

Chapter 4

Agriculture as a Sector of Opportunity for Young Africans

Efforts to accelerate agricultural growth and improve food security have often been separated conceptually from efforts to create jobs for young people. This damaging compartmentalization, if it persists, will limit Africa's ability to reap the benefits of its youth dividend. Agriculture, already Africa's largest employer, is the most immediate means of catalyzing economic growth and employment for young people. To realize this potential, farming must shift rapidly from its present status as occupation of last resort and low productivity to one of technical dynamism and recognized opportunity. With higher priority accorded to accelerated implementation of well-designed programs of public investment in agriculture, continued progress on regulatory and policy reform, and further specific measures to include young people, agriculture will absorb the large numbers of new job seekers and offer meaningful work with large public and private benefits.

Agriculture—once the predominant sector in most of the world's economies—has historically played a lesser role as economies developed the accumulated wealth, innovations in

technology, and connections through trade that spurred diversification and structural change. Faster growth in nonagricultural sectors has drawn enough labor out of agriculture to cause the share of employment in agriculture to fall. Labor shifted out of agriculture because productivity gains on the farm saved labor (push factors), and higher productivity and earnings opportunities off the farm attracted labor (pull factors).¹

Africa is not following that trajectory. In many African countries, income generated through the extraction of natural resources and urban construction and services has raised gross domestic product (GDP) without drawing significant numbers of workers out of agriculture. Even under optimistic assumptions, the cohort of young Africans now entering the labor force is likely to exceed the number that can be absorbed into jobs in manufacturing and services (see chapter 1). Over the next few decades, young people will continue to apply their energies and talents to agriculture, on or near the farmstead of their birth (Proctor and Lucchesi 2012). The critical question is how African youths and their countries can

benefit from agricultural employment. The answer depends on whether governments take the policy and investment decisions that will lift the constraints on agricultural productivity.

The reasons for Africa's slow growth in agricultural productivity are known. Cropping systems based on wheat and irrigated rice, which registered spectacular productivity gains in South and East Asia, are not suited for most environments south of the Sahara. Africa's complex agro-ecologies and highly diverse production systems demand a level of original research comparable to that undertaken elsewhere in the world, but Africa is only beginning to reverse decades of neglect and underinvestment in agricultural research. It will take time for the benefits to be felt in earnest. The effects of low productivity in African agriculture are also well known. Low productivity is partially responsible for the high food prices prevalent in much of Africa, where expenditures on primary food products can account for as much as half of consumers' expenditures (OECD and FAO 2012). High food prices also curtail competitiveness by increasing the cost of labor.

In the interim and until research specific to Africa's environments is available, growth in agricultural productivity will need to come from wider use of superior technologies that have worked elsewhere—improved seeds, breeds, cropping methods, conservation practices, and equipment. Over the past decade, more farmers across Africa have started to adopt such technologies,² although not as rapidly as farmers in other regions. Recent investments and policy reform may catalyze more rapid adoption, but the levels of investment, pace of implementation, and quality of programs in Africa have not yet sufficed to deliver a large shift in productivity.

Agriculture: Potential Opportunity, Room to Grow

The opportunity that farming represents in Sub-Saharan Africa is clearly evident in the region's trade accounts. The value of Africa's food markets is projected to increase from

US\$313 billion in 2010 to US\$1 trillion in 2030 (World Bank 2013). Food imports surged ahead of exports as recently as 2003, and they have continued to climb. The growth in imports has been variously attributed to the failure of agricultural production to keep up with population growth (which is incorrect, as per capita production has risen over this period), climate change, and other supply-side factors. Supply matters, but the fundamental point is that rapid growth in population, incomes, and urbanization is increasing the demand for imported food faster than the supply of domestically produced substitutes is growing.

Rapidly growing demand creates opportunities for suppliers. For example, urbanization could be good news for local agriculture. The denser patterns of settlement seen as rural communities grow and merge³ can reduce marketing costs for agricultural producers in the hinterlands and raise the returns to investments in processing raw products. Nor is growth in demand limited to Africa's expanding domestic markets. Global food prices are at their highest point in several decades, and, barring significant changes in policies related to biofuels, food prices are expected to remain high for at least the rest of the decade.

The opportunities presented by this growing local and international demand for food are likely to be as varied as African agriculture itself. On average agriculture is a sector of low labor productivity and high employment, but in reality it is exceptionally heterogeneous. Even in developed countries, agriculture is sufficiently heterogeneous to raise questions about what constitutes a farm. In Africa every farm lies somewhere along wide continuums of farm size, capital intensity, use of mechanical and biological technology, and degree of commercialization. The first requirement for creating good opportunities for young people in African agriculture is to gain a detailed understanding of the sector by peeling back the averages to reveal the dispersion of participants' activities, command of assets, and use of skills. This task demands close, continuous attention to gender issues, given the importance of women and girls in Africa's agricultural labor force (box 4.1).

New opportunities for African agriculture to benefit from changes in local and national markets will emerge from segments of the farming structure that have been underdeveloped in the past but now have room to grow. For example, in many African capitals, rice is twice as expensive as it is in Asian exporting countries. The price of maize, the main food staple in Eastern and Southern Africa, is 30–40 percent above export prices in South Africa, the United States, and the Black Sea region (table 4.1). If local producers become more competitive, they can capture thriving domestic and regional markets. Measures that reduce the costs of production (such as the dissemination of improved technology) and marketing (such as investments in transportation and infrastructure) can increase profitability and reduce food costs. Even in countries that are relatively well linked to world markets, increased local production can lower food prices, because international prices do not translate directly into local market prices (Minot 2011). Lower food prices not only help consumers but also temper demands for higher wages in the nonfarm sector, which attracts new investment in manufacturing and services. New investment creates new jobs, fueling a virtuous cycle (box 4.2).

Box 4.1

Women and girls: A major force within Africa's agricultural labor force

African women and girls work in agriculture as farmers on their own land, as unpaid workers on family farms, and as paid laborers on other farms and in agricultural enterprises. They are involved in both crop and livestock production at subsistence and commercial levels.

Across developing countries, women comprise 43 percent of the agricultural labor force, on average; this figure ranges from around 20 percent in Latin America to 50 percent in parts of Africa and Asia. Some Sub-Saharan African countries have seen women's share of the agricultural labor force rise significantly in recent decades due to conflict, the human immunodeficiency virus/acquired immune deficiency syndrome (HIV/AIDS), migration, and livelihood diversification, but regional data conceal wide differences. The share of women in the agricultural labor force ranges from 36 percent in Côte d'Ivoire and Niger to more than 60 percent in Lesotho, Mozambique, and Sierra Leone (FAO 2011). Nevertheless, one regional trend is clear—it is usually the male member of the agricultural household who moves into a nonfarm activity first (Fox and Sohnesen 2012).

How countries choose to increase agricultural productivity will influence whether this virtuous cycle is sustained, with benefits to young people and the economy as a whole, or

Table 4.1 Wholesale prices of unprocessed maize and rice in selected countries (average, January–April 2012)

Maize		Rice	
Market	Wholesale price (US\$ per ton)	Market	Wholesale price (US\$ per ton)
<i>Africa</i>			
Ethiopia	390	Benin	1,055
Kenya	393	Burkina Faso	738
Malawi	400	Madagascar	593
Mozambique	378	Mali	690
Rwanda	318	Mozambique	865
South Africa	293	Niger	850
Tanzania	334	Senegal	810
Togo	453	Togo	1,097
Uganda	334	Uganda	1,368
Zimbabwe	300	<i>International benchmark</i>	
<i>International benchmark</i>		India	378
Black Sea region	267	Thailand	556
United States	276	Vietnam	434

Source: FAO Global Information and Early Warning System.

Box 4.2

When agriculture is more productive, economies can grow

Despite differences in the global context and national economic circumstances, the effects of agriculture on the U.S. economy over the past 45 years may provide useful lessons for Africa at this juncture, when so many young people are poised to enter the agricultural workforce. From 1960 to 2005, the United States produced more agricultural commodities more cheaply than ever. The real prices of most agricultural commodities declined 20–50 percent (see table B4.2.1). Even though the cost of food was rising throughout the world, most food prices were still lower in 2010 (in constant U.S. dollars) than they were in 1960. For the economy as a whole, low prices of primary food products meant that it was much cheaper to process food into an array of consumer products (an activity that generated new jobs). The low prices enabled consumers to spend more money on items other than food. Higher agricultural productivity contributed to broad-based income growth in the United States.

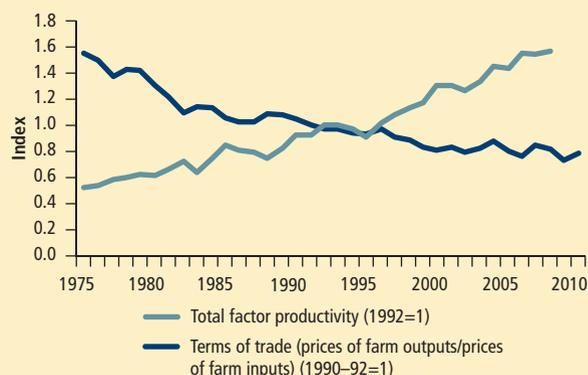
Table B4.2.1 Percentage change in prices of selected food products in the United States, 1960–2010

Period	Wheat	Maize	Sugar	Beef
1960–2005	–43	–52	–19	–23
2006–2010	8	41	50	22
1960–2010	–24	–18	24	–10

Source: World Bank Pink Sheets.

whether it is short-lived. As demand for food rises, growth in total factor productivity will be necessary to keep real food prices in check and maintain the capacity to create jobs.⁴ Unless serious attention is paid to interventions that can truly sustain productivity, such as agricultural research, the development of farming skills, and the adoption of new and better varieties, growth in output will come through increased use of purchased inputs such as fertilizer and agro-chemicals. The resulting growth in output may be rapid for a short period if the inputs boost yields, but it will be costly, increase the real price of food, and ultimately erode potential gains to producers, consumers, and society at large (box 4.3).

Figure B4.2.1 Higher total factor productivity helped U.S. farmers to compensate for declining terms of trade, 1975–2009



Source: Executive Office of the President 2011.

Even while the prices of commodities they produced declined, farmers and other agricultural workers preserved their livelihoods. As real agricultural prices fell and the cost of inputs and factors of production rose, farmers in the United States and other developed countries still managed to profit (and so did agricultural wage earners) by increasing their productivity. They used inputs more efficiently and changed their mix of outputs. In the United States between 1975 and 2010, total factor productivity rose 2.2 percent a year, which was low by historic standards but sufficient to maintain profitability (see figure B4.2.1).

African leaders who are framing strategies for agriculture now should be aware that the circumstances they face are quite different from those that shaped traditional experiences of development and structural change. African agriculture is developing in a context of high global food prices, potential for growth in area and yield, few nontradable manufactured goods, and shifts in comparative advantage in the developed world in favor of technology-intensive services and products (Losch, Fréguin-Gresh, and White 2012). In this context, if African farmers change the technology they use and the mix of commodities they produce, agriculture's share in African GDP could remain larger than has historically been the case

or even grow with development. Furthermore, the cost of withdrawing labor from agriculture seems to have increased over time around the world, and this is another factor arguing that Africa's experience may be different (Timmer and Akkus 2008). Over the past 50 years, the point at which wages in agriculture converge with those in nonagricultural jobs has been reached at later and later stages in the transformation of successful economies, perhaps suggesting that globally industry is becoming less and less able to absorb labor.

Recent cautiously optimistic trends suggest that the sources of agricultural growth in Africa may be changing. Between 1960 and 2008, cultivated area grew faster than yields (Fuglie 2011). About 40 percent of the growth in yield came from greater use of purchased inputs and 60 percent from changes in total factor productivity. Between 2006 and 2008, when African governments began to give greater attention to agriculture,⁵ yield growth dominated area growth, and total factor productivity rose. These recent developments suggest that if governments would intensify and sustain their efforts to raise factor productivity, they could secure lower prices for consumers, higher earnings for farmers, and good opportunities for young people to enter farming.

