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CHAPTER 3

Megatrends and the Future of African Economies

BEYOND A MIDDLE INCOME AFRICA:

Transforming African Economies
for Sustained Growth with Rising
Employment and Incomes

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CHAPTER 3

Megatrends and the Future of African Economies

Lulama Traub, Felix K. Yeboah, Ferdinand Meyer, and Thomas S. Jayne

Introduction

After decades of lethargy, much of Africa is now experiencing rapid economic transformation.¹ Half of the world's 10 fastest-growing economies are in Africa, south of the Sahara (Kearney 2014). Africa's dynamism has spawned “foresighting” exercises to identify megatrends² driving the region's economic transformation and anticipate the future challenges and opportunities associated with these trends. Among the most frequently cited trends are the rise of the African middle class (AfDB 2011; Hattingh et al. 2012; Deloitte and Touche 2013), rapid urbanization and consequent shifts in food demand and downstream modernization of the food systems (Tschirley et al. 2013), a rapid shift in the labor force from farming to nonfarm jobs (Fine et al. 2012), and rising global interest in African farmland (Deininger and Byerlee 2011; Schoneveld 2014).

This article argues that these projections about Africa's future are a good deal less certain than the conventional wisdom might suggest. Foresighting exercises are often based on tenuous evidence of key underlying trends and tenuous assumptions about the degree to which these trends are inevitable exogenous forces. Most current trends are neither irreversible nor inevitable. Just as the current trends being observed in African food systems are the outcomes of the policies and public investment patterns of prior decades, the future will be shaped and transformed by today's policy actions—either those taken proactively or those taken

passively as a result of no action (Seidman 1973). This point may be underappreciated by development thinkers who speak in terms of inevitable transformations.

The evolution of Africa's economic systems ultimately reflects the investment decisions of the private sector, which constitutes both formal registered companies and millions of informal microenterprises. Yet the pace and composition of private investment is determined by the enabling environment set by governments (consider the difference between North and South Korea, for example).³ Given the strong commitments made by African heads of state under the Comprehensive African Agricultural Development Programme (CAADP), our focus is on what the public sector can do in the first instance to generate the incentives for systemwide private investment in food systems that contribute to equitable growth.

This article has two objectives. Our first is to clarify how megatrends, often considered to be shaping the region's economic, political, and social landscapes, are actually quite dependent on other related processes that are either highly uncertain or within the capacity of governments to alter. Toward this end, we consider which of the commonly articulated trends and transformations are indeed exogenous from the standpoint of African policymakers over the next decade and which are endogenously dependent on other, more fundamental processes that are within the realm of policy to influence. Remarkably different scenarios are plausible, with very different growth and distributional outcomes, contingent on the policy actions taken by African

¹ Economic or structural transformation can be defined as shifts over time in the sectoral composition of the labor force (de Vries et al. 2013). A healthy transformation process typically is associated with diversification of the economy and specialization at firm/household level.

² A megatrend is a social, economic, political, environmental, or technological change that is typically slow to form yet, when in place, exerts major influence on human behavior.

³ By *enabling environment*, we mean the integrity and efficiency of public institutions affecting commerce and trade; the economic policies influencing the returns to investment in particular sectors and areas; the pattern of public expenditures in infrastructure, education, health, research and development, subsidies, and taxation policies; and the degree of stability and predictability in the political-economic system. Inevitable policy variability across countries poses additional problems for generalized predictions of Africa-wide trends and transformations. Clearly the main features of change in agrifood systems and overall economies will vary greatly across areas of the continent.

governments. Time scale matters: The near term holds greater certainty. The farther forward we project, the more scope for the future to be shaped by long-term policy choices—those taken either implicitly or explicitly.

This then leads to our second objective, which is to contribute to a greater societal awareness of the potential to shape future outcomes through engagement in the political process within existing policy-dialogue platforms under CAADP. Rather than adopting analytical frameworks that reinforce perceptions of predetermined outcomes being driven by exogenous megatrends, we argue that a major role of the state is to engage the public and civil society in seeking greater consensus on matters of social policy, informed and guided by research evidence. Based on the goals and priorities identified through this process, the state then implements the policies and make investments that will guide private capital toward achieving these goals, anticipating the impacts of the trends that cannot or should not be altered and planning accordingly.

Based on this analysis, the chapter sketches out four plausible scenarios of how future African food systems might develop over the coming decades and shows how policy choices will influence whichever of these four scenarios actually manifests. This analysis may be of interest to civil society in promoting public discussion of what the dimensions of a “good society” might look like and the types of policy decisions required to achieve it. Our analysis may also help policymakers understand the policy options at their disposal to bend certain trends or forces in particular directions that may be considered socially desirable. It may also help public- and private-sector analysts involved in foresighting projections.

Megatrends Affecting African Economies

We highlight the following eight trends as being among the most important drivers of change in African agrifood systems.⁴

Trend 1: A higher mean and volatility of food and energy prices. Food prices have risen sharply and become more volatile since the global food price surge of 2007/08. Even though 2015 has witnessed a sharp fall in food prices, international maize, rice, and wheat prices in early 2015 adjusted by two different global deflators (the US gross domestic product (GDP) deflator and the global Manufacturing Unit Values Index) are roughly 42, 48, and 35 percent higher, respectively, in 2015 than their averages between 1995 and 2005. World maize, rice, and wheat prices over the 2006–2015 period are 68, 66, and 55 percent higher, respectively, than their inflation-adjusted 1995–2005 averages. Because every region of Africa is a net importer of staple food commodities, food prices in Africa have become and are likely to remain at very high import parity levels for the foreseeable future.⁵

Factors that are likely to keep future food prices relatively high in Africa include the following:

- Continued high population growth rates
- Rising income growth and hence demand for food in areas of the world that were historically poor
- Rising global demand for livestock products (which raises the demand for grain used in feed rations)
- An apparent slowing of grain productivity growth in major grain bread-basket regions of the world (Grassini et al. 2013; Cassman et al. 2010)

⁴ This article focuses on Africa south of the Sahara and uses the term *Africa* as shorthand. These trends are often presented as overarching ones with a pan-African reach, though their relative importance varies somewhat across countries as will the responses of African governments to them.

⁵ Import parity prices are defined as the world price plus international and local marketing costs to a particular destination.

- Greater costs of bringing new land under cultivation (for example, Chamberlin et al. 2014) and growing scarcity of productive resources (water and land) in Asia
- The growing connection between global food prices and energy prices, at least until such time as the world becomes less dependent on finite, nonrenewable sources of energy

However, the long-term perspective for food and energy prices will depend on the pace of new technologies for generating food and energy (Westhoff 2010). Both of these are major unknowns and highly influenced by policy decisions in the major food- and energy-producing regions of the world. Projections differ greatly on the long-term direction of food prices; compare, for example, the International Food Policy Research Institute's projections (for example, Rosegrant et al. 2012) with those of Baldos and Hertel (2014), Food and Agricultural Policy Research Institute FAPRI at the University of Missouri, and the Organization for Economic Cooperation and Development / Food and Agriculture Organization of the United Nations (OECD/FAO), which suggest that inflation-adjusted prices of the major grains and oilseed will be constant over the next decade with growing production levels comfortably meeting the growing demand for food.

Few, if any, African governments have the ability to affect world food price levels, and most have only limited ability to insulate their domestic food markets from secular changes in world market conditions, especially over a sustained period. This particular trend is therefore largely exogenous from the standpoint of individual African governments. Moreover,

the trend in global food prices over the coming several decades will be increasingly dependent on other megatrends, including the likelihood of much higher global prices of fresh water to maintain existing global breadbaskets (Strzepek and Boehlert 2010) and the growing connections between future land expansion and climate change.

Trend 2: Improved macroeconomic management. Macroeconomic management has improved dramatically in the post-structural adjustment period. Since 2000, few African countries have been massively in debt, requiring bailouts from international financiers and experiencing hyperinflation or rapid currency depreciation. A report from the McKinsey Global Institute indicates that African countries trimmed their foreign debt by one-fourth and shrunk their budget deficits by two-thirds between 2000 and 2008 (Roxburgh et al. 2010). The continent has also experienced rapid economic growth since the mid-1990s, with several countries recording growth rates above or near 7 percent.⁶ Even during the crises of the global food and financial markets, African economies maintained average growth rates well above the global average of 3 percent. This positive growth trend has been attributed to high prices of oil, minerals, and agricultural commodities over the past decade as well as improved macroeconomic conditions and prudent sectoral reforms, including in the agricultural sector, that have improved the enabling environment for private investment across the continent (ACET 2014). Many African countries have experienced sustained agricultural productivity growth since 2000 (Jayne et al. 2015).

