PART II
Sustainable cities and structural transformation

Chapter 6

The implications of Africa's urbanisation for structural transformation

While there is growing awareness that urbanisation is profoundly transforming African societies, little attention has been paid so far to ways in which that process may be harnessed to accelerate the continent's structural transformation in a more effective and sustainable manner. In pursuit of that ambition, this chapter analyses the diversity and uniqueness of the continent's urbanisation experiences. Chapters 7 and 8 then focus on options for seizing the opportunities that urbanisation provides. An annex to Chapter 6 explains the methodology for the cluster analysis on urbanisation and structural transformation in diverse African countries.

In brief

Africa is urbanising at a historically rapid rate, bringing about considerable opportunities and challenges. Africa's urbanisation can allow for structural transformation, if accompanied by productive employment and sufficient public goods. Urbanisation patterns are diverse across Africa, but they generally confirm that unplanned urbanisation can challenge structural transformation.

Current urbanisation patterns should be more sustainable for economic, social and environmental development. In many African countries, a large portion of the urban labour force remains trapped in low-productivity informal services activities and access to public goods is unequal. Urban activities are increasingly connected with rural areas, which remain a pillar of African economies. Despite Africa's slow industrialisation, the costs of environmental degradation are large and increasing, adding to the economic and social challenges of urbanisation. Specifically, policies must ensure that infrastructure keeps up with rapid urban growth and connects urban centres and must actively promote urban planning and governance. Agenda 2063 and the Sustainable Development Goal 11 on cities provide new impetus for fulfilling Africa's urbanisation potential.

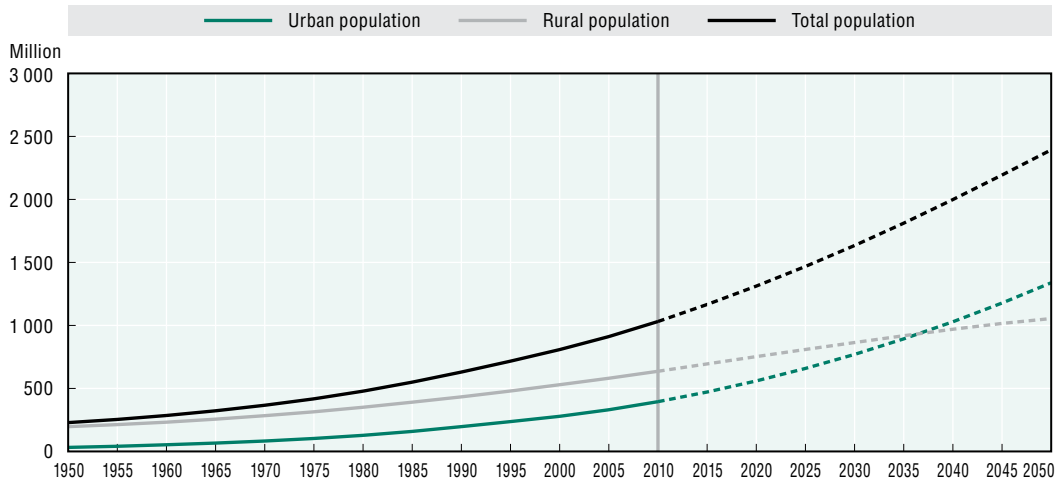
The links between urbanisation and structural transformation in Africa are complex and varied

The first section below informs the reader of the fast pace and magnitude of Africa's urbanisation in light of the most recent evidence. It frames Africa's urbanisation in the context of the "second wave" of the world's urbanisation process led by Asia. The following section analyses Africa's experience of rapid urbanisation with slow structural transformation. This contrasts with that of many world regions, most clearly OECD and East Asian countries. The third section looks at the variety of urbanisation patterns observed on the continent. The final section takes account of the staying power of Africa's rural economy.

Africa is urbanising at a historically rapid rate

The African continent is urbanising fast. The share of urban residents has increased from 14% in 1950 to 40% today. By the mid-2030s, 50% of Africans are expected to become urban dwellers (Figure 6.1).[1] Urbanisation is likely to continue and level off at about 56% around 2050.

Figure 6.1. **Growth trends in Africa's urban, rural and total population, 1950-2050**



Note: Forecasts start from 2010 based on UN DESA's medium fertility scenario.
Source: UN DESA (2014).

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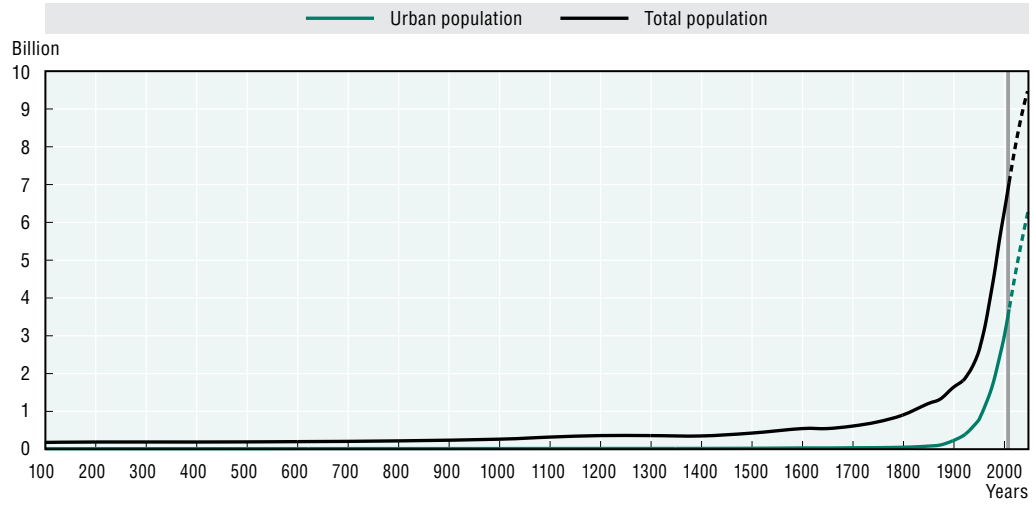
Considering their magnitude and speed, the urbanisation of Africa and Asia simultaneously correspond to the second major wave of urbanisation in the history of mankind. The first major urbanisation wave took place in Europe, Northern America, and to some extent Latin America and the Caribbean between 1750 and 1950 when the urban population increased from 15 million to almost 462 million. The current wave of urbanisation is bigger and faster. An additional 2.1 billion people are projected to be living in African and Asian cities between today and 2050 (Figure 6.2).

Figure 6.2. **Global urban population growth, year 100 to 2050**



Note: Vertical bar indicates projection after year 2010.

Source: Data on total population between year 100 and 1940 from Kremer (1993), data on urban population between year 100 and 1925 from Graumann (1977), and data from 1950 to 2050 from (UN DESA, 2014) using UN DESA's medium fertility scenario from 2010 onwards.

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The magnitude of the current wave of urbanisation calls for a more environment-friendly and less resource-consuming process than in the past. In China, as in several OECD countries, rapid urbanisation has come with environmental degradation proportional to development and poverty reduction: 12 of the 20 most polluted cities in the world are located in China, and about 90% of rivers around urban areas are seriously polluted (World Bank, 2007; Zheng and Khan, 2013). In addition, Africa's urbanisation is taking place in a resource and climate-constrained world unknown to earlier urbanisation (Swilling, 2015; Currie et al., 2015). Ensuring that the ongoing wave of urbanisation is more sustainable than in the past is of strategic importance to Africa and to the world at large.

