PART III

Context for Agricultural Development

Chapter 9

AGRICULTURAL GROWTH, URBANIZATION, AND POVERTY REDUCTION

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There are opposing views on the importance of agriculture and urban development in reducing national and global poverty. At the extreme, these perspectives can be separated into two schools of thought. The first is the "pro-agriculture" school, whose thinking is underpinned by long-standing theory and a reading of certain global trends. For instance, despite rapid urbanization, rural populations continue to grow in most late-transforming economies (Thurlow, Dorosh, and Davies 2018), placing tremendous pressure on agricultural land and rural economies to create sufficient jobs and income opportunities (Chamberlin, Headey, and Jayne 2014; Thurlow 2015). Fast population growth and slow economic growth largely explain why global poverty is concentrating in Africa's rural areas (Thurlow, Dorosh, and Davies 2019). Traditional development models afford agriculture an important role in stimulating national economic growth—via backward and forward linkages between sectors (Johnston and Mellor 1961). Linkages to the *rural* nonfarm economy are often even stronger, because farm incomes are more often used to purchase locally produced goods and services (see Haggblade, Hazell, and Dorosh 2007). Agriculture is therefore expected to continue playing a major role in promoting economywide growth in today's late-transforming economies. Finally, agriculture-led growth is said to have stronger linkages to poverty reduction than nonagricultural growth (Christiaensen, Demery, and Kuhl 2011; Diao, Hazell, and Thurlow 2010; Dorosh and Thurlow 2016). The evidence supporting this is varied, ranging from macroeconometric and structural modeling of intersectoral growth linkages, to microeconomic and value-chain analyses of growth opportunities (see Dercon and Gollin 2014). Given these trends and evidence, the pro-agriculture school usually recommends that governments in developing countries should maintain (or increase) investments and policy support for agriculture.

The second school of thought offers a "pro-urban" perspective, again by emphasizing certain global trends. The developing world is urbanizing rapidly and economic growth is fastest in urban centers. Although poverty is

lower in urban areas, faster urban growth can create market opportunities for farmers and provides an indirect means of reducing rural poverty (Dorosh and Thurlow 2014). Urbanization also coincides with structural transformation, in which workers leave agriculture for more productive, and likely more remunerative, sectors. History shows that this process is strongly associated with long-term development (McMillan, Rodrik, and Verduzco-Gallo 2014). As agriculture's share of the economy falls, so too does its absolute contribution to national growth and poverty reduction. Simply put, if agriculture is not growing, then it does not matter how strong its growth-poverty linkages are. Fast-growing urban centers, on the other hand, could lift more people out of poverty, even though they have weaker linkages to poverty reduction than agriculture (see Dorosh and Thurlow 2016; Thurlow, Dorosh, and Davies 2019). Finally, at least some urban economic growth may be due to positive "agglomeration effects." These arise when an expansion of economic activity is concentrated within certain locations, giving rise to positive externalities between firms as product and labor markets deepen (see Fujita, Krugman, and Venables 1999). Alongside the above claims about urban-centered industrialization, the pro-urban school also questions the evidence supporting agriculture-led development, arguing, for example, that the ability to import food makes raising agricultural productivity less critical for sustaining economic development (see Dercon and Gollin 2014). The conclusion often reached by the pro-urban school is that current development strategies overemphasize agriculture and exhibit a "rural bias" (Collier and Dercon 2014) and that future investments should rather be directed toward cities as engines of growth and poverty reduction.

The two perspectives are perhaps best reflected in the World Bank's back-to-back publication of the 2008 and the 2009 *World Development Report*, which in turn advocated for agricultural and urban-oriented development strategies (World Bank 2008, 2009). The reports encapsulated an ongoing debate about the role of smallholder farmers in agricultural transformation (Dercon 2009; Hazell et al. 2010; Collier and Dercon 2014) and, more broadly, the role of agriculture in national development (Diao, Hazell, and Thurlow 2010; Dercon and Gollin 2014; Thurlow, Dorosh, and Davies 2019). There is also debate over the role of small towns vis-à-vis big cities in driving development and reducing poverty (Christiaensen and Todo 2014; Dorosh and Thurlow 2014; Ingelaere et al. 2018). Finally, agriculturalists have increasingly emphasized value-chain development as a means of creating jobs and incomes for the rural poor. Value chains and food system approaches are essentially a more business- or consumer-oriented reformulation of the

production and demand linkages that underpin traditional development models (see Chapter 12).

Emerging from these debates is a more nuanced view—one that drops sharp dualistic distinctions between rural and urban areas and agricultural and nonagricultural sectors. Urban areas are viewed as a hierarchy in which major cities have different economic structures and rural linkages than secondary cities and towns. Investing in smaller urban centers rather than large cities could stimulate faster growth in the rural economy for reasons that are familiar to the proponents of rural farm-nonfarm linkages. Moreover, many downstream activities forming part of agricultural value chains are located within or close to towns. Investing in smaller towns and peri-urban areas is often equivalent to investing in agricultural value-chain development. Conversely, industrial activity can cluster in rural areas, as in China and Viet Nam (see Chapter 11), possibly leading to *rural* agglomeration effects. There is also recognition that economies do not neatly separate into the "modern" and "backward" sectors of traditional dualistic models. Agriculture comprises both traditional subsistence farming and higher-value commercial agriculture. Nonagriculture also consists of a wide range of activities, including labor-intensive informal services (for example, street vending), capital-intensive industries (for example, mining), and skill-intensive services (for example, banking). Informal food traders in urban areas may generate stronger backward linkages to the rural poor than even export-oriented commercial agriculture. A more nuanced perspective argues that economies do not fit standard dualistic structures. It emphasizes the overlaps and synergies between developing small towns and agricultural value chains and recommends greater alignment between agricultural and urban-oriented investments and policies. The Food and Agriculture Organization's 2017 *State of Food and Agriculture* report is a recent example of this more nuanced view (FAO 2017).

This chapter argues in favor of the more nuanced perspective. The second section reviews global development and demographic trends and discusses what is meant by "urbanization" in different parts of the developing world. The third section presents a conceptual framework for understanding rural-urban linkages across cities and towns. The fourth section presents a Malawian case study that operationalizes the conceptual framework. The study uses an economywide model to capture various farm-nonfarm linkages, as well as urban agglomeration economies and rural-urban migration. The model is used to simulate the effects of redirecting investments between rural areas, small towns, and major cities. The analysis reveals synergies (and

trade-offs) between urbanization, agriculture, and poverty reduction. The last section summarizes the chapter and identifies where future research is needed.

Understanding Urbanization

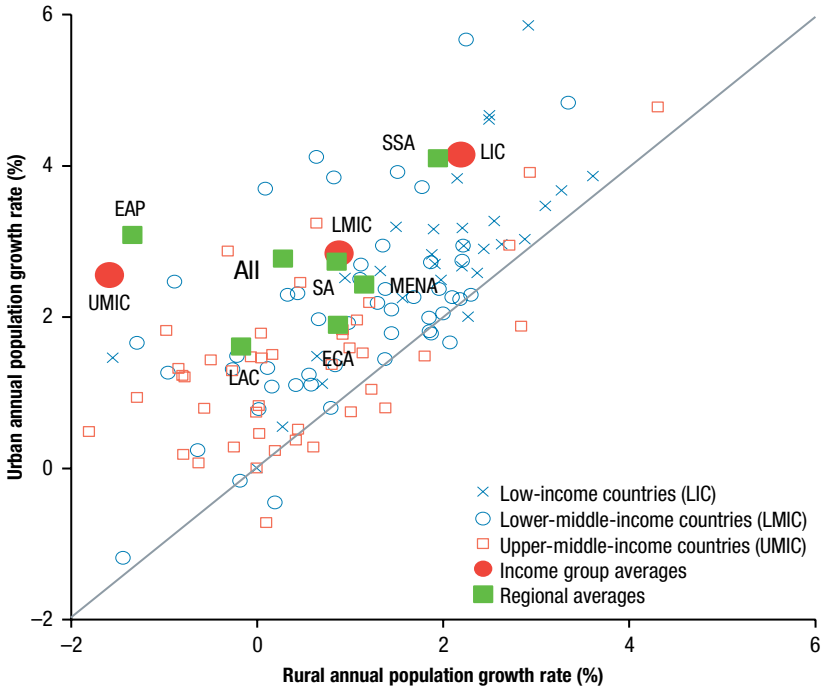
Speed of Urbanization

It is generally held that the developing world is urbanizing rapidly and that this process is particularly fast in Africa south of the Sahara (SSA). However, there are two ways of gauging the speed of urbanization (Figure 9.1). From the point of view of urban areas or urban planners, the most relevant indicator is urban population growth (vertical axis). Municipal and local governments need to provide infrastructure and services to urban residents, and the scale of this challenge is determined by the number of people living in urban areas. Almost all developing countries have seen urban populations expand over the last decade. From this perspective, SSA is the fastest urbanizing region, with an average urban population growth rate of 4.2 percent per year. Urban populations are even expanding in Latin America and the Caribbean (LAC), even though this region has the slowest growth rate (1.6 percent). Urban population growth is fastest in low-income countries (LIC), most of which are in SSA, and is slowest in upper-middle-income countries (UMIC), which includes China.[1] Global projections indicate that the urban population in developing countries will almost double between 2015 and 2050 (from 2.9 to 5.1 billion) (UN DESA 2015) and that a third of this expansion will occur in SSA, whose urban population will triple in size (from 0.3 to 1.1 billion people). It is not surprising then that many studies about global urbanization emphasize Africa's demographic trajectory (Masters et al. 2013).