⁶ In fact, 6 of the world's 10 fastest-growing countries in 2000–2010 were Angola at 11.1 percent a year, Nigeria 8.9 percent, Ethiopia 8.4 percent, Chad 7.9 percent, Mozambique 7.9 percent, and Rwanda 7.6 percent (IMF African Economic Outlook 2013).

Due to prudent monetary policies, the continent's inflation rate has decelerated since 2009, with variations across countries.⁷ Median inflation for Africa, which increased from 3.4 percent in 2002 to about 10.5 percent following the global food crisis in 2008, has declined and is expected to fall below 5.0 percent by 2015 (AfDB et al. 2014). The relative stability of African countries' macroeconomies over the past 15 years has attracted greater foreign investment in recent years. Since 2000, external financial flows into Africa have quadrupled, reaching more than US\$200 billion in 2014 and expected to further increase in the coming years (AfDB et al. 2014).⁸ At the same time, tax revenues as a form of internally generated funds continue to rise across the continent. In 2012 low-, lower-middle, and upper-middle income countries in Africa south of the Sahara mobilized about 16.8, 19.9, and 34.5 percent, respectively, of their GDP in tax revenues (AfDB et al. 2014).

While improved macroeconomic management is likely to persist and positively affect African economies well into the future, it is clearly endogenous from the perspective of African governments. Future growth may depend on the extent to which governments are able to anticipate shocks to the system and implement policies that maintain macroeconomic stability. For example, for resource-rich countries whose growth has been supported largely by the commodity boom, the extent to which they invest to diversify their economy will shape their future growth trajectory in the event of declining prices of oil or other commodities.

Trend 3: Rapid urbanization and rising per capita incomes giving rise to an African middle class. Recent studies have provided evidence of a rising middle class in Africa (for example AfDB 2011; Kearney 2014; Deloitte and Touche 2013; Tschirley et al. 2014). On this basis they project a rapid modernization of Africa's food systems and diets, with major employment growth being envisioned in the downstream stages of the food systems. However, these conclusions are highly sensitive to how middle class is defined.⁹ Potts (2013) argues that urban income growth is quite narrow in most African countries for which data exist. Jedwab (2013) and Gollin et al. (2013) indicate that GDP growth in many African countries is driven by narrow growth in natural resource sectors, which contribute woefully little to employment creation and raise the specter of urbanization without income growth or economic transformation. An otherwise bullish assessment by the McKinsey Global Institute (Fine et al. 2012) indicates that under the most favorable scenario the supply of wage jobs in manufacturing, services, and government is not growing rapidly enough to absorb more than two-thirds of the region's rapidly rising labor force. Other sources argue that urban income growth is robust and relatively broadly based (Young 2012; Tschirley et al. 2013; McMillan and Harttgen 2014a and 2014b). Therefore we note a lack of consensus on this issue.

It has long been argued that income growth restricted to a narrow segment of society produces weaker growth and employment multipliers than would be the case if the initial income shock were broadly based.

⁷ In 2013, only five countries in Africa south of the Sahara recorded double-digit inflation (Eritrea, Ghana, Guinea, Malawi, Sudan), relative to 13 countries in 2012, while 16 countries in recorded inflation rates below 3 percent in 2013 (AfDB et al. 2014).

⁸ The 2014 African Economic Outlook Report projects that foreign investment and official remittances to Africa could reach more than US\$80 billion and US\$67.1 billion, respectively, in 2014.

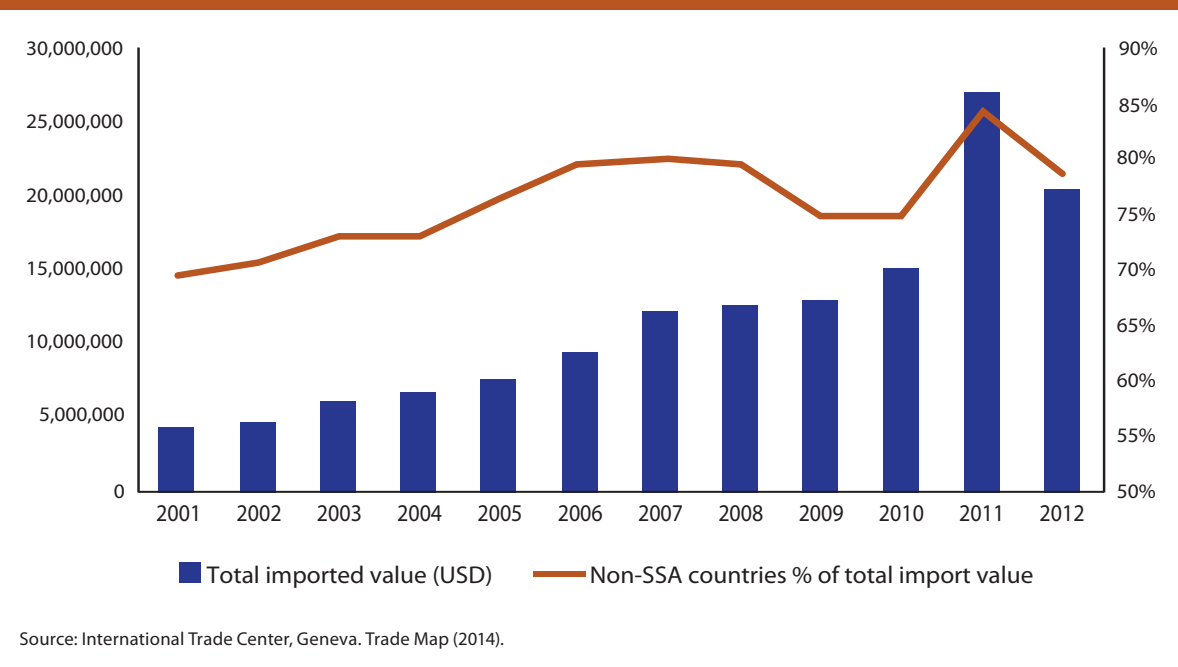
⁹ The African Development Bank (AfDB) defined *middle class* as per capita daily consumption of US\$2–20 in 2005 purchasing power parity. Further it found that this group had risen from 27 percent to 34 percent of the population between 1990 and 2010. However, about 60 percent of the middle class in 2010 were in the US\$2–\$4 per capita consumption group—barely out of the poor category and in constant threat of falling back into it (AfDB 2011). If this group is excluded, the rise in Africa's middle class over the past two decades would appear to be quite modest. There is evidence of rising incomes at least among a small segment at the top end of the income distribution.

The potential for urbanization and income growth to stimulate job expansion in downstream segments of the food system of course depends on where the primary agricultural products come from. If domestic farm production is able to keep up with rising urban demand, obvious growth of jobs will occur in food assembly, wholesaling, and meeting the demand for food away from home, in addition to processing and retailing. In contrast, if domestic production cannot keep up with food demand, imported food (both processed and raw) will take an increasing share of consumers' expenditures. The importation of processed foods may still stimulate job growth in food retailing, but will cause loss of potential for job expansion at the upstream stages of the food system, including agricultural input supply and agrobusiness

services, farm production, financial services for the farm sector, storage, and local trading, which can otherwise occur if consumer demand is met through domestic production. Capturing the potential of urban growth to stimulate employment growth in the agrifood system will hence depend on stimulating the domestic production base—itsself a potentially major source of growth in wage employment and self-employment in the coming decades (Losch 2012; Filmer and Fox 2014).

Worries about the loss of jobs within the agrifood system to foreign suppliers appear warranted. The data in Figure 3.1 demonstrate that while

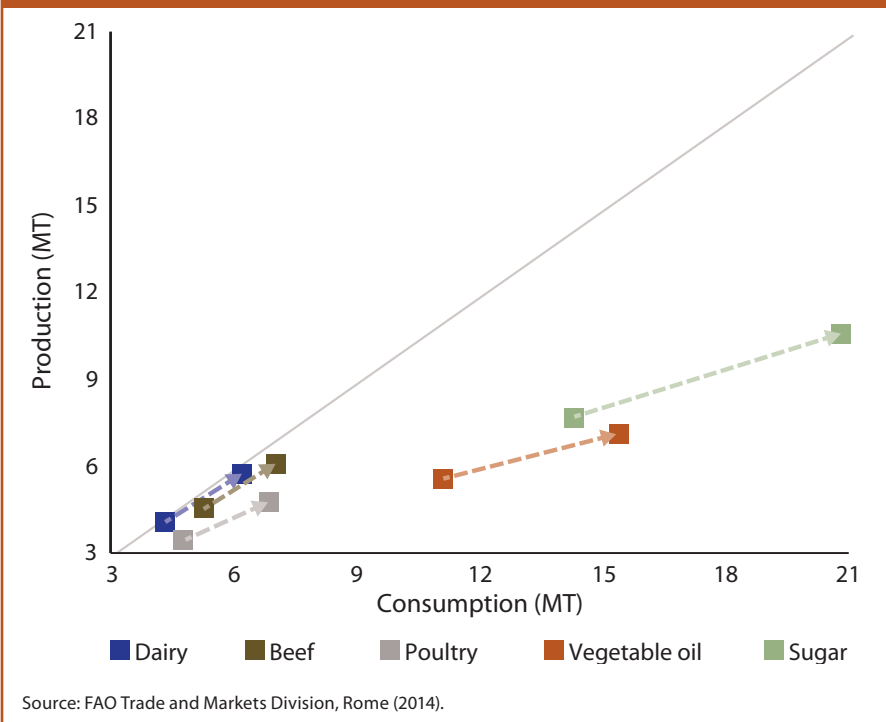
FIGURE 3.1—IMPORTS BY AFRICAN COUNTRIES OF PROCESSED, SEMIPROCESSED, AND HIGH-VALUE FOOD PRODUCTS AND THE SHARE OF IMPORTS ORIGINATING FROM OUTSIDE AFRICA¹⁰



