



Smallholder agriculture in Africa

An overview and implications
for policy

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Smallholder agriculture has long served as the dominant economic activity for people in sub-Saharan Africa, and it will remain enormously important for the foreseeable future. But the size of the sector does not necessarily imply that investments in the smallholder sector will yield high social benefits in comparison to other possible uses of development resources. Large changes could potentially affect the viability of smallholder systems, emanating from shifts in technology, markets, climate and the global environment. The priorities for development policy will vary across and within countries due to the highly heterogeneous nature of the smallholder sector.

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Summary

This paper considers a range of issues relating to the current status and future trends affecting smallholder agriculture in sub-Saharan Africa, including the likely transitions that lie ahead for this sector. Smallholder agriculture has long been the dominant economic activity for people in the sub-Saharan region, and it will remain enormously important for the foreseeable future. The sector is highly heterogeneous and includes farms that are quite commercial in orientation as well as those that are rooted in quasi-subsistence livelihoods. This heterogeneity is often ignored in discussions of the importance of smallholder agriculture. Too often, these discussions argue that the sheer size of the sector implies that it must play a key role in growth and poverty reduction. The evidence here is mixed, however. The size of the sector does not, by itself, serve as evidence that public investment should focus on smallholder agriculture. Much more evidence is needed about the relative social benefits – measured appropriately – of investing in smallholder agriculture in comparison to other possible investments.

Discussions about the future of smallholder agriculture also tend to take a static view; but vast changes lie ahead, emanating from shifts in technology, markets, climate and the global environment. These forces can produce dramatic changes in the structure of agriculture

over relatively short periods of time. The changes in structure will almost certainly not involve any major shift away from family-based production units, which dominate farming worldwide – a fact that economists understand as the result of incentive and information problems that arise in agriculture. But it would not be implausible for larger family farms to emerge in some parts of sub-Saharan Africa, relying on mechanization and taking advantage of emerging market opportunities. Smallholders may be displaced by the growth of urban middle-class populations and the concomitant rise of supermarkets and commercial supply chains; they may also be displaced by continued growth in export-oriented agriculture.

Policies have an important role to play in shaping the conditions under which smallholder systems evolve. The emergence of larger farms is not intrinsically bad; but in some cases in the rest of the world, consolidation has occurred through direct expropriation of smallholders or through parallel processes resulting in the alienation of their land rights. Smallholders may require protection via policy in this process, as well as effective social safety nets that secure their well-being.

1

Smallholder agriculture in Africa: roles, status, and trends

Most sub-Saharan African households depend on smallholder agriculture for their livelihoods, and most agriculture in Africa, in turn, is carried out by smallholder households.¹ This remains true even after several decades of growth in urban populations. As of 2010, the UN Food and Agriculture Organization (FAO) reported that 58.8 per cent of the total sub-Saharan workforce was in agriculture and a slightly higher proportion (63.6 per cent) of the total population was in rural areas.²

Smallholder agriculture is also and particularly a source of livelihoods for women. Although women make up little more than half the agricultural workforce, women are more likely to work in agriculture than in other sectors. Thus, agriculture is the main source of employment for almost two thirds of economically active African women. Very few women work in the wage labour market; almost all are working in smallholder production.

Almost all the agricultural workforce is employed in smallholder production systems rather than large farms, although there is no conceptually clear way to define 'small farms' or 'smallholder agriculture'.³ On many measures where quantification is possible, however, it is clear that most African agriculture takes place on a small scale. For instance, the vast majority of crop farms are smaller than five hectares (Eastwood *et al.*, 2010, appendix table 1, p. 3394), and evidence from numerous household surveys supports the idea that the median size of a crop farm is probably between one and two hectares in most of the countries with available data. (See Eastwood *et al.*, 2010, Dercon and Gollin, in press, p. 2.)

¹ This paper focuses on sub-Saharan Africa, and I use the term 'African' here to refer specifically to the subset of the continent that is south of the Sahara. In particular, I will draw data from the FAO groupings of countries in eastern, middle, southern and western Africa. I do not include their category of North Africa in the data that follow, and my descriptive statistics for 'Africa' will relate to this group of countries, thereby excluding North Africa and the Middle East.