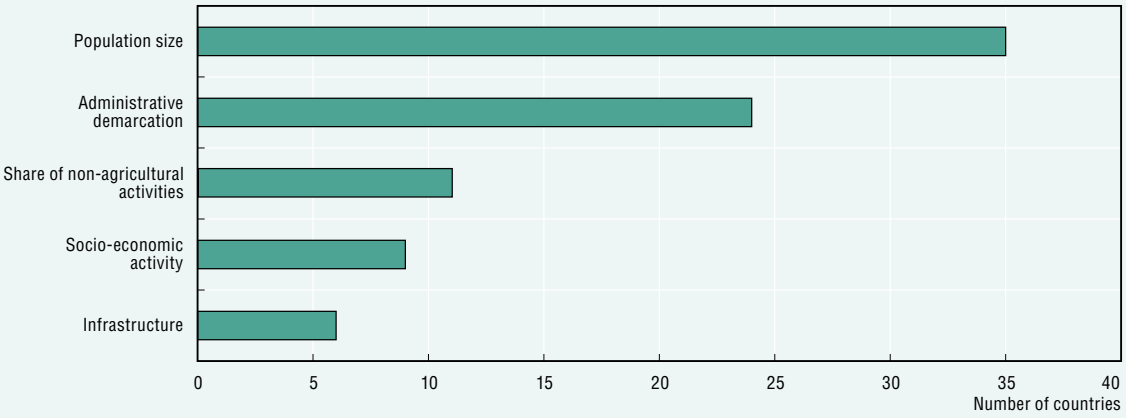
As Asia, Africa is urbanising twice as fast as did Europe. It took Europe 110 years to move from 15% urban in 1800, to 40% in 1910. Africa has achieved the same transformation in almost half the time: 60 years. Africa's urbanisation is estimated to have gained 5.9 percentage points between 2000 and 2015, second only to Asia, which gained 10.7 percentage points during the same period. In 2015, almost 472 million Africans lived in urban areas (authors' calculations based on UN DESA, 2014).

Even more striking is the rapid growth of Africa's urban population in absolute terms, or without relating urban growth to rural population growth (see Box 6.1). The size of Africa's urban population nearly doubled in 20 years from 237 million in 1995 to 472 million in 2015. Africa's urban population is expected to almost double again between 2015 and 2035. Not so long ago, in 1990, Africa was the world's region with the smallest number of urban dwellers: 197 million. Soon, in 2020, Africa is forecasted to have the second highest number of urban dwellers (560 million) after Asia (2 348 million).

Box 6.1. **Definitions of urban areas, various agglomerations, urbanisation and urban population growth**

The official definitions of **urban areas** vary across African countries (Figure 6.3). Thirty-five African countries define an urban area by population size, however the size varies. The threshold is between 1 500 to 3 000 inhabitants in 16 countries; 5 000 inhabitants in 11 countries; 10 000 inhabitants in 5 countries; 20 000 in Nigeria and 30 000 in Mali. Twenty-four countries define their urban areas according to administrative or political criteria, whereas for 11 countries the definition takes into account the presence of non-agricultural activities. Socio-economic activity defines urban areas for only 9 countries, while infrastructure is less commonly used in the national definitions. The lack of a single, accurate definition hinders collecting and tabulating urban statistics and prevents harmonised comparisons at regional and international levels (AfDB/OECD/UNDP, 2015). This report uses urbanisation data from UN DESA's *World Urbanization Prospects* (2014), which is based on official data produced by national statistical offices.

Figure 6.3. **Definitions of urban across 54 African countries**



Source: Authors' classification based on UN DESA (2014).
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Urban agglomerations carry various names, often depending on their size. **Cities** usually refer to large urban agglomerations; they can be big, intermediate or small. **Towns** refer to even smaller urban agglomerations and **villages** to the smallest. It is noteworthy, however, that no objective threshold exists and that the distinction between city and town is more common in the English language than in French and Portuguese, the other languages in which this report is published. A **megacity** is an urban agglomeration with a population of 10 million people or more, and a **megalopolis** a large agglomeration of adjacent urban centres. A **conurbation** is an urban agglomeration composed of several cities, initially separated by rural areas, whose growth has overlapped while remaining administratively independent. An **urban corridor** links cities of different sizes through transport and economic axes. **Urban settlement** is an all-encompassing category without reference to size.

Urbanisation differs from urban population growth. **Urbanisation** is the increase in the share of a country's total population living in urban areas. It is typically measured as the level showing the percentage of a country's total population that is urbanised. Deep changes accompany this increase, notably economic, social and environmental ones (see Box 6.2). **Urban population growth** is the absolute growth in a country's urban population. A country does not urbanise when urban population growth is lower than rural population growth.

Contrary to widely-held assumptions, Africa is urbanising fast mainly because towns and intermediate cities are growing. Between 2000 and 2010, urban agglomerations with fewer than 300 000 inhabitants accounted for 58% of Africa's urban growth; agglomerations with 300 000-1 million inhabitants only 13%; and those with over

1 million inhabitants 29%. Between 2010 and 2030, the small agglomerations are forecasted to make up 51% of the urban growth; the intermediate ones 16%; and the biggest 33%.

Africa's fast pace of urbanisation and urban growth contrasts with the slow pace of structural transformation, as the next sub-section shows. Urbanisation and structural transformation have not been mutually supportive in many African economies.

Urbanisation is part of structural transformation

Economic theory since Adam Smith and Alfred Marshall has long analysed the links between development and urbanisation. Early "dual economy" models viewed urbanisation as a process of rural-urban migration where surplus agricultural workers moved from rural areas into more productive jobs in modern urban industries and services (Haggblade, Hazell and Brown, 1989; Fei and Ranis, 1963; Johnston and Mellor, 1961; Lewis, 1954). Labour-saving technologies and rising agricultural productivity through a "green revolution" can push surplus agricultural workers away from traditional activities in rural areas (Gollin, Parente and Rogerson, 2002). Cities provide a large and diversified pool of labour, a more dynamic local market, more cost-effective access to suppliers and specialised services, lower transaction costs, more diversified contact networks and greater knowledge-sharing opportunities, and an environment that encourages innovation (Krugman, 1991; Spence, 2012; World Bank, 2009; AfDB, 2010).

Box 6.2. **Definition of structural transformation**

In its economic sense, structural transformation is the process of moving economic resources from low to higher productivity activities (AfDB/OECD/UNDP/UNECA, 2013). Its basic mechanics entail a push factor away from traditional agriculture best described as a "green revolution" and a pull factor into higher productivity manufacturing or services best known as an "industrial revolution". Structural transformation involves moving away from low-productivity agriculture and re-allocating economic resources to higher productivity activities. The process may also happen within a single sector such as agriculture.