National planners and policymakers, however, are also concerned with how fast populations are growing outside of urban areas, since scarce public resources are also needed for rural inhabitants. A more relevant urbanization indicator for national planners is therefore the *share* of the total population living in urban areas. This can be derived from Figure 9.1, which also shows rural population growth rates (horizontal axis). Countries and regions above the diagonal line have urban populations growing faster than rural populations, and so the share of their population living in urban areas is rising.

1 LIC and UMIC, as well as lower-middle-income countries (LMIC), are World Bank country income categories, as of 2016, based on per capita gross domestic product measured using the Atlas method. Upper thresholds are $1,005 for LIC, $3,955 for LMIC, and $12,235 for UMIC.

FIGURE 9.1 Urban and rural population growth rates, 2005–2015



Source: Authors' calculations using population data from World Bank (2018).

Note: Sample includes 137 countries. Regions are East Asia and the Pacific (EAP), Europe and Central Asia (ECA), Latin America and the Caribbean (LAC), Middle East and North Africa (MENA), South Asia (SA), and Africa south of the Sahara (SSA).

Countries and regions that are farther from the diagonal line have larger gaps between urban and rural population growth rates, and hence faster increases in urban population shares. The figure shows that, even from this perspective, urbanization is occurring in almost all developing countries. However, rural populations continue to grow quite quickly in many LICs, causing slower increases in their urban population shares compared with most UMICs. Based on this indicator, SSA is no longer the fastest urbanizing region, which is instead East Asia and the Pacific (EAP), where the rural population is contracting. About half of developing countries' populations live in urban areas today, and projections indicate that this share will increase to about two-thirds by 2050 (UN DESA 2015). Even in SSA, where urban population shares are lowest, more than half of the population will live in urban areas by 2040.

In summary, while the developing world is urbanizing, there are differences in how the speed of urbanization is perceived, with implications for policy. For urban planners, particularly in SSA, absorbing the large influx of migrants into cities and towns is a major policy concern. National planners, on the other hand, are also tasked with raising incomes and living standards of people in rural areas, where much of the developing world still lives. National development plans inevitably involve difficult choices about how to allocate scarce resources between fast-growing urban centers and large rural populations.

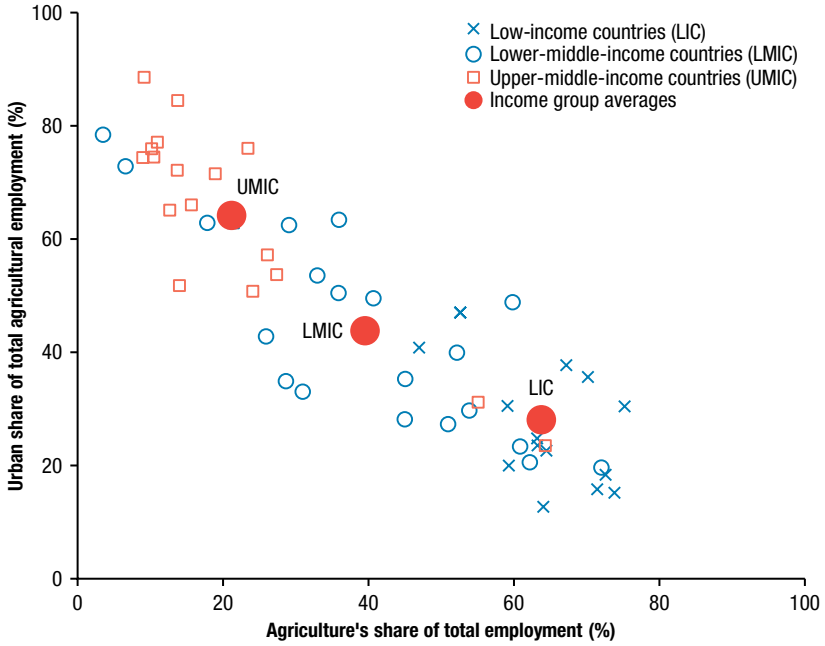
Urbanization and Structural Change

Urbanization is closely associated with economic development, particularly with structural transformation. When workers move from rural to urban areas, this often involves an exit out of agriculture into other sectors of employment, leading to higher labor productivity (and incomes). Figure 9.2 provides information on urban population and agricultural employment patterns for a sample of 52 developing countries.[2] These countries were selected because they conducted at least one nationally representative household/labor force survey or population census since 2000, with information on employment by sector and rural/urban location. Normally the most recent survey or census is used, but preference is given to labor force surveys because they are better at capturing employment statistics. Since data are from different years, the income groups are simple cross-country averages (not weighted by population). In total, the countries represent 80 percent of the developing world's total population in 2015, with a slightly lower coverage rate for LICs.

The figure shows that more-developed countries tend to be more urbanized and have fewer of their workers engaged in agriculture. Although the strength of this relationship varies across countries, there is a consistent tradeoff between agricultural work and urban residence. In a typical LIC, around 60 percent of employed workers are in agriculture and 20 percent of the population live in urban areas. This is reversed for UMICs, that is, 20 percent

2 Country and survey/census years include LICs: Afghanistan 2008, DR Congo 2005, Ethiopia 2013, Haiti 2003, Liberia 2008, Malawi 2013, Mali 2009, Mozambique 2007, Nepal 2008, Rwanda 2016, Sierra Leone 2004, South Sudan 2008, Tanzania 2014, and Uganda 2012; LMICs: Armenia 2011, Bangladesh 2013, Bolivia 2001, Cambodia 2008, Cameroon 2005, Egypt 2006, El Salvador 2007, Ghana 2015, India 2009, Indonesia 2010, Jordan 2004, Kenya 2005, Kyrgyzstan 2009, Nicaragua 2005, Nigeria 2010, Pakistan 2015, Palestine 2007, Sudan 2008, Viet Nam 2009, and Zambia 2012; UMICs: Belarus 2009, Brazil 2010, China 2000, Colombia 2005, Costa Rica 2011, Dominican Republic 2010, Ecuador 2010, Fiji 2007, Iran 2011, Jamaica 2001, Malaysia 2000, Mexico 2015, Panama 2010, Paraguay 2002, Peru 2007, Romania 2011, Thailand 2000, and Venezuela 2001.

FIGURE 9.2 Urban population and agricultural employment shares



Source: Labor force and household surveys, and population censuses (all post-2000); censuses from IPUMS (2019).

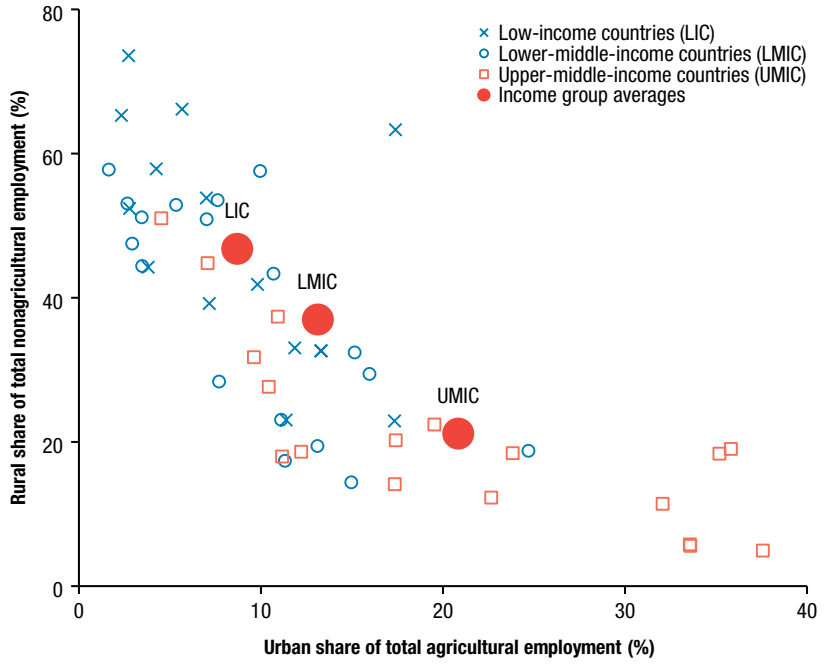
Note: Sample includes 52 countries. The 2015 population coverage is 70% LIC, 84% LMIC, and 81% UMIC. The calculations use official urban definitions and simple unweighted averages for country income groups.

of workers are in agriculture and 60 percent of people are urbanized. Lower-middle-income countries (LMICs) fall in between, with 40 percent of the workforce and population in agriculture as well as in urban areas.[3]

The symmetry in Figure 9.2 can give the impression that urban areas and nonagricultural employment are interchangeable, as are rural areas and agricultural employment. This is not the case. Using the same dataset, Figure 9.3 shows that many agricultural workers live in urban areas (horizontal axis) and many nonagricultural workers live in rural areas (vertical axis). Almost half of all nonagricultural workers in LICs reside in rural areas, reflecting the important role of the rural nonfarm economy in these countries. Employment in the rural nonfarm sector declines with economic development and

3 The figure is based on primary occupation as stated by survey respondents and so does not capture secondary work or actual time spent (see discussion in the chapter's third section, Framing Rural–Urban Linkages).