Africa's demand for semiprocessed, processed, and high-value foods (many of which are considered basic food staples) is rising rapidly, this demand is increasingly being met by world markets. The value share of this imported food originating from outside Africa rose from 70 percent in 2001 to about 80 percent since 2010. Projections by the OECD and FAO of Africa's consumption and production of high-valued commodities over the period 2011–2023 also indicate that an increasing share of the region's growing demand for food products will be met by imports (Figure 3.2). Private firms in the region repeatedly warn that while urban populations and hence

¹⁰ The food products included in this figure follow Womach (2005) and are divided into three groups: (1) semiprocessed products, such as fresh and frozen meats, staple grain meals and flour, vegetable oils, roasted coffee, tea, and sugar; (2) highly processed products that are ready for the consumer, such as milk, cheese, wine, and breakfast cereals; and (3) high-value unprocessed products that are also often consumer ready, such as fresh and dried fruits and vegetables, eggs, and nuts

FIGURE 3.2—PRODUCTION AND CONSUMPTION TRENDS IN HIGH-VALUED FOOD COMMODITIES FOR AFRICA, 2011 TO 2023



demand are growing rapidly, major concerns exist over whether adequate supplies can be sourced through local production to meet this demand. Concerns over the scope for local production to respond to rising consumer demand are especially warranted in many countries where the potential for expansion of high-potential cropland is limited (Chamberlin et al. 2014). Export-oriented private-sector firms also acknowledge that Africa may be exporting agricultural commodities, but that most of the processing and value added is carried out internationally.

The pattern of trade shown in Figures 3.1 and 3.2 implies that the growth of employment and value addition within local agrifood systems is to some extent being captured by overseas suppliers. This employment growth could have been captured by local producers and agribusiness marketing and processing stages of the food system if urban demand were more effectively met by local production. The rate of new private investment and the transformation of value chains at the assembly, wholesaling, and processing stages of the food system will depend on the extent to which domestic food production keeps pace with demand or is lost to foreign suppliers.

Furthermore, the view that Africa is rapidly urbanizing is also highly contested. Prior to 2005, the United Nations concluded that Africa was the most rapidly urbanizing region of the world (for example, Cohen 2004), owing in large part to rapid urban-to-rural migration. The UN later modified its projections based on more recent evidence that urbanization is generally lower and considerably more variable across countries (Bocquier 2005; Potts 2012).¹¹ Furthermore, according to Potts (2013), over the past three decades the trends in the cost of living has often exceeded that of incomes in urban areas, intensifying the economic vulnerability of most urban households and contributing to circular migration between urban and rural areas.

The rates of migration and urbanization are responsive to public-sector actions that affect the relative costs of living in rural and urban areas and the relative returns to labor in agriculture and nonfarm employment (Harris and Todaro 1970). Policies and investment patterns vary greatly across countries, owing to highly varying political and historical conditions.

¹¹ In some areas of Africa, rural-to-rural migration may exceed rural-to-urban migration (Bilsborrow 2002).

For these reasons, and based on the empirical record to date, we conclude that some areas of Africa may experience broad-based income growth and urbanization over the next several decades. But the pace and extent to which this occurs is likely to vary substantially across countries, depending on government policies and the composition of public expenditures.

Trend 4: Rapid increase in the number of young people entering the labor force because of Africa's unique demographic structure. Over 60 percent of Africa's population is currently below the age of 25. Roughly 17 million people will enter the labor force each year over the next decade (Losch 2012; IMF 2015). Fine et al. (2012) estimate that given current rates of employment growth, less than half of these people will be absorbed into gainful off-farm wage jobs. Even under the most favorable policy and growth scenarios, the urban and nonfarm sectors can absorb at the most two-thirds of the youth entering the labor force into off-farm employment. Therefore, the viability of family farming is likely to determine whether the remaining youth who are seeking jobs are productively engaged in agriculture and the informal sector (which is heavily dependent on agriculture as a source of demand), or whether they join the ranks of the unemployed. The latter scenario will bring major political risks. Fortunately, policy and public investments can rapidly improve the incentives and the profitability to engage in farming—a major opportunity both for the youth and for governments.

This trend is perhaps the one with the highest degree of certainty, and one that African governments can proactively anticipate and respond to. Instituting¹² an enabling environment that rapidly promotes private investment and job creation in nonfarm sectors and labor-intensive forms of

agriculture would have high payoffs and raise the likelihood that a country's economic transformation will be relatively smooth rather than painful and protracted. We discuss what such an enabling environment might look like in Sections 4 and 5.

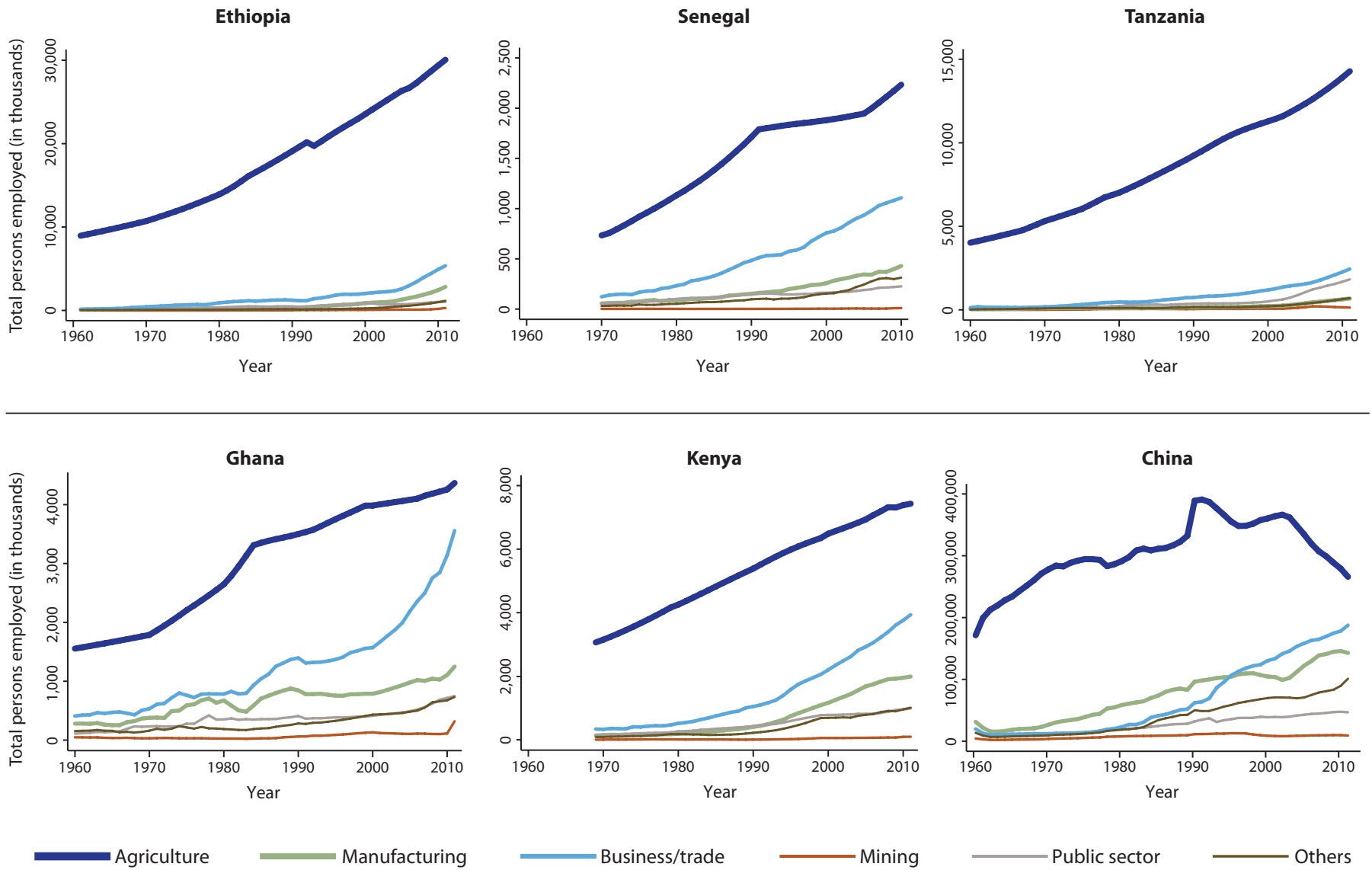
Trend 5: Rising nonfarm job opportunities, but agriculture likely remaining the single largest source of employment for at least the next several decades.

