgent revolution in the way the world grows its food. That revolution must harness Western markets and technology, especially in Africa. Efficiency is the watchword—in production and trade.

Take trade first. "Food security is best served by fair and fully functioning markets," Beddington wrote in a report, *The Future of Food and Farming*, published by his government think tank in early 2011. The 2008 food price spike happened because of restrictions placed on exports by food producers. So "greater powers need to be given to international institutions to prevent trade restrictions at times of crisis." In an aside, he agreed that "empirical evidence" does not allow him to assess the importance of market speculators in pushing up prices during those dangerous months. But he absolves them anyway, by concluding that "improving the functioning of commodity markets can reduce the element of volatility that does not reflect underlying market fundamentals."

As we saw in chapter 2, not many people in the financial markets seem to agree with the professor's sanguine assessment of how more and freer international trade will stabilize prices and feed the world. Several said so in their responses to Beddington's report. "In reality, open markets do not necessarily deliver either affordability or balance to the market for food," said Nick Tapp, the head of agribusiness at Bidwells, the London-based international property consultants. "The rapid price movements of early 2011 suggest an altogether more volatile market going forwards, as market pricing responds increasingly to the daily signals and sentiments flashed across newswires." Hitching the food business more tightly to global financial markets will, as it did in 2008 and 2011, pump up price fluctuations and decrease food security. "Periods of shortage and related hunger are endemic to a laissez-faire approach to markets," he added.

If the modernists' enthusiasm for unfettered markets seems questionable, how about their assessment of the relative merits of peasants and agribusiness? Do we need to turn independent peasant farmers into agricultural laborers as fast as we can? Many experts strongly disagree with the bleak assessment of Collier and others about peasant agriculture's potential. "There is a cultural prejudice against peasants," says Olivier De Schutter, UN special rapporteur on the right to food. "They are seen as backward, not worthy partners. These ideas are self-fulfilling." One of Beddington's coauthors told me that the chief scientist's planned revolution stands a good chance of making the poor poorer. Big farms and big investment risk exacerbating the trends that bring hunger amidst plenty. We could have both more food and more famines.

And that view seems to be shared by Bob Watson, a former chief scientist at the World Bank. He must have had some interesting conversations with Collier. In 2008, Watson chaired an international study of the future of the world's farming. The 2,500-page report of the International Assessment of Agricultural Knowledge, Science and Technology for Development (IAASTD) reached rather different conclusions from Collier and Beddington. It proposed "strengthening food security" by "making the small-scale farming sector profitable," rather than by dismantling it. Far from embracing unfettered global markets, Watson warned that "opening national agricultural markets to international competition . . . can undermine the agricultural sector, with long-term negative effects for poverty, food security and the environment." Watson warned that extending the power of markets and agribusiness "would mean the earth's haves and have-nots splitting further apart."

Some will say Beddington and Collier are cold-eyed realists, while Watson and De Schutter are befuddled victims of political correctness. Collier says the latter are guilty of a "retreat into romanticism." But the prescription depends on the diagnosis.

Beddington and Collier see feeding the world as, in large measure, a matter of growing more food. And to do that they want to unleash commercial agriculture. To fill the grain hoppers, and improve Cargill's turnover. So they support plowing up African pastures and grabbing the smallholdings of millions of peasant farmers to create large, more "efficient" farms. Watson, on the other hand, sees the biggest problems as poverty, lack of development in poor rural communities, and the uneven distribution of food. After all, he points out, we produce enough food now to feed the world, but still 1 billion people go hungry. He says the agribusiness prescription could kill the patient.

Half the world's undernourished people, and three-quarters of Africa's undernourished children, live on small farms. Watson says the best way to feed them is to help them feed themselves and their communities, by "empowering the small farmer." Beddington wants to take away their land in order "to make agriculture more efficient." But Watson asks: more efficient for whom? Are we most interested in the efficient use of capital or labor? In the efficient delivery of food to markets or to the poor? In healthy children or healthy bottom lines? If these different efficiencies have different requirements, then Beddington's efficient farms may not solve the problem as he hopes.

There is no doubting that much peasant farming is in a mess, and nowhere more than in Africa. Per-capita food production in Africa has only recently returned to the levels of the early 1960s—whereas it has doubled in Asia and risen by 60 percent in Latin America. But while a repeat of the dramatic success of Brazil in transforming the *cerrado* into a high-tech prairie might suit investors keen to profit from Africa's newfound reputation as the "last frontier" for agribusiness, it may not suit Africans so well. As Raj Patel of the University of California at Berkeley put it for *Foreign Policy*, "big agriculture tends to work most lucratively with large-scale plantations and operations to which small farmers are little more than an impediment."