FIGURE 9.3 Spatial distribution of agricultural and nonagricultural employment

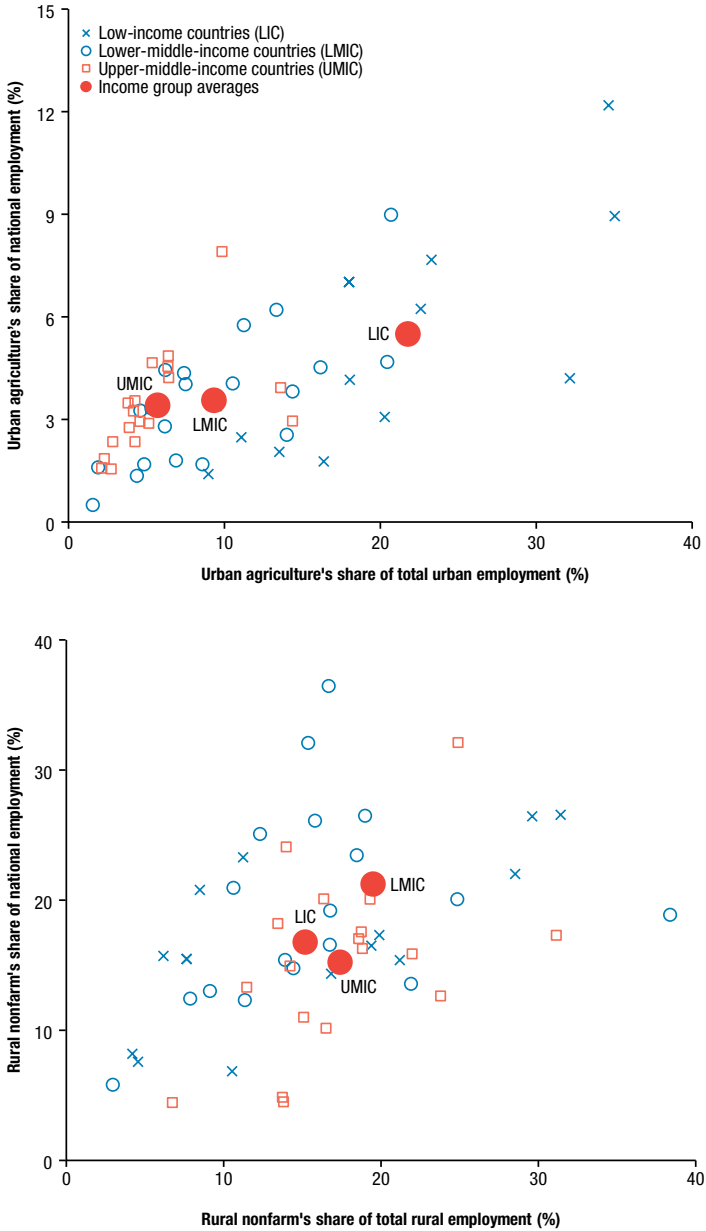


Source: Labor force and household surveys, and population censuses (all post-2000); censuses from IPUMS (2019).
Note: Sample includes 53 countries. The 2015 population coverage is 70% LIC, 84% LMIC, and 81% UMIC. Calculations use official urban definitions and simple unweighted averages for country income groups.

urbanization. More surprising, however, is the greater importance of urban agricultural employment in more-developed countries. About 20 percent of all agricultural jobs in UMICs are in urban areas, compared with just 9 percent in LICs. Urban-based farming seems to become a more important part of the agricultural sector as countries develop.

Lying behind the trends in Figure 9.3 is the declining importance of agriculture as countries develop. The top panel in Figure 9.4 reports the contribution of urban agriculture to national employment (vertical axis) and to total urban employment (horizontal axis). Urban agriculture is a small share of national employment in most countries, although in a few countries it does account for around 10 percent of all jobs. As at the national level, urban agriculture becomes less important as countries develop, falling from 5.5 percent in LICs to 3.5 percent in UMICs. Agricultural employment also becomes less important *within* urban economies. The share of agriculture in urban employment is 21.8 percent in LICS and 5.5 percent in UMICs. Although Figure 9.3

FIGURE 9.4 Sectoral distribution of urban and rural employment



Source: Labor force and household surveys, and population censuses (all post-2000); censuses from IPUMS (2019).

Note: Sample includes 53 countries. The 2015 population coverage is 70% LIC, 84% LMIC, and 81% UMIC. Calculations use official urban definitions and simple unweighted averages for country income groups.

shows the share of agricultural employment in urban areas rising in more developed countries, this is caused by reductions in *rural* farming. Simply put, as countries develop, workers leave rural agriculture faster than they leave urban agriculture.

The lower panel in Figure 9.4 provides similar information for rural nonfarm employment. The link between economic development and the rural nonfarm economy is less clear. The share of rural nonfarm employment in total *rural* employment (horizontal axis) is slightly higher in middle-income countries, but there is no consistent trend between LMICs and UMICs (that is, rural nonfarm employment shares rise and then fall). Rural nonfarm employment appears to remain an important part of the economy, even in more-developed countries.

In summary, while *urban* and *nonagriculture* are not interchangeable terms, cross-country evidence suggests that *urbanization* is strongly associated with a movement out of rural agriculture into urban nonagriculture. In fact, the contributions of urban agriculture and the rural nonfarm economy do not change dramatically across the development spectrum—together they consistently account for around one-fifth of total employment. Of course, employment is not equivalent to labor productivity or value addition, and so the contributions of rural nonfarm and urban agricultural sectors to gross domestic product (GDP) may be quite different in low- and middle-income countries. Unfortunately, the data needed to test this only exists for a few countries (see, for example, Dorosh and Thurlow 2013). Moreover, the cross-country data presented here focus only on primary jobs. The early stages of rural transformation are often associated with workers moving from full- to part-time farming or with nonfarm income diversification within rural households (see Timmer 1988). Finally, as discussed next, the definition of *urban areas* may change over time, with unclear delineations between where rural areas end and urban areas begin.

Defining Urban and Rural Areas

The figures above are all based on countries' own official definitions of what constitutes an urban area. However, these definitions vary considerably. The supplementary material to the *United Nations Demographic Yearbook* (UN DESA 2016a) provides information on how countries define their urban centers. Table 9.1 summarizes the various criteria used in these definitions. Of the 215 countries listed, about half include population size thresholds. The typical or median population threshold is 2,500 people, but this ranges from 200 (Sweden) to 50,000 (Japan). A larger share of LICs include population

TABLE 9.1 Official definitions of urban areas across countries

Indicator	All countries	Income group			
		LIC	LMIC	UMIC	HIC
Number of countries (N)	215	31	52	56	76
Share of countries using these criteria (%)					
Population level	52.1	64.5	63.5	39.3	48.7
Population density	6.5	3.2	7.7	3.6	9.2
Nonfarm employment	16.3	9.7	32.7	17.9	6.6
Infrastructure and services	7.0	3.2	15.4	8.9	1.3
Administrative center	51.2	51.6	48.1	55.4	50.0
More than one criteria	27.0	25.8	48.1	23.2	15.8
Minimum population level thresholds (people)					
Lowest	200	1,500	500	400	200
Median	2,500	2,500	4,000	2,500	2,500
Highest	50,000	10,000	20,000	10,000	50,000

Source: Authors' calculations using urban definitions from UN DESA (2016a).

Note: LIC = low-income country; LMIC = lower-middle-income country; UMIC = upper-middle-income country; HIC = high-income country. Official criteria are usually expressed as minimum population levels and densities; nonfarm employment or activities as a share of total; existence of certain infrastructure or services (for example, roads, piped water, or health facilities); and administrative function.

thresholds in their urban definitions, and the minimum thresholds in LICs tend to be higher (that is, the smallest threshold is 1,500 people in LICs compared with 400 people in UMICs). A small share of countries (6.5 percent) use population density as a criterion—sometimes, but not often, in combination with population size.

The relationship between urbanization and structural change was discussed above. The positive association could result from how urban areas are defined. About one in six countries define urban areas based on how dependent a location is on agricultural activities. Some countries are quite specific, requiring that a minimum share of employment or economic activity be in nonfarm sectors. Middle-income countries are more likely to include nonfarm employment criteria in their definitions, although only a third of LMICs and a fifth of UMICs use such criteria. The unevenness in how this criterion is applied may also explain variations in urban agriculture across countries. It does not necessarily explain why urban agriculture becomes more important for the overall agricultural sector, since the nonfarm criterion is more often applied in middle-income countries.

About half of countries in each income group use a location's administrative function in their *urban* definition. For example, a country may decide that all provincial or district capitals should be classified as urban centers, irrespective of their population size or nonfarm employment share. Finally, a few countries require locations to have certain infrastructure and services, such as paved-road networks, piped-water systems, and health facilities.

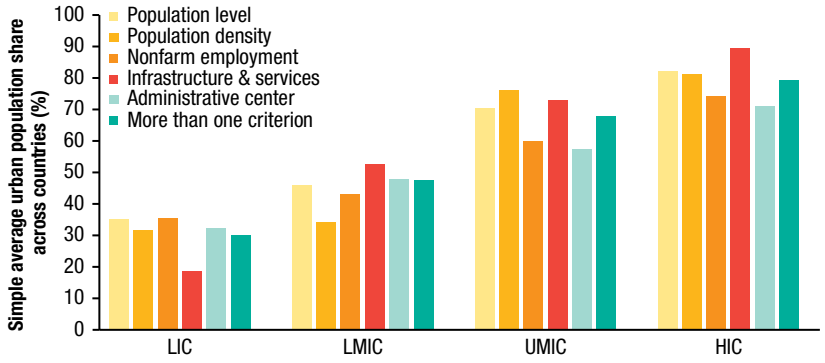
A country's choice of criteria can affect the number of locations classified as urban. For example, countries that use administrative function, rather than minimum population size, may include smaller urban centers. Figure 9.5 reports the simple or unweighted average urban population shares across countries within each income group. There is no strong directional relationship between which criteria are used and the average population shares of the countries that use them.