Where will these young Africans be employed? Will most Africans continue to be involved in farming as in prior decades, or will we see rapid structural transformation toward nonfarm employment? Urbanization and income growth (or possibly mainly population growth) do appear to be causing some shifts in the labor force from farming to nonfarm sectors as well as the downstream stages of food systems. Tschirley et al. (2015), for example, project that the percentage of employed people located in the downstream stages of African food systems will rise from 8 percent of total employment in 2010 to 12 percent or more by 2025, and that 17 percent of all new jobs created in the economy over this 15-year period may be in these downstream stages of the food system (retailing, processing, food preparation away from home). They also project that the jobs in the nonfarm economy over the same period may rise from 17 percent to 28 percent.

However, in the recent past the number of people employed in primary agriculture rose in select African countries (Figure 3.3). Compared with China, where the agricultural labor force peaked around 1990 and has since been declining, each of the eight African countries examined by Yeboah and Jayne (2015) using national census data show increases over time in the number of people primarily employed in agriculture.

¹² Specific policies and investments, consistent with broad-based agricultural growth and poverty reduction, include investments in physical infrastructure (such as roads, rail systems, ports, and electrification), policies favorable to family farming, agricultural R&D, education, and farm extension programs (Fan et al. 2008; EIU 2008).

FIGURE 3.3—TRENDS IN SECTORAL EMPLOYMENT IN VARIOUS COUNTRIES



Source: Groningen Global Development Center (2013).

Consistent with employment trends by the Groningen Global Development Center (2013), a recent flagship World Bank report (Filmer and Fox 2014) projects that family farming will remain the single largest source of employment for at least the next several decades.

However, most African countries are experiencing a declining share of the number of people employed in farming over time, indicative of some diversification of employment away from farming into nonfarm employment sectors. Results from nationally representative multiyear and multicountry survey data over the past decade show that the proportion of the working-age population involved in farming is declining in most but not all countries (Yeboah and Jayne, 2015). At the same time, there is a corresponding growth in the share of people employed in the nonfarm sectors (Table 3.1). This observed growth in the share of nonfarm employment is largely concentrated in construction and manufacturing, nonagricultural commerce and transportation, services in the informal sectors, as well as downstream agriculture-related wholesale and retailing activities. These findings are consistent with other studies (for example, Badiane, Ulimwengu, and Badibanga 2012; McMillan and Harttgen 2014a and 2014b), suggesting a gradual transformation of African economies from agricultural to nonfarm employment in the service sector.

Moreover, urbanization in Africa does not mean that agriculture will decline in importance as a source of livelihood for many if not most of Africa's population. Recent surveys show that farming is the primary source of livelihood for between 10 and 25 percent of urban households. To some extent this occurs due to reclassification of localities from rural to urban once a threshold number of households is exceeded. But this is only part of the story. Development Health Surveys (DHS) data indicate that households

whose primary residence is urban control 10–30 percent of total national agricultural land, and this share has risen in recent years for most of the countries with multiple years of data (Jayne et al. 2015).¹³ The jump in world food prices since 2008 has made farming very profitable for those with sufficient capital to acquire good agricultural land and use modern inputs. Wealthy urbanites are increasingly investing in land for both speculative reasons and for income generation through farming (Jayne et al. 2015).

This view of rising agricultural landownership among urban households is corroborated in some countries by data on employment trends in census and Living Standard Measurement Study (LSMS) survey data. The number of working-age men and women employed primarily in farming is rising quite rapidly in Kenya, Nigeria, and Tanzania, more rapidly than the overall growth in the labor force in all three countries. In Kenya and Tanzania, the fastest growth in farming among urban residents is in the oldest age categories (45–54 and 55–65 years of age) for both men and women. This pattern is not replicated in all countries. Forthcoming analysis of employment trends by Yeboah and Jayne (2015) show two distinct patterns, where sustained agricultural productivity growth during the 2000–2013 period appears to be correlated with the recent growth rates of employment in farming among urban households, while sluggish agricultural growth rates is in most cases associated with slow (or even negative) rates of growth in the number of urban people stating their primary employment to be in farming. Countries such as Mali, Malawi, and Zambia are in the latter category. However, across most of the countries analyzed by Yeboah and Jayne, the number of working-age people in rural areas who are primarily engaged in agriculture, while generally growing, is declining as a share of the total labor force over time.

¹³ These are likely to be underestimates of the true extent to which national agricultural land is controlled by urban-based households, for reasons described in Jayne et al. (2015).

TABLE 3.1—STRUCTURE OF EMPLOYMENT OVER TIME FOR GHANA, TANZANIA, AND ZAMBIA

EMPLOYMENT CATEGORY	% SHARE OF THE POPULATION EMPLOYED					
	Ghana		Tanzania		Zambia	
	2005	2013	2008	2012	2005	2012
Within agrifood systems						
Farming*	52.91	43.80	64.93	55.74	73.79	56.88
Downstream agroprocessing and manufacturing	6.12	3.64	0.79	0.90	1.23	1.57
Downstream agricultural commerce**	6.69	14.09	4.50	5.00	1.85	6.34
Outside agrifood systems						
Forestry and mining	1.25	1.90	0.79	1.12	1.54	2.83
Manufacturing and construction	7.43	8.74	5.31	8.26	3.52	5.89
Professional and technical services	7.78	8.91	8.38	7.31	5.39	7.75
Financial and real estate	0.47	0.99	0.53	0.37	0.63	0.80
Transportation and commerce	14.12	13.45	12.16	17.05	9.43	9.15
Arts, entertainment, and recreation	0.29	0.43	0.30	0.58	0.20	0.16
Communal and personal services	2.95	4.06	2.31	3.67	2.41	8.65
Total employment as % of working-age (15–64 years) population	68.43	79.78	64.57	71.54	79.00	70.36
Source: Ghana Living Standard Surveys 5 and 6; Tanzania National Panel Surveys (2008 and 2012); Zambia Labor Force Survey (2005 and 2012). *Farming comprises crop and livestock production activities including fishing, aquaculture, and hunting. **Downstream agricultural commerce comprises wholesale and retail of agriculture-related products.						

In light of these trends, we expect employment opportunities in some nonfarm sectors to continue to rise rapidly, but agriculture will still remain the main source of employment over the next several decades in most African countries. Policies that enhance productivity in agriculture appear to have the greatest potential to directly improve rural livelihoods and stimulate effective demand and growth in the nonfarm job opportunities through multiplier effects that may be generated from the productivity gains.

Trend 6: Rapid concentration of farm structure and marketed surplus from agriculture. The demand for agricultural land in Africa has risen dramatically since the surge in global food prices starting in 2007. Agricultural subsidies and land policies in many countries have accelerated the demand for land. Recent evidence indicates that relatively wealthy people (both rural and urban) are investing in land at an unprecedented rate, leading to the rapid rise of medium-scale farmers in Africa. A study of three countries (Ghana, Kenya, and Zambia) by Jayne et al. (2014a) indicates that medium-scale farms control more land than large-scale foreign investors in all three countries and control more agricultural land than small-scale farmers in two of the three countries. Evidence also suggests that existing land policies are leading to increased inequality of landholdings and in some cases may be making it more difficult for area expansion in densely populated smallholder farming areas (Jayne et al. 2014a; Woodhouse 2003).

Farm lobbies have also changed their complexion over time and are increasingly dominated by urban-based and politically influential

medium- and large-scale farmers (most farming in the range of 20 to 100 hectares). This group has progressively steered agricultural policies and public budgets in their favor through input subsidy programs targeted to “progressive” farmers and through commodity price support programs and import tariffs that reward those with the greatest surpluses to sell.¹⁴ Ironically, most small-scale farms are net staple-food buyers and are adversely affected by the lobbying of national unions of farmers aimed at raising grain prices (Jayne 2012).

However, these trends reflect the incentives embodied in land and agricultural policies over the past several decades. Future farm structure and income growth from agriculture are highly malleable to alternative land and agricultural policies. We are inclined to agree with Woodhouse (2003) that farm structure and farm commercialization are likely to become more concentrated over time in most countries unless land and farm policies are put in place to actively reverse these trends.