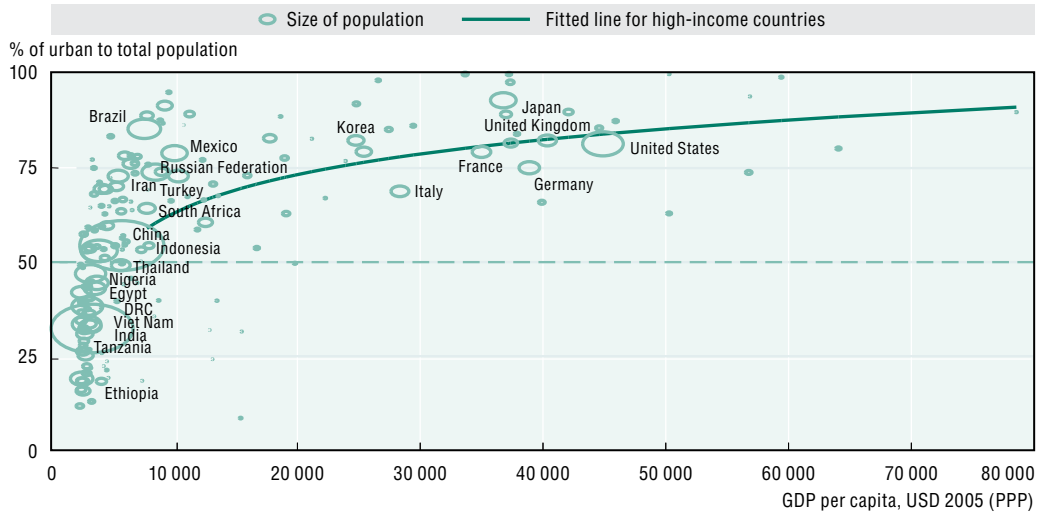
Structural transformation brings about deep changes to societies. In particular, it entails urbanisation and a reduction in total fertility ratios. Fertility ratios fall as people acquire more education, earn higher incomes and live in denser environments (Timmer and Akkus, 2008). Dysfunctions will inevitably be part of such radical transformations. In various regions of the world, these processes have not been linear.

Big and small cities can benefit from agglomeration economies by using fewer resources to support a larger population. Increasing returns from agglomeration makes cities more attractive. Cities offer cultural vibrancy and diverse choices for services. This attractiveness further draws talents and investments, creating a virtuous circle of urbanisation and development. These advantages allow cities to increase productivity and hence economic gains through three broad functions: **matching**, **sharing** and **learning** (Kayizzi-Mugerwa, Shimeles and Yaméogo, 2014; Turok, 2014; Duranton and Puga, 2004):

- First, cities help firms **match** their unique requirements for labour, material inputs and premises better than towns. Larger markets bring more choices and opportunities.
- Second, cities afford firms access to a wider range of **shared** services and infrastructure because of the scale of activity.
- Third, firms gain from the superior flow of information in cities, which promotes more **learning** and innovation and results in higher value-added products and processes.

Hence, industrialised countries have gone through an urbanisation process. Globally, urbanisation closely relates to national income: all countries that pass the USD 10 000 per capita threshold are at least 50% urbanised (Figure 6.4).

Figure 6.4. **Global urbanisation levels and GDP per capita in selected countries, 2014**



Note: Exponential fit line for high income countries. Each bubble reflects the size of a country's total population.
Source: UN DESA (2014) and World Bank (2015).
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However, urbanisation is a necessary but insufficient condition for structural transformation. Many countries that are more than 50% urbanised still have low-income levels. Urbanisation per se does not bring economic growth, though concentrating economic resources in one place can bring benefits (Henderson, 2003). Further, rapid urbanisation does not necessarily correlate with fast economic growth: Gabon has a high annual urbanisation rate at 1 percentage point despite a negative annual economic growth rate of -0.6% between 1980 and 2011 (Chen M. et al., 2014).

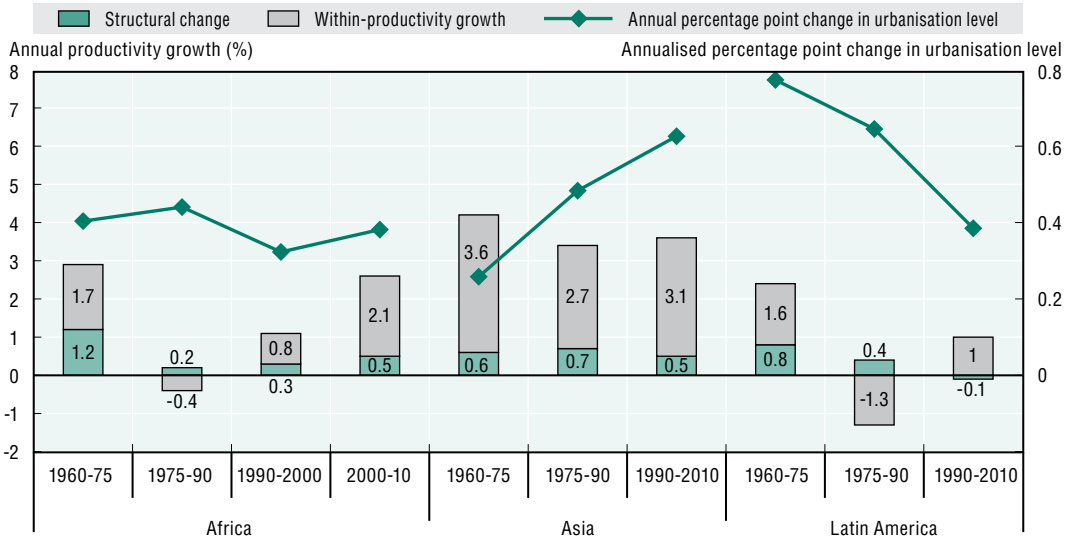
In addition, the benefits of agglomeration greatly depend on the local context, including the provision of public goods. Public goods possess non-rivalry and non-excludable benefits. Lack of sufficient public goods or their unsustainable provision can impose huge costs on third parties who are not necessarily involved in economic transactions. Congestion, overcrowding, overloaded infrastructure, pressure on ecosystems, higher costs of living, and higher labour and property costs can offset the benefits of concentrating economic resources in one place. These negative externalities tend to increase as cities grow. This is especially true if urban development is haphazard and public investment does not maintain and expand essential infrastructure. Dysfunctional systems, gridlocks, power cuts and insecure water supplies increase business costs, reduce productivity and deter private investment. In OECD countries, cities beyond an estimated 7 million inhabitants tend to generate such diseconomies of agglomeration (OECD, 2006). Hence, the balance between agglomeration economies and diseconomies may have an important influence on whether city economies continue to grow, stagnate or begin to decline.

OECD experiences demonstrate that many different patterns of urbanisation can lead to structural transformation, such as industrialisation. Urban structures have varied a great deal among OECD countries; there is no one-size-fits-all pattern. In several countries, primate cities like London and Paris dominate the urban networks. Other countries such as Germany or Italy have more balanced urban networks where intermediary cities, such as Stuttgart or Turin, have driven industrialisation. Moreover, rural regions can grow faster than urban ones. Between 1995 and 2007, OECD regions with lower levels of development tended to grow faster than richer regions, suggesting a catching-up growth process (OECD, 2012a). In Italy, clusters of small and medium enterprises in intermediary cities fostered industrialisation through specialising in closely related industries and forming interconnected production networks.