Finally, we consider how using the same definition across countries affects relative urbanization rates. Uchida and Nelson (2010) used high-resolution spatial information on population size and location to apply a standard definition of an "urban area" to all countries. The resulting urban agglomeration index reported in Figure 9.6 requires that a location have a minimum population density of 150 people per square kilometer and be within one-hour travel time to an urban center of either 50,000 or 100,000 people. Travel time is calculated based on the location of roads, including their surface type and slope. The figure compares urban population shares for different definitions of urban areas, including countries' official definitions.

Applying a uniform definition of *urban* affects urban population shares differently across developing regions. In South Asia (SA), for example, the official definition puts the region's urban population share at 27 percent, which is the lowest of all developing regions. However, when the authors' urban agglomeration criteria are applied, the region's urban population share rises to 42 and 51 percent, depending on whether the core urban area needs to contain 100,000 or 500,000 people, respectively. Urbanization rates in the Middle East and North Africa (MENA) also increase, although the change is not as pronounced as in SA. In contrast, LAC, which by official definitions is the world's most urbanized region, sees its urban population fall considerably (from 75 percent to as low as 56 percent). There are smaller and inconsistent changes for the other three regions.

In summary, there are major differences in how countries define *urban areas*. That said, the types of criteria used do not greatly influence urban population shares. Rather, it is the threshold values of these criteria that matter. For instance, SA and LAC may both use population levels as criteria but

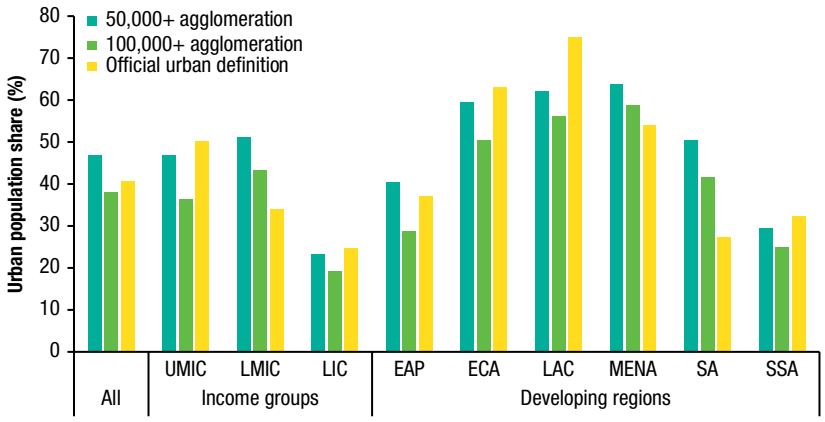
FIGURE 9.5 Urban criteria and population shares, 2015



Source: Authors' calculations using urban definitions from UN DESA (2015) and populations from World Bank (2018).

Note: Countries are grouped into high-income countries (HIC), upper-middle-income countries (UMIC), lower-middle-income countries (LMIC), and low-income countries (LIC). Official criteria are usually expressed as minimum population levels and densities; nonfarm employment or activities as a share of total; existence of certain infrastructure or services (for example, roads, piped water, or health facilities); and administrative function.

FIGURE 9.6 Developing country populations within urban agglomerations, 2000



Source: Authors' calculations using data from Uchida and Nelson (2010).

Note: Urban agglomerations vary by population threshold; population density is constant at 150 people or more per square kilometer, with a maximum one-hour travel time to an urban center (given road network surface and slope). Sample includes 139 countries. Income groups are upper-middle-income countries (UMIC), lower-middle-income countries (LMIC), and low-income countries (LIC). Regions are East Asia and the Pacific (EAP), Europe and Central Asia (ECA), Latin America and the Caribbean (LAC), Middle East and North Africa (MENA), South Asia (SA), and Africa south of the Sahara (SSA).

apply very different threshold values. Applying common thresholds substantially reduces the gap in urban population shares between these two extreme regions. This sensitivity to how *urban area* is defined reveals the existence of an urban-rural "continuum," in which locations transition from (1) large densely populated areas (cities and towns) to (2) lower-density areas with substantial access to urban markets (peri-urban areas) to (3) remote rural areas in the hinterlands. We expect economic linkages and household livelihoods to vary across this continuum, implying different roles for agriculture in reducing poverty.

Spatial Consumption and Poverty Patterns

Poverty is typically measured in developing countries using information on household consumption spending, including the imputed value of own-produced goods and services. The Global Consumption Database (World Bank 2017) provides consistent estimates of household spending in 2010 for 77 developing countries. Using this information, Table 9.2 reports differences in consumption patterns across rural and urban areas. As expected, the table shows that per capita consumption is higher in middle-income countries and that consumption is consistently higher in urban areas, irrespective of the level of development. As a result, the urban consumption share is much higher than the urban population share. In LICs, for example, urban areas accounted for 25 percent of the population in 2010, but 36 percent of total consumption spending. Urban areas therefore account for a disproportionate share of total consumer demand.

Urban consumers generate backward demand linkages to rural agriculture. Even in LICs, where most of the population still live in rural areas, urban consumers account for about a third of total food consumption, most of which is produced in rural areas. This is despite urban households allocating a smaller share of their consumption basket to food products (mainly due to their higher incomes). For example, urban households in developing countries account for 68 percent of total spending on all goods and services, but only 59 percent of spending on food and beverages. This gap is present across developing regions and country income groups, as well as between lower- and higher-income households within developing countries (see the final two columns in Table 9.2).

Urban households consume different kinds of food products. This is evident from the low urban consumption share for cereals, fats, and oils but high shares for meat, dairy, and fish. Urban consumers are also more likely to

TABLE 9.2 Differences in consumption patterns between rural and urban areas, 2010

Indicator	All countries	Country income group			Household group	
		LIC	LMIC	UMIC	Lower income	Upper income
Per capita spending ($PPP)	1,645	738	983	2,703	639	3,197
Rural households	916	636	719	1,378	603	2,203
Urban households	2,628	1,044	1,444	3,800	751	3,593
Urban share of population (%)	42.6	25.1	36.4	54.7	23.9	71.5
Urban share of spending (%)	68.0	35.5	53.4	76.9	28.0	80.4
Nonfood goods and services	73.4	43.5	60.5	79.3	30.9	82.5
Food and beverages	59.4	29.6	45.8	72.1	25.6	76.1
Cereals and roots	40.8	21.7	35.9	62.5	23.1	63.6
Fats and oils	52.7	36.7	44.2	66.5	26.5	72.5
Fruits	64.5	36.1	51.7	72.1	24.3	77.0
Vegetables	57.1	26.4	43.6	72.6	26.3	76.4
Meat and eggs	66.0	36.0	53.9	71.3	26.2	77.4
Milk and dairy	58.4	26.0	45.6	77.4	25.7	77.5
Fish and seafood	59.3	44.6	46.8	69.1	26.7	75.2
Sugar and confectionary	49.8	36.3	40.6	64.3	24.4	69.1
Bread and baked goods	72.6	65.3	59.5	78.1	41.6	80.6
Other foods	56.9	26.5	44.6	69.2	24.4	74.7
Beverages	67.1	36.4	58.4	72.8	28.2	78.0
Restaurants and vendors	74.0	40.8	65.4	77.0	28.0	82.7

Source: Authors' calculations using the Global Consumption Database from World Bank (2017).

Note: LIC = low-income countries; LMIC = lower-middle-income countries; UMIC = upper-middle-income countries; PPP = purchasing power parity. Sample is 77 countries; 2015 population coverage is 85% LIC, 91% LMIC, and 80% UMIC. Table uses official urban definitions. Households are grouped (across countries) based on average level of per capita consumption spending (including consumption of own-produced products). Lower-income household group spends less than $2.97 per person per day after adjusting for 2005 purchasing power parity (PPP); upper-income household group spends more than $2.97.

consume processed products, such as bread, rather than less-processed products, such as cereals. Finally, urban households are the most important consumers of meals prepared outside of the home, such as at restaurants and from street vendors. Urbanization and urban income growth not only generate demand for agricultural products, but also alter the composition of the national agriculture-food system (Tschirley et al. 2015), with uncertain implications for poor households and smallholder farmers (Thurlow, Dorosh, and Davies 2019).

TABLE 9.3 Living conditions in rural and urban areas

Indicator	All countries	Country income group		
		LIC	LMIC	UMIC
Poverty headcount ratio (under $1.25) (%)	16.8	40.9	22.8	4.3
Urban areas	9.8	29.6	18.5	1.3
Rural areas	22.8	45.3	25.4	8.8
Urban share of poor population (%)	26.4	20.0	29.7	18.2
Approximate change, 2000s (percentage point)	8.4	0.9	7.8	5.2
Urban population in slums (%)	29.9	64.9	32.2	23.7
Urban population without access to facilities (%)				
Electricity	5.1	42.1	5.4	0.3
Improved sanitation	23.8	59.7	33.1	12.1
Improved water	4.9	13.5	6.6	2.6
Rural population without access to facilities (%)				
Electricity	29.7	83.2	30.4	1.8
Improved sanitation	54.0	76.7	58.8	32.5
Improved water	17.3	44.6	14.9	8.6

Source: Authors' calculations using data from IFAD (2016) and World Bank (2018).

Note: LIC = low-income countries; LMIC = lower-middle-income countries; UMIC = upper-middle-income countries. Sample is 94 countries. Poverty line is $1.25 per day adjusted for 2005 purchasing power parity (PPP). Population-weighted poverty ratios are estimated using surveys closest to 2012 (and to 2000 for change in urban share of poor population).