Trend 7: Widespread soil degradation in densely populated African farming systems. Land pressures in the densely populated farming areas of Africa are causing a gradual shrinking of farm sizes over time (Headey and Jayne 2014). Smallholder farmers respond by more continuously cropping their fields every year. Fallows have largely disappeared in densely populated areas.¹⁵ Continuous cultivation of existing plots would not necessarily pose problems for sustainable intensification if soil quality was maintained or improved over time through sufficient use of fertilizers, soil amendment practices, and other land-augmenting investments. However, a major body

¹⁴ Similar processes of elite capture of public agricultural expenditures in Latin America are discussed by López and Valdés (2000).

¹⁵ Fuglie and Rada (2013) report that fallowed land as a proportion of total farmland in Africa south of the Sahara has declined from 40 percent in 1960 to roughly 15 percent in 2011. Jayne et al. (2014b) report that fallows have largely been eliminated in smallholder farming areas containing more than 250 people per km² of arable land.

of evidence in Africa points to soil degradation arising from unsustainable cultivation practices in high-density areas of the continent (for example, Stoorvogel and Smaling 1990; Drechsel et al. 2001; Tittonell and Giller 2012).¹⁶ Loss of micronutrients and soil organic matter pose special problems, both because they cannot be ameliorated by the application of conventional inorganic fertilizers and because they tend to depress the efficiency of inorganic fertilizer in contributing to crop output (Shaxson and Barber 2003; Marenya and Barrett 2009; Vanlauwe et al. 2011). Because of continuous cultivation and lack of crop rotations,¹⁷ soil organic carbon levels have reached very low levels in high-population-density Africa (Powlson et al. 2011; Vanlauwe et al. 2011). Giller et al. (2006) and Tittonell et al. (2007) conclude that smallholder farmers are largely unable to benefit from the current yield gains offered by plant genetic improvement due to their farming on depleted soils that are nonresponsive to fertilizer application. The problem of soil mining has the classic elements of a “social trap” (Platt 1973), in which people adopt behaviors that are consistent with their short-term livelihood objectives but produce unsustainable and potentially disastrous long-term consequences. Rising rural population density and associated land pressures are important underlying drivers of these processes, yet they are clearly within the scope of policy to ameliorate. A more holistic approach to sustainable agricultural intensification can succeed in reversing these trends and creating the potential for productivity growth in high-density smallholder environments (Snapp et al. 2010; Powlson et al. 2011).

¹⁶ Common forms of soil degradation include declining nutrient balances (“soil mining”), erosion and loss of topsoil, acidification, and loss of organic matter. An important contrasting study by Tiffen et al. (1994) argues that population pressures between 1950 and 1980 in the Machakos District of Kenya induced households to make land-augmenting investments that contributed to sustainable intensification. However, in a more recent revisit to these same areas in 2014, Kyalo and Muyanga (2014) note that population densities during the period studied by Tiffen et al. were generally below 400 people per km², about half the current densities in many areas of Machakos where widespread soil degradation and unsustainable forms of intensification are apparent.

¹⁷ On very small farms, households cannot afford to sacrifice a whole year by planting green manures or crops for which there is limited consumption value because they need to produce as much food as possible for the coming year.

Trend 8: Greater climate variability. The precise impacts of climate change on African farming systems are likely to vary spatially, but two general predictions are greater variability in agricultural production and possibly a decline in crop productivity (Schlenker and Lobell 2010).

In the developed world, 31 percent of total wheat, rice, and maize production has reached a yield plateau, experienced an abrupt decline in yield growth rates, or both (Grassini et Al. 2013). This has serious implications for global food security, as past projections of global food production were based on sustained yield growth in the United States, Europe, and parts of the Far East.

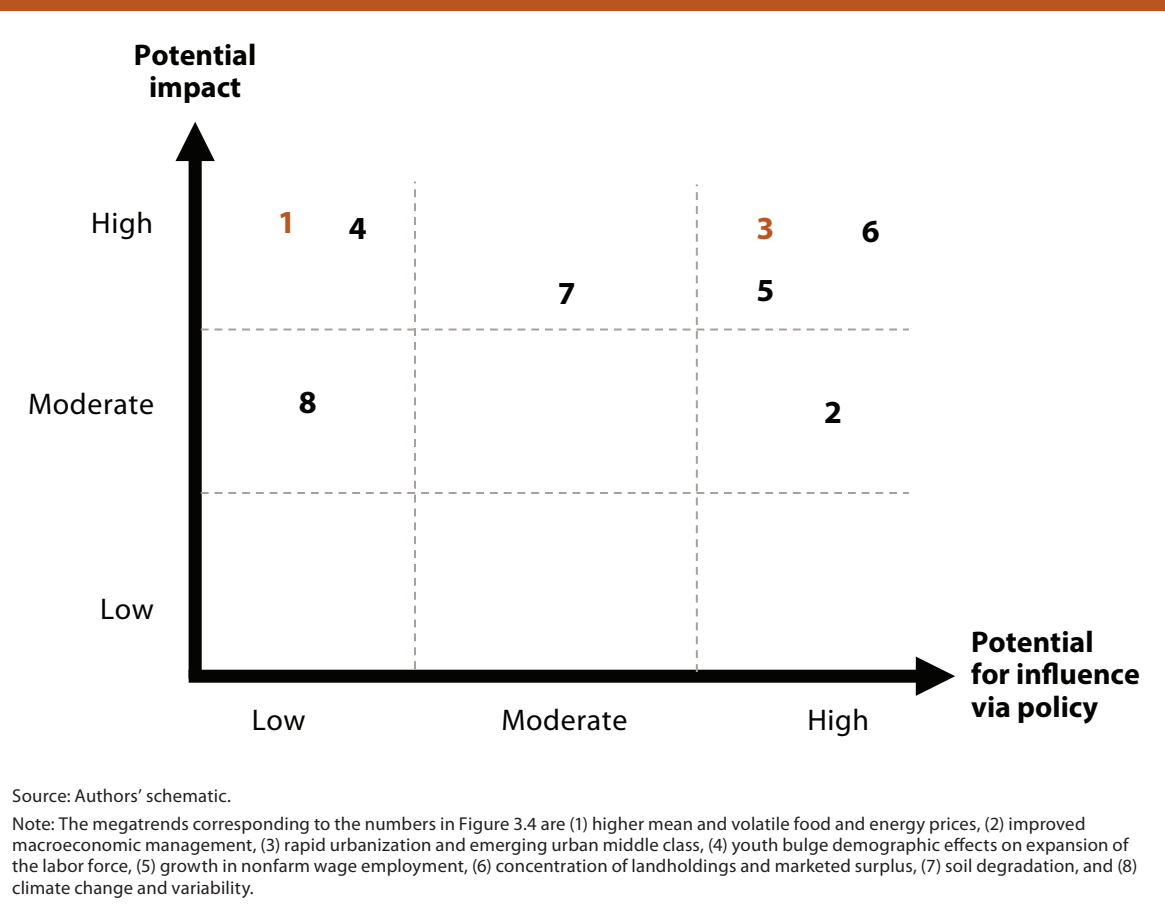
In contrast, Africa’s low levels of yields indicates the potential to experience continued growth in food production before reaching the region’s biophysical limits. Africa and Latin America are experiencing the world’s fastest growth in the share of global farmland under cultivation (Headey 2015). However, feeding the global population through expansion of agricultural land will involve degradation of natural ecosystems. The alternative, ecological intensification of agriculture, would require minimizing the constraints to appropriate technology adoption; focusing on sustainable water use through irrigation; and implementing best farming practices. Given the rising competition for water (to date, 70 percent of available water is used by irrigation farming) it will be imperative that agriculture focus on developing irrigation technology that improves water use efficiency and enhances our ability to adapt to climate change (Cassman et Al. 2010).

Ultimately these effects of climate change are largely exogenous in the short run from the standpoint of African policymakers, but it is quite possible that future land policies affecting the rate at which forest- and grassland are converted to farmland may influence the degree of climate variability experienced in some parts of the region. In this way, factors affecting the supply of and demand for farmland in Africa may affect the pace of this trend in the coming decades. Moreover, if global climate change induces greater volatility in world food prices, this may induce public and private investment responses at certain stages of the food system, for example, local storage and a shift toward food self-sufficiency, or investments in water-saving technologies and adaptive farm-management practices.

Classification of Megatrends

Scenario planning is a foresighting methodology used to make sense of an uncertain future. It allows for a systematic approach to understanding the possible implications of observed trends and provides a framework that categorizes what is inevitable, what is malleable, and in this study the plausible

FIGURE 3.4—CLASSIFICATION OF MEGATRENDS ACCORDING TO IMPACT AND POTENTIAL INFLUENCE VIA POLICY



role of public policy in influencing future outcomes. To generate the scenarios, the eight megatrends presented in Section 2 were ranked, through an iterative process, by the authors according to two dimensions—the **relative impact** on shaping the African food system, and the degree to which the

direction or force of the trend can be **influenced through policy actions**, broadly defined. Figure 3.4 illustrates this ranking.