Structural transformation has been slow in a context of changing employment patterns

Weak linkages between urbanisation and structural transformation are observable in many regions of the world, though most recent examples are found in Africa and Latin America (UN-Habitat and UNECA, 2015). Previous editions of the *African Economic Outlook* have documented the slow pace of structural transformation in a majority of African economies, notably when compared with Asia's performance (AfDB/OECD/UNDP, 2013; AfDB/OECD/UNDP, 2015; see also McMillan and Harttgen, 2014). Figure 6.5 puts this comparison in perspective by showing the paces of urbanisation and structural transformation in 3 regional samples: although the 11 African countries are urbanising at a comparable speed to the 11 countries from Asia, labour productivity has been progressing more slowly; the 9 Latin American countries have experienced faster urbanisation but even slower structural change than the African ones.

Figure 6.5. **Annualised labour productivity growth and urbanisation in Africa, Asia and Latin America, 1960-2010**



Note: The following countries are included in Africa: Botswana, Ethiopia, Ghana, Kenya, Malawi, Mauritius, Nigeria, Senegal, South Africa, Tanzania and Zambia. Asia: China, Hong Kong (China), India, Indonesia, Japan, Korea, Malaysia, Philippines, Singapore, Taiwan and Thailand. Latin America: Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Mexico, Peru and Venezuela. "Within-productivity growth" refers to gains incurred within existing economic activities through capital accumulation or technological change. "Structural change" is incurred from reallocation of labour from low-productivity to high-productivity activities which increases aggregate labour productivity of the economy. Although this analysis uses a ten-sector categorisation with a longer time frame than AfDB/OECD/UNDP/UNECA (2013) albeit with less African countries (11 vs. 19), the final results of the two analyses are consistent.

Source: Structural change figures adapted from Figure 1 and Figure 2 in De Vries et al. (2015) and urbanisation data computed from UN DESA (2014).

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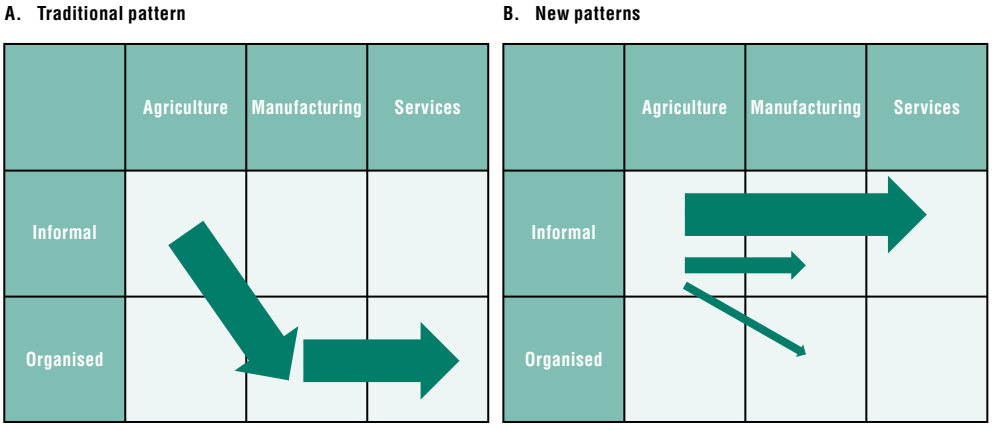
The quasi halt of industrialisation in many African countries at the end of the 20th century seems to be a turning point. De Vries, Timmer and de Vries (2015) show that, following independence, manufacturing employment progressed quickly in Africa, from 4.7% in 1960 to 7.8% in 1975. During this period, urbanisation levels increased by 0.40 percentage points a year. The development trajectory thus seemed to follow the classic dual economic model explained above. Between 1975 and 1990, however, political and economic turmoil wiped out the nascent manufacturing sector while urbanisation continued. Structural change slowed down, as services kept absorbing workers released from agriculture, but with much lower returns than industry. With Africa's growth picking up considerably since the early 2000s, structural change has become positive again, albeit still at a slower pace than in Asia.

Many countries seem to be by-passing the manufacturing stage altogether in favour of services and risk the consequences of premature deindustrialisation. The sub-Saharan services sector grew from 47% of gross domestic product (GDP) in 1965 in aggregate to 58% in 2014, absorbing the bulk of growth in labour force in the process. Large-scale reallocation into services traditionally occurs in post-industrialised countries owing to the faster growth of labour-saving technologies in manufacturing and demand shifts away from manufactured products (Figure 6.6). There are thus concerns that African countries – and today's developing countries at large – are moving into the service sector too early without having gone through a proper experience of industrialisation (Rodrik, 2015). "Premature deindustrialisation" may affect future growth prospects, because industrialisation is the most efficient path to sustained growth and economic convergence.

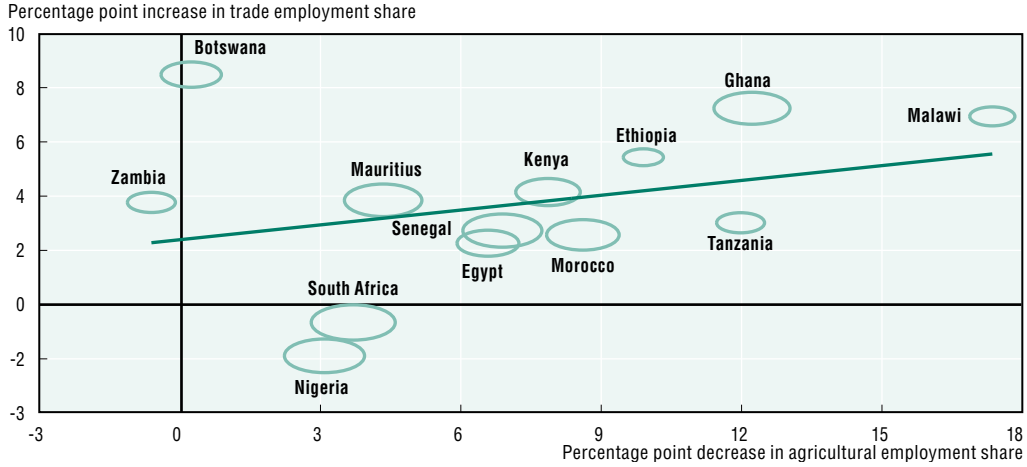
Figure 6.6. **Traditional and new patterns of transformation between sectors and type of employment**



Source: Adapted from Rodrik (2014).

Farmers may prefer to move into traditional or informal urban services because urban informal work is often more productive than agricultural work, even if considerably less productive than formal employment. In Ghana, the differential between urban informal work and rural farming work was estimated at 2:1 (Spence, Clarke Annez and Buckley, 2009: xiv). This productivity gap largely benefits the trade, hotel and restaurant service sector, which is the largest service sector and mostly consists of informal, micro and small enterprises such as hawkers and convenience shops. Hence, Figure 6.7 shows that, in 9 out of 13 African countries, a decrease in agricultural employment between 2000 and 2010 was related to the increase in employment in the trade, hotel and restaurant service sector (formal and informal services included).