Recognizing the Opportunity in Agriculture for Young People

Many young people know little of the opportunities and dynamism possible in farming today. When young rural Africans in 32 focus groups were asked about the best and worst ways to earn a living in their community, they rarely mentioned agriculture as the "best job" (although it was not considered the worst). Participants described good jobs as those that command good pay and respect, two features not typically associated with farming under the conditions most familiar to young Africans. They described bad jobs as those that offer poor, insecure returns and are physically damaging or demanding or illegal.

Even so, the focus groups gave mixed messages regarding the desirability of farming as a

Box 4.3

Compromising growth and job creation without improving long-term food security

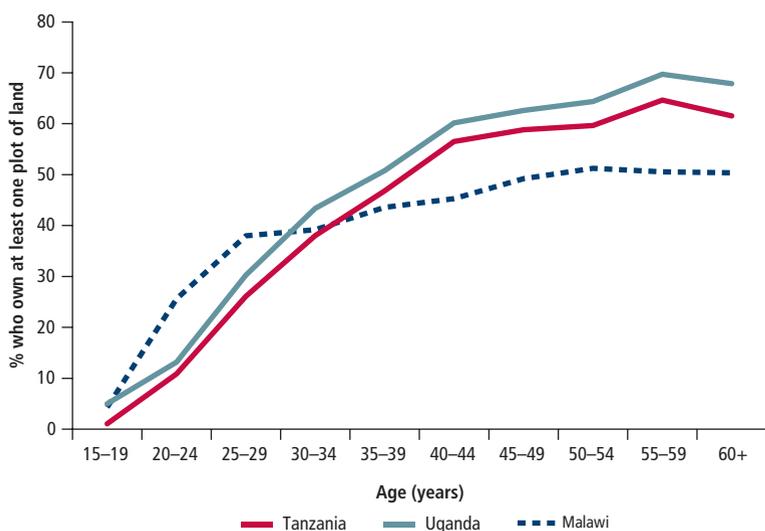
Since 2008, several African countries have introduced subsidy programs that encourage farmers to use fertilizer on staple crops without supporting the use of more productive varieties and better management practices. As a result, farmers have devoted much of their land to staple crops, crowding out higher-value, more labor-intensive crops and slowing the pace at which agriculture creates jobs and expands productivity. In some cases, the production of staple crops surged briefly, only to drop off sharply once the expensive (and often politicized) distribution of subsidized fertilizer came to an end. Early evidence suggests that, even while the subsidies were in place, the yield response of varieties in use was considerably less than anticipated. Much can be done to improve the production of staple food crops without compromising growth and job creation in this way. The lesson is that fertilizer use should be one part of a broader program to promote gains in productivity and encourage diversification into higher-valued and more labor-intensive products.

livelihood, and their perceptions varied widely across Africa. Within three broad categories of jobs (nonfarm wage, nonfarm nonwage, and agriculture), "family farming" was the desirable job named most often. Yet with the exception of a women's group in North Darfur, none of the focus groups from South Africa, Sudan, or Togo mentioned any farming activities as a good job (Petesch and Caillava 2012). Within the same broad categories, farming followed only illegal and antisocial jobs as the "worst job." Focus group interviews with urban young people suggest that agriculture virtually disappears from mention as the "best job." To attract young people, agriculture will need to be more dynamic and appealing than it is now, and young people will need to view the sector more positively (IDS 2012). The farms that offer attractive opportunities will have to be quite different from those that most young Africans know.

Patterns of Land Use, Farm Size, and Profitability

The farms that many young Africans know from childhood are small and worked with back-breaking labor and little mechanization.

"Farming is a good job because it is where I can get food to eat and live well."
Liberia

Figure 4.1 The young do not typically own land

Source: Based on data from the Living Standards Measurement Study—Integrated Survey on Agriculture.

Holdings of 1 to 2 hectares predominate, and the most common implements are the hand hoe and machete (Nagayets 2005). According to World Bank data from three countries, owned land increases with age of the farmer (figure 4.1)—the average plot size, even for older farmers, often remains well under 1 hectare.

This pattern of land use is seen whether land is scarce or abundant, although for different reasons. Where settlement is dense and land is scarce, as in Rwanda and Malawi, holdings per household and per worker are small and shrinking with population growth. Under these circumstances, investments in irrigation, application of purchased inputs, improved varieties, high-valued crops, double and triple cropping, terracing, and other practices can increase the productivity of land and incomes. Investments that make it easier to reach markets increase the demand for agricultural products and reduce the cost of transporting them. The returns to intensification rise, and more such investments take place.

But why are farms so small in areas where land is abundant, as in much of Africa? Farm size is often limited to the amount of land that a household can farm manually, because machinery is expensive, cannot be purchased without financing, and can be challenging to own and use collectively. Animal traction makes it pos-

sible to farm larger areas, but trypanosomiasis and other animal diseases constrain the use of draft animals in many parts of Africa.

Alternatively, land may be abundant but virtually impossible to acquire because of ambiguities in the transactability of land through purchase, sale, leasing, inheritance, assignment under traditional rules, and mortgage (World Bank 2012b). When constraints on the operation of land markets raise the cost of accessing new land, a young person reaching adulthood may simply farm a portion of the family's original holding rather than secure a new allotment. It is not unusual for the continuous fragmentation of small holdings to persist alongside the acquisition of large tracts by outside investors, whether domestic or foreign.

A third consideration is that small, labor-intensive farms can be economically appropriate, efficient, and profitable under certain conditions. Recent evidence based on a geographically wide and heterogeneous set of data confirms an inverse relationship between maize yield and farm size, supporting the premise documented in earlier studies that small farms are often productive in the African context and that smallholders do not necessarily forgo economies of scale (Larson et al. 2012). Historically, primary production of staple commodities has not exhibited increasing returns to scale, and smallholders who voluntarily form producer groups can capture scale economies where they do exist—for example, in the marketing of their produce and access to information (see box 4.4; Morris, Binswanger-Mkhize, and Byerlee 2009).

The most desirable farm size, however, is an economic issue and not a matter of principle or ideology. Where relevant costs of production are readily divisible, smallholders will do as well as or better than others. Where costs are not divisible for whatever reason, smallholders will be at a disadvantage but will still be very numerous. In that case, programs that facilitate adjustments in farm size or address the indivisible costs will be constructive.

Getting Young Africans the Farms They Need

Even where small farms are demonstrably efficient, agricultural productivity cannot grow

“If you have only a small parcel for eight people, not everyone can eat.” Madagascar

if more family labor crowds onto them. The income that 1 or 2 hectares can generate is rarely sufficient to pull all members of a household out of poverty. For agricultural productivity and incomes to grow, young people will need to be able to acquire more land, and young workers will need to be able to leave the farm of their birth for other forms of employment.

Since mobility out of farming has been low in Africa, much of the land is now held by aging farmers despite the large cohort of potential new entrants. Constraints to inter-generational transfers of land are particularly costly when land is scarce or young people have difficulty acquiring holdings to start farming on their own. Where old-age pensions do not exist and rental markets are poorly developed, elderly farmers often retain control over holdings that would be managed more efficiently by younger, more innovative, and energetic farmers (box 4.5).

More fluid land markets would create better opportunities for young people to practice more productive and managerially demanding agriculture. As processors and urban consumers demand quality and traceability in agricultural produce and as changing weather patterns undermine the validity of traditional “rules of thumb” for the agricultural cycle, agriculture requires a more sophisticated level of management. Young people are well suited to acquire and exercise managerial expertise, and they can do so in many ways, but the managerial acumen of an individual farmer is as indivisible as a tractor. Each creates economic pressures to amalgamate very small farms into larger units or develop new networks of producers to share costs. For this reason, increased fluidity of land markets, in particular through land rentals, is essential for a new generation of African farmers to take advantage of opportunities emerging in agriculture. Producer organizations may need to innovate in the delivery of managerial services, an area in which they have not been active in the past.

When factor endowments and the characteristics of technology and markets imply that the optimal farm size is larger than what is observed, constraints on capital and land markets impose a high burden of inefficiency on rural people. Although smallholders may not

Box 4.4

Producer organizations and the transition to modern supply chains

Rural productive alliances can bring producer organizations and commercial buyers together to increase income and employment via participation in modern supply chains. These alliances have been shown to bring about higher agricultural incomes and increased rural employment, especially for agricultural workers and women working in postharvest activities (World Bank 2012a). Farmers have also benefited from employment opportunities generated by public-private partnerships that enhance agricultural productivity. For example, a successful model in Latin America that sought to increase competitiveness along the entire value chain for cassava (production, processing, and utilization) worked with farmer groups and cooperatives (among many others) and ultimately expanded training and jobs for farmers in cassava-based agro-industries.

Source: World Bank 2012a.

Box 4.5

Options for establishing or leaving a farm in Kenya

Kenya's young people have great difficulty establishing themselves as farm operators. According to a large national sample drawn from participants in the Kenya Agricultural Productivity and Agribusiness Project, people whose primary economic occupation is farming are in their late 50s, on average. In most cases, these people are also the principal decision makers on the farm.

Men who identify themselves primarily as farmers usually farm as their first occupation; they have a spouse who works in the household and on the farm but does not earn significant outside wages. Women who identify themselves primarily as farmers may or may not have an adult male in the household contributing wage earnings to the household income. Women farmers with wage-earning adult males in their household do very well in farming—in most cases, better than men. In contrast, single women who manage farms are, on average, about 10 years older than other farmers, and their earnings are the lowest. These women probably retain control of land because the cost of holding it is low in the absence of land tax, and they have no other way to feed themselves as they age. This information suggests that elderly women and land-hungry young farmers could benefit from participating in a program that eases intergenerational land transfers while providing some kind of social safety net for elderly landholders.

Source: Torkelsson 2012.

have the skills or appetite for risk to manage as much as 100 hectares, many could probably handle 5–10 hectares if they had access to machinery to work it, particularly if public investments were made in infrastructure that would make farming more profitable. The incentives for young people to remain in school and acquire basic numeracy and literacy skills would increase if intermediate-size farms were among the possible options and were known to require those basic skills for successful operation. Intermediate-size farms can emerge only if land markets are more active.

One concern is that an expansion of farm size in Africa could displace labor precisely when demography requires agriculture to absorb labor. In parts of the world where farms have expanded from very small (2 hectares and less) to mid-size holdings (5–100 hectares), labor has often been displaced. This displacement need not occur in Africa because underused land can be brought into production—Africa can still expand at the extensive margins of farming without compromising forest area. Larger farms need not be less labor intensive than small ones when both area and employment can expand simultaneously. However, if farm size grows through consolidation on land that is already farmed and is accompanied by a capital subsidy that reduces the cost of mechanization, as occurred in Brazil, then bigger farms could be expected to displace labor. If the change is occasioned by shifts in technology and markets that require greater managerial skill, formerly independent farm operators might become hired workers or outgrowers on larger, technically more sophisticated holdings. Thus the effects of changing farm size on employment are specific to the factor endowment in a given market and to the forces trig-

gering the change. The conditions in Africa offer ample opportunities for simultaneous increases in average farm size and in employment. The fact that average farm size in Africa is now declining is a worrisome indicator that constraints on land markets are already damaging the prospects for young people and becoming stronger (Djurfeldt and Jirström 2013).

Agricultural Career Paths for the Future

The young people who will look to agriculture for employment are familiar with traditional agriculture, but given the changes under way in the sector, they are likely to experience their working years in ways different from their parents. They will also have different requirements for support if they are to succeed. Young farmers will face four generic paths to agricultural employment: continuing on the family plot but with a different mix of enterprises; establishing their own operations on new land; combining farming with part-time other work; or taking wage work on large or mid-size commercial holdings. Although these four basic paths cover many options, the diversity of African agriculture ensures that some young people will face other choices. For example, young people in pastoral areas confront a different set of challenges and opportunities.