Finally, Table 9.3 provides a rough assessment of household poverty and living conditions in urban areas across developing countries. The table reports poverty head count rates based on the World Bank's $1.25 per day poverty line (adjusted for purchasing power parity). The rural and urban poverty ratios were computed by the World Bank for IFAD (2016) and provided to us for this study. The poverty ratios are for different years. Table 9.3 uses the most recent poverty estimate for each country—dropping those countries where recent surveys are unavailable.

As mentioned, urban households have higher consumption levels, and so urban poverty is almost always lower than rural poverty. National poverty ratios are also lower in more-developed countries. Urbanization, however, has, in recent years, caused the share of poor people living in urban areas to increase. This is driven either by an inflow of poor migrants from rural areas, or by overcrowding in low-income urban neighborhoods. Even when migrants are better educated and wealthier than the average rural household, they may still be poorer than the average urban household. Unfortunately, evidence on

the characteristics of new urban migrants is limited, particularly in SSA. That said, the growth of informal trade services in urban Africa over the last decade suggests that new migrants' education and expertise may lend themselves more to some of the less-productive and lower-paid occupations within urban areas. Inadequate housing and public services also help explain urban poverty in Africa (Lall, Henderson, and Venables 2017).

The "urbanization of poverty" is most pronounced in middle-income countries, where rural populations are growing slowly or even contracting (see above). In LMICs, for example, urban areas are home to about 30 percent of poor people, and this share has risen over the last decade or more. In contrast, LICs have seen a much smaller expansion in urban poverty, despite more rapid urban population growth. This is because the gap between urban and rural poverty is much larger in these countries and, more importantly, because rural populations continue to grow quite rapidly. Long-run projections suggest that faster urban economic growth will outweigh urbanization, leading to an eventual concentration of the world's poor population in rural areas in SSA (Thurlow, Dorosh, and Davies 2019).

Urban households in LICs also lack access to basic services. Two-thirds of urban residents live in slums, and many do not have access to electricity and improved sanitation facilities and water sources. Even "middle-class" Africans, most of whom live in cities and towns, often lack the assets and income security typically associated with middle-class lifestyles in developed countries (for example, properly roofed dwellings, flush toilets, piped water, and formal-sector jobs) (Thurlow, Resnick, and Ubogo 2015). This underscores the huge infrastructure and service gaps that already exist in urban areas, and the pressure on local governments to provide for new migrants. Of course, household poverty and asset gaps are much larger in rural areas.

Given the pace of urbanization and existing living conditions in urban areas, it is perhaps not surprising that more than half of developing country governments (78 of 148) have implemented policies specifically aimed at reducing rural-to-urban migration (UN DESA 2016b). To avoid congestion in major cities, many governments (47 of 148) are also attempting to encourage populations in major cities to move to smaller towns and peri-urban areas. Almost every government has policies aimed at improving income opportunities and living conditions in rural areas, and some governments even aim to narrow the rural-urban divide. Urban and rural policies need to be closely aligned with broader national development strategies. This is especially true in LICs and SSA, where urban and rural populations are expanding fastest and where global poverty is concentrating.

Framing Rural–Urban Linkages

The previous section provided five key facts about urbanization, agriculture, and poverty. First, while urbanization is associated with workers leaving agriculture, the rural economy is not solely composed of farming. The nonfarm sector is a large part of the rural economy (Davis et al. 2010), and urban agriculture is also important for urban economies and the broader food system (Zezza and Tasciotti 2010). Davis et al. (2010), for example, find that off-farm activities account for almost half of all rural incomes in their sample of developing countries. Self-employment in informal trade services is the main rural nonfarm activity and is much larger than rural manufacturing, particularly in SSA. Second, at the national level, the movement of workers out of agriculture into nonagricultural sectors is a major driver of economic growth and structural change in developing countries. Third, many people live in peri-urban areas close to urban centers, especially in SA and LAC. Migrants from more-remote rural areas may choose peri-urban areas over urban centers in order to avoid living in slums. Similarly, rural agriculture and urban industries may choose to locate within peri-urban areas, where firms face lower congestion costs and farms have better access to urban consumers, particularly markets for high-value foods. Fourth, urban unemployment and poverty are major concerns, even though most of the poor live in rural areas. Finally, many governments are actively trying to reduce the speed of urbanization (and an urbanization of poverty) by investing in rural areas.

To be more effective, national development strategies need to have alignment between urban, industrial, and agricultural policies, as well as alignment between public and private sector incentives and objectives. The facts listed above indicate the importance of considering both spatial and sectoral transformation when evaluating policy options. This section provides a conceptual framework that is useful for linking these sectoral and spatial dimensions of economic transformation. The framework emphasizes the rural-urban continuum that extends across cities, towns, and villages and considers how strategies for agricultural transformation may vary depending on where they are implemented in relation to urban centers. The framework also recognizes that not all agricultural activities are low-productivity activities (and not all nonagricultural activities are high in productivity). Instead, the returns to employment in different sectors will vary depending on where the job is located and whether rural or urban markets are being supplied. The framework encourages agricultural economists to look beyond the farm and consider how consumption patterns and market potential vary across space. Similarly, it

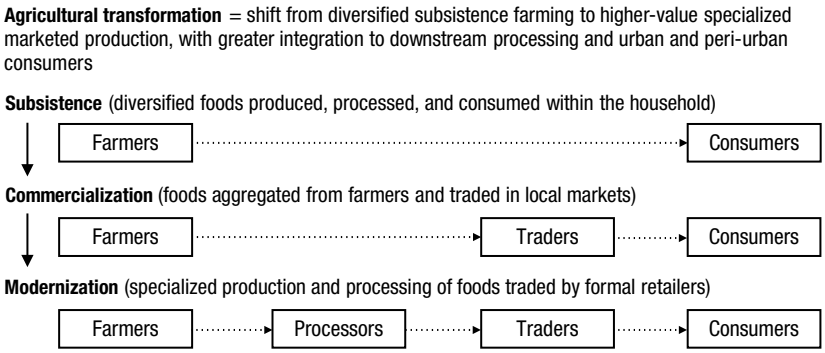
encourages urban economists to consider the broader role of smaller towns in promoting rural farm and nonfarm development.

The framework is presented in Figures 9.7 and 9.8. As agriculture-food systems transform, there is a gradual reorientation of farmers and their practices from subsistence to commercialization and finally to modernization (Figure 9.7). This involves a shift from production of diverse foods for subsistence consumption—first to selling largely unprocessed agricultural products in local markets, and then to more-intensive formal processing and retailing of food products. Agricultural transformation therefore involves an increasing number of value-chain actors (farmers, aggregators, processors, wholesalers, retailers, and consumers), as is stressed in Chapter 12.

This process closely follows economic transformation, in which workers move from low-productivity sectors, like agriculture, into more-productive nonagricultural sectors (Figure 9.8). Within the food system, this usually involves a shift out of farming into trading and processing. It is now recognized that, while average labor productivity in agriculture is lower than elsewhere in the food system, these averages hide considerable variation within these sectors. In other words, some agricultural workers or activities generate higher value-added per worker than some downstream activities or sectors, such as agro-processing. Economic development therefore also involves a move out of low- to higher-productivity activities within agriculture.

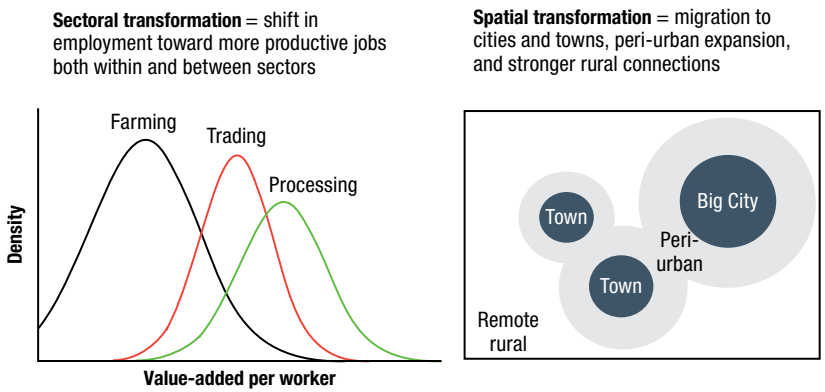
Higher-productivity agricultural activities may be unevenly distributed within a country, and so agricultural transformation may promote certain locations over others. As countries develop, they typically experience a spatial transformation along the rural-urban continuum. Transport networks improve and populations concentrate, creating urban "catchment areas" around major cities, large towns, and to some extent, even small towns. Fewer areas remain remote, and they account for a smaller share of the national population. Only in very remote rural areas does agriculture almost completely dominate the local economy, with the nonagricultural sector almost entirely absent. Most agricultural output in countries is produced in relatively well-connected rural areas, such as the "peri-urban" areas lying within the catchments of cities and towns. These areas also support substantial nonagricultural employment and production, including manufacturing, trade and transport, and various services. And, as discussed above, although agriculture is only a small part of the economies of cities and larger towns, there is still some agricultural employment in urban areas that may account for a major share of national agricultural employment.

FIGURE 9.7 Agriculture's transformation process



Source: Authors.