There is another blueprint. It rejects Beddington's notions of "efficiency," Collier's Brazilian aspiration, and Ferguson's dreams of giantism. It holds that the idea of uprooting half a billion peasants who grow 90 percent of the continent's food is a global capitalist version of the disastrous socialist experiments attempted by Stalin, Mao, and Pol Pot. According to this blueprint, mixed farming systems operated by most of the world's smallholders have at least as much productive potential as big farms with their monocultures. As Patel said, "if you're keen to make the world's poorest people better off, it's smarter to invest in their farms . . . than to send them packing to the cities."

Simple measures of tons of grain per acre may suggest big is best. But small farmers bring many other things to the kitchen table. Official statistics often ignore the fact that they use every corner of their plots, planting kitchen gardens where mechanized farms have vehicle yards. They gather fruits from the hedgerows. They have chickens running in the yard. They feed animals on farm waste and apply the animals' manure to their fields. They raise fish in their flooded paddies. Big farmers may have access to more capital. But ultimately their purpose is to generate returns for that capital—to please their investors, rather than to feed families.

"There can be a green revolution in Africa," said Gordon Conway, former president of the Rockefeller Foundation, launching his Montpellier Panel report on African agriculture in 2010. "But it will be driven by smallholders—the 33 million smallholders in Africa with less than two hectares. The people from whom that continent gets 90 percent of its food. It is their productivity we have to improve."

Dig into the literature and you find that this view is widely held among many experts on world agriculture, even those working for organizations more associated with gung-ho agri-capitalism. The World Bank's *2008*

World Development Report concluded that investment in peasant farming was among the most efficient and effective ways of raising people out of poverty. Its 2009 study on "awakening Africa's sleeping giant" is widely claimed to be a manifesto for big farming and land grabs. But even a cursory reading suggests not. The report notes, for instance, that "despite recent efforts, mainly by foreign investors, to launch large-scale agribusiness ventures in Africa, there is little evidence that the large-scale farming model is either necessary or even particularly promising for Africa."

Asia's green revolution is often cited as a triumph for agribusiness. But a 2011 study by Diana Hunt and Michael Lipton at London's Chatham House, *Green Revolutions for sub-Saharan Africa?*, says the real Asian lesson for Africa is that "employment-intensive, small-scale farming [is] both more efficient and more pro-poor." Vietnam, a country with a booming economy and fast-rising population, has gone from running a regular food deficit to being a major food exporter by investing in smallholder farming.

Big farms hollow out communities, while investment in small farms sustains and improves them, says a 2007 study by the Washington, D.C.-based International Food Policy Research Institute. "When small farm households spend their incomes, they tend to spend them on locally produced goods and services, thereby stimulating the rural non-farm economy and creating additional jobs," says IFPRI's Peter Hazell. Small farms also nurture local agricultural know-how, and networks of marketing and other expertise. Such "social capital" underpins wider development, but could never emerge from turning smallholders into laborers for corporate farms. "Unless key policymakers adopt a more assertive agenda towards small-farm agriculture, there is a growing risk that rural poverty will rise dramatically," says Hazell.

Pretending that big commercial farming can, or even wants to, feed the world, is dangerous, according to a 2010 report from the International Livestock Research Institute in Nairobi. "It is not big efficient farms on high potential lands but rather 1 billion small family farms, tending rice paddies or cultivating corn and beans while raising a few chicken and pigs, a herd of goats or a cow or two . . . who feed most of the world's poor people today," write Susan MacMillan and Carlos Seré in *Back to the Future*. Small farms are good for the planet, too. They "make up the biggest and most environmentally sustainable agricultural system in the world." The world needs more of them, since "this same group is likely to play the biggest role in global food security over the next several decades . . . Governments and researchers are mistaken to continue looking to high-potential lands and single commodity farming systems as the answer to world hunger." Hooray to that.

But we can't just leave the peasants to get on with it. An important reason why smallholder farming has stagnated, in many parts of Africa in particular, is because even the most basic state help has been stripped away. The collapse of support for peasant farmers in Africa has been a continent-wide tragedy and a global disgrace, because it has often been carried out in the name of free markets, and demanded by structural adjustment programs.