The four basic pathways to employment in agriculture vary in their requirements for land, capital, and skills (table 4.2). The first two—full-time employment on the family farm and full-time farming on a new holding—are the most prevalent. Among households surveyed in nine African countries in 2008, 51 percent reported that inheriting land already under cultivation was the most common means for young people to obtain land, while 16 percent would be allocated land not previously cultivated, 9 percent would rent or borrow land, and 12 percent would buy land (Proctor and Lucchesi 2012).

For each pathway to become a more productive source of employment, policy makers will need to use a range of approaches to improve young people's acquisition of land, capital, and

Table 4.2 Pathways for agricultural employment and their requirements

Type of employment	Need for land	Need for capital	Need for skills
Full-time on existing family holding	None	Medium	Medium
Full-time on new holding	High	High	High
Part-time combined with household enterprise (processing, trading, sales of services)	Low	Medium	High
Wage work off the family farm	None	None	Medium or high

skills. Evidence from various African countries suggests some approaches that show promise.

Pathway 1: Full-Time Employment on an Existing Family Holding

For young people with no other options, the default outcome is to remain on the family holding and simply farm a portion, essentially subdividing an already small parcel. Others choose not to leave. Eventually many can expect to inherit a portion of the land, but if siblings are in the same position, the holding will be small. These youths need capital and skills to make the most of their small holdings through higher-value agriculture. Young people who foresee this as their future, however, may have little incentive to invest in skills, since they will not have the power to use them as long as the parental generation retains recognized rights of decision.

Families in this situation may find themselves in increasingly difficult circumstances, with alienated young people resentful of their elders' continued control over resources. With some guidance and mentoring, however, families could turn this situation to advantage by managing the household as an enterprise with a portfolio of activities. Many households already support small natural resource-based enterprises (selling eggs and poultry, processing cassava or grain, collecting reeds, making bricks) as adjuncts to their primary farming enterprise. The difference here is that the household takes a strategic approach enabling the small household farm to evolve and support multiple generations and families. In this way, pathway 1 resembles pathway 3, but the emphasis is on full-time agriculture as part of a diversified, multigenerational family business.

In this pathway, the skills and labor of multiple young adults in the household could allow for specialization. If there is demand for their labor, those capable of earning off-farm wages could do so, thus easing the household's capital constraints. Those with sufficient skill to manage higher-value agriculture could sharpen the specific skills required through short courses or focused training. Some superior technologies, such as conservation tillage, require high investment of labor at peak periods, and a

household with several young adults should be able to undertake the required work.

Thus even if young people are absorbed into the farm of their birth as a young adult, a change in management of the household enterprise could make this absorption more rewarding for the individuals and the family. A combination of pooled off-farm earnings, a shift in farming technology to higher-value and more commercial products, and aggregation of household labor at peak periods could allow small farms to absorb young adults constructively. An emphasis on extension programs that focus on the household as an enterprise and do not just offer technical and economic advice on crops or livestock could help this group.

The view sketched above of the small household farm evolving as young adults become economically active provides an important perspective on the conceptual understanding of youth employment. A young person in, for example, northern Uganda who is a member of such a household and has also benefited from the Youth Opportunities Program of the northern Uganda Social Action Fund might have acquired vocational skills as a hairdresser (see discussion in chapter 3). She might see her primary occupation as "hairdresser," but she would also be an equity holder in a small farm enterprise (if her earnings were applied in part to investment on the farm) and an occasional laborer at times of peak demand. Her economic security would come from the farm earnings as well as from her trade. To create space for the contributions of young people like this, the parental generation would need to view the farm as an enterprise.

Pathway 2: Full-Time Employment on New Farm Starts

A second group of young people will succeed in leaving the farm of their childhood and establishing a new and separate holding, ideally larger than the parcel they left. Those more likely to succeed in such an undertaking would probably be relatively experienced in farming and hence on the older end of the age range for "youth." They would also have the highest potential returns in the form of increased productivity. These young farmers would

"Two [of our children] have become farmers as well . . . the others took another direction. It is best that we are not in the same profession; that way we can help out one another."
Madagascar

have the greatest need for land, start-up capital, and advisory services or training to assist with technical and managerial challenges. Few young farmers will be able to assemble the elements required to establish a new farm without assistance.

New holdings may be in the localities where young people already live and on land newly available for cultivation through clarification of ownership, conversion of marginal or grazing land, or public investment in irrigation and improvement. Alternatively, new holdings may be farther away, in which case establishing the new farmstead will require relocation.

Resettlement is often controversial. Experience globally and in Africa attests to the importance of strict adherence to voluntary decision making on the part of participants, careful selection, full information for all stakeholders, effective support services for new arrivals, and adequate investment in infrastructure. An assessment of several decades of public support for resettlement in Indonesia found mixed results tending toward the negative. Improvements in the incomes and access to public services of settlers were offset by disappointing outcomes in agricultural production, environmental degradation, and resentment against newcomers on the part of indigenous inhabitants (World Bank 2012a). Preliminary results regarding a program of market-assisted land reform in Malawi, in contrast, indicate more positive outcomes (Chirwaa 2008). If local young people can secure access to land in or near their community, this approach is clearly simpler. If relocation is required, lessons of past experience should be fully weighed.

Pathway 3: Part-Time Farming and Household Enterprises

A third group of young people may be independent part-time farmers, either managing their own holdings or contributing to family operations described under pathway 1, with enough capital to establish themselves as a seller of services, a trader, or an occasional wage worker. Higher-value agriculture will use services more intensively and create employment for those who can provide them (box 4.6). Demand for transport, plant protection, veterinary services,

mechanized field operations, and advice can be met by young men and women with the capital and skills to start a small business. These young people may not have the capital to acquire a full array of farm machinery, but they could offer services on a paid basis by purchasing or leasing a limited selection of equipment. Young people would also need the particular skills to deliver the services and maintain the machinery.

Pathway 4: Wage Work off the Family Farm

The seasonal nature of agriculture creates demand for part-time wage work at peak periods even on small farms. In a heterogeneous farm structure with significant numbers of large holdings, wage work on a regular basis is also observed. Most of this work pays relatively little and requires very little skill, and few young people aspire to be low-skilled day laborers. For the very poorest, however, paid work, even if undesirable, is a better option than no work. Therefore, it is anticipated that a fourth group of young people will take wage work, whether formal or informal, on large commercial farms or in the processing and service sectors. These young people need skills to handle a range of tasks and equipment. At a minimum, for the most basic low-skilled work, they need good health to withstand often grueling working conditions. Such wage work could fit into the livelihood strategies described above in combination with other activities, or it could be a temporary option until better opportunities appear.

Not all wage work is poorly paid or low skilled. Some very large enterprises, both in primary production and in processing, require a range of skills depending on the technical sophistication of the production process and types of machinery used. Drivers, machine operators, mechanics, quality testing technicians, and others will be required in increasing numbers in the future, and these jobs are often better paid than unskilled day labor. For example, Red Fox Ethiopia, a floriculture firm located outside of Addis Ababa, draws labor from the surrounding rural areas and towns and offers employer-provided transport to work, life and health insurance, and a subsidized cafeteria (box 4.7).

“My first job was a contract job that paid 300 [Liberian] dollars per day . . . I didn’t enjoy it. I just did it for the money, worked on someone else’s farm . . . I just forced myself because of food . . . I’m still doing it. It was my first job.” Liberia

Box 4.6**High-value agriculture and opportunities for employment off the farm**

The labor market effects of high-value agriculture are documented in several countries in Africa. In 1985, just 14 percent of the agricultural and food exports from African countries consisted of high-value agricultural products; by 2005, the share had risen to 30 percent, with many jobs created along the way. In Madagascar, the export of vegetables has relied on about 10,000 smallholders contracted for procurement of primary produce. In other instances, production of primary produce has been vertically integrated with large estate farms, as is the case with tomato and bean exports in Senegal; the jobs created are for wage earners in processing units and pack houses. Table B4.6.1 gives several examples of employment created in export horticulture chains. Horticultural work is generally labor intensive and effective at alleviating poverty, especially among women.

Processing food for local markets is another growth area for rural employment. As new towns proliferate through in situ urbanization, demand for processed foods increases, along with investment in processing. Greater attention to food safety in public policy will improve conditions within processing plants, since the conditions that assure safe products also contribute to improved hygiene and safety for workers. The regulatory bar for wages and working conditions cannot be set so high that it stifles investment, eliminates jobs, and depresses demand for primary production. The surge in food imports in Africa since 2003 reflects the underdevelopment of local food-processing capacity. Remedying this underdevelopment will create jobs and raise returns to investments in primary agriculture.

Table B4.6.1 Employment in horticultural supply chains in Sub-Saharan Africa

Country	Commodity	Year of survey	Number of employees in the fresh fruit and vegetable agro-industry	Percentage of female employees
Cameroon	Bananas	2003	10,000	—
Côte d'Ivoire	Bananas and pineapples	2002	35,000	—
Kenya	Flowers	2002	40,000–70,000	75
	Fruits and vegetables	2002	2,000,000	
Senegal	Cherry tomatoes	2006	3,000	60
	French beans	2005	12,000	90
South Africa	Deciduous fruit	1994	283,000	53
Uganda	Flowers	1998	3,300	75
Zambia	Flowers	2002–03	2,500	35
	Vegetables	2002–03	7,500	65

Source: Maertens, Minten, and Swinnen 2009.

Note: — = not available.

Lifting Key Constraints on Capital, Land, and Skills

Constraints on the acquisition of capital, land, and skills block young people's progress along the four basic pathways to employment in agriculture. To create opportunities commensurate with the number of young people who will need employment, those constraints must be removed or relieved, as discussed next. The removal of other constraints—from the lack of

agricultural research and infrastructure to the weak rural investment climate—is also integral to raising agricultural productivity and creating jobs, but those constraints are not specific to opportunities for young people and are not addressed here.

Financial Services

Access to capital and credit for smallholders has been a perennial problem and the subject of analysis for decades.⁶ Small farmers in Africa,

Box 4.7**Red Fox Ethiopia: More technically sophisticated wage work**

Red Fox Ethiopia was established in 2003 by a German entrepreneur with long experience in the flower business. Red Fox Ethiopia produces and exports more than 150 varieties of unrooted young plants, mainly to France, Germany, Italy, and the United States. In 2009, it exported 127 million cuttings valued at US\$10 million.

The firm started on 8 hectares in Koka, 95 kilometers from Addis Ababa. The factory's area increased incrementally to 35 hectares in 2009, and the firm is acquiring additional land to bring its area to 65 hectares. The firm has 1,300 employees, 450 of whom are hired on a seasonal basis for three to four months at a time. Expatriate professionals currently run the operation, but the owners plan to replace them slowly and smoothly with local professionals.

Red Fox controls the end-to-end supply chain by having its own importing company, transportation services, and distribution networks in the international market. The company imports its fertilizer and other agro-chemicals and sources packaging materials and plastic bags locally. The presence of a well-established customer network enables the firm to book orders in advance and produce accordingly, resulting in minimal wastage and risks of price fluctuations.

Red Fox plans to strengthen its market leadership and consolidate its special expertise in producing unrooted young plants. In addition, it plans to diversify into fruit production, in partnership with another firm that has knowledge and experience of the sector.

Source: Sutton and Kellow 2010.

“You may have innovative ideas, but there is nothing you can do if you can't afford to get a loan from the bank. It is difficult getting a loan from the bank, as you have to have security. It's hard.” Rwanda

like their counterparts elsewhere, work in risky environments that are expensive for financial institutions to serve. Most such farmers have little or no usable collateral and little experience with financial services. A history of public intervention in credit markets has created expectations that defaults on agricultural loans will carry little penalty to the borrower. All of these challenges for financial institutions seeking to serve smallholders are relevant for young farmers and compounded by their lack of experience. Not everyone will be able to access credit, although many farmers can benefit from a wider array of financial services such as insurance and money transfer. Yet small farmers, particularly if they are young, need capital to adopt the technologies and secure the land and equipment that will allow them to become more commercially active. Because finance is so important and the potential client base is so large, banks and nongovernmental organizations (NGOs) continue to experiment with innovations to overcome the barriers to providing sustainable financial services to large numbers of smallholders. A brief review of some of these new products and services follows. Many of the innovations discussed are still being tested; their performance and sustainability on a large scale are unknown. They warrant close

attention nonetheless to identify, replicate, and scale up the successful approaches.