² These data come from the FAOSTAT online database, available at <http://faostat.fao.org/>. The data were last accessed on 6 June 2014. Subsequent references in this paper to FAOSTAT refer to this data source and a similar date of access.

³ Smallholders are variously defined in the literature in terms of the land area of the farm, the number of workers, the value of output, or the value of asset holdings. Different definitions make sense in different production systems. For instance, a definition based on land area does not necessarily make sense for a commercial poultry or dairy farm that may produce very high values with essentially no land. Conversely, the land measure may also overstate the 'farm size' of a herder.

The small land area of these farms should not obscure their importance in livelihood strategies. Small farms are not only sources of employment; they are also, perhaps obviously, sources of food and sustenance. Although there is enormous heterogeneity across sub-Saharan Africa, many smallholder families produce a large fraction of the household's food; and conversely, much of their agricultural output is consumed within the household.

Household surveys from African countries generally show high rates of household consumption of agricultural produce. For instance, in Rwanda, only half the grain production enters market channels; the rest is consumed within producing households. Similarly, households sell only 30 per cent of the roots and tubers produced and less than 10 per cent of the beans (Republic of Rwanda, National Institute of Statistics, 2010, p. 56). This is not unique to Rwanda; the same pattern holds in Uganda, for instance, where two thirds of the cooking bananas (known locally as *matoke*, and an important staple food) and three quarters of the cassava are consumed in the producing households (Uganda Bureau of Statistics, 2006, pp. 56-59). In northern Ghana, about 80 per cent of the production of maize – the single most important crop – is consumed by the households that produce it, along with three quarters of the sorghum and half the yams (Wiredu *et al.*, 2010, p. 7).

As noted above, most African agriculture takes place in smallholder systems. Very few farms employ large numbers of hired workers; the exceptions are large plantations that produce tea, rubber and a few other export crops. As a result, most of the workers in the agricultural sector in Africa are self-employed or own-account workers; very few are employees. Although relatively few countries report these data, the figures are striking in those countries that do. For instance, averaged over the period from 2001 to 2010, only 1.2 per cent of the agricultural workforce in Benin consisted of employees, as defined by the International Labour Organization (12,000 out of nearly one million). Similar low proportions (less than 2 per cent of the agricultural workforce) worked as employees in Guinea, Ethiopia, Tanzania and Sierra Leone. In effect, this is a measure of the dominance of smallholder modes of production in all but a few countries with large-scale production of plantation export crops. The exceptions to this rule are

revealing: they are countries with relatively small overall shares of agricultural employment (compared to total employment). Thus, large fractions of the agricultural workforce consist of 'employees' in Botswana (11.2 per cent) and even larger fractions in South Africa (59.1 per cent) and Mauritius (55.3 per cent).

Although African smallholders depend on agriculture for sustenance as well as for cash income, it is important to recognize that many smallholder households pursue non-farm activities as well as farming.⁴ The degree of dependence on agriculture varies substantially across and within countries. Rural non-farm employment offers a number of benefits to agricultural households. It serves as a form of diversification and risk coping, provides a vehicle for managing seasonal fluctuations in agricultural labour demand, and provides cash income to complement and supplement the in-kind income from farming (Haggblade *et al.*, 2010). There is significant spatial and economic heterogeneity in rural non-farm employment (Smith 2003). In general, households that are in remote areas tend to devote all of their labour hours to farming, and rural non-farm employment is correlated with proximity to markets. But this correlation sometimes breaks down and it is certainly not monotonic. In areas of close proximity to cities and urban markets, households may find it worthwhile to specialize in intensive production of high value agricultural outputs, such as fruits and vegetables or dairy, aimed at urban consumers. Specialization may take place at the level of individuals; some household members may work in off-farm activities while others engage full-time in farming activities.

Haggblade *et al.* (2010) argue that rural non-farm employment is growing in importance in many developing countries, and many studies point to large continuing flows of population from rural to urban areas.⁵ Certainly agriculture's share of total employment has been falling steadily in almost all countries in the region. Because rural populations continue to grow rapidly, however, the absolute number of people working in agriculture and living in rural areas seems likely to rise for the next several decades in sub-Saharan Africa (Masters *et al.*, 2013). What is clear is that in sub-Saharan Africa, non-farm employment and urban employment are primarily in sectors such as trading and informal services; there is little or no manufacturing employment in African towns and cities (Gollin *et al.*,

⁴ The literature on rural non-farm employment has been well surveyed, beginning with Haggblade *et al.* (1989) and continuing more recently to Reardon (1997), Barrett *et al.* (2001), Hazell *et al.* (2007), Wiggins and Hazell (2008), Haggblade *et al.* (2010) and Jayne *et al.* (2010), among others.