Figure 6.7. **Change in employment in trade services and agriculture in 13 African countries, 2000-10**



Note: The size of the bubble reflects the relative share of the country's labour force in trade employment in 2000.
Source: Authors' calculations based on the GGDC 10-sector database (Timmer, de Vries and de Vries, 2014).
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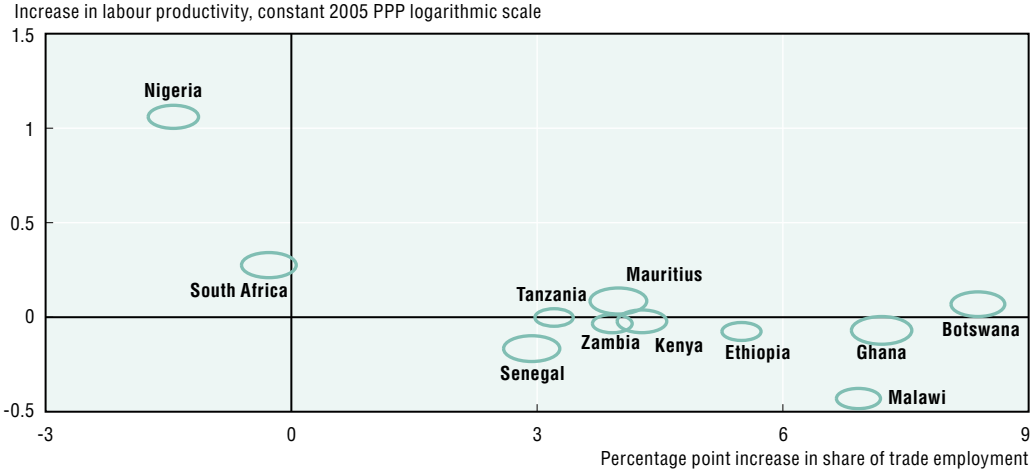
But the large exodus of low-skilled workers into trade, hotel and restaurant services reduces the productivity of this sector. In 7[2] out of the 11 African countries in Figure 6.8, the sector appears as the least productive activity in services while accounting for 10% to 25% of total employment. This sector has experienced productivity loss in real terms in the same 7 countries. Between 2000 and 2010, Ghana's wholesale and retail trade sector has increased its employment share from 17% to 25% without increasing its economic output.

Figure 6.8. **Change in labour productivity and share of employment in trade services in 11 African countries, 2000-10**



Note: Productivity is adjusted by sectoral price levels in real terms, which is available for 11 sub-Saharan African countries. The size of the bubble reflects the relative share of the country's labour force in trade employment in 2000.

Source: Authors' calculations based on the GGDC 10-sector database (Timmer et al., 2014).

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Low-productivity informal urban jobs prevail particularly in countries that urbanised while benefiting from rents stemming from natural resources extraction and agricultural exports. Focusing on Côte d'Ivoire and Ghana, Jedwab (2013) finds windfalls from cocoa exports have been disproportionately spent on non-tradable goods and services, giving rise to "consumption cities". In Ghana, census data shows that informal jobs grew with urbanisation from 74% to 82% of total employment between 2000 and 2010 (Table 6.1). Informal jobs remain more prevalent among female than male workers.

Table 6.1. **Employment sectors of household heads by sex in Ghana, 2000-10**

	Total		Male		Female	
Employment sector	**2000**	**2010**	**2000**	**2010**	**2000**	**2010**
Public	9.6%	8.7%	10.8%	9.7%	6.5%	6.5%
Private formal	14.6%	8.4%	15.4%	10.3%	12.7%	4.3%
Private informal	74.0%	82.0%	71.7%	79.0%	79.7%	88.6%
Semi-public or parastatal	1.0%	0.2%	1.2%	0.2%	0.5%	0.1%
Non-governmental or international organisations	0.2%	0.7%	0.3%	0.8%	0.1%	0.3%
Other	0.5%	0.1%	0.5%	0.1%	0.5%	0.0%
Total	100%	100%	100%	100%	100%	100%
Number of people	3 052 266	4 585 293	2 170 609	3 132 907	881 657	1 452 386

Source: Ghana Statistical Service, 2000 and 2010 Population and Housing Censuses, quoted in Potts (2013).

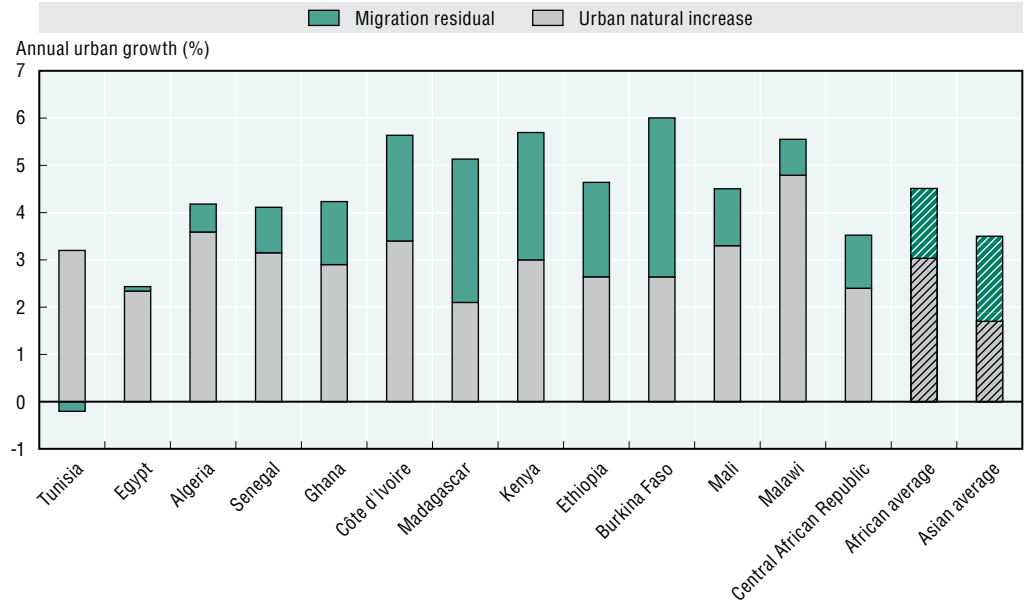
Rapid growth of African cities has compounded the consequences of slow structural transformation

The failed attempts in the decades following independence at accelerating industrialisation amid rapid growth of the urban population may explain in part why structural transformation has not accompanied urbanisation in the

case of most African countries, particularly in sub-Saharan countries. Natural demographic growth in urban areas has prevailed over economic migration of a working-age labour force from rural areas. This has outstripped the capacities of cities to provide productive economic opportunities and services.

Urban fertility remains much higher than in Asia and contributes to the majority of urban growth in Africa (Figure 6.9). While Africa's urbanisation rate has been second to Asia's, Africa's urban population growth rate was the world's fastest at 4% between 1960 and 2010. In 2010-14, the urban fertility rate remains at more than five children per woman in Burundi, the Democratic Republic of the Congo (DRC), Mali, Niger and Nigeria. To illustrate, a family of 4 rural migrants in 1960 would have become a family of 43 in 2010 at sub-Saharan Africa's annual increase of 2.9%, compared with 24 at Asia's increase of 1.7% (Jedwab, Christiaensen and Gindelsky, 2015).