Institutions and Organizations

Various actors offer financial services, including bank and nonbank financial institutions, insurers, and payment service providers. As commercial banks tend to limit their outreach in rural areas, alternative institutions such as self-help groups, savings and credit associations, and cooperatives have emerged to fill the gap and to address both credit risk (usually higher in agriculture than in other sectors) and covariant risks specific to agriculture—weather and other climatic risks, pest and disease epidemics, and so on (see focus note 3).

Access to Credit

Allowing alternative forms of collateral, such as chattel mortgages, warehouse receipts, and the future harvest, can ease the credit market. The OHADA⁷ Uniform Act on Secured Transactions, in effect in 17 Sub-Saharan African countries, was amended at the end of 2010 to allow borrowers to use a wide range of assets as collateral, including warehouse receipts and movable property such as machinery, equipment, and receivables that remain in the hands of the debtor (AgriFin 2012). Even where the

regulatory framework allows collateralization, however, assets may not be attractive for various reasons, and banking practices require time for adjustment.

Leasing also offers young farmers some relief, as it requires either no or less collateral than typically required by loans. Most rural leases are financial (unlike operating leases); the price of the asset is amortized, and the lessee can purchase the asset at the end of the lease period for a small price (IFPRI and World Bank 2010, brief 6). A notable example is DFCU Leasing in Uganda, which provided more than US\$4 million in farm equipment leases in 2002 for items such as rice hullers, dairy processing equipment, and maize milling equipment. CECAM in Madagascar⁸ leased more than US\$2.8 million in 2002–03 to rural microenterprises, with an average US\$945 per lease (Kloppinger-Todd, Nair, and Mulder 2004). Individuals in pathways 2 and 3, who may need new equipment to start their venture, would particularly benefit from leasing. Despite leasing's clear potential to relieve constraints on access to mechanical technology, few firms have chosen to enter this business.

Young farmers' simultaneous needs for finance and information can be addressed by linking agricultural credit to extension services, an approach followed by BASIX Social Enterprise Group, a livelihood promotion institution based in India. Initially established to provide microcredit to the rural poor, BASIX now provides rural households with financial services and advice in managing crop and livestock enterprises. Almost 1,000 service providers work with more than 25,000 villages in India under the program. BASIX's research has shown that farmers prefer cost-saving and risk-reducing interventions to yield-enhancing ones that require more investment. The combination of financial services and information or mentoring allows the financial institution to identify the products in greatest demand, such as savings, money transfer, and insurance rather than credit (IFPRI and World Bank 2010, brief 13).

Grants

Matching grants can promote employment and employability among young people.⁹

Many governments and development partners use matching grants in a variety of schemes, including efforts to promote improved technologies, empower farmers to hire service providers, strengthen linkages with private firms through productive partnerships, and provide rural infrastructure for common use (AgriFin 2012). Grant schemes carry well-known risks of diversion and elite capture, and their success depends crucially on their design, including transparent rules for participation, checks and balances in monitoring at the local level, and clear expectations regarding accounting and auditing. The expectation and encouragement of savings should be a key feature of grants to individual beneficiaries. Africa has widespread experience with grant programs, yet few have focused specifically on the needs of young participants. In Sri Lanka, the Gemi Diriya Program allocates a portion of its Livelihood Fund for one-time grants of US\$46–US\$92 to generate income and help clients to start an economic activity without incurring the risk of a loan (World Bank 2007b). Young people are one of the program's target groups. Just over 10 percent of participants are destitute young people (World Bank n.d.).

Contracting Arrangements

Some outgrower arrangements offer prefinancing of inputs and assured marketing channels. In Mozambique, Rwanda, Tanzania, and Zambia, Rabo Development (a subsidiary of Rabobank) provides management services and technical assistance to financial institutions, which, in turn, finance supply chains with a range of agricultural clients. Participants include commercial farmers, farmers with little commercial presence, and an intermediate group of farmers with ambitions to grow commercially. Rabo takes particular interest in linking this last group to finance through contract farming under financial arrangements that limit the risk of default or side selling.¹⁰ Kenya's DrumNet Project is piloting a similar supply-chain approach to promote agricultural lending among 3,000 farmers in the horticultural and oilseed subsectors. Risks of default are reduced through cashless direct payment to the input supplier via a bank transfer once the

product is delivered to the buyer (IFPRI and World Bank 2010, brief 14).

E-Transfers and Payments

Electronic and mobile technology are rapidly bringing banking services to rural areas (where the regulatory environment permits). For example, Kenya's M-PESA service has transformed rural banking there. This service allows users to transfer money safely via their mobile phone without requiring a bank account. Initially intended to enable wage earners to send money home to families in rural areas, M-PESA now allows customers to pay bills (utilities, school fees, and others), repay loans, and pay insurance and microinsurance premiums. A new business feature allows companies to pay employees via M-PESA. Equity Bank in Kenya recently offered all M-PESA users the option to open a savings account, using M-PESA to deposit and withdraw funds (IFPRI and World Bank 2010, brief 8). Young people are especially quick to adopt innovations based on mobile phones when they have access.

The use of biometrics is being explored in the context of credit markets in countries where unique identification systems do not exist (making it difficult for banks to spot repeat defaulters). Biometric identification allows lenders to withhold new loans from known defaulters and to grant loans to known responsible borrowers. An experiment in Malawi linked higher repayment rates with the use of fingerprint scanning among paprika farmers (IFPRI and World Bank 2010, brief 9). Biometric tools that reduce the costs of identifying borrowers and diminish default rates can enhance outreach to hard-to-serve clients. Such measures are unlikely to be introduced solely to foster the employment of young people, but they are yet another example of how measures that generally facilitate agricultural growth have specific, significant benefits for the young.

Insurance

Innovations in microinsurance are also under way. The International Labour Organization (ILO) estimates that microinsurance in Africa almost doubled between 2006 and 2009 from a very small base. Microinsurance differs from

traditional insurance by being available through well-trusted yet innovative channels and by offering low premiums, products with simple designs, flexible payments for premiums, and prompt settlement of claims. For example, more than 11,000 Kenyan maize farmers, some with as little as 1 acre, have obtained insurance policies that cover significant losses when drought or excess rain destroys their harvest. Similarly, BASIX and a commercial insurer in India provide weather insurance based on a rainfall index to smallholders to improve their access to credit. Payments are triggered when rainfall at local weather stations exceeds a minimum threshold; insurance contracts secure the repayment of loans (IFPRI and World Bank 2010, brief 9).

Loan Guarantees

Banks reluctant to enter the business of agriculture can sometimes be induced to do so through partial guarantee schemes that protect their losses in cases of default. The Alliance for a Green Revolution in Africa has established an innovative financing initiative operating in Kenya, Mozambique, and Tanzania. The initiative provides partial guarantees that result in lower interest rates on loans to smallholders. Since 2009, it has provided US\$160 million in financing to smallholder agriculture. Rabobank's Rabo Sustainable Agriculture Guarantee Fund issues partial credit guarantees and provides other financial products to mitigate the risks of financial intermediaries, allowing them to offer better prices and terms for commercial finance to grow and export agricultural produce.¹¹

Rural Finance Targeted to Young People

None of these innovations in rural finance is relevant exclusively to young people. Nor should young people be segregated as a group and offered financial services designed specifically for them. The risks of working with this client base are high, and separating young people from a larger pool for sharing risks would make them even less attractive to financial institutions. Rather, any and all innovations in finance that facilitate sustainable outreach to small farmers and rural entrepreneurs should

be supported. When necessary, additional features should be added to enable these programs to serve young people.

Land Policies That Benefit the Young

Of the many aspects of land administration that require attention in Africa, the two that matter most to young entrants to the labor force are the need to improve security of tenure and the need to relax controls on rental. Land redistribution will also influence young people's access to land. In general, policies and measures that help the poor to gain access to land will also help young people.

High food prices and the resulting spike in demand for land add urgency to the challenges of improving land governance for all citizens and applying appropriate safeguards to protect the land rights of the poor. When arrangements for governance are weak, the rights of traditional users may be overlooked or abused, consultation with communities about impending transactions may be limited, and transparency may be constrained (IDS 2012).

Decentralized land administration can empower local communities, expedite decisions on land management and uses (highly desirable for individuals pursuing pathways 1 and 2), and help to clarify the legal rights of landowners and tenants amid the surge in demand for land.¹² Various models for decentralization exist (see Bruce and Knox 2009, for example). Their success depends on their design, implementation, and prevailing local conditions.

The *Land Governance Assessment Framework*¹³ and the *Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries, and Forests in the Context of National Food Security*¹⁴ have been developed to assist decision makers at the country level and guide the formulation of land tenure projects and policies.¹⁵ According to the World Bank (2012b),

Sound land policies can safeguard the livelihoods of the very vulnerable by giving them access to land and income-earning opportunities through rental markets or redistribution

of land. Accelerated land registration facilitates land rental markets, which make it easier for the poor to access land on rental terms . . . Land access for the poor can also be improved by redistributing underused and unused agricultural land to them.

Policies and programs to improve access to land can include special provisions to assist young people. Several are described next.¹⁶

Systematic Inventory and Registration of Land

Systematic land registration is a prerequisite for creating employment in agriculture through any of the four pathways. Notable efforts are yielding results for various categories of tenure, but the pace of activity does not reflect the urgency of the problem.

Only 10 percent of occupied land in Africa is formally registered (World Bank 2012b). State ownership of land is widespread, but even state-owned land is not fully documented, and long-term use and occupancy by individuals or groups blur ownership claims and limit investment. For example, in Ghana in 2000, the state owned about 40 percent of urban and periurban land, most of it undeveloped (Kasanga and Kotey 2001). Periurban land is often in transition from agricultural to nonagricultural use. It is well placed to offer high returns in intensive horticulture, tank aquaculture, and pig or poultry production, but it requires significant investment. Holders of periurban land often have other income streams and are linked to the financial system, so they can, in principle, make the required investments. They will not do so, however, if their ownership or the duration of their tenure is ambiguous.

Inventory and registration of individual land rights. Several countries are making progress in formally documenting individual landownership. By the end of 2012, Rwanda had demarcated all 10.5 million land parcels in the country and registered and prepared leases for at least 83 percent of them. Of the almost 1 million leases collected as of March 2012, 7 percent were claimed by women, 5 percent by men, 83 percent by married couples, and 1 percent by other legal entities (World Bank

Box 4.8**Documenting land rights: Encouraging investment and reducing the cost of land transfers**

The economic literature has long held that more secure tenure will increase investments in land. Evidence from Ethiopia and Rwanda appears to confirm this finding and to highlight improvements in environmental management as well. Other estimates suggest that certification-induced investment increased output in Ethiopia by about 9 percentage points (Deininger, Ali, and Alemu 2011). Investment and productivity improvements were also found in Benin, where households participating in rural land use plans planted more perennial crops than nonparticipants (Selod 2012).

The same documentation of rights that strengthens tenure can reduce the cost of transactions. By 2010, both Ghana and Rwanda had reduced the cost of transferring property to less than 1 percent of property value (World Bank 2010b).

2012b). Ethiopia used a participatory public process to award certificates for more than 25 million parcels in rural areas throughout the country, with noted benefits, including “reduced conflicts, empowerment of women, increased individual and community investment, and improved security” (World Bank 2012b). Madagascar has issued 75,000 certificates akin to traditional land titles; Tanzania issued about 27,000 certificates of customary rights of occupancy in two districts. A pilot program in Ghana registered nearly 10,000 land parcels in periurban areas, and a similar program in Uganda registered 10,000 parcels in three districts. Benin, Burkina Faso, and Côte d’Ivoire have been piloting various rural land use plans—*plans fonciers ruraux*—as another way to establish individual land use rights. While methods have differed and success has varied, these efforts have done much to establish smallholders’ land rights (box 4.8).