⁵ Some recent literature (for example McGranahan *et al.*, 2009; Djurfeldt and Jirstrom, 2013) has argued that Africa's urban populations are growing primarily through natural increase (that is, by births exceeding deaths). This literature appears to be based on data from surveys such as those conducted by the DHS Program that, because of their sampling frames, are unlikely to do a good job of capturing rural-urban migration. The small number of surveys that track individuals over time, along with census data, give quite a different picture. Moreover, family size (that is, accounting for surviving children, as opposed to fertility rates) is consistently lower in urban areas than in rural ones, so for urban population *shares* to be rising, it must be the case that adult mortality rates are implausibly higher in rural areas than in urban areas. This is simply inconsistent with the data.

2014a). Urban employment opportunities appear to offer higher wages and standards of living than do rural jobs (Gollin *et al.*, 2014b), and it remains somewhat puzzling why rural-urban migration flows are not larger than currently observed (de Brauw *et al.*, 2013).⁶ Possible explanations include the strength of informal insurance networks in rural areas; the potential loss of land rights and the importance of retaining title. In terms of long-term and external forces affecting smallholder agriculture in Africa, perhaps the most powerful will be the supply of urban employment. If new urban employment opportunities emerge and barriers to mobility fall, it seems possible that the pace of rural outmigration could dramatically increase.

⁶There are numerous explanations offered for the resistance of people to leave agriculture and rural areas. One is that those who migrate risk losing their rights to land under many traditional systems of property rights. Since land is often the most valuable asset that people hold, migration is thus associated with an extreme loss of wealth. Another explanation is that informal social safety nets are strong in rural areas and people do not want to risk losing access to this kind of insurance. Other explanations invoke intangible differences in living standards, including social status and the value of living near family.

2

Advantages and disadvantages of smallholder farms

One reason for the persistence of smallholder agriculture in Africa – and elsewhere in the world – is that small family-operated farms benefit from a number of advantages related to incentives, information and management effectiveness. These have been widely discussed for many decades in the economics literature. Small farms also face a number of disadvantages – related to missing markets for credit, insurance, information and also, perhaps, to economies of scale in marketing and transportation.

The standard view (such as Lipton, 2005) holds that smallholders farm land very intensively – more intensively than large farms – resulting in high levels of productivity per unit of land. Small farms also typically use family labour rather than hired labour, thereby solving many incentive issues that affect agricultural labour markets. For instance, family labour is thought not to face the same issues of shirking and costly monitoring as hired labour. Small farms may also face an advantage in that the family labour supply is extremely flexible; during peak periods, labour can be mobilized nearly around the clock; during slack times, farm labour activities can be

worked around other commitments, including off-farm employment. Thus, a family member can take half an hour each evening to feed a flock of chickens; because of labour market indivisibilities, this is a difficult task to hire in.

The advantages listed here are essentially associated with the family management structure of smallholder agriculture, rather than with the absolute size of the land holding. Indeed, this is reflected in the prevalence of family farming as the dominant mode of agricultural production across the globe. Even in rich countries with heavily commercialized agricultural sectors, family farms predominate and family labour is the principal source of farm work. Thus, in the United States in 2011, virtually all (96 per cent) of the production of major field crops (maize, cotton, soybeans and wheat) came from family farms, as defined by the Economic Research Service, and about half the value of all agricultural production came from farms where the bulk of the labour was provided by the principal operator and spouse.⁷ In the United States, hired labour is rarely used except in the very largest crop farms: for corn or wheat farms smaller

⁷ The US Department of Agriculture defines family farms as, "...those whose principal operator and people related to the principal operator by blood or marriage own most of the farm business. The principal operator is the person who is responsible for the on-site, day-to-day decisions of the farm or ranch business." (MacDonald, 2014). In contrast, the UN's definition also imposes the requirement that the farm relies primarily on family labour. By the more restrictive UN definition, family farms still accounted for 62 per cent of the production of major field crops.

than 500 acres hired labour accounts for less than 5 per cent of the total labour hours used. Even for farms of 1,000–2,000 acres (compared to a median size for crop farms of about 900 acres), hired labour provides less than 20 per cent of the total labour hours (MacDonald *et al.*, 2013). The United States is not unique among rich countries in this regard: in most Organisation for Economic Co-operation and Development (OECD) countries, agricultural production units are typically family-owned and family-managed, with the bulk of the labour coming from family members.