For decades, African governments have turned their backs on the countryside, putting their money into airlines, industrial enterprises, and urban infrastructure, and starving smallholders of seeds, fertilizer, and rural roads. The state marketing agencies that once underpinned local economies by buying crops at stable prices have been abolished. Extension services that once spread best practice have shriveled. Research budgets have been slashed. Even the roads in many rural areas are more potholes than tarmac.

In 2003, African leaders pledged to raise the proportion of their budgets allocated to agriculture from an average of 3.5 percent to 10 percent. With agriculture responsible for typically two-thirds of their GDP, that still seems a small figure. But only seven nations, representing just 15 percent of the continent's 1 billion people, have yet achieved it. Government spending still averages less than $20 per year per rural inhabitant. Compare that to the huge subsidies, handouts, and tax waivers—not to mention free land—now being offered to foreign investors. Donors too have taken their eyes off this ball. Agricultural aid was halved between the mid-1980s and the millennium, bottoming out at 3.4 percent of total aid. It has only recently begun to recover.

More spending will only make sense if it is spent wisely, of course. But the good news is that there are innumerable examples of what can be done. The recent poster child has been Malawi. Since 2005, the small southern African country has radically raised corn yields by distributing coupons that farmers can exchange for cheap fertilizer and corn seed. More than 1.5 million Malawi farmers benefit. The subsidy costs more than 6 percent of Malawi's GDP, and absorbs 60 percent of the budget of the Ministry of Agriculture. But since the program began, Malawi has gone from being a food importer to a food exporter. Economic growth is up and there are more jobs.

The system isn't perfect. Some parts of Malawi still lack food at certain times of the year; three-quarters of the vouchers end up in the hands of men, even though most of the farm work is done by women; and environmental critics say a concentration on corn fed by chemical fertilizer will degrade the country's soils in the long run. But other countries, such as Zambia, are copying this model. Development expert Jeffrey Sachs of Columbia University claims Malawi's success could be replicated across the whole of Africa for $10 billion a year.

Much else can be done besides raining fertilizer across the continent. I have seen numerous and diverse success stories on my travels. I visited a research station on the mosquito-ridden shores of Lake Victoria in Kenya where they have developed a simple system for banishing the stem borer, a common and destructive pest in cornfields, without expensive chemicals. Tens of thousands of corn farmers in East Africa now cultivate a common weed known as napier grass on their field edges. The grass attracts the stem borer and leaves the field free of the pest. They call it the push-pull system. Farmers have discovered they can also harvest the napier grass to feed their dairy cattle.

In Mali, on the edge of the Sahara desert, I saw farmers stabilizing their soils and increasing crop yields by planting trees. This was a reversal of the advice from foreign agronomists who told them trees reduce yields and should be removed. The new practice had spread from neighboring Niger, where Chris Reij, a Dutch geographer who first spotted the trend, reckons 200 million trees have been planted in a largely unremarked "re-greening" of the Sahel region.

More surprising still, because it slays some environmental myths as well as undermining prejudice against peasant farmers, is the story of the Akamba people in Machakos, Kenya. Half a century ago, colonial administrators wrote off the "overpopulated" and deforested district as destined for desertification, and the Akamba for destitution. But since then, Akamba farmers have increased output fivefold, while reducing soil erosion, increasing tree cover—and tripling their population. Desertification has been put into reverse. Malthus has been stood on his head. And all without outside assistance. Their trick has been to manage their land better, by terracing hillsides, capturing rainwater, and planting trees. And they have been finding new markets for high-value produce. The Akamba still work small family plots, but they are selling vegetables and milk to Nairobi, mangoes and oranges to the Middle East, avocados to France, and green beans to British supermarkets. Researchers call this the "Machakos miracle."

I also visited the dusty desert margins of northern Nigeria, around the ancient caravan city of Kano. The area is as densely populated as Belgium. Rainfall is declining. An incompetent government cannot keep chemical fertilizers in the stores. Only the richest farmers can afford high-yielding grain varieties or irrigation. The poor make do by cultivating almost every scrap of the sandy soil that they can find. Surely, you would say, those fields should be turning to desert? Yet, the roadsides between the closely spaced villages are busy with fruit and vegetable stalls, and behind them the fields grow black-eyed peas in rotation with grains.