Inventory and registration of communal land. Where legal provisions recognize customary tenure and communal land, it may be more appropriate to register communal land than individual holdings. Registration of communal land can be an important first step in

securing an agreement with an outside investor (that will generate jobs within the community) or allocating a portion of communal land to young people for new farm starts. As noted in a recent World Bank review (World Bank 2012b), registration can be very slow if there are no clearly defined community owners of land and if new formal entities have to be developed. Demarcation of communal land boundaries requires time and financial resources. Registration needs to be followed up with resources to plan for land use and to delineate common property resources (such as grazing land).

Inventory of state land. The extent of state landownership in Africa is largely unknown, as most lands have not yet been surveyed and registered. Some governments have started inventorying state-owned land, including recent efforts in Ghana and Uganda. Underused or poorly used state land can be auctioned to the private sector in ways that combine large-scale operators and small and medium farmers in innovative relationships—with care to avoid disenfranchising indigenous users such as herders and subsistence communities. Long-term occupants can be formally (legally) recognized as owners (as in Kenya), and land can be made available to land-poor farmers (as in Malawi), including the young (for Kenya, see United Republic of Kenya 2010; World Bank 2011; for Malawi, see World Bank 2004; Tchale 2012). Individuals in pathway 2 are most likely to benefit from these programs, and underused state-owned land is a clear source of supply for young people showing promise in farming.

Reforms in Land Rental Markets

For the very poor, the landless, the young, and migrants, land rental is the gateway to agricultural employment and eventual landownership. For those pursuing pathway 1 (perhaps hoping to acquire additional land to expand family holdings) and pathway 2, rental is a workable approach to gain access to land. Worldwide, evidence demonstrates that introducing long-term leases or certifying land rights can increase land rental activity,¹⁷ because people with secure rights are more likely to offer tem-

porary use of their land to others. In turn, well-functioning land rental markets can facilitate labor mobility, increase efficiency by transferring land to more productive users, increase equality, and enhance structural transformation. Rental can be particularly helpful in easing the intergenerational transfer of land while still providing income to elderly owners (box 4.9). The most common restrictions on rental markets, such as ceilings on rental rates or prohibitions against absentee landownership, are often introduced to safeguard smallholders' interests, but instead they may lock land into inefficient patterns of use, greatly disadvantaging prospective young users (Deininger 2003).

Land rental markets have promoted commercial farming in Ghana and created new opportunities elsewhere in West Africa (for Ghana, see Amanor and Diderutuah 2001; for elsewhere in West Africa, see Estudillo, Quisumbing, and Otsuka 2001). In Sudan land rental markets facilitated the transfer of land to smaller producers (Kevane 1996). In contrast, Uganda's rental markets largely ceased to function in the 2000s due to severe ceilings on rent and controls on the eviction of tenants. In Ethiopia, restrictions on land rental markets in all regions except Amhara not only reduced opportunities to use land more productively but also may have inhibited development of the nonfarm sector, as individuals who took nonfarm jobs perceived that the risk of losing their land through redistribution was high (Deininger et al. 2003).

Redistribution of Agricultural Land

Land redistribution programs can profoundly and positively affect the poor, but their success depends critically on their objectives and design. If operated at sufficient scale, they can change the income distribution and increase the incentives and opportunities for investment by poor households. If poorly designed, they can transfer land to persons poorly suited to farm it and can discourage investment by heightening uncertainty about future redistribution. As individuals in pathway 2 have the greatest need for new land, they will have the most to gain or lose from approaches to redistribution. Examples of approaches to land redistribution can

Box 4.9

Mexico's program to speed intergenerational land transfers

Most land in Mexico was held in common under unclear tenure arrangements until reforms initiated in the 1990s. Heavy restrictions on the transfer of rights to common land from one generation to another limited young farmers' access to land. In the early 2000s, with support from the World Bank and as part of a wider set of reforms in land administration, the Government of Mexico initiated its Young Rural Entrepreneurs and Land Fund Program (Programa para Jóvenes Emprendedores Rurales y Fondo de Tierra) to accelerate the intergenerational transfer of land. This successful program provided credit for rural youths without land to acquire underused common land. The young people were trained and received technical assistance in setting up their farming activities. The program also helped older landowners who transferred land to young farmers to gain access to social welfare schemes for their retirement.

Source: FAO, IFAD, and MIJARC 2012.

be seen in Malawi, South Africa, and Zambia, and each of which has drawn on lessons from programs in Brazil.

Malawi's pilot land reform program. Malawi recently piloted a land reform program in four districts in which underused land from former tea estates was made available to smallholders wishing to relocate from densely settled areas.¹⁹ Patterned after Brazil's market-based approach to land reform, the pilot had three key elements: (1) communities voluntarily acquired land from estate owners, the government, or private donors; (2) resettlement and on-farm development included transportation of settlers, establishment of shelter, and purchase of basic inputs and advisory services; and (3) redistributed land was surveyed and registered, initially under group title, with the expectation that individual titles would be provided to beneficiaries on demand in the future. A cap on the maximum amount of a grant that could be spent to acquire land improved the bargaining power of beneficiaries in relation to land sellers,²⁰ and access to advisory services significantly lowered the failure rate.

“But even for a farmer, without education, forget about good production.”
Tanzania

Although the program did not focus explicitly on attracting young people, most participants were young. They preferred to relocate within or close to their original home, which preserved sociocultural ties and supported young people when they were forming families and needed links to the older generation. The program distributed an average of more than 1.5 hectares to each of 15,142 rural households, increased agricultural incomes 40 percent a year on average for beneficiaries between 2005–06 and 2008–09, and had positive effects on surrounding communities.

South Africa's land reform program. Despite having had programs in place for a decade and a half, South Africa has made little progress in providing growing numbers of underemployed rural young people with land that they can farm.¹⁸ At the end of apartheid in 1994, South Africa's new government introduced tenure reform, restitution, and redistribution of land. The redistribution program was designed to transfer land through market-mediated transactions to historically disadvantaged South Africans who wanted to enter farming. After disappointing results, a new program launched in 2001 provided graduated areas of land and start-up grants depending on the amount of the beneficiary's contribution. Those who could contribute little (and most of that in kind) received a base allotment of land and a grant of R 20,000 (almost \$3,000). Those who could contribute more or leverage a bank loan could receive larger holdings and a grant of up to R 100,000 (about \$14,000). Although the goal was to redistribute 30 percent of the land by 2014, as of March 2011, only 6.27 million hectares (7.2 percent of land owned by white African farmers) had been redistributed to black African farmers, and many recipients struggled to manage that land well. The program had limited success because allocations of land and start-up capital were not accompanied by advisory services or technical assistance. Those who received land through the program were prohibited from subdividing it, even though repeal of the prohibition was announced several times. Beneficiaries of small allotments were forced into group structures

similar to collective farms and experienced the deficiencies in internal management that are common under such arrangements.

Zambia's irrigation development and support project. In this project (approved in 2011 and receiving just over US\$200 million from all funding sources), smallholders can exchange small parcels for holdings of 3–5 hectares as part of a larger scheme that will join small producers, large commercial operators, and mid-size farmers in a shared area. Management of irrigation services for the entire scheme will be contracted to a concession. To ensure that small and mid-size farmers earn enough to pay irrigation fees, professional farm management services will be available to assist with production and marketing. The selection of smallholders taking on the mid-size parcels is not complete, so the age distribution of participants is unknown, but this opportunity is expected to appeal to young people with prior experience in farming.

Enhancing Skills and Building a Better Educational Foundation

Rural children need to go to school and learn. Better-educated farmers are more likely to adopt modern farm inputs and technologies, make better use of purchased inputs and labor, choose technologies more effectively, and respond rapidly to changes in markets or to natural calamities (Schultz 1988). Basic education can significantly improve the efficacy of agricultural training. The relationship between education and agricultural development cuts both ways, and the two are mutually reinforcing, with demand for schooling rising as rural incomes increase.

To equip young Africans with the skills to thrive in all four pathways to agricultural employment, schools must do a better job of providing the basic skills for any endeavor. Foremost among these are reading, writing, numeracy, and the ability to use digital technology to access and interpret information (box 4.10). Beyond these basics, the skills required for individuals in pathways 1 and 2

Box 4.10**Information and communication technologies: Altering the flow of agricultural information**

For African farmers operating in an environment of rapid climatic and economic change, the age-old questions of what to plant, when to plant, and how to plant have assumed immense importance. Answers are proliferating, as rural radio, television, the Internet, and mobile services offer an expanding array of information about specific technologies and practices, climate change, disaster management, early warning (for drought, floods, and diseases), prices, natural resource management, production efficiency, and market access (World Bank 2012a).

Researchers are rigorously testing the effectiveness of different information and communication technologies (ICTs) at reaching and benefiting farmers, focusing primarily on the transmission of price information.^a Radio, a long-standing method of communicating with farmers, has helped them to obtain better farm-gate prices by providing information on commodity prices. Internet stations with agricultural market information (e-Choupals) have done the same in Madhya Pradesh, India. Mobile phones have allowed fishermen and onshore buyers in Kerala, India, to communicate supply and price information, resulting in higher profits, lower consumer prices, and less waste. Among grain traders in Niger, the introduction of mobile phone coverage in two markets reduced the price variation between the two, ultimately increasing traders' profits, decreasing prices paid by consumers, and increasing total welfare. Cell phone coverage also reduced within-year price variation for producers.

Actors in the public and private sector are interested in using mobile phones to deliver information to farmers in developing countries. A rigorous evaluation of one program found that text messages provided by Reuters Market Light did not have a robust effect on producer prices or input use among farmers of five crops in Maharashtra, India (Fafchamps and Minten 2012). Similar interventions to supply

price and weather information in Colombia and India failed to have a substantial impact on crop choices, revenues, or profits (Camacho and Conover 2011 on Colombia; Cole and Hunt 2010 on India). These findings suggest the need to experiment with different content and methods of delivery. More attention should be given to the underinvestigated, distinct, and potentially complex issue of using ICT to support agricultural production and production technologies, as distinct from marketing information.

For newer ICTs such as mobile phones and the Internet to convey agricultural information effectively, the content and mode of delivery may need to change, but what about the users themselves? Much has been made of young people's ready adoption of newer ICTs, as well as the capacity of ICTs (newer and older) to break through barriers to the acquisition of information and skills, such as distance, the inability to read and write, or the expense of producing and disseminating audiovisual information. Much has also been made of the potential for interactive ICTs to provide agricultural recommendations tailored to an individual farmer's circumstances. Yet much depends on whether the individual user of ICTs is able to frame relevant questions based on learning acquired in good primary schools, coupled with practice in imagining states of the world other than those already experienced. As discussed in chapter 3, most African educational systems are not delivering high-quality basic education, even though enrollment is increasing. Among rural youths who lack a basic cognitive foundation on which they can build, the benefits of ICTs may be slower to emerge.

a. See Svensson and Yanagizawa (2009) on radio and farm-gate prices; Goyal (2010) on Internet stations in India; Jensen (2007) on fishers in Kerala; Aker (2008) on traders in Niger; and Aker and Fafchamps (2010) on phone coverage and variation in producer prices.

may differ from the skills required in pathways 3 and 4. The majority of farmers, who will have little more than a primary school education, will need access to effective agricultural extension services to sharpen their skills and clearly convey their requirements for information and technology to service providers. Finally, a growing and diversifying agricultural sector will create jobs that demand increasingly advanced technical and professional skills,

from processing and marketing to agricultural research.

This section describes recent initiatives and changes in "schools of thought" regarding the role and delivery of both basic and agricultural education, agricultural extension, and other innovative models of training and research and development. As with some of the finance mechanisms discussed earlier, many of these programs are experimental. They have not

been rigorously evaluated or tested for their effectiveness or sustainability on a larger scale.