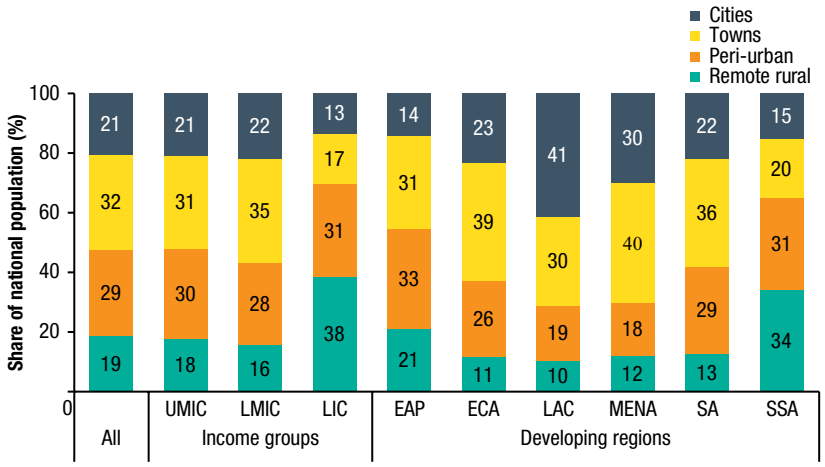
FIGURE 9.8 Linking sectoral and spatial transformations



Source: Authors.

Policy priorities will vary across space and by the stage of agricultural transformation. In remote rural areas, where agricultural transformation is still in its earlier stages, raising farm productivity and reducing poverty and hunger among smallholder subsistence farmers is more likely to be the main policy objective. In peri-urban areas and small towns, farmers are generally more market oriented, and there is greater scope to promote nonagricultural activities, making agricultural commercialization and off-farm income diversification more important policy priorities. This may include investing in and

FIGURE 9.9 Developing country populations across the rural and urban hierarchy, 2000



Source: Authors' calculations using data from FAO (2017).

Note: Cities (towns) are locations within an hour travel time of an urban agglomeration of 500,000 (50,000) people; peri-urban (remote rural) areas are one to three hours (more than three hours) from a 50,000-person agglomeration. Sample includes 125 countries. Income groups are upper-middle-income countries (UMIC), lower-middle-income countries (LMIC), and low-income countries (LIC). Regions are East Asia and the Pacific (EAP), Europe and Central Asia (ECA), Latin America and the Caribbean (LAC), Middle East and North Africa (MENA), South Asia (SA), and Africa south of the Sahara (SSA).

supporting food processors and traders. Finally, within the boundaries of cities and large towns, key policy issues are more likely to include food safety, regulation of urban traders, promoting more formal private sector operators, and managing import competition.

Figure 9.8 divided the population into four broad areas: cities, towns, peri-urban areas, and remote rural areas. Figure 9.9 provides some indication of the share of the total population living in these areas, although the data are from two decades ago. The figure draws on analysis conducted for FAO (2017) using the same spatial population data that underpinned the agglomeration indices discussed in the second section (see Uchida and Nelson 2010). Cities are defined as locations within one hour of an urban agglomeration of 500,000 people or more, whereas towns include locations within one hour of urban agglomerations with 50,000–500,000 people. Peri-urban areas are within three hours of cities and towns, and remote rural areas are more than three hours away.

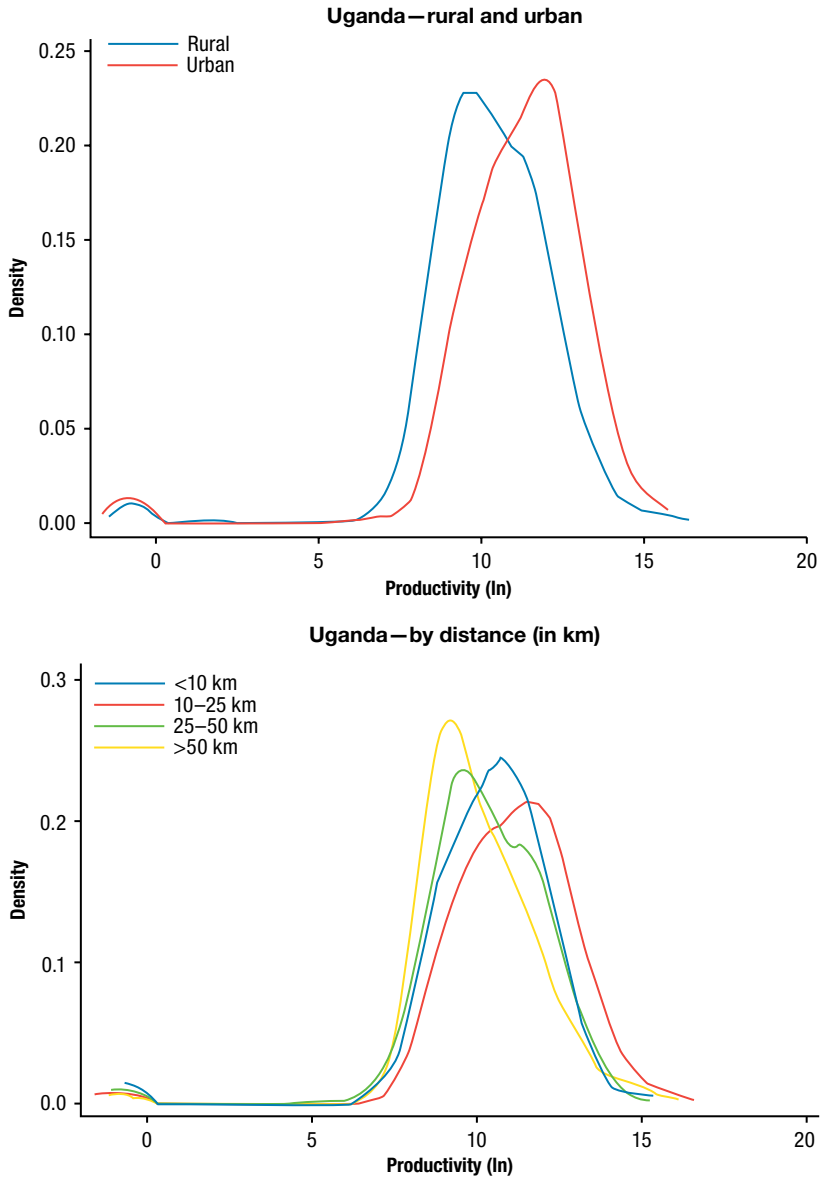
About a fifth of the developing world's population live in cities, and another fifth live in remote rural areas. The remaining population is evenly

divided across towns and peri-urban areas. Both UMICs and LMICs share this broad population distribution, partly because most large developing countries fall into one of these two groups. The spatial distribution is very different in LICs, where two-fifths of the population live in remote rural areas and only a third live in either cities or towns. Differences are even more pronounced across developing regions. About 70 percent of the populations in LAC and MENA live within one hour of a city or town, and only 10 percent live in remote rural areas. This pattern is almost reversed in SSA, where 65 percent of the population lives more than an hour away from a city or town. That said, about half of the rural population in SSA live in peri-urban areas within three hours of a city or town. Many urban centers in SSA fall below the 50,000-person threshold and so are reclassified as peri-urban areas in the figure (see Dorosh and Thurlow 2013). Nevertheless, the large peri-urban population suggests that there is scope for farmers to raise their incomes by supplying foods (even perishable foods) to urban markets or by working as seasonal or circular migrants within the urban economy.

Figure 9.8 also suggests that while average labor productivity may be higher in nonfarm activities (Gollin, Lagakos, and Waugh 2014), this hides the wide range of jobs within the agricultural and nonagricultural sectors. A large share of economic growth in Africa over the last decade was generated by wholesale and retail trade, and much of this was in the low-productivity informal sector (McMillan, Rodrik, and Verduzco-Gallo 2014; Thurlow, Dorosh, and Davies 2019). Parts of the agricultural sector, especially high-value crops and livestock, may be more productive than informal trade, manufacturing, and business services. There is evidence to support this. McCullough (2017) used time-use data from household surveys to estimate hourly labor returns for individual workers in four African countries. Findings suggest that, in some countries, hourly labor returns are higher in agriculture than in industry. Nagler and Naudé (2017) use the same household data to estimate how labor productivity in nonfarm enterprises changes, the further these enterprises are located from urban markets. Figure 9.10 reports their findings for Uganda. While average labor productivity is higher in urban areas, this hides the large overlap in labor productivity in rural and urban areas. Just as it is incorrect to equate rural areas with agriculture, it is also incorrect to equate rural areas with low-productivity jobs (at least for households' nonfarm enterprises).

The above framework captures some of the main arguments from both the pro-agriculture and pro-urban perspectives. The next section implements this framework using a model of Malawi's economy to evaluate the impacts of urbanization and investments along the rural-urban continuum.

FIGURE 9.10 Labor productivity of nonfarm enterprises in Uganda (by rural/urban area or distance to nearest urban population center)



Source: Nagler and Naudé (2017).

Note: Distribution of labor productivity is measured as average monthly enterprise sales divided by number of workers. Urban and rural designations are based on official national definitions. Distance is measured in kilometers (km) to the nearest population center.

Investing in Agricultural Growth or Urban Development

An open-economy computable general equilibrium (CGE) model used in this section separates the Malawian economy into detailed sectors and household groups within cities, towns, and rural areas. Previous sections emphasized cross-country variation in urban definitions and the importance of peri-urban areas, but due to data constraints, we retain Malawi's official definition of *urban centers* and cannot separate peri-urban and more-remote rural areas. Nevertheless, the model still captures key aspects of the debate over the roles of rural agriculture and urban areas in development, including agriculture's production and demand linkages, internal rural-to-urban migration, and urban agglomeration economies and congestion effects (see Dorosh and Thurlow 2011, 2013). The model's parameters are calibrated to a 2010 social accounting matrix and to employment and migration data from national labor force surveys and population censuses (see Pauw, Schuenemann, and Thurlow 2015). Urban agglomeration effects are calibrated to cross-country estimates from Henderson and Wang (2005).