Figure 6.9. **Urban growth rates for selected African countries and Asia, 1960-2010**



Note: The Asian average includes 12 countries: Bangladesh, China, India, Indonesia, Japan, Malaysia, Myanmar, Pakistan, Philippines, Korea, Sri Lanka and Thailand. The African average is a simple average of the 13 African countries in the sample.

Source: Adapted from Web Appendix Table 3 in Jedwab, Christiaensen and Gindelsky (2015).

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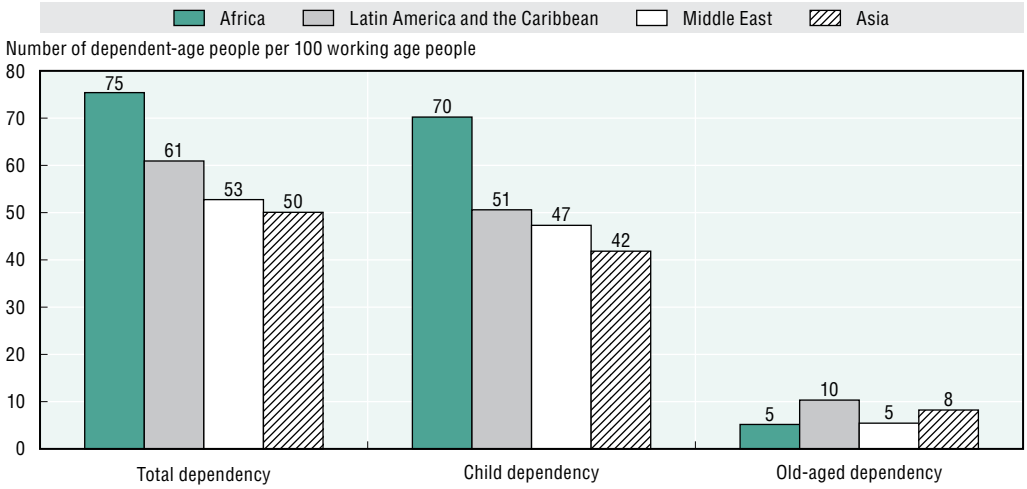
The contribution of migration to Africa's urbanisation has decreased. Migration from rural areas accounted for at least half of all urban growth in sub-Saharan Africa during the 1960s and 1970s but about 25% of urban growth in the 1980s and 1990s (Brockerhoff, 1995).[3] Rural-urban migration accounts for less than a third of urban population growth in 22 African countries. It accounts for over 50% in only 7 African countries (Burkina Faso, Cabo Verde, Lesotho, Namibia, Rwanda, Seychelles and South Africa), whereas it contributed to half of Asia's urban population growth (Potts, 2009; Tacoli, McGranahan and Satterthwaite, 2015). Dissatisfaction with local public services has been one of the main reasons why Africans migrate to urban areas; this differs from Asia and Latin America where better employment opportunities attract people to cities (Dustmann and Okatenko, 2014; AfDB/OECD/UNDP, 2015). Changing weather patterns, land pressures, conflict and natural disasters also push African rural dwellers to urban areas (Box 6.5).

Africa's urban population in working age is now supporting more people in dependency-age than the urban population in any other world region. On average, 100 people of working age in urban Africa support 75 economically inactive people. This compares to 100 workers per 61 dependents in Latin America, 53 in the Middle East and 50 in Asia. The high rate of child dependency is the main cause of urban Africa's high dependency ratios. For every 100 urban workers, there are 70 children under 15 years old. In contrast, Africa has the lowest urban old-age dependency ratio, along with the Middle East. This results from low life expectancy. For every 100 people of working age, 5 are over 65 years old.

Figure 6.10. **Urban dependency ratios in selected developing regions**



Note: Averages are unweighted. Sample includes 43 African countries, 21 Asian countries, 23 Latin American countries and 9 Middle East countries based on data between 2000 and 2010.

Source: Authors' calculations based on data shared by Jedwab et al. (2015).

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Rapid urban growth does not in itself impede structural transformation if accompanied by sufficient productive employment and public goods. In fact, concentrating people in urban areas provides an opportunity to spread the costs of providing public goods over a larger number of users, thus reducing the marginal cost per user. However, despite their diverse forms, policies of productivity and public goods have failed in many African countries. This may help explain the lack of linkages between urbanisation and structural transformation in diverse groups of African countries.

African countries show diverse patterns of urbanisation, fertility transition and structural transformation

To further analyse Africa's urbanisation process requires understanding the wide diversity of situations found across its 54 countries. We can group African countries into five types according to their stages in three processes: urbanisation, fertility transition and structural transformation. The latter is expressed in the economy notably by the changing role of agriculture and by the importance of natural resource extraction. Figure 6.11 shows where countries stand visually in this typology by comparing their urbanisation levels and total fertility rates. Annex 6.A1 presents the methodology used for this analysis and lists the countries per group.

- The ***diversifiers*** are the five African countries at the most advanced stage of the three processes. Their urbanisation levels range between 40% and 67%. They are also close to completing their fertility transition with total fertility ratios of about

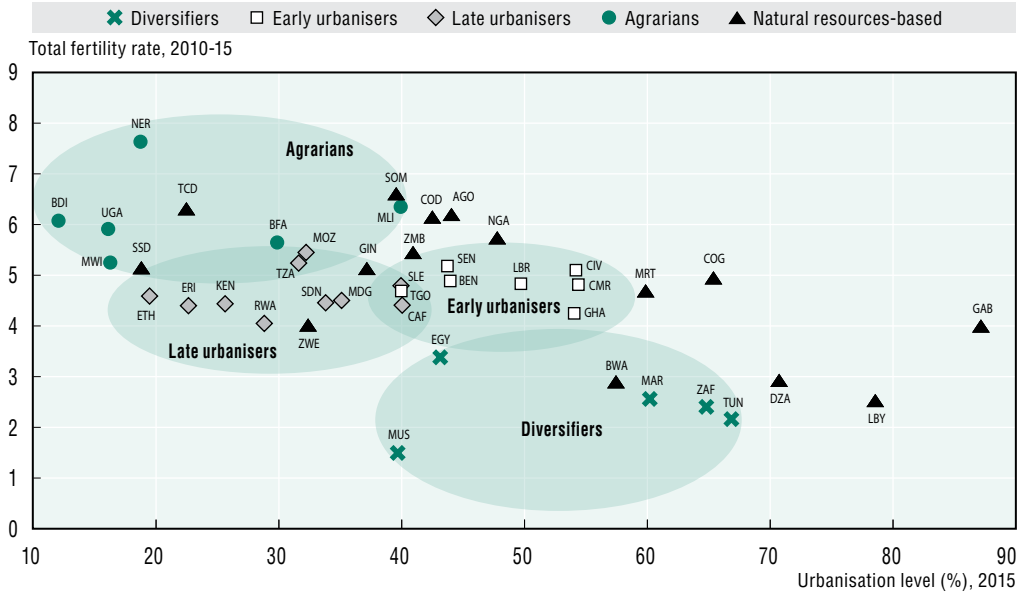
three or fewer children per woman. These countries are Egypt, Mauritius, Morocco, South Africa and Tunisia. This group has Africa's highest level of income (above USD 10 000 gross national income [GNI] per capita in 2013 with the exception of Morocco) and of human development (with a Human Development Index [HDI] value above 0.60).[4] Between 1960 and 2010, a natural increase in the population drove urban growth in Egypt and Morocco. These two countries are more advanced in their structural transformation. Agriculture generates less than 16% of gross domestic product (GDP) and manufacturing 13-18% of GDP. The main challenge for these countries is to increase both productivity and economic complexity, as they have not yet been able to transition to sophisticated manufacturing. Indeed, the share of manufacturing in GDP peaked for all five countries in the *diversifiers*' group during the late 1980s and the 1990s and has since declined. Several countries have de-industrialised significantly. For example, South Africa's manufacturing workforce has shrunk from 16.8% of total employment in 1981 to 11.6% in 2011, shifting towards services; the size of its manufacturing sector decreased from 23.6% in 1990 to 13.3% of GDP in 2014.