Schooling and Learning

To the extent that schooling raises literacy and numeracy skills and enhances the ability to process agricultural information, an education effect can exist independent of the design of school curriculum. Returns to such skills are particularly magnified in a modernizing agricultural sector, where access to advanced technology complements an understanding of how to use it. The decision to adopt new technologies is an investment decision if significant costs are incurred in obtaining information and learning about the performance of one or more new technologies, while the returns are distributed over time. Furthermore, only a small share of new technologies will be profitable for any given farmer to adopt. Given the degree and multiple sources of uncertainty facing farmers, effective schooling may help them to make better decisions to increase farm profitability.

Returns to schooling in rural areas depend, in part, on the pace of technological innovation in farming. A large body of literature has shown that more educated farmers are the first to adopt new seed, tillage practices, fertilizer, and animal breeds (for example, see Welch 1970; Huffman 1977; Besley and Case 1993; Foster and Rosenzweig 1996; Abdulai and Huffman 2005). Moreover, farmers with primary education tend to earn higher profits than farmers

without schooling, assuming that both have access to the same assets, and this effect is magnified in environments undergoing rapid technical change (Rosenzweig 2010). Schooling thus enhances learning, and a dynamic agricultural sector provides opportunities to apply it.

Education offers spillover effects when uneducated farmers are able to observe the choices and outcomes of their better-educated neighbors. This type of social learning is usually inferred from observed behavior or outcomes over time. For example, in Ghana, social learning played an important role in diffusing knowledge on pineapple cultivation among farmers. In this case, the experiences of the farmers and their neighbors influenced profitability and adoption rates (Conley and Udry 2010).

The importance of female labor in agriculture brings into sharp focus the urgency of improving access to schooling for girls and women. There is widespread recognition of the need to improve both basic education and agricultural vocational education for women and to enhance rural women's access to extension services.

Postsecondary Education in Agriculture

Alongside jobs in primary production, a growing and diversifying agricultural sector creates demand for skilled labor in rural areas inside and outside of the sector. Africa's existing agricultural vocational schools can play a constructive role in training skilled personnel for jobs in processing, marketing, machinery operation and repair, transport, logistics, and quality control—provided that students have sufficient preparation to benefit from that training (box 4.11).

The number and quality of trained technical and professional personnel in agriculture are critical factors in agricultural development, because a sector undergoing structural transformation has an expanding need for skills. In addition to gaining technical skills, workers need to master teamwork, communication, diligence, creativity, and entrepreneurship. In many cases, these behavioral “soft skills” are learned through mentoring and through the standards of performance set in the formal workplace.

“I decided to get married after my stepmother refused to pay school fees for me, and the job I could find there was only farming.”
Tanzania

Box 4.11

Vocational agricultural education: A poor substitute for general education

To remedy gaps in skills, many African governments and their development partners in past years focused on vocational agricultural training, often at the expense of primary, secondary, or postsecondary education. More often than not, attempts to substitute vocational education in agriculture for general education have failed. The returns to such training have been mixed at best, largely because the individuals undertaking the training and the neighbors who could learn from their example lacked sufficient basic education to make use of more advanced, specific skills.

As formal nonfarm employment increases, a larger cohort of young people can be expected to acquire behavioral skills in this way.

Institutional infrastructure for agricultural higher education and training has been in place in Africa since the 1960s but has not strengthened sufficiently over time to meet the enormous demands evident now. Sub-Saharan Africa now has more than 200 public universities (compared with 20 in 1960), about 100 of which teach agriculture and natural resource management. Private universities complement this public capacity (World Bank 2007a). Much stronger national and regional institutions are needed to train future professionals and leaders with appropriate technical and functional skills.

Women face particular obstacles in obtaining the education and training to become more successful in agriculture, whether as farmers, entrepreneurs, providers of extension information, or leaders in agricultural research and education. Few women graduate from agricultural education programs, few women become agricultural extension workers, and women are often marginalized during agricultural events, activities, and programs. These problems are widely evident, although detailed gender-disaggregated data are only available sporadically or are not reported at all (World Bank 2009). Efforts are under way to give stronger recognition to the role of women in agriculture, to increase the number of female students in agricultural schools and colleges, and to provide resources for extension services directed to women farmers. An innovative program was launched in 2008 by the Gender and Diversity Program of the Consultative Group on International Agricultural Research. The African Women in Agricultural Research and Development Program seeks to strengthen the research and leadership skills of African women in agricultural science, empowering them to contribute more effectively by establishing mentoring partnerships, building science skills, and developing leadership capacity.

Agricultural Extension

Agricultural extension arose to address farmers' needs for information in a wide array of

settings around the world. Their needs then were quite similar to those of young Africans now entering the labor force in rural and urban areas. Much of what has been learned about effective extension methods may be used to design advisory services and mentoring programs for young people generally, in farming and in other spheres of activity.

Early models of agricultural extension were centralized, public, and linear. The basic model was one in which a trained extension worker traveled over a large area to convey messages to farmers, who then applied the advice to improve their operations. The deficiencies of this model became clear over the years, especially in Africa. The foremost deficiencies involved cost, quality, and relevance. Traditionally designed agricultural extension programs are now a rarity, although the term is still used and applied to nontraditional approaches. Newer programs empower farmers to specify the information they require and to select the provider (box 4.12; see Davis 2008). The provision of information is still recognized as a public good, and the government assumes a share of the cost, particularly for small farmers and the poor. The advice may be delivered by public officials, private advisers, NGOs, or the media, depending on farmers' needs. The new systems are decentralized, integrated with the private sector, coordinated with agricultural research, and tailored to local contexts. Extension is understood to be part of a broader innovation system.

Agricultural extension services can contribute significantly to young farmers' success, but the design of successful programs is still an open empirical question. Several approaches have been tried and reviewed in different contexts, but rigorous assessment is elusive (Davis 2008). For example, participatory and group-based approaches are gaining traction. These methods have the potential to overcome barriers to participation, foster inclusiveness, and lead to more demand-driven services. Many African countries have pluralistic extension services (which have a variety of service providers), including Kenya, Mozambique, and Uganda.

Many factors in addition to the mode of providing extension services affect agricultural

“Many who received training commented that their farming efforts are now ‘more efficient and sustainable.’”
Ethiopia

Box 4.12**Innovations in agricultural extension: Relying on farmers to improve service delivery**

The question of whether agricultural extension services are best provided by the public sector (the traditional model), the private sector, or a range of providers continues to generate debate in light of the mixed results obtained with the traditional model.^a This uncertainty has complicated efforts to widen the adoption of improved agricultural technologies and increase agricultural productivity. Newer models of extension, which are driven by farmers and reinforce the quality of service delivery through incentives and other innovations, are proving more effective than traditional methods, but they, too, encounter difficulties and constraints to effectiveness.

The impact of innovative approaches that mobilize farmers to improve returns to agricultural extension was recently evaluated on a large scale. In Malawi and Mozambique, randomized controlled trials tested multiple modalities for implementing peer and lead farming. In both experiments, communities nominated lead or peer farmers, who were trained to use sustainable land management techniques and mandated to communicate those techniques to other farmers in their village through demonstrations.

In Malawi, the social status (peer versus lead) and gender of the communicator were subject to random assignment, and a small performance-based material incentive was given to a subset of the communicators. The project designated “shadow” communicators in control villages to provide a counterfactual. In Mozambique, lead farmers—mostly men—were already designated by the project team in all project villages at baseline. The intervention trained a random subset of these lead farmers in sustainable land management. To add a gender variation, a woman lead farmer was added to a random subset of treatment villages, since it was not possible to demote the previously chosen commu-

nicator. Small performance-based material and social incentives were distributed to a subset of the treatment villages.

The results from these large pilots suggest that female farmers can be as productive as male farmers in teaching their peers about a new technology and getting them to adopt it. Adding a woman communicator to a male-centered model for delivering extension advice can add value and change the numbers of male and female beneficiaries. Evidence on the use of performance-based incentives suggests that providing service to the community is more costly for women leaders, as they are more responsive to incentives. Finally, despite performing as well as, and in some cases better than, male communicators, female communicators still suffer from discrimination and are rated as worse teachers than men.

Overall, these results suggest that development projects that place the adoption of new agricultural techniques at the center of their theory of change may consider using peer and lead farming interventions to boost their returns. Given that female leaders appear to be as productive as male leaders in getting farmers to learn about and adopt new techniques, empowering women to take on leadership roles may not only increase equity but also add value. Performance-based incentives can play an important role in getting women leaders to devote additional time and effort to working with their community.

a. For example, Birkhaeuser, Evenson, and Feder (1991) found no significant relationship between the provision of traditional extension services and farm productivity in Africa, whereas Evenson (2001) and Dercon et al. (2009) identified some successes. Anderson and Feder (2003) propose an organizational inquiry into which model of extension (public or private) can deliver superior results.

performance. Spillover effects are hard to capture or isolate. Selection bias may enter even in controlled environments, and programs performing well at scale can be subverted by clientelism and patronage (Anderson and Feder 2004). While most experts would agree that advisory services or extension of some kind are vital, particularly in light of the challenges faced by young people entering agriculture in Africa, the profession does not have a clear view on the best approach to program design.

Each pathway to agricultural employment has particular needs for advice and training that may determine which approach will work best. For example, programs of competence-based training in Ethiopia and Uganda in high-value export crops (horticulture and floriculture, respectively) are providing a workforce for these demanding subsectors. Individuals in pathways 3 and 4 (engaged in wage work either part or full time) might benefit most from such training. For those in pathways 1 and 2, farmer

field schools may be useful. They exist in many countries and are “a participatory method of learning, technology development, and dissemination based on adult-learning principles such as experiential learning” (World Bank 2012a). A recent study in East Africa found that farmer field schools are especially beneficial for women, people with low literacy levels, and farmers with medium-size landholdings. Field school participants had significant differences in outcomes with respect to the value of crops produced per acre, the livestock value gained per head, and agricultural income per capita (Davis et al. 2010). For those in pathway 1 who adopt a more corporate approach to family farming, the shift to entrepreneurial family farms can be aided by local agribusiness development services, which are advisory services with a business orientation. Although the provision and use of these services are still relatively new, anticipated impacts for smaller-scale farmers and entrepreneurs include enhanced rural income (both directly and through employment) and enhanced small-scale entrepreneurial activity (World Bank 2012a). Such services could also assist young people seeking to combine self-employment with part-time farming (pathway 3).

Producer organizations can be a highly effective means of building members’ skills and entrepreneurial expertise by improving access to advice and training. Once again, however, the ability to self-organize and participate effectively in such organizations requires the fundamentals of a solid education.

Priorities for a Diverse Skills Agenda

The skills agenda to meet the needs of Africa’s young people is diverse, and the resources to address that agenda are highly constrained. Priority should be accorded to improving the quality of basic education and keeping young people in school long enough for them to acquire basic skills. Agricultural programs in tertiary education must be strengthened to produce a new generation of scientists and teachers in all fields. In the intermediate arena of extension and outreach, emphasis should be placed on providing resources to the final users of information, so that they can seek out the

help they need, coupled with careful evaluation and transparent display of user satisfaction with the various channels of information. The alternative approach of seeking a new, highly structured, unitary style of extension system, widely applicable to all, is not likely to deliver good results. In designing a skills agenda for Africa’s rural young people, distinctions should be made between the needs of the stock of young adults in the labor force today—whose elementary education is incomplete—and the children who will flow into the labor force in the future. The very young need better schools with more learning as a matter of highest urgency. Those who are already beyond school age will need a mix of short-term remedial programs for applied literacy and numeracy and access to mentoring, apprenticeships, and flows of “just-in-time” information, perhaps delivered through electronic media.