As is clear from the example of OECD countries, however, the advantages of family farms do not necessarily imply that farms will remain small. Family farms in many European countries are, on average, quite large; in several countries, average farm size is greater than 50 hectares. The average land area of farms has continued to rise in today's rich countries, primarily through a process of consolidation. Thus, in the United States, MacDonald *et al.* (2013) report that the midpoint crop acreage – defined as the farm size such that half of all crop area is in farms that are larger than the midpoint – rose from 589 acres in 1982 to 1105 acres in 2007.⁸

It is clear that small farms do not equate to family farms; although almost all small farms are family farms, family farms can be quite large. What then determines farm size (as measured by land area)? Broadly speaking, we can think of the key determinants as being: the quality of land, the profit-maximizing choice of output and technology, and the prices of inputs and outputs. In particular, the relative costs of capital and labour have an impact on the choice of technologies and the quantities of these inputs that are used in production. In poor countries, where capital is typically scarce and expensive (unless subsidized), farm families will use little capital and will primarily depend on labour. If land were abundant and costless, we might then expect that farm size would be determined by the amount of land that a family can farm with its own labour, given that hired labour is a poor substitute for family labour. In places where land is scarce, we might expect farm size to shrink somewhat. But below a certain threshold, the returns to labour are too low and we will expect to see people exiting agriculture – either by leaving agriculture altogether or by seeking off-farm (and generally non-

farm) sources of income. In contrast, where capital is relatively inexpensive compared to labour, as is true in many rich countries, we should expect to see that farm size will depend on the amount of land that can be profitably farmed with the machinery and equipment that a family can operate and/or afford. This indeed is the pattern that we see.⁹

Many analysts have focused on the high crop yields attained by smallholders as evidence that they are more 'efficient' or more 'productive' than larger farms. Indeed, an extensive literature has documented an inverse relationship between farm size and productivity in developing countries. Although there are complicated empirical issues in estimating this relationship from data – related to heterogeneity in land quality, location and infrastructure, among other things – recent studies find robust evidence of this inverse relationship even in carefully estimated studies (Barrett, 1996; Barrett *et al.*, 2010; Larson *et al.*, 2012). What is left unsaid in this literature, however, is that small farms typically achieve lower output per unit of labour, almost as a corollary of their yield advantage. Another point that is worth noting is that this advantage of small farms depends precisely on failures in labour and land markets that leave smallholder households inclined to use extraordinarily high levels of labour on small plots of land. In a world with frictionless markets for labour and land, we would expect to see no particular correlation between farm size and productivity levels.

This is not to deny the advantages of small farms in Africa, but it is important to note that the observed yield advantages are not evidence of some underlying technological advantage. In thinking about the long-term viability of smallholder agriculture in Africa, it would be a mistake to think that small farms have an inherent technological edge that will assure their survival or allow them to out-compete family-owned large farms. Their advantages are, in fact, dependent on pervasive market failures and might be expected to melt away if, when, and where those market failures fade – with small family farms giving way, in general, to larger family farms. (There may in some places be opportunities for non-family farms, but the management advantages of family production units are unlikely to disappear.)

⁸ The midpoint differs from the median farm size in that it focuses on the median acreage of cropland, rather than the median farm. Because there are many very small farms, the median farm is very small; but most of the cropland is in larger farms (MacDonald *et al.*, 2013).

⁹ Households do not need to own all of the capital that they operate; they may rent equipment or, alternatively, hire equipment services, especially when the capital requires specialized skills. This would be true of hiring oxen and ploughing services in the Ethiopian highlands, for instance; it is equally true of combine harvesting wheat in the United States. The general point remains.