- The ***early urbanisers*** are seven countries that have made progress in their urbanisation and fertility transition without having been able to diversify their economic base. Mostly found in West Africa, they include Côte d'Ivoire, Ghana and Senegal. These countries are about 35-50% urbanised and have total fertility ratios of about five children per woman. They are typically low- to lower-middle income countries (USD 1 000-4 000 GNI per capita in 2013), with low-to-medium levels of human development (HDI values between 0.40 and 0.57). Between 1960 and 2010, both migration and natural population increase have driven their urban growth. Migration out of agriculture has pushed the labour force to urban areas. Yet the manufacturing sector is small, 2%-14% of GDP, and can hardly absorb the high proportion of unskilled labour. The urban informal services sector has grown significantly. The common challenge for these *early urbanisers* is to break into higher value activities particularly in the urban formal sector. They should focus on manufacturing that can absorb a low-skilled labour force, pursue ambitious education policies, develop higher value-added urban services, further raise agricultural productivity and continue their demographic transition.
- The ***late urbanisers*** are eight countries that are predominantly rural yet have begun their urbanisation and fertility transition and structural transformation more recently. They are located in East Africa and include Ethiopia, Kenya and Tanzania. Less than a third of their population typically lives in urban areas. Their total fertility rates are four to six children per woman. Income levels are low (USD 1 000-3 500 GNI per capita in 2013), and levels of human development are low-to-medium (HDI values between 0.38 and 0.54). Manufacturing makes up less than 4-12% of GDP. While starting from a low base, several of these countries including Ethiopia and Rwanda have positively transformed their economic structures within the past ten years. These are the main challenges for the *late urbanisers*: continue to improve their infrastructures, particularly transportation linking different urban growth centres, break into manufacturing and higher value services as they continue to move out of agriculture, urbanise, and accelerate their demographic transition. Developing a network of intermediary cities can support the rapid urbanisation that is currently taking place.
- The ***agrarians*** are nine pre-dominantly rural countries that are still at a very early stage of their urbanisation and fertility transition. Many *agrarian* countries are landlocked, such as Niger, Chad and Malawi. Typically less than a third of

the population resides in urban areas, and women have on average at least six children. These countries' income levels did not exceed USD 1 900 GNI per capita in 2013, and they have low levels of human development (HDI values between 0.48 and 0.34). Their economies are predominantly agriculture-based: agriculture makes up 25-58% of their GDP and manufacturing 4-12%. For these countries, a natural population increase drove urban population growth between 2000 and 2010. Though rural-urban migration may increase as they are now starting their urban transition, their urban economies have not developed enough to attract much rural migration to urban areas. The *agrarian* countries are challenged to begin the structural transformation process more decisively by raising agricultural productivity and engaging in a well-planned urbanisation process. Once they have accelerated structural transformation, they will likely start the fertility transition.

- The ***natural resources-based countries*** have urbanised with windfalls from natural resources, which have attracted labour out of agriculture. Compared with other countries at similar income levels, these 13 countries show a higher degree of urbanisation (40-78%), generally higher fertility rates and a high degree of urban primacy with the capital usually disproportionally bigger than other cities. The share of GDP in agriculture is low at 3-21%. These countries exhibit huge variations in income levels (USD 500-20 000 per capita), in the types of natural resources they produce (e.g. hydrocarbons, minerals and metals) and in their geography (e.g. Libya is predominantly arid while Nigeria is mostly rain-fed). Their common challenges are to use their competitive advantage in international trade to diversify their economic base away from natural resources and to decrease fertility particularly in urban areas. However, they currently need specific policies to face the adverse global conditions of lower commodity prices.

Figure 6.11. **Urbanisation levels and total fertility rate by typology of African countries**



Note: Natural resources-based countries are not clustered in the figure because they are more scattered across the board. The history and ability of states to invest resource rents can have implications for their development.
Source: UN DESA (2015, 2014).
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Rural areas and towns remain pillars of Africa's urbanisation

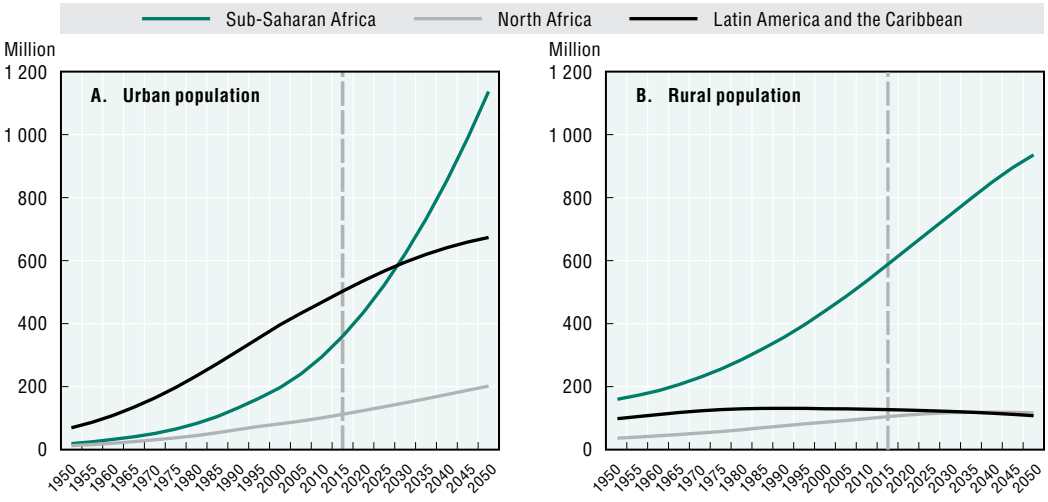
As seen above, urbanisation is not synonymous with the decline of agriculture, let alone of the broader rural economy. In most cases, agricultural output continues to grow – though at a slower pace – and accompanies the rise of industry and higher-value-added services as a share of GDP. Some rural regions may even develop faster than some urban ones.