Current Agricultural Programs Deliver Too Little, Too Slowly, to Meet the Needs of Africa’s Young People

As early as 2003, African heads of state met in Maputo, Mozambique, and pledged to give renewed attention and resources to agriculture. The pledge was made under the rubric of the Comprehensive African Agriculture Development Programme (CAADP) of the African Union and the New Partnership for Africa’s Development.²¹ The CAADP framework recognizes the breadth of the agricultural agenda and the corresponding need for multiple entry points and complementary public investments in several areas (box 4.13).

Until food prices spiked in 2008, the commitment to increase public spending on agriculture was not implemented widely, but between 2003 and 2008, the technical work to design a framework for reinvestment in agriculture under CAADP proceeded. When rising food prices caught the attention of global and African leaders, the conceptual framework was available to address the long-standing neglect of key public goods and services. The framework does not specifically recognize the unique

When asked how their days differ from their parents’ generation, one young man offers, “Those days were days for farming and that is it. Now we do farming, we do business, we even go to school in great numbers.”
Tanzania

Box 4.13**Overview of the Comprehensive African Agriculture Development Programme (CAADP)**

CAADP's four pillars are complementary. The first pillar, land and water, addresses the design of programs and investment required to improve land administration, sustainability of land use, and management of water through irrigation and water harvesting and storage.

The second pillar identifies investment and reforms in policy and regulations needed to improve smallholders' access to markets. Many of these interventions focus on rural infrastructure, including roads, rail transport, and power (both on- and off-grid), but important regulatory measures also require attention, such as regulation of the trucking industry and food safety standards. These measures aim to reduce marketing costs to make farming more profitable, while reducing food prices for net buyers to accelerate job creation.

The third pillar addresses measures that will make agriculture less risky for those with a commercial orientation and strengthen the resilience of the very poor when shocks hit. Diversification, affordable insurance products, and rural safety nets can help people to manage risks, and higher income levels associated with growth in productiv-

ity and profitability provide a cushion of savings for hard times.

Finally, the agricultural technology pillar underpins the other three. Modern agriculture is science based, and producers at all levels of sophistication benefit from improved systems to generate and spread improved technologies. Some of these entail breeding improved crops and animals to address changing demand or agro-ecological conditions or to allow producers to select a desired level of risk. Others emphasize new systems of management and rotation, to reduce costs of inputs, enhance soil health, and capture carbon for additional revenue streams.

The CAADP framework is applied to help countries and regions to improve the quality of their agricultural planning and policy making and to use them as the basis for scaled-up investment in the sector. CAADP offers political, technical, and financial support for countries and regions that engage in this process, through a partnership of continental and regional African institutions in collaboration with other stakeholders, including civil society, the private sector, and Africa's development partners.

demography of Africa, nor does it make specific provisions for young farmers, but its key features can be enriched to address a youth agenda.

Complementing the largely public elements of CAADP, local and international private investors are expressing growing interest in the opportunities in agriculture. The African Union has declared a "Decade on Youth Development in Africa 2009–2019." The United Nations General Assembly has called for member states to prepare a "National Review and Action Plan on Youth Employment," and the African Union, Economic Commission for Africa, African Development Bank, and the ILO have recently proposed a "Joint Initiative on Job Creation for Youth in Africa." The initiatives demonstrate the level of attention being given to the youth employment issue (Proctor and Lucchesi 2012). Each of these organizations also emphasizes agriculture.

Thus efforts to reach out to Africa's young farmers can draw on resources from the public

and private sectors, domestically and internationally, under strategic initiatives already in place. No new or separate strategy is required, but the current slow pace of implementation, if continued, will fail young people and compromise Africa's future. Existing commitments must be accorded focused attention, with improved quality of public spending, more efficient approaches to increasing production of food staples, more attention to meeting demand for high-quality products by the growing urban middle classes, continued progress on policy and regulatory reforms, and improved data and tracking of progress. With better-implemented public programs, private investment will accelerate, and opportunities for young people will increase. Some proactive additional attention to meet the specific needs of the large group of young people may be required, but doing so without more effective programs in general will be counterproductive. Successfully mobilizing the talents of young people will increase the likelihood that

CAADP and other ongoing initiatives will meet their ambitious goals.

Harnessing Agriculture's Youth Dividend

Agriculture—already Africa's largest employer—is changing, and the large numbers of young people entering the sector will accelerate the pace of change. Africa's leaders recognize that agriculture is a source of growth, an instrument for improved food security, and a means to steward valuable natural resources. As the potential for the sector to absorb the large numbers of new job seekers and to offer meaningful work with public and private benefits becomes clearer, agriculture will gain even more attention from policy makers.

This attention will be necessary, because the sector's ability to create jobs will not be realized without modifications to public programs. Present levels of public investment are not sufficient. The quality of investment is inadequate to yield high returns. Too much has gone into short-term palliatives, such as fertilizer subsidies, without complementary attention to improved technologies and management practices and long-term investments in research and infrastructure. The investment climate still cannot attract the private firms needed in marketing, processing, input supply, and finance. Public policies governing trade, the introduction of new varieties, licensing and intellectual property rights, and taxation offer weak incentives to producers and innovators.

Detailed agendas in each of these areas are beyond the scope of this chapter, but the future of Africa's young people is at present hostage to the wide gap between rhetorical commitment to the importance of agriculture and actual, effective attention accorded to it by Africa's leaders. Efforts to address constraints to land, capital, and skills will have to be redoubled and accelerated, and features to make programs friendly to the needs of the young introduced.

Although farming is often done by the elderly, the profession's requirements for energy, innovation, and physical strength make it ideally suited for persons who are 25–45

years old—the “mature young.” Energy, creativity, and strength are attributes that Africa's young people have in abundance. The agriculture that attracts them will have to be profitable, competitive, and dynamic. These same characteristics are needed for agriculture to deliver growth, to improve food security, and to preserve a fragile natural environment. With much higher priority accorded to the implementation of well-designed programs of public investment in agriculture, continued progress on regulatory and policy reform, and a modest overlay of attention to assure the inclusion of young people in Africa's agricultural renaissance, the sector's youth dividend can be collected and widely shared.

Notes

1. Whether an economy's agricultural labor force rose or fell in absolute numbers as the relative share of the sector declined depended on birth and death rates in rural areas, migration, and the size and labor intensity of sectors that were growing more rapidly than agriculture. See Timmer and Akkus (2008).
2. For example, farmers grow modern improved varieties of food crops on an estimated 35 percent of all planted area, compared to just 23 percent in 1998 (Renkow and Byerlee 2010).
3. A band of settlements of 10,000 or more inhabitants now stretches from Djibouti to Dakar, with few gaps in between. Another rings Lake Victoria, and another marks the Kinshasa-Brazzaville corridor.
4. Agricultural total factor productivity is growing at just over and under 3 percent annually in Southeast Asia and South America, respectively. Since 2000, total factor productivity in Sub-Saharan Africa has been higher than the average in the four prior decades but is still short of being transformative. Estimates range from just under 1 percent annually to just over 2 percent annually, owing to severe deficiencies in the underlying data; see Fuglie (2011); Nin-Pratt, Johnson, and Yu (2012).
5. After food prices spiked in 2007–08, governments began to set ambitious growth targets for agriculture. At 8–10 percent, those rates exceed the 6 percent target set by the African Union through the Comprehensive Africa Agriculture Development Programme and the rates recently observed for the entire region (3.8–4.0 percent; World Bank 2012c).

6. This section draws heavily on AgriFin (2012) and IFPRI and World Bank (2010).
7. Organisation pour l'Harmonisation en Afrique du Droit des Affaires (Organization for the Harmonization of Business Law in Africa).
8. Caisses d'Épargne et de Crédit Agricole Mutuelles, a cooperative agricultural financial institution.
9. This section draws from World Bank (2010a).
10. IFPRI and World Bank (2010, brief 4); see also http://www.rabobank.com/content/products_services/business_clients/professionalproducts/raboagrifund/index.jsp.
11. See http://www.rabobank.com/content/products_services/business_clients/professionalproducts/raboagrifund/index.jsp.
12. For a perspective on equity issues arising from heightened global interest in Africa's farmland, see Deininger and Byerlee (2011).
13. See Deininger, Selod, and Burns (2011) for more on this relatively quick and innovative tool.
14. Endorsed by the Committee on World Food Security in May 2012, the *Voluntary Guidelines* promote secure tenure rights and equitable access to land, fisheries, and forests as a means of eradicating hunger and poverty, supporting sustainable development, and enhancing the environment. They set out principles and internationally recommended standards for responsible practices. They are a framework that actors can use when developing their own strategies, policies, legislation, and programs, allowing government authorities, the private sector, civil society, and citizens to judge whether their proposed actions and the actions of others constitute acceptable practices.
15. Encouraging collaboration with the Sustainable Commodity Roundtables can also help to increase the extent to which crop production systems meet voluntary environmental and social criteria, including those of the Roundtable for Responsible Soy, the Roundtable on Sustainable Palm Oil, the Better Sugarcane Initiative, and a variety of forest certification processes.
16. The following sections draw heavily from World Bank (2012b).
17. For example, in China, the Dominican Republic, Ethiopia, Nicaragua, and Vietnam.
18. This section is adapted from Lahiff and Li (2012); World Bank (2012b).
19. Adapted from Tchale (2012); World Bank (2012b).
20. Each family received a grant of US\$1,050, managed directly by the beneficiary; up to 30 percent was for land acquisition, and the rest was

for transportation, water, shelter, and farm development.

21. See <http://www.nepad-caadp.net/>.

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Safety Nets and Pathways to Productive Employment

Social safety nets are programs that aim to increase households' consumption of basic commodities and facilitate access to basic services (Grosh et al. 2008; Monchuk 2014). They can also help households to cope with shocks such as an economic crisis, drought, or illness. The coverage of safety net programs targeted to poor and vulnerable households is growing rapidly in Africa (Monchuk 2014; Subbarao et al. 2013; McCord and Slater 2009). The most common safety nets include public works and cash transfer programs. Participants in public works programs receive cash or food in exchange for engaging in labor-intensive work to build or maintain public goods such as local infrastructure. Some longer-term public works programs ensure temporary employment to the poor at critical junctures, such as lean periods in the agricultural cycle. Cash transfers provide temporary relief to households to reduce poverty. These traditional safety nets can improve productivity in the long term through a range of channels (Alderman and Yemtsov 2013). For instance, safety nets have been shown to increase human capital by improving nutrition and access to education and health services.¹ Such improvements for today's children can contribute to higher labor productivity for tomorrow's youth.

Because safety net programs explicitly target the poor or vulnerable, they often reach the core of the population engaged in low-productivity employment, particularly in agriculture and household enterprises. Many governments also deliver complementary productive interventions through safety net programs, with the explicit objective of fostering productive employment in the short to medium term. The intention is to allow poor households to build pathways to raise productivity in the farming sector, diversify livelihoods, or enter into non-farm household enterprises. If complementary productive interventions are targeted to youth, they can pave a pathway to productive employ-

ment at a critical period when youth may be completing their education, transitioning to work, or already working on their own account in low-productivity occupations. As such, safety nets with these complementary components have the potential to improve productive employment for the current generation of youth.

Short-Term Benefits of Safety Net Programs

African governments rely extensively on public works programs to provide short-term employment. Public works programs are common throughout the region and typically offer temporary employment for periods ranging from 10 days to 6 months.² For example, the Malawi Social Action Fund has offered temporary employment to more than 800,000 individuals for 12 days on average since 1995 (World Bank 2011). The Tanzania Social Action Fund offers cash transfers through short-term employment in a labor-intensive public works program, which has offered an average of 75 days of employment to more than 200,000 beneficiaries since 2000 (World Bank 2010). One public works program of longer duration is Ethiopia's Productive Safety Net Program. Participants, who can remain in the program for up to five years, work during the lean season on labor-intensive projects building community assets, such as soil and water conservation structures. The program reaches more than 7 million people and operates with an annual budget of nearly US\$500 million (Gilligan, Hoddinott, and Taffesse 2009).