It is also important to recognize the disadvantages faced by smallholders in other dimensions. As noted above, smallholders typically face obstacles in accessing formal sector credit and insurance markets that limit their take-up of improved technologies and marketing opportunities (Jack, 2013). Smallholders often face additional obstacles to their integration with commercial marketing channels. Smallholders may struggle to take advantage of profitable opportunities to sell to supermarket chains and other formal sector retailers, due to their difficulty in complying with quality and consistency standards and also to the high transaction and monitoring costs that these retailers face in dealing with farms that market small quantities (Reardon *et al.*, 2012). In dynamic zones, where new marketing channels are emerging that are targeted to urban consumers or export markets, smallholders may find that they face strong competitive pressures from larger farms.

3

Policy issues

The sheer size of the smallholder sector – and the number of poor people dependent on small-scale agriculture – have made this sector a target of interest for governments and for the broader development community. Interventions that succeed in improving productivity or living standards for smallholder farmers are seen as having high social returns. For example, Hazell *et al.* (2007) argue that smallholder agricultural development offers ‘one of the main ways to reduce poverty’, and they suggest that, at least in some relatively dynamic areas, smallholder agriculture can contribute significantly to economic growth. A similar viewpoint appears in Fan *et al.* (2013). Numerous papers (for example de Janvry and Sadoulet, 2009; Fan *et al.*, 2000; Fan *et al.*, 2002; Gemmell *et al.*, 2000; Ligon and Sadoulet, 2008; Tiffin and Irz, 2006) find evidence that increases in agricultural output or productivity lead to large reductions in poverty – and in particular, larger reductions than would be achieved from similar increases in non-agricultural output or productivity.

But as Dercon and Gollin (in press) have argued, the size and significance of the smallholder sector do not, by themselves, imply that investments targeting smallholders have a high expected return – either in growth or poverty reduction. This depends on the feasibility and efficacy of interventions aimed at small farms and rural households. Crucially, it also depends on the opportunity cost: whether the same resources spent elsewhere could generate greater impacts on poverty or other outcomes of interest. For instance, there may be large benefits associated with improvements in agricultural productivity for smallholders. But it may be substantially harder to raise productivity for this group than for large farms or for non-agricultural firms. This will depend on the context. In

some settings, however, poverty could be reduced more effectively through the creation of off-farm jobs.

Without understanding these trade-offs, it makes little sense to argue *a priori* for (or against) focusing policies on the smallholder sector. Given the heterogeneity of African settings, it cannot be the case that development policies should always and everywhere favour smallholder agriculture as opposed to other sectors and public investments.

Moreover, it is difficult to think of investments, policies or development interventions that target smallholder agriculture with any precision. Most interventions that would benefit agriculture are, at best, scale neutral; they benefit large farms at least as much as small farms. Improved agricultural technologies, such as new crop varieties, are often scale neutral. Investments in rural roads and electrification are likely to benefit large land owners at least as much as smallholders. Perhaps interventions that allow smallholders to overcome transaction costs – such as support for farmer organizations or cooperatives – might benefit smallholders. And perhaps there might be ways to target interventions to small farmers that focus on input supply and information. In general, however, the key challenge for policy may be – to invoke a phrase from Hazell *et al.* (2007, p. 31) – reducing the biases against smallholders and “getting the basics in place”.

In this category, Hazell *et al.* (2007) include investments in rural roads and infrastructure, the provision of basic public goods and a range of activities suitable for a modern developmental state. These are not necessarily interventions or activities that would specifically favour smallholders, but they have the potential to promote rural development and agricultural growth more generally.

In recent years, however, concerns have emerged that many African governments seem to be opening the door to policies that would explicitly favour large farms. The most apparent support for large farms has come in the form of government support for land purchases by large-scale producers. In some cases, governments have actually sold land directly to investors. In other instances, governments have played an enabling environment, making sure that the legal and institutional environment is sufficient to assure investors that they can manage land as they wish.¹⁰ Some of these land acquisitions have taken place on publicly owned land, but in much of sub-Saharan Africa, land ownership rights are complex, with conflicts between formal legal claims and traditional or customary claims. Even when the state asserts ownership rights to land, their claims may be contested by local communities. In this context, government support for large-scale land acquisitions almost inevitably involves contestation; there is little scope for willing seller–willing buyer transactions.