I met Ado, who tended a 5-acre plot on the outskirts of Badume village, 30 miles northwest of Kano. He took me behind the high mud walls of his small compound to an inner sanctum where a dozen sheep were munching away on waste straw he had cut from his fields. The sheep deposited manure that Ado scooped up to return to the fields as fertilizer. This simple nutrient recycling had tripled his pea harvest. And since the pea plants were legumes, they were adding more nitrogen to the soil and improving his sorghum and millet crops, too. The extra crops were transforming Ado's life. "Now I can send my three children to school," he said. "The boys will become farmers, but I want my daughter to become a doctor."

His neighbor, Galadima, was doing the same thing. "Crops grow much better with manure," he told me. "I don't use chemical fertilizer at all now." His two wives and eighteen children came running out of the house and lined up for a family photo. "We can double yields here easily and improve the environment at the same time," said agricultural scientist B.B. Singh, who had advised the farmers as head of the Kano office of the International Institute of Tropical Agriculture. "And this is nothing unusual. We can do it all over Africa." So simple, but so effective.

In many places, new communications technology is helping smallholders. Mobile phones have revolutionized the ability of small farmers to access markets and check prices. In outgrower schemes for fresh vegetables—such as the Homegrown operation I watched in Machakos, which airfreights produce to Britain—farmers take orders by phone for the day's delivery while working in their fields.

Africans can learn from each other, but also from elsewhere. Well-organized milk markets are still rare in Africa, but Indian milk production

has gone from seventy-eighth in the world to number one, almost entirely through the work of farmer-owned cooperative dairies. The knowledge that a truck will be collecting milk from the local village every morning has done wonders for the productivity of even the smallest Indian farmers. I met Jitbhai Chowdhury, who cultivates 5 acres of irrigated alfalfa in Kushkal village in northern Gujarat. He feeds the alfalfa to half a dozen cattle. Every morning, he milks the cows and carries two churns containing 7 gallons of milk to a village collecting point. From there, a tanker takes it to the modern Amul dairy in Anand, Gujarat, which supplies dairy products across India. Co-ops currently collect from 10 million Indian farmers in more than eighty thousand villages.

Urban markets are creating new opportunities for rural smallholders. Nairobi's consumers have been an important part of the Machakos miracle. In Ethiopia, the bulk of the milk and honey sold in the capital, Addis Ababa, comes not from large commercial enterprises but from informal markets supplying the output of smallholders. But city dwellers also grow their own food—on a huge scale.

As much as a tenth of the world's food is grown within cities. Most of it comes from small farmers—micro-farmers, even—cultivating roadside plots and wastelands, rooftops and military bases, garbage dumps and parks, gardens and greenhouses, railway yards and university campuses, and scraps of land beneath bridges or beside canals. Urban farms are a major source of leafy vegetables. In Haiti, people grow vegetables in old truck tires and even kettles. And they even supply meat. In Lima, Peru, they raise guinea pigs in squatter settlements. In Nairobi, chickens fatten in coops bolted to apartment walls. Sheep graze on the roadsides of the Armenian capital Yerevan.

Urban agriculture is usually high-efficiency agriculture. According to the late Jac Smit, president of the Urban Agriculture Network of the UN Development Programme, city-grown vegetables typically use only a fifth as much irrigation water, and a sixth as much land, as mechanized rural cultivation. Hundreds of millions of urban dwellers get some of their food and part of their income from urban agriculture. They include professionals as well as the landless, and at least as many women as men. In a world where more and more of us live in cities, more and more of our food will come from cities, too. And when supermarket shelves empty or income falters, in times of drought or conflict, cities will feed themselves.

Of course, urban agriculture will only ever be a small part of the story. But, especially in Africa, it shows the dynamism and innovation of which small farmers are capable, given the right circumstances and a ready market for their produce. Whatever Collier may believe, they are often the true innovators. "There is much that is working well in Africa, working much better than many appreciate," says Jules Pretty of the University of Essex, one of Beddington's team of experts. Smallholder farming is the solution rather than the problem, he says, a success story waiting to happen. Small farms have great potential to increase their output—but also to raise the incomes and improve the livelihoods and skills of their operators.

Few small farmers in Africa can abandon subsistence food production. Nor should they. But successful cash crops turn African smallholder farming from, at best, an "old man's business," into something young adults seek out, even when they have the chance to go and work in factories or offices. Perhaps that is the biggest challenge of all. If the young don't want to till the soil then, as Ben White of Erasmus University, Rotterdam, as staunch a supporter of smallholders as you will find, admits: "We will have no argument against the corporations growing the world's food, because there will be nobody else to do it."