According to our subjective rankings, African policymakers have little scope to alter Trends 1 (global food and energy prices), 4 (youth bulge), and 8 (climate change), at least in the next decade. In contrast, policy and public investment patterns can do much to bend Trends 2 (macroeconomic management), 3 (urbanization and rising middle class), and 6 (changing farm structure) in socially desirable directions. Taking Trend 3, for instance, major public investment in infrastructure and education, would be likely to stimulate private investment in industry and manufacturing and hence encourage the growth of wage employment in urban areas.

Two of these megatrends are of special importance, both because they are highly uncertain and because they will determine the pace of other trends if they do materialize. These two megatrends are the direction of world food prices and the rate and breadth of urban income growth (Trends 1 and 3). From the standpoint of private- and public-sector stakeholders in the agricultural sector, the first trend is largely exogenous in the sense that stakeholders can do very little to influence the time path of global food prices. However, great scope exists—both through agricultural as well as industrial policy—to influence the pace and breadth of urban income growth. The extent to which urban income growth is broadly based will also depend in part on the nature of future agricultural growth. The contribution of agricultural growth to nonfarm employment through growth multiplier effects is well established and is considered to be one of the central pathways leading to nonfarm growth in Green Revolution Asia (for example, Mellor 1976; Lipton 2005; Fan et al. 2008).

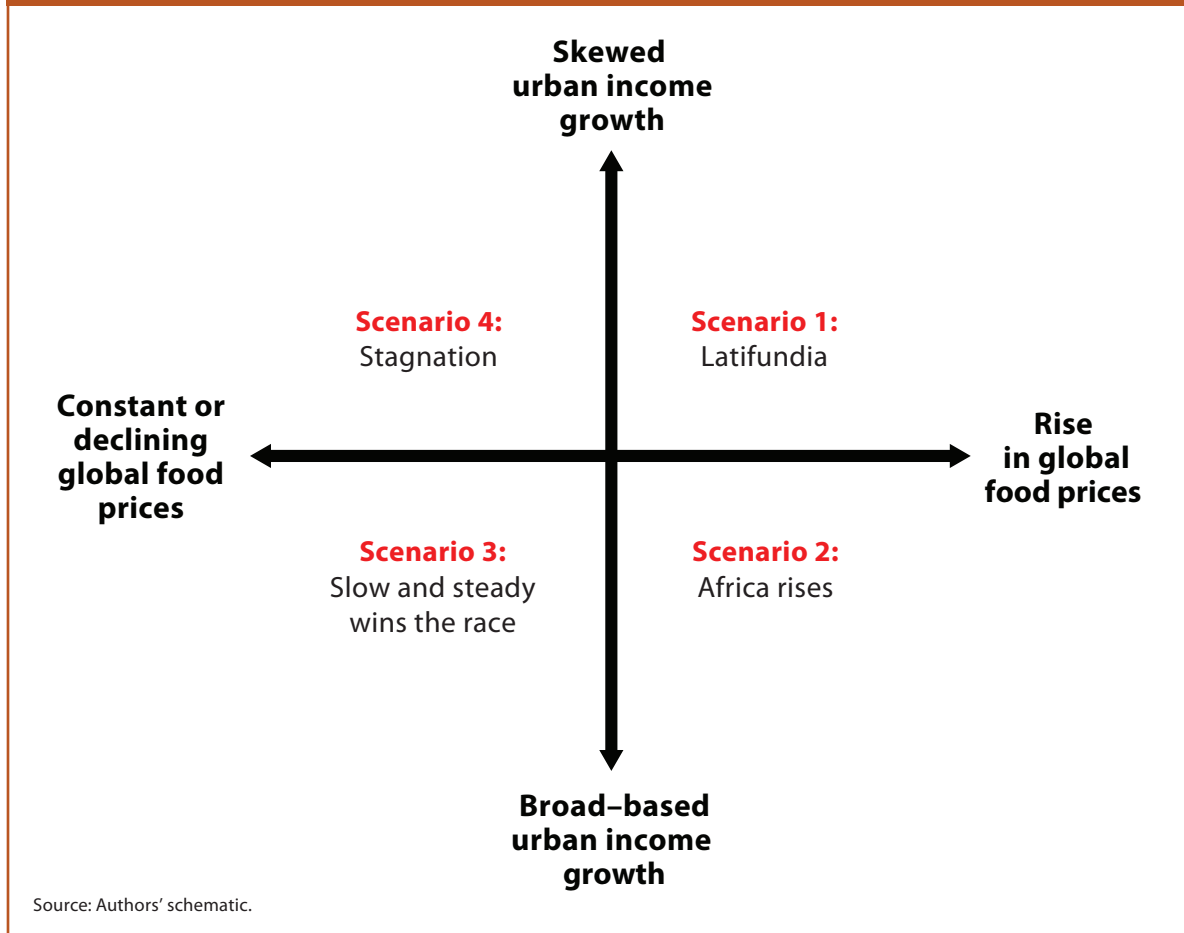
Four Possible Trajectories of Economic Transformation

For the purpose of this analysis, Trends 1 and 3 (the rate of growth in world food prices relative to prices in the rest of the economy, and the pace and breadth of urban employment and income growth) were selected as the key uncertainties underpinning the resulting scenarios. The selection was determined by the high impact potential, the contrasting degree of policy malleability, and the internal and external consistency exhibited by these trends relative to Trends 4 and 6. In particular, these drivers describe uncertainties that could generate probable scenarios that are relevant to all the key stakeholders. Four possible scenarios emerge (Figure 3.5). The projected impacts for each scenario are discussed from the perspective of five stakeholder or interest groups: (1) African governments, (2) traditional authorities, (3) rural communities (the majority of whom are small-scale farmers), (4) urban consumers, and (5) private-sector firms and investors.

Scenario 1: The Emergence of Latifundia

Assuming that global food prices continue to rise over the next several decades and that urban income growth is quite skewed, with the top 20 percent of urban households realizing a rapid rise in income while the remainder experience little or no growth, we project broad outcomes as noted in the following paragraphs.

FIGURE 3.5—FOUR FUTURE SCENARIOS OF THE AFRICAN FOOD SYSTEM



middle-class consumer goods. Consumption patterns among wealthy consumers will slowly shift away from starchy staples and toward animal products, fresh fruits and vegetables, and more convenient processed foods. Rising food prices driven by the rising demand will attract increased private investment in the development of local value chains to produce and process these products more cheaply than imports. However, whether domestic production indeed becomes a cheaper source of meeting rising domestic demand depends decisively on government policies and public investment patterns. For example, state investment in rural electrification, roads, and irrigation can provide cost advantages to local production and stimulate private investment. Farm lobbies representing the interests of commercialized sellers (many of whom are influential urbanites in government, the private sector, or both) may become quite powerful under this scenario and effectively lobby for public funds to be used in support of

Rise of an urban elite: Even if only 10 to 20 percent of urban Africa becomes middle class, the sheer size of Africa’s cities will be sufficient to attract major foreign investment in food retailing and other upper- and

domestic food self-sufficiency to protect against foreign competition and the vagaries of a volatile world food market.¹⁸

¹⁸ Despite producing questionable income distributional effects, this line of argument in favor of farm price supports above world market prices has been successfully employed in the past throughout Africa, first by colonial settler farm lobbies and more recently by their African successors (for example, Jayne and Jones 1997; Jayne 2012).

Concentration of agricultural land: This scenario may accelerate the pace at which wealthy and influential people in both urban and rural areas acquire prime agricultural land. Farm lobbies are increasingly being represented by medium-scale farmers, many of whom are educated people with urban-based jobs and relatively new entrants into commercialized farming (Sitko and Jayne 2014; Jayne et al. 2014a). Such circumstances appear to encourage efforts through the political process to convert large tracts of land from traditional tenure structures to statutory tenure systems where land can be privately owned through title deeds acquired through land markets. A skewed pattern of income growth confined to the top 20 percent of urban households would most likely increase their demand for land and accelerate pressures on the state to convert customary land to statutory tenure (where this process has not already been completed). Such changes in land tenure would accelerate already profound shifts in farm structure, featuring rising inequality in land distribution. The Gini coefficients of land distribution in African countries where data are available appear to be rising quite rapidly over time, are now much higher than those in Green Revolution Asia, and are in some cases approaching those of the latifundia agricultural systems of Latin and South America (Jayne et al. 2014a).¹⁹

The impacts on farm productivity are unclear. New technologies may provide efficiency advantages to medium- and large-scale farms. While the evidence to date shows an inverse relationship between farm size and efficiency over the range of 1–10 hectares (for example, Larsen et al. 2013; Carletto et al. 2013), very little evidence shows efficiency differences between small, medium (20–100 hectares), and large farms (more than 100 hectares).