Land sales are only one form of government support for larger farms. Numerous governments have in recent years articulated narratives in which commercial

agricultural development would be focused on ‘growth corridors’, such as the Southern Agricultural Growth Corridor in Tanzania or the Beira Growth Corridor in Mozambique. The concept of growth corridors is not very rigorously defined, but the main idea is to create a spatial and geographic concentration of government investments and services to complement private sector investments in commercial agriculture. Although the rhetoric of growth corridors is typically enthusiastic about supporting smallholders, there is an undeniable emphasis on larger-scale commercially oriented ventures, as opposed to subsistence or quasi-subsistence modes of production.

Both land acquisitions (referred to by some as ‘foreign direct investment in land’) and growth corridors have generated substantial public debate. Opponents argue that these policies effectively support large-scale commercial agriculture, with undesirable social and poverty impacts. Advocates argue, in contrast, that policies aimed at supporting smallholders have the effect of keeping people trapped in poverty, in a sector where there is little or no potential for long-run growth.

¹⁰It is important to note that many advocates of foreign investment in land are eager to argue that it will create opportunities for poor smallholders as well as for large farms. To the extent that this argument is not disingenuous, it rests on the idea that large-scale acquisitions will create opportunities for resource-poor smallholders to share in the market opportunities that are created by larger operations, as well as creating demand for wage labour. Thus, Deininger *et al.* (2011) argue that “... a variety of institutional arrangements can be used to combine the assets of investors (capital, technology, markets) with those of local communities and smallholders (land, labor, and local knowledge). Such arrangements include land rental, contract farming, and intermediate options, such as nucleus-outgrower schemes.”

4

Future trends

With competing pressures from policy, demographics, technological progress and market forces, how will smallholder agriculture fare in Africa over the next several decades? Any forecasts are obviously unreliable: there are far too many unknowns for anyone to predict the future of African agriculture with confidence. A few points seem worth keeping in mind, however.

First, demographic momentum is a powerful force. It seems clear that rural populations will continue to rise in absolute terms for several more decades, even as the rural share of the population falls.¹¹ With little new land available for agricultural expansion, this suggests that *average* farm size is likely to fall, implying that there will be many small farms – and that small farms may in fact become smaller (Masters *et al.*, 2013). These smaller farms will be situated in a rural landscape that is more densely populated, which may have implications for both labour and product markets. The greater population density could plausibly lead to reductions in transport and information costs, allowing for greater specialization of labour in both agricultural and non-agricultural tasks. In places with unequal distribution of land, the growth of rural populations may lead to an expansion of the pool of landless agricultural labour. In areas where land is relatively equally distributed, livelihoods will eventually become dependent on non-farm opportunities or migration.

Second, small farms are likely to remain the dominant class of producers in much of African agriculture. There will be enormous heterogeneity within the population of small farms. In areas with good proximity to markets

and effective governance, small farms are likely to move away from subsistence and quasi-subsistence modes of production. Instead, a class of highly commercialized smallholder farms is likely to emerge. These will not be limited to traditional export cash crops; instead, smallholder farms will be heavily involved in producing high value output for domestic markets – including formal marketing channels such as supermarkets. Among the commodities that may make sense for smallholders in well-connected areas are dairy, fruits and vegetables, farmed fish (and shellfish, in some locales) and perhaps also grains and starch staples that are intended for industrial uses, such as sorghum and millet for brewing, or soybeans for animal feed. In more remote areas, smallholders will be growing a broad range of human foods, along with some (typically non-perishable) cash crops that can be sold to provide households with the ability to meet their needs for non-food items.

Third, large family farms may become increasingly competitive. Too often, when people invoke the prospect of large farms in Africa, they envision some kind of corporate behemoths. But there is little evidence for the success of that model outside of a few commodities (for example oil palm, bananas and, perhaps, intensive livestock production, if ‘large’ is defined by the number of animals instead of the physical area). By focusing on the inverse relationship between farm size and yield, the literature has tended to suggest that large farms operate at a clear disadvantage. But this seems like a misreading of the research. Large farms do not obviously face any technological barriers in Africa. On the contrary, large farms achieve higher levels of output

¹¹ FAOSTAT projections suggest that sub-Saharan Africa will experience increases in rural population numbers at least until 2050, with a total increase of nearly 70 per cent by that time.

per worker. The basic economic logic of large farms is compelling, particularly in locations where farmers can easily access global markets for inputs and outputs. It is true that relative factor prices (expensive capital and cheap labour) would normally tend to encourage large farms to expand by hiring (abundant and inexpensive) labour. But for all the reasons discussed above, farms will not tend to expand through hiring more workers. Instead, they will expand and consolidate through mechanization, allowing farm households to expand in size while drawing largely or exclusively on family labour.