Workers in cities, towns, and rural areas are fully employed, but their labor markets are segmented by education levels. Full employment for lower-skilled workers in rural areas reflects seasonal labor shortages and distance barriers to circular migration. Full employment in urban areas reflects the greater skill intensity of urban employment and a scarcity of those skills within the urban labor force. Barriers to migration lead to trade-offs between farm and nonfarm work, which may explain why so few farm households in Malawi also earn incomes from nonfarm enterprises and off-farm work, despite the country's high population density (Benson, Erman, and Baulch 2019).

Even without full employment, migrants from rural areas in the model would still need to compete with urban workers and would have limited job opportunities in more skill-intensive sectors. Workers migrate in response to wage differentials, with initial migration replicating observed flows at prevailing wage gaps. Workers migrate with their families. Cities and towns benefit from migrant workers, but their labor dependency ratios rise. Finally, migrants adopt the consumption patterns of urban households at similar income levels, including the import intensity of their consumption baskets.

The model is dynamic and is used to evaluate future growth, urbanization, and investment trajectories until 2030. We run three policy scenarios. The "faster urban migration" scenario simulates faster rural-to-urban migration without reallocating public resources. The "higher urban investment" scenario

again simulates faster migration but increases public investment in urban areas. Government resources are fixed in this scenario, and so higher urban investment reduces rural investment. Finally, the "maintaining rural investment" scenario simulates faster urbanization and higher urban investment (as above) but maintains rural investment levels by increasing urban taxation.

The model used in this analysis incorporates neoclassical microeconomic assumptions regarding consumer demand, producer profit maximization, and market-clearing prices, as well as the special features related to positive agglomeration effects on total factor productivity in urban areas. The empirical results are heavily dependent on the structure of the Malawian economy as captured in the detailed social accounting matrix, which does capture some of the country's macroeconomic rigidities and resource misallocations. The model also draws on econometric analysis of consumer behavior, such as by imposing income elasticities. However, the model abstracts from various important aspects of household decision-making that is often the focus of the more recent microeconomics literature. This includes incorporating risk and risk aversion, quasi-hyperbolic discounting and demand for commitment devices, status quo biases, and gender dynamics and related labor market frictions or allocation inefficiencies (see discussion in Dercon and Gollin 2014).

There is considerable scope to develop more elaborate structural models that incorporate the recent findings from household-level behavioral studies, especially on the factors influencing a worker's decision to migrate (urbanize) and the economic relationships that migrants maintain with their sending households (in rural areas). In fact, a major gap in the rural-urban linkages literature is a lack of sophisticated macro-micro economic models, especially for developing countries. Macroeconomic modeling would benefit from stronger microempirical foundations, whereas microeconomic studies could benefit from demonstrating the economywide importance of their findings about household and worker behavior.

Malawi Case Study

Before presenting the results of these scenarios, we introduce the Malawian case study and the country's baseline (or business-as-usual) growth path. Malawi has much in common with other low-income agrarian economies. Economic growth over the last 15 years was modest but was enough to raise average per capita incomes. Underlying the growth process were three major trends. First, while agriculture is the dominant sector, most recent growth came from urban areas and the rural nonfarm economy. Second, urban

population growth exceeds rural population growth, but the urban population share is only increasing slowly. Third, urban poverty ratios have risen, even though national poverty ratios have declined.

Given the above trends, it is possible to reach different conclusions about where Malawi's government should focus. Investing in agriculture could raise incomes for smallholder farmers in rural areas, who make up most of the population. Alternatively, investing in cities or towns could generate even faster urban economic growth, with potential benefits for migrants and rural areas. Malawi's Growth and Development Strategy has traditionally favored rural agriculture and small villages. In fact, this series of strategies has explicitly aimed to reduce the pace of urbanization, which is considered a constraint to economic development. While the existing strategy is definitive, there is some debate in Malawi over whether agriculture, as opposed to industry and urban areas, should remain the focus of future policies (see World Bank 2016).

Malawi's rural and urban economies are compared using a social accounting matrix (SAM) built for this study. Sectors and households are disaggregated across rural and urban areas using household and economic survey data. Table 9.4 summarizes the main characteristics of the city, town, and rural economies. Rural areas contain 85 percent of the population but generate only 62 percent of GDP. Household consumption in rural areas is below average, which explains why most poor Malawians live in rural areas. Agriculture is concentrated in rural areas, but there is also a large rural nonfarm economy. Rural households spend two-thirds of their income on food and agricultural products.

Towns have 3 percent of the population and contribute 6 percent of the GDP. While there is some farming within town boundaries, the main sectors are industry and services, and these tend to employ slightly better-educated workers than rural agriculture. Compared with rural households, town households consume more processed foods and fewer unprocessed agricultural products. Households in cities have a similar preference for processed foods. Cities are the core of Malawi's economy—they contain a tenth of the population but generate a third of the GDP. Consumption levels are highest and poverty is lowest in cities. Services are concentrated in cities, and this is reflected in consumption patterns.

Table 9.4 also provides information on the size of rural-urban demand linkages. City households, for example, account for 18 percent of consumption spending on agricultural products, but they produce only 5 percent of agricultural output. Cities are therefore "net importers" of agricultural products from rural areas (even after accounting for urban food imports). Overall,

TABLE 9.4 Malawi's city, town, and rural economies, 2010

Indicator	Rural areas	Towns	Cities	All
Consumption per capita ($)	341	940	1,136	458
Poverty headcount rate (%)	45.3	18.4	9.4	40.0
Population share (%)	84.6	2.7	12.7	100
Poor population share (%)	95.8	1.2	3.0	100
Sector GDP shares (%)	100	100	100	100
Agriculture	49.2	9.5	4.5	32.3
Industry	15.5	20.0	17.7	16.5
Services	35.3	70.5	77.8	51.2
Regional GDP shares (%)	61.6	5.9	32.5	100
Agriculture	93.8	1.7	4.5	100
Industry	57.9	7.2	34.9	100
Services	42.5	8.1	49.4	100
Employment shares by education (%)	100	100	100	100
Secondary schooling completed	6.0	12.4	16.1	7.3
Primary schooling completed	30.8	37.9	40.9	32.0
Primary schooling incomplete	63.2	49.7	43.0	60.7
Total consumption shares (%)	100	100	100	100
Agriculture	49.3	28.7	22.1	39.6
Processed foods	14.3	13.7	12.8	13.8
Industrial goods	9.2	18.8	12.9	10.9
Services	27.3	38.8	52.1	35.7
Product consumption shares (%)	63.0	5.5	31.5	100
Agriculture	78.4	4.0	17.6	100
Processed foods	65.2	5.5	29.3	100
Industrial goods	53.1	9.5	37.4	100
Services	48.1	6.0	45.9	100

Source: Malawi social accounting matrix and CGE model.

Note: GDP = gross domestic product. Poverty line is upper threshold of second per capita consumption quintile.

urban areas import most of their agricultural products from rural areas, although they are almost self-sufficient for processed foods. Urban centers in turn export services to rural areas, including transport, finance, and business. Both rural and urban areas rely on foreign imports for industrial products (for example, machinery and chemicals). These economic structures and linkages will determine the impacts of urbanization and public investments in our model scenarios.

Baseline Scenario

The baseline assumes a continuation of recent trends (1998–2013). The population grows at 2.8 percent per year, with faster growth in cities and towns (Table 9.5). Labor supply grows more slowly at 1.4 percent per year, and land supply grows even more slowly at 0.5 percent (reflecting major land constraints). Private investment and capital accumulation rates are endogenous; public investment is exogenous and increases faster than the population.

Total factor productivity (TFP) growth has exogenous and endogenous components. The latter include urban agglomeration effects (and offsetting congestion effects) proxied by population density. Urban nonagricultural productivity grows faster than rural agricultural productivity in the baseline. Overall, national GDP grows at 4.0 percent per year (or 1.2 percent in per capita terms). There is only modest structural change in the baseline. The urban population share rises from 15 to 16 percent during 2010–2030, and agriculture's share of GDP falls. Poor households in the bottom two consumption quintiles enjoy modest welfare gains. Equivalent variation (EV), a consumption-based welfare measure that adjusts for changing prices, grows at 0.1 percent per year. Nonpoor households' welfare grows much faster (1.2 percent), implying a widening gap between poor and nonpoor households in the baseline.

Faster Urban Migration

The faster urban migration scenario increases rural-to-urban migration rates above historical values. The urban population share now rises to 21.1 percent in 2030, as compared with 16.2 percent in the baseline. Faster migration increases urban labor supply and narrows the gap between urban and rural wages. Urbanization reduces rural labor supply, but it also generates backward linkages to agriculture, mainly because higher urban incomes generate demand for food (Table 9.6). Overall, faster urbanization leads to a 0.7 percentage point increase in the national GDP growth rate such that by 2030 the national economy is 14.1 percent larger than it would have been without faster urbanization.