Public works programs have well-documented short-term benefits, including on participants' income. To work the hours required by these labor-intensive programs, beneficiaries usually forgo other income-earning opportunities (Subbarao et al. 2013). For this reason, ben-

eficiaries' earnings generally increase less than the actual wages they receive (which are usually based on estimated market rates for wage employment or a minimum wage). Argentina initiated a public works program in 2002 after a severe economic crisis pushed unemployment and poverty to record heights. Net earnings (after subtracting income forgone from other activities) were estimated to be two-thirds of the benefits offered by the public works program during the crisis and only one-third of those offered after the crisis had dissipated (Galasso and Ravallion 2004).

In low-income African countries, nearly all individuals are working, and very few are unemployed (see discussion in chapter 1). In this context, public works do not necessarily substantially increase overall employment. At the same time, public works programs tend to be oversubscribed despite paying low wages and can strongly increase the earnings of beneficiaries. Few evaluations measure net earnings gains from participating in public works programs in Africa.

Overall, public works programs are first and foremost social protection programs that provide temporary employment. They are generally not designed to foster sustainable productive employment beyond beneficiaries' participation in the program. Some evidence suggests that traditional public works programs can open pathways to employment in new activities, even if that is not their primary goal. In Liberia, participants reported using 14.2 percent of the income from public works for farm and nonfarm investments (Andrews et al. 2011). In Ethiopia, beneficiaries from the public works program were more likely to enter in nonfarm business activities and less likely to work as day laborers (Gilligan, Hoddinott, and Taffesse 2009). Evidence from an impact evaluation in Sierra Leone shows that participation in a cash-for-works program increased participation in informal saving groups, led to accumulation of assets such as livestock, and fostered the creation of new household enterprises (Rosas and Sabarwal 2013).

Cash transfer programs also primarily focus on immediate poverty relief, and there is solid evidence documenting their short-term impacts on reducing poverty, improving

a range of outcomes such as food security or nutrition, and increasing the use of health or education services (see Fiszbein and Schady 2009 for a review). There is also growing evidence showing that cash transfer beneficiaries are able to save and enter into more productive activities, even if these programs were not designed with that objective in mind.³ For instance, in Malawi, cash transfers facilitated investments in agricultural assets and livestock and reduced adults' participation in low-skilled labor (Covarrubias, Davis, and Winters 2012). In Mexico, cash transfers led poor rural households to invest in productive assets such as farm animals and land for agricultural production, increasing agricultural income by 10 percent (Gertler, Martinez, and Rubio-Codina 2011). Beneficiaries were also more likely to start non-agricultural household enterprises, particularly the production of handcrafts for sale.

A new generation of safety net programs is trying to be more explicit about maximizing their productive potential in the short to medium term.

Safety Nets Plus Explicit Productive Components

A growing number of safety net programs attempt to create the conditions for beneficiaries to access pathways to more productive employment or sustainable livelihoods in the short to medium term. Policy makers start with the proven ability of safety net programs to stabilize household consumption and add productive interventions that may lead to sustainable, productive employment for the current generation. For example, "public works plus" delivers complementary services such as links to financial services or training in a range of skills. Some "cash transfer plus" programs take a similar approach.

Financial Services

A growing number of public works programs aim to strengthen financial inclusion or build linkages to other intermediate services. Participants in Rwanda's Vision Umurenge Programme are given access to bank accounts and encouraged to save some of their earnings.

Beneficiaries of Tanzania's Productive Safety Net Program can participate in small groups that promote community savings to increase their ability to save for future needs and investments; a similar approach is being considered for a public works program in Mozambique. A public works program in Côte d'Ivoire includes a component that fosters saving by delivering payments to a bank account (during its pilot phase, the program awarded a matching grant to participants who had saved a certain amount). For more discussion on financial services, see focus note 3.

Capital

Participants in Ethiopia's public works program are linked to the Household Asset Building Program to help them to make their farms more productive and to increase their long-term food security. They obtain "at least one of several productivity-enhancing transfers or services, including access to credit, agricultural extension services, technology transfer (such as advice on food crop production, cash cropping, livestock production, and soil and water conservation), and irrigation and water harvesting schemes" (Gilligan, Hoddinott, and Taffesse 2009).

Skills Training

Many public works programs also provide short-term training in basic literacy, skills for microenterprise development, technical skills, or life skills. In South Africa's Expanded Public Works Program, beneficiaries receive two days of training each month in literacy and numeracy, vocational skills, and business skills. In Côte d'Ivoire, the public works program implemented by the national roads agency includes sensitization in basic life skills, training in basic business skills to help participants to set up a household enterprise, and sensitization to wage employment opportunities to help youth to prepare themselves and search for a wage job. In Liberia, the community works component of the Youth Employment and Skills Project provides eight sessions of life skills training during the 40-day works program. Each of these sessions lasts two to three hours and is led by 1 trainer for every 25 trainees. The life skills training has six main sections: Myself

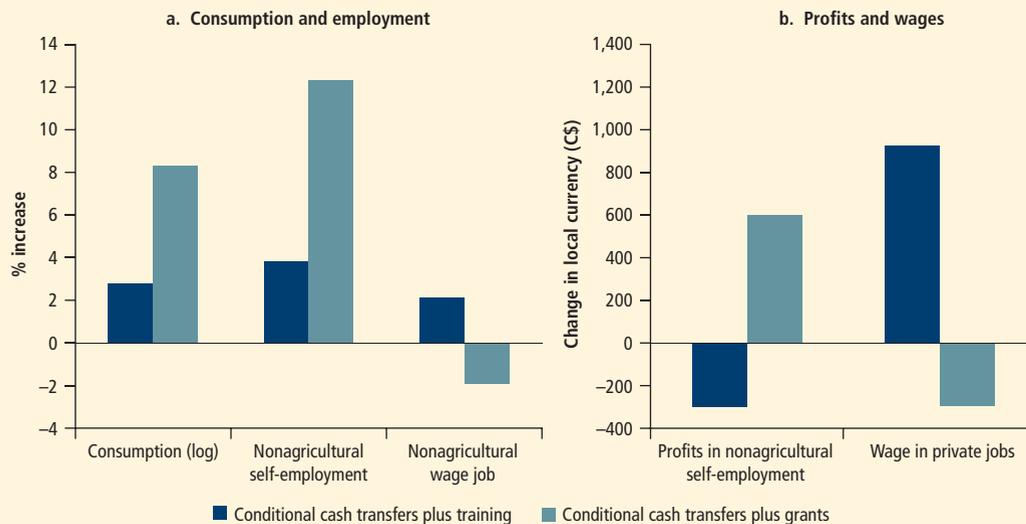
and My Community, Making a Living, Managing Money, My Workplace, My Health, and My Future.

Some programs deliver a package of benefits including cash transfers together with a range of complementary productive interventions. For instance, the "targeting the ultra-poor" or "graduation model" is currently being tested in 10 countries around the world including Ethiopia and Ghana (Hashemi and Montequiou 2011). The intervention targets the poor and offers basic consumption support similar to a safety net program. It also facilitates savings, transfers assets to allow the poor to enter into higher-productivity farming activities (for example, livestock) or start a household enterprise, and provides skills training and regular technical assistance to beneficiaries. The stated objective of this approach is to help households to graduate from extreme poverty through productive employment.

Do Complementary Interventions Open Pathways toward Productive Employment for Youth?

Despite their potential to increase productivity and facilitate entry into new employment opportunities, few rigorous evaluations have shown that expanded safety net programs lead to employment or productivity gains.⁴ In Ethiopia, households with access to the public works program and complementary interventions are "more likely to be food secure and are more likely to borrow for productive purposes, use improved agricultural technologies, and operate nonfarm own business activities" (Gilligan, Hoddinott, and Taffesse 2009). Their incomes grow, and distress sales of assets decline. Elsewhere in Africa, evidence on the productive impacts of "public works plus" programs is limited, especially evidence on the effectiveness of short training modules and links to financial services. An evaluation testing alternative complementary training targeted to young beneficiaries of a public works program is under way in Côte d'Ivoire.

Figure F2.1 Impacts of conditional cash transfers plus business grants or conditional cash transfers plus skills training in Nicaragua



Source: Macours, Premand, and Vakis 2012.

Note: Impacts are measured as differences between beneficiaries and a control group. The impact on consumption and entry in a nonagricultural wage job is not significant for beneficiaries of the “conditional cash transfers plus training” package, while the impact on entry in a nonagricultural wage job and on wages in a private sector wage job is not significant for beneficiaries of the “conditional cash transfers plus grant” package.

Evidence is also thin on the effectiveness of productive components embedded in cash transfer programs. In Niger, monitoring data suggested that beneficiaries save a substantial share of their earnings through savings groups created by the program. A new cash transfer program in Cameroon encourages beneficiaries to participate in awareness and training activities to learn about generating income, understand how to access microfinance, and acquire business skills. Impact evaluations are under way in both countries.

Although the effectiveness of complementary productive interventions has not been ascertained in Africa, promising evidence is emerging elsewhere. In rural areas of Nicaragua, an evaluation tests the relative effectiveness of complementing a cash transfer program with business grants or vocational training (see figure F2.1; Macours, Premand, and Vakis 2012). Two years after the end of the program, results show that the business grant enabled cash transfer recipients to enter nonagricultural self-employment and increased profits in household enterprises as well as overall income and consumption. The main effect of the vocational

training delivered to cash transfer recipients was to increase wages in private wage jobs. But overall the average impact on income and consumption across all beneficiaries was not significant.

Early results from impact evaluations of the “graduation model” also suggest substantial productive impacts. For instance, a program that targets the ultra-poor with a package including large asset transfers and intensive training was effective in inducing entry into self-employment in Bangladesh. The combined intervention was successful in inducing a change from agricultural wage labor to small businesses, raising annual income 36 percent on average (Bandiera et al. 2012). These results are consistent with evidence emerging from similar programs in Honduras, Pakistan, and West Bengal.

Safety Nets as Vehicles to Deliver Interventions Aimed at Improving Youth Employment Outcomes

Traditional safety nets do not seek primarily to foster productive employment for the current

generation of youth, but they have the potential to do so. These programs target the very households that are engaged in low-productivity activities. As such, safety net programs have the potential to deliver complementary interventions opening pathways toward more productive employment for the poor. There are not necessarily any equity-efficiency trade-offs in targeting productive interventions to the poor: in fact, poor households often would benefit the most from productive interventions (Macours, Premand, and Vakis 2013). The effectiveness of these complementary interventions for opening such pathways is yet to be evaluated rigorously in Africa, but their potential to help individuals to “graduate” to more productive and secure livelihoods deserves to be considered as part of inclusive employment strategies. Greater attention could be paid to targeting productive interventions to youth within poor households benefiting from such programs.

Notes

1. Safety nets can also create positive externalities on the local economy.
2. See Subbarao et al. (2013) for a review. For instance, Liberia and Sierra Leone rolled out cash-for-work programs in 2008 to cushion the impacts of soaring food prices (Wodon and Zaman 2010). In its first phase, the program in Sierra Leone reached 16,000 beneficiaries, who worked for approximately 50 days, for six to eight hours a day, on road rehabilitation, reforestation, soil conservation, and cultivation of rice and alternative crops (Andrews et al. 2012). The program in Liberia offered, on average, 40 days of temporary employment to 17,000 households, which mostly rehabilitated public agricultural land and cleaned and cleared roads, drains, and public spaces (Andrews et al. 2011). The program was later scaled up to cover 45,000 beneficiaries.
3. Cash transfers can contribute to raising growth through channels other than their direct impact on beneficiaries (Alderman and Yemstov 2013). For instance, simulations also suggest that they have productive impacts on the local economy (Asfaw et al. 2012).
4. Pilots delivering cash grants to beneficiaries have had large impacts on employment and earnings (for example, Blattman, Fiala, and Martinez 2011). It remains unclear how the impacts from a public works program would compare

to those of a program delivering cash to beneficiaries amounting to the labor and capital costs of a public works program.

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