Where markets remain thin and poorly developed, farms will likely remain small. But in locations with good access to international markets, large farms may become competitive even without subsidy or support. The displacement of small farms by large ones can happen quite fast when the market forces are properly aligned. This has been the experience in Latin America, and it is difficult to see why the African context would be different. In parts of Latin America (for example Paraguay and parts of Brazil in recent years), large farms – explicitly or implicitly allied with governments – have succeeded in displacing small farms. This displacement has at times taken place simply through buy-outs of smallholders. But at times, governments have more aggressively supported the large farms – for example, by helping to force poor people off the land they have been farming. It is difficult to imagine why governments in Africa would be more effective advocates for the poor and powerless than were governments in Latin America.

5

Some further research questions

To understand the future trajectory of smallholder agriculture in Africa, it would also be helpful to have a more complete understanding of the economics behind today's smallholder sector. A number of basic questions remain unanswered.

For instance, the food price spikes of 2008/09 and 2011 have made it clear that we do not at present know whether Africa's poverty levels are increased or reduced by increases in world prices. Although some early research (such as that of Aksoy and Isik-Dikmelik, 2011) seems to suggest that high world prices are better for poor rural households, the evidence is patchy and incomplete. A more complete answer to this question would seem important for thinking about different agricultural development strategies. If the poor are net producers of food, then higher prices are likely to benefit the poor; if the poor are net consumers, then lower prices will dominate.

In the same way, we do not at present have a good and comprehensive understanding of the role that non-farm income plays in smallholder livelihoods. The standard view is that non-farm income is an important component of total rural income. But are many or most rural households dependent on non-farm activities, or is this a characteristic of a particular subset of rural households – namely, those who live in towns? Is rural non-farm employment an important supplement to smallholder incomes? Or is it linked to a small set of households who may live in rural areas, but are essentially inhabitants of towns? The answers to these questions will also affect strategies for smallholder agriculture.

Finally, there remains much room for research that would shed light on the ways in which people ultimately exit agriculture. Do they tend to move to new locations, such as cities? Or do they remain in the same vicinity and change activities, moving (for instance) from farming to trading? What are the forces that drive the exit process, and what is an appropriate role for the state in promoting or facilitating exit from agriculture?

* * *

The ubiquity of smallholder farms in Africa – and the relative poverty of the people who depend on smallholder agriculture for their livelihoods – makes it important for policy makers to focus on these production units. Small farms do not appear to enjoy any magical technological advantage that would guarantee their survival and, in fact, they are under increasing threat from larger commercial farms. The move towards consolidation is not necessarily a negative one. On the contrary, an increase in land per worker will be one of the most important ways in which output per worker is increased. But there are also reasons to worry about the welfare effects on those smallholders who are displaced from their land by the expansion and consolidation of large farms. The desire to support *smallholders* should not be confused with a need to support *smallholder agriculture*: equity concerns dictate caring for the needs of the people in these systems, but not necessarily by maintaining small farms as production units.

In the final analysis, too, it is difficult to identify interventions that would specifically target smallholders as opposed to larger farms. In most cases, policies and interventions that would affect the agricultural sector are likely to be scale neutral, meaning that the scope for targeted interventions may be limited. Instead, the forces most directly affecting the future of smallholder agriculture may emanate from shifts in technology, markets, climate and the global economic environment. These forces are capable of producing dramatic and sudden changes in the structure of agriculture and the role of policy may simply be to manage the process – and particularly to alleviate the welfare costs of dislocation.

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Smallholder agriculture has long served as the dominant economic activity for people in sub-Saharan Africa, and it will remain enormously important for the foreseeable future. But the size of the sector does not necessarily imply that investments in the smallholder sector will yield high social benefits in comparison to other possible uses of development resources. Large changes could potentially affect the viability of smallholder systems, emanating from shifts in technology, markets, climate and the global environment. The priorities for development policy will vary across and within countries due to the highly heterogeneous nature of the smallholder sector.

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