All additional economic growth from faster urbanization occurs in cities and towns. Despite increased agricultural production, the rural economy contracts (relative to the baseline) due to slower growth of rural nonfarm activities. This change in the composition of rural employment is mainly caused by higher demand from urban households for imported goods, a real exchange rate depreciation, and greater incentives to produce exports (and

TABLE 9.5 Baseline scenario, 2010–2030

Indicator	Rural areas	Towns	Cities	All
Annual GDP growth (%)	3.04	4.91	5.22	3.96
Labor	1.10	2.90	2.90	1.38
Crop land/livestock	0.50	0.00	0.00	0.48
Private capital	4.09	6.17	6.37	6.22
Public capital	3.67	3.93	2.95	4.00
TFP	1.28	1.43	1.64	1.30
Annual migrant flow (1,000s)	–16.98	3.35	13.63	0.00
Inflow	0.00	3.80	13.63	17.43
Outflow	–16.98	–0.45	0.00	–17.43
Change in share of workforce (%)	–0.31	1.62	1.71	0.00
Population growth rate (%)	2.70	3.27	2.98	2.75

Source: Malawi CGE model results.
Note: GDP = gross domestic product; TFP = total factor productivity.

TABLE 9.6 Economic growth and household welfare results, 2010–2030

		Urbanization scenarios (percentage point deviation from baseline)		
Indicator	Baseline annual growth rate (%)	Faster urban migration	Higher urban investment	Maintaining rural investment
Annual GDP growth	3.96	0.66	0.68	0.82
Agriculture	2.81	0.17	–0.03	0.14
Industry	4.69	0.83	0.95	1.10
Services	4.35	0.83	0.90	1.03
Rural areas	3.04	–0.29	–0.52	–0.33
Towns	4.91	1.23	1.22	1.54
Cities	5.22	1.60	1.83	1.91
Annual welfare change	1.01	1.52	1.48	1.36
Poor	0.13	0.25	0.14	0.25
Urban	0.95	–0.07	–0.16	0.00
Rural	0.06	0.23	0.12	0.22
Nonpoor	1.16	1.73	1.70	1.56
Urban	1.90	1.88	1.92	1.63
Rural	0.45	0.82	0.71	0.70

Source: Malawi CGE model results.
Note: GDP = gross domestic product.

other tradable goods) within the rural economy. Because of this change, labor allocations within agriculture shift toward export crops, such as tobacco and cotton, and toward food crops that are difficult to substitute with imports, such as livestock and fish. Urbanization in Malawi encourages a shift toward higher-value activities in agriculture, and this is consistent with recent survey-based studies suggesting that urbanization in SSA transforms national food systems (Tschirley et al. 2015).

Faster urbanization accelerates structural change in Malawi. Migration to urban centers causes agricultural employment to fall and nonagricultural employment to increase, particularly in trade services. Again, this is consistent with recent growth and employment trends in SSA (Thurlow, Dorosh, and Davies 2019). Migration also results in more manufacturing and construction jobs, in part because urban migrants demand more manufactured goods.

Finally, the increase in urban population exceeds the increase in urban GDP, leading to lower urban per capita GDP and welfare relative to the baseline. Conversely, the decline in the rural population is larger than the decline in rural GDP, and so rural welfare improves. Faster urbanization leads to higher national welfare and falling poverty, but most of the benefits accrue to nonpoor households. Thus, while urbanization raises national GDP and welfare and stimulates agricultural growth, it also leads to an "urbanization of poverty" as urban centers struggle to absorb migrant workers and their families. This might justify reallocating public resources from rural to urban areas.

Higher Urban Investment

The decline in urban welfare in the faster urban migration scenario is partly due to declining public capital (infrastructure) per capita (relative to the baseline) as urban populations increase. To avoid these adverse congestion effects, the higher urban investment scenario increases public investment in cities and towns so that urban public capital per capita remains unchanged from baseline levels. The overall level of government spending is fixed, however, and so increasing urban investment in this scenario reduces investment in rural areas, causing agricultural TFP to fall below baseline levels. In other words, we capture both the benefits and opportunity costs of raising urban investment.

As shown in Table 9.6, GDP growth in the industrial and service sectors is faster in the higher urban investment scenario than in the faster urban migration scenario. Agricultural growth decelerates, however, and is even slower than in the baseline. Faster urban GDP growth widens the gap between urban and rural wages and encourages more migration to urban centers. Not

surprisingly, urban welfare is higher and rural welfare is lower when investments are reallocated toward urban centers.

Reallocating investment away from rural agriculture does not achieve the goal of preventing urban poverty from rising with urbanization. Instead, the model simulations show that reducing rural investment leads to even worse outcomes for poor urban households, because slower agricultural growth leads to higher real food prices. This finding is consistent with traditional development models that argue that raising agricultural productivity benefits the urban poor by reducing food prices (see Diao, Hazell, and Thurlow 2010). The results suggest that increasing urban investment is necessary to prevent an urbanization of poverty, but this should not come at the expense of rural investments (at least over the near term).

Maintaining Rural Investment

The final scenario increases government spending in urban areas (as in the previous scenario) but finances these investments by raising direct tax rates on urban enterprises and households rather than reducing rural investments. Raising domestic revenues is a challenge for countries like Malawi, where the tax base is small and the government has few tax instruments to apply. Higher tax rates could also lead to tax evasion. Nevertheless, this scenario allows us to assess the potential economywide benefits of a more balanced rural and urban investment strategy, while still accounting for both benefits and costs of investment decisions.

Maintaining rural investment, while also increasing urban investment, leads to faster agricultural growth relative to the baseline (that is, by 0.14 percentage points per year) and higher overall GDP growth. As shown in Table 9.6, secondary towns are the main beneficiaries from maintaining rural investment levels, since the economy of towns is more closely linked to rural agriculture, and town households tend to be poorer than city households with higher shares of food in their consumption baskets. Preventing the fall in agricultural productivity actually leads to faster rural-to-urban migration and most of the increase in the urban migrant population occurring in secondary towns.

Poor urban households are better off in the maintaining rural investment scenario than in either the faster urban migration or the higher urban investment scenarios. By design, urban welfare now remains unchanged, compared with the 1.3 and 3.1 percent declines in the previous scenarios. Poor rural households are also better off when rural investment is maintained at

baseline levels. Only nonpoor urban households are worse off, because taxes are raised to finance urban investments. Even with higher taxes, however, nonpoor urban households are still the main beneficiaries from faster urbanization—their per capita welfare is still 38.1 percent higher in 2030 than it would have been without faster urbanization, and this is only slightly below the 46.4 percent welfare improvement they would have enjoyed had they not had to finance urban investments.

The Malawi case study provides some insights into the relationship between agriculture, urbanization, and poverty. As in many developing countries, Malawi's development plan views urbanization as a constraint to development. To reduce migration, the strategy focuses on raising agricultural productivity and value addition and creating markets and job opportunities in rural villages. The above analysis suggests that faster urbanization is not a constraint but rather a potential catalyst for long-term economic development in Malawi. Urbanization accelerates national economic growth and structural change and can help spur rural transformation and poverty reduction. However, reducing investments in rural agriculture to finance urban development can lead to an "urbanization of poverty" that underpins many of the concerns about urban migration in Malawi. Instead, findings suggest that urbanization can finance itself (via urban taxes) without preventing higher-income urban households from benefiting from urban development.

Conclusions

Rapid urbanization is a defining feature of low-income countries, even as rural populations continue to grow. Greater attention should therefore be paid to the spatial dimensions and urban drivers of agricultural transformation. Unfortunately, agricultural and urban policies are usually developed in isolation from each other and are often viewed as being in competition. This perceived competition between sectors has led many countries to adopt policies aimed at curbing internal migration or redirecting scarce public resources toward agriculture. However, urban populations are growing rapidly in low-income countries and a large share of urban residents are poor and live in slums. Even maintaining urban investments at current levels will be insufficient and could become a constraint to national development, including efforts to transform agriculture-food systems.

This chapter reviewed cross-country evidence on the relationship between urbanization, structural change, and poverty reduction. Urbanization is

associated with workers leaving agriculture. That said, the nonfarm sector is an important part of the rural economy, as is agricultural employment within the urban economy. Many people, including farmers and other workers in the food system, live in peri-urban areas close to urban centers. Finally, urban poverty is a justified concern, even though most of the world's poor still live in rural areas.

The Malawi case study considered many of the concerns and arguments raised by the pro-agriculture and pro-urban schools. Findings suggest that, contrary to national policies in many developing countries, faster urbanization is not a constraint on, but instead a potential catalyst for, economic development. Urbanization can accelerate national economic growth and structural change and spur rural transformation and poverty reduction. The analysis, however, cautions against reducing investments in rural agriculture to finance urban development. This leads to an "urbanization of poverty" that underpins many concerns about urban migration in countries like Malawi. Instead, findings indicate that urbanization could finance itself without preventing higher-income urban households from benefiting from faster urbanization and urban development. A more balanced national strategy for developing countries like Malawi should limit the policy constraints placed on migration and instead ensure that urban policy includes investments that support urban enterprises and job creation, particularly in downstream components of the agriculture-food system.

Further research is needed to better understand the economies of small towns and their rural/agricultural linkages. More systematic research on agriculture-food systems is needed to gauge the urban extent of agricultural value chains (for example, processors and traders) and the interactions between these value chains (for example, competition for market space, barriers to entry). This research agenda would require use of both household and business surveys and the study of the incentives and needs of both firms and farms. Similarly, agriculture-food systems stretch across multiple sectors and locations, and so there needs to be better alignment between agricultural, industrial, and urban policies and investments. Adopting a more nuanced conceptual framework, like the one presented in this chapter, requires a broadening of food policy research beyond farming and value chains. It also needs better coordination of ministries and agencies tasked with promoting private sector development within food systems. While agriculture may indeed be in competition with urban development, it may also be that rapid urbanization provides the impetus needed to broaden existing food policies and research.

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