In any case, the relationship between farm size and production efficiency is a reflection of prior policies and patterns of public investment (for example, water rights and irrigation investments having been made for the benefit of particular groups at the expense of others).

Greater income inequality: Greater concentration of both consumer demand and landownership may restrict the breadth of economic growth in Africa and retard the poverty-reducing benefits of whatever agricultural growth does occur (Ravallion and Datt 2002). Most crucially, a form of income growth restricted to a narrow segment of society would diminish the income multiplier effects that otherwise might encourage more rapid and inclusive economic transformation.

Stubbornly high poverty rates: Greater concentration of land would be expected to contribute to landlessness and accelerate the rate of outmigration from rural areas experiencing land scarcity. Other things being equal, this would contribute to urbanization. However, if the form of nonfarm employment growth is not broadly based, it will be exceedingly difficult for the nonfarm sector to absorb the 330 million young Africans who will be entering the labor force between now and 2025 (Losch 2012). This could be a politically volatile scenario (Beehner 2007).

Agribusiness firms and investors: A continued rise in global food prices would be expected to elicit continued strong interest in large-scale land acquisitions by agribusiness firms and speculators, as well as domestic

¹⁹ For example, the Gini coefficients of landholdings have increased in Zambia from 0.42 in 2001 to 0.49 in 2012, and in Ghana from 0.54 in 1992 to 0.65 in 2005 (Jayne et al. 2014a).

investors, especially for commodities priced at import parity levels. We might also expect large investment firms to approach domestic landowners (many of whom appear to be speculators and not experienced farmers)²⁰ to engage in cooperative production schemes through land lease agreements, and so on. Such arrangements could promote major gains in agricultural production, though it is unclear whether this would be sufficient to keep pace with rising consumer demand without sustained public-sector commitment and expenditures in support of farm productivity growth.

Rural communities/small-scale farmers: High food prices would provide incentives for smallholder farmers to increase their productivity and expand their use of land. Intensified land pressures in densely populated areas will make it difficult for many rural households to do either. A continuation of land allocations to medium- and large-scale investors will indirectly exacerbate land pressures in densely populated rural areas by restricting the supply of unused land in other areas that would otherwise support voluntary rural–rural migration. Continued rural population growth and land subdivision will intensify land constraints in the more densely populated smallholder areas and contribute to forms of unsustainable intensification featuring land degradation. These can be reversed by aggressive state actions to put in place holistic programs of soil rehabilitation and sustainable land intensification (Drechsel et al. 2001; Powlson et al. 2011; Tittonell and Giller 2012).

Traditional authorities: High food prices coupled with a concentration of economic and political influence in urban areas would be anticipated to

intensify pressures to convert land from customary to state-titled land and hasten the demise of traditional governance systems in rural areas.

Scenario 2: Africa Rises

Our second scenario assumes that per capita income growth will be relatively high and broadly based and that global food prices will continue to rise over the next 10 years.

Urban elite: As with the latifundia scenario, we anticipate that rising incomes will hasten changes in food consumption patterns along the classic Engel curve. However, unlike Scenario 1, we anticipate that a growing proportion of this demand will be met by local industries as the more broadly based multiplier effects of broad-based income growth stimulate local investment at various stages of the food systems.

In terms of land acquisitions, increased disposable incomes and investment potential among urban households, combined with expectations of rising global food prices, are likely to increase the rate of new investment in land. Unmet demand for land will create pressures for conversion of land from customary to state-titled land accessible through market purchases. However, unlike in the latifundia scenario, a broad-based pattern of urban income growth will generate growth multipliers that are both stronger and better distributed through the local economy. This would, in turn, allow rural households to remain in agriculture while gradually increasing the share of their livelihoods earned from rural nonfarm employment, both through informal businesses and wage employment. Greater

²⁰ See Sitko and Jayne (2014) for evidence in Zambia, and Schoneveld (2014) for Africa-wide evidence.

nonfarm income-earning opportunities will also provide the capital to enable relatively productive smallholders to break through the barriers of subsistence agriculture into a more commercialized medium-scale stature. As a result, this scenario is likely to produce more equitable patterns of farmland use and more widely dispersed benefits to be derived from a high-food-price environment.

Urban poor: Broadly based growth in urban incomes will reduce the number of urban poor. Recent evidence indicates a long-term inverse correlation between food price levels and overall poverty, resulting from the multiplier effects associated with food production incentives (Headey 2014). Urbanization with income growth will result in more profound shifts in consumer demand patterns than in the latifundia scenario. Under latifundia, demand expansion is driven mainly by population growth, meaning that more of the same commodities are demanded by more poor consumers. Major shifts in consumer preferences for quality, convenience, and sanitary conditions for shopping occur only among a relatively small percentage of consumers who are experiencing significant income growth. In contrast, when urban income growth is broadly based, the composition of demand shifts as per Engel's law in addition to greater demand for the same goods driven by population growth. This growing urban demand will stimulate a greater supply response in local production and private investment in the food system, contributing to efficiency gains and employment generation. Such investments may help local food production keep pace with domestic demand growth and hence mitigate the trend toward increased food import dependence as shown in Figures 3.1 and 3.2. High food prices may also become less politically sensitive with broad-based urban income growth,

thus enabling more of the public budget to be shifted from general consumer food subsidies into other areas with greater payoffs to long-run productivity.

Rural communities/small-scale farmers: Under this scenario we anticipate that a greater number of smallholder farmers will be well positioned to meet the growing urban demand for food through informal markets. Improved market access conditions and increased private investment in food value chains will enable many of these farmers to adopt productive farm technologies, acquire more land, and move away from subsistence farming toward commercialization. Over time, some farm consolidation will occur as nonfarm employment opportunities pull the more marginal farmers out of agriculture and into more remunerative nonfarm jobs.

Agribusiness firms and investors: The interest of foreign investors will remain high, driven by strong demand growth through the food systems. Because income growth reaches further down to the urban poor, African entrepreneurs will be greater incentivized to invest in the informal markets that cater to the shopping habits of the poor, as well as in the more modern aspects of the food system that are preferred by high-income consumers. Broad-based income growth will also raise the incentives for local business investments along the food value chain as the demand rises for all categories of food.

Traditional authorities: The relevance of traditional authorities derives largely from their control over a stock of land to allocate to subjects, and the political power of those subjects in the modern state (Herbst 2000). In some countries, traditional authorities have been stripped of their authority

to allocate land through the conversion of customary land to statutory land. If smallholder farming is viable for many households residing in areas of customary tenure, this may stave off the pace at which customary land is converted to state-titled land. The viability of smallholder farming is most likely to be decisive; if the returns to labor in smallholder agriculture become too low, farming will offer little incentive, which then creates greater political pressure to change the tenure structure to enable others to take control of it. Agricultural policies and public expenditure patterns will largely determine the future returns to labor in smallholder agriculture.

Scenario 3: Slow and Steady Wins the Race

Under the third scenario we assume a broadly based pattern of urban income growth (for example, from investment and employment growth in industry and manufacturing), yet unlike Scenario 2, global food prices remain relatively constant or decline.

Urban consumers: We anticipate that food demand patterns would shift in ways similar to those described for Scenario 2, with similar virtuous cycles and multiplier effects being created between income growth in towns and private incentives to invest at the various downstream stages of the food system. High-income household demand will be increasingly met by imported food as shown in Figure 3.1 because lower food prices may dampen the returns to investment in local production for crops without a clear competitive advantage vis-à-vis the world market. Low-income household demand will be met by local small-scale production and informal value chains, yet the returns to labor for those engaged in those sectors may be quite modest without significant public investment in

support of infrastructure and agriculture (for example, crop research and development, extension systems, soil health programs, subsidization of inputs needed to make inorganic fertilizer more profitable to use).

Rural communities/small-scale farmers: The demand of international and domestic investors for agricultural land is expected to be lower under this scenario as a consequence of the relatively lower returns to agriculture in a low world-food-price environment. Local informal and formal businesses may have less competition from international capital, and the rate of investment and innovation in the food systems may be less dramatic than in Scenario 2 but still be favorable over the long run. These farm households will experience somewhat less competition from foreign investments in land. In other words, their access to land will not be as constrained as under Scenarios 1 and 2.

Foreign investors: The appetite for investment will decline as returns on investments fall. However, Africa will remain an attractive investment relative to the rest of the world owing to the rate of population growth and relatively broadly based income growth.

Traditional authorities: Lower world and domestic food prices are anticipated to reduce the competition for land from foreign investors and relatively wealthy urban people and to slow down the dynamic changes in farm structure described in earlier scenarios. Political pressure will be less intense to convert customary land to state-titled land. Consequently, traditional authorities may retain their influence in rural areas for a longer duration.