Africa's urbanisation is not a breakaway from its rural areas for many reasons. First, slow structural transformation, continued demographic growth in the countryside and declining migration flows to big cities mean that rural areas remain pillars of many African countries. Second, urbanisation holds new promise for rural areas by providing greater demand for rural products, upgrading the agricultural supply chain and enhancing the rural factor market (see Chapter 7 for a more detailed discussion). Third, the traditional divides between rural and urban areas have increasingly blurred: almost three-fourths of Africa's population lives within a rural-urban interface made up of rural areas and cities with fewer than 500 000 inhabitants. Fourth, those trends are not linear and demand careful analysis. Several countries for instance have experienced a deceleration of urbanisation or even de-urbanisation episodes.

Rural population growth will abate only slowly

A characteristic of African urbanisation is that rural population growth will abate only slowly. Except in the *diversifiers'* group, most of Africa's rural areas are not emptying fast (AfDB/OECD/UNDP, 2015; OECD 2016). Thus, while Africa urbanises, its rural population will continue to grow at a rate of more than 1% per annum beyond 2045. Sub-Saharan Africa is expected to grow by more than 353 million additional rural dwellers between 2015 and 2050. Continuing rural population growth in most of sub-Saharan Africa contrasts with other world regions. Globally, rural population is forecasted to start shrinking no later than by 2020. Figure 6.12 shows that sub-Saharan Africa is the region of the world where the rural population will continue to grow the most (in stark contrast to Latin America and the Caribbean).

Figure 6.12. **Population increase in North and sub-Saharan Africa, and in Latin America and the Caribbean, 1950-2050**



Source: Authors' calculations based on UN DESA (2014).
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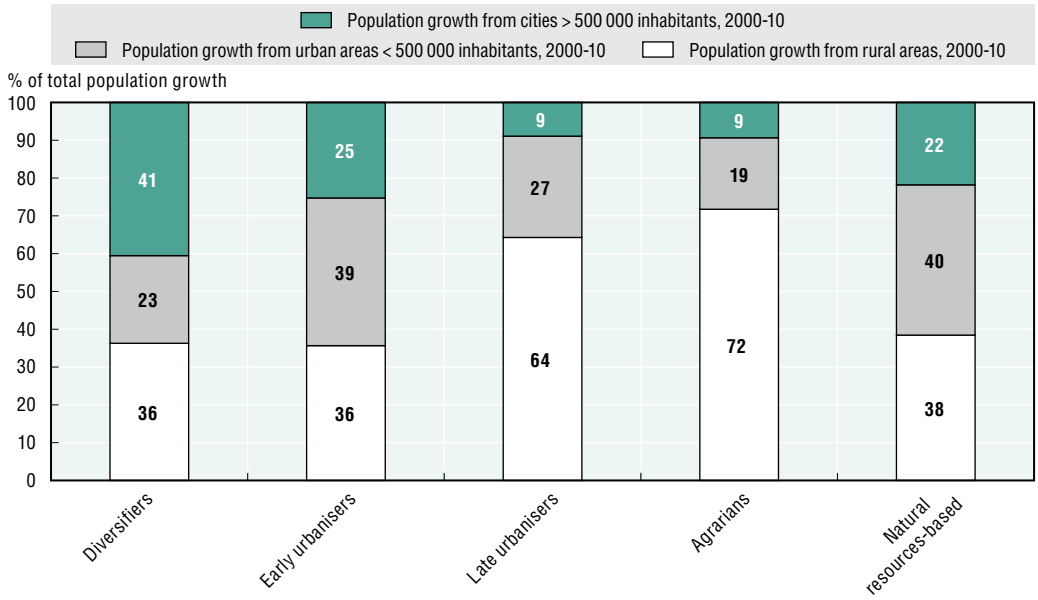
The growth of towns and intermediary cities has strengthened the reciprocal linkages between rural and urban development

While the debate on urbanisation often focuses on big cities, urbanisation has actually been happening mostly in a rural-urban interface. A continuum of rural areas, villages, towns and cities of fewer than 500 000 inhabitants make up this interface.[5] Figure 6.13 shows that the rural-urban interface remains important all over Africa, particularly for the *late urbanisers* and *agrarian* countries where it has absorbed over 90% of total population growth.

Figure 6.13. **Contribution to population growth by city size and rural-urban interface by type of African country, 2000-10**



Note: The countries in each group are listed in Annex 6.A1.
Source: Authors' calculations based UN DESA (2014).
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Over 952 million Africans, 82% of Africa's population, live at such a rural-urban interface. Across the different regions, the share of the population living in settlements smaller than 500 000 inhabitants is as follows: 91% in East Africa, 80% in West Africa, 77% in North Africa, 74% in Central Africa and 65% in Southern Africa. Looking at all of Africa's urban areas, 55% have a population of fewer than 500 000 people. Africa's urbanisation has thus to a large extent taken the form of "urban villages", diffusing urban growth in smaller towns. In 2010, the growth of cities of fewer than 500 000 inhabitants was second to that of the largest cities. The magnitude of this rural-urban interface shows that most Africans retain a close relationship with rural areas.

Box 6.3. **Settlement dynamics in West Africa**

Urbanisation is the most spectacular manifestation of West African settlement dynamics witnessed in past decades. Between 1950 and 2010, the region's total population increased by a factor of four (from 72 to 320 million), while its urban population increased by a factor of 22 (from 6 to 133 million). West Africa now counts 1 950 urban agglomerations with more than 10 000 inhabitants. The average distance between cities has been reduced from 111 kilometres to 28 (OECD, 2016). In 2000, 94% of high-density rural areas were located in the urban catchment area of towns with at least 50 000 inhabitants (OECD, 2013; see Map 6.1). Those rural areas, which averaged more than 51 inhabitants per km^2, accounted for 58% of the total rural population.

Box 6.3. **Settlement dynamics in West Africa** (cont.)

Settlement dynamics in West African towns and intermediary cities show that urban and rural populations are moving ever closer together, as documented in the Africapolis database updated by the Sahel and West Africa Club. Rural areas that are well connected to urban markets have more diversified local economies, with a higher share of off-farm employment and income from non-agricultural activities. One-fourth of West Africa's rural population is engaged in off-farm activities. At current urbanisation levels, the economy-wide share of agricultural employment is 50% at the regional level, down from 90% in 1950 (Moriconi-Ebrard, Harre and Heinrigs, 2016).

The traditional divides between rural and urban areas have increasingly blurred

Static categories of urban and rural no longer capture the hybrid nature of shifting relations between cities and countryside (Agergaard, Fold and Gough, 2010; Berdegué and Proctor, 2014). The phenomenon of "urbanisation of the countryside and ruralisation of the cities" observed in Tunisia by Miossec (1985) has become a general feature of the continent's urbanisation trends.

Migratory practices have diversified. A gradual improvement in infrastructure, including the adoption of mobile phones, has led to a growing tendency towards shorter and temporary migratory practices (Losch, Magrin and Imbernon, 2013). These new patterns may comprise weeks or days but also daily commuting, where transport conditions allow. The degree of change in migratory practices often reflects the regional density and quality of transportation, showing clear differences in networks. Circular migration has increased since the 1980s. This refers to migration into a town followed by a movement out of the town and back to a rural area, which could be a year or even decades later (Potts, 2012). In South Africa, population trends show increasing circular migration and the development of a rural-urban interface, leading to high formal housing prices and to many informal settlements that are only temporarily occupied (OECD, 2008).