Scenario 4: Stagnation

As with Scenario 1 we assume a skewed distribution of growth in urban incomes and a constant or declining trend in global food prices relative to the general price level. While government policy decisions and the composition of its public investments are important in all cases, this scenario in particular may require a progressive and committed “development state” to manage the transformation to a thriving and relatively egalitarian society.

Urban consumers: Under this scenario, the natural resource industries, such as oil and mining, will continue to be the main engines of growth with relatively small growth multipliers emanating from agrifood systems and little potential for employment expansion in urban areas. Unlike Scenarios 1 and 2, the savings of the urban elite will be directed toward either nonagricultural growth sectors, such as mining, or to offshore banking and the like.

Rural communities/small-scale farmers: As in Scenario 1, continued rural population growth and land subdivision will intensify land constraints in the more densely populated smallholder areas, with median farm sizes decreasing over the next 10 years. However, low agricultural prices may depress incentives to invest in sustainable agricultural intensification without major public programs to address soil fertility issues in a holistic manner.

Agribusiness firms and investors: We anticipate a slow rate of foreign direct investment in food systems except perhaps in retailing. The phenomenon observed in Figure 3.1, whereby a high share of consumer food imports comes from international markets, may characterize this scenario as well, owing to the concentration of disposable income among a relatively narrow segment of high-income consumers. Low world and domestic food prices would also reduce the competition for land from foreign investors and relatively wealthy urban people and retard the dynamic changes currently being seen in land markets and farm structure.

Traditional authorities: As in Scenario 3, low food prices would reduce the intensity of the pressure put on the political system to pass sweeping land acts that convert customary land to state-titled land. Traditional authorities would be likely to retain their influence in rural areas for a longer duration.

Conclusions

Africa’s economies are complex and interdependent systems. Like most other economic systems, they develop endogenously with broader demographic and economic changes in the broader economy. Their future trajectories are highly dependent on policy choices and public investment patterns and hence can be molded by public action. Moreover, they evolve through interdependent decisions of many actors such that few emerging patterns can be linked to a particular agent within the system. The variables influencing their development change over time, along with the underlying structure of local, regional, and international economic systems. In this dynamic environment, notions of equilibrium conditions may be less

appropriate than continuous adaptation to disequilibrium caused by rapid technical, institutional, and policy change.

The takeaway messages from this analysis are threefold. First, many megatrends identified as drivers of change in African agricultural systems are arguably highly dependent on other underlying processes that may or may not occur. Our projections for the future are highly contingent on the predicted time paths of numerous variables. Two such variables of central importance in the context of predicting the future of African food systems are the direction of future world food prices and the rate and breadth of income growth in urban areas.

A second conclusion is that the pace and force of some commonly identified megatrends are highly dependent on policy and public investment decisions to be made by African governments. These megatrends are hence malleable over time. We highlight this point as a counterpoint to analyses couched in terms of inevitable transformations. The risk of conceiving of global food systems as irreversible exogenous shocks on developing countries is to neglect the role of proactive public policy to moderate and shape the way international forces affect local agricultural sectors. Therefore, achieving socially equitable outcomes in food systems does not stop at technical solutions for getting the prices right or the markets right (as important as these are), but fundamentally getting the political institutions and political processes right (Rodrik et al. 2004) since these processes determine the policies and, in turn, the market and pricing outcomes. In response to views that the widening social inequality of the United States might be an inevitable outgrowth of capitalist economies, Stiglitz (2014) remarked, “Widening and deepening inequality is not driven by immutable economic laws, but by laws we have written ourselves.” While

the question of how to get the political process right is obviously complex, situation dependent, and beyond the scope of this analysis, major features of such a process are that it is transparent, participatory, and one that can be defended as reflecting the long-term interests of the majority.

Our third conclusion is that some of the most important trends currently shaping African food systems may continue only for a limited duration. This is both because they are part of a system that co-evolves with related processes that may assume new trajectories and because some can be bent by policy. Hence, we believe that foresighting studies might be most useful if they would consider a range of plausible scenarios of the future in order to anticipate the various plausible challenges that African leaders might face. Our analytical framework considers four general scenarios contingent on the direction of global food prices and the pace and breadth of income growth in Africa’s rapidly growing urban areas, given the uncertainties and endogeneity of both of these to other important economic processes. A conclusion that is likely to remain constant no matter which scenario unfolds is that the creation of new jobs in the nonfarm economy will be unlikely to grow fast enough to absorb the rapidly growing young labor force. Because of this, smallholder agriculture will remain a fundamental safety valve for absorbing much of the new labor force into gainful employment (Losch 2012), at least as a several-decades-long intermediate stage in the region’s economic transformation. While only a fraction of smallholder farmers currently possess the requisite entrepreneurial ability and productive assets to thrive, this sector still plays a crucial role in successfully managing the transition to a modernized Africa. It must remain viable at least over the next several decades for two reasons.

First, we must acknowledge that even in 2014, most African countries are primarily inhabited by unskilled and semiskilled²¹ rural people who are primarily engaged in farming. While most rural people might wish to put down their hoes and walk into white-collar office jobs tomorrow, their levels of education and skills will prevent this from happening quickly. Under such conditions, much greater public investment directed toward making 2-hectare farms productive may have high payoffs. Second, the growth of nonfarm sectors and employment opportunities will rely on effective demand. When a country's population is 60 percent rural, it is difficult to generate effective demand for nonfarm goods and services without at least some portion of the countryside having enough money to participate in the cash economy. The literature on growth linkages indicates that the first-round beneficiaries of agricultural growth generate important multiplier effects by increasing their expenditures on a range of local off-farm and nonfarm activities that create second-round benefits for a wide range of other households in the rural economy (Johnston and Mellor 1961; Mellor 1976). The extent and magnitude of these second-round effects depend on how broadly spread the first-round growth is. The distribution of land and other productive assets will clearly affect the size of these multipliers. If dynamic labor and services markets can be developed, then other employment opportunities should be easier to create in the very locations where the larger smallholders are investing and raising their output and productivity. Proactive public-sector investment and policy support in developing these labor and service markets will be a key determinant of the magnitude of the growth linkages to be derived from agricultural growth. Education, which played a crucial role in Asia by allowing households to

exit agriculture into more lucrative off-farm jobs, is relatively low in most areas of rural Africa by world standards. Investments in rural education and communications are likely to become increasingly important to facilitate structural transformation under any of the future scenarios envisioned.

So, what should governments do? While Dercon and Gollin (2014) rightly warn that the empirical evidence is often not strong enough to warrant confident prescriptions, governments cannot wait for academics to conclusively agree on the priority list. Governments are acting today, and to be useful, academics must provide guidance based on the weight of the evidence. To these authors, the priority list would look something as follows. First, invest strongly in the education value chain—from higher universities to vocational schools to primary and secondary education—to upgrade the skill levels of young people entering the labor force. Second, implement policies to promote broad-based agricultural growth, including investments in research and development that are scale-neutral, agricultural extension programs, and programs designed to restore long-term soil fertility. Third, invest in physical infrastructure (roads, ports, and electrification) to reduce the costs of production in both industry and agriculture and thereby promote competitiveness and job creation. Fourth, institute an industrial policy that promotes private investment and job growth in local nonfarm sectors, which simultaneously acts as a stimulus to investment in local agrifood systems (see EIU 2008; Hausmann et al. 2008; Rodrik 2007). In particular, strategic industrial policies that aim to reduce the cost of doing business (for example, energy policies that focuses on 21st century technologies, which provide low-cost and reliable energy supplies) and improve competitiveness of local industry

²¹ At least with respect to the types of job skills being demanded in the modern and globalized economy.

(for example, remove or reduce trade restrictions and taxes on imports of inputs to industry and service sectors, that is, trucks, tractors, spare parts, etc. as well as minimize border-crossing bottlenecks). Furthermore, in terms of scope, industrial policy interventions should ensure that incentives and/or public goods aimed at improving the function of markets are equally available to both the formal and informal sectors. As most of the job growth in Africa over the next decade will be both in farming and nonfarm microbusinesses, industrial policies that provide a favorable and level playing field for both of these sectors would promote competition and growth. Fifth, invest in urban planning (housing, sanitation, health facilities, and green spaces) in anticipation of the near certainty that

an increasing proportion of Africa's population will be living in urban areas in the decades to come. A possible sixth priority area would be for governments to mobilize adequate funding to finance these investments and leverage complementary private-sector investments.

These challenges are formidable but manageable. While private investment will largely determine the quality and pace of job creation in the region, the enabling environment and the underlying political process determine the quality and pace of private investment. Hence the role of governance and institutions is decisive and will largely determine whether the region's economic transformation is a relatively smooth, robust, and peaceful process or a painful and protracted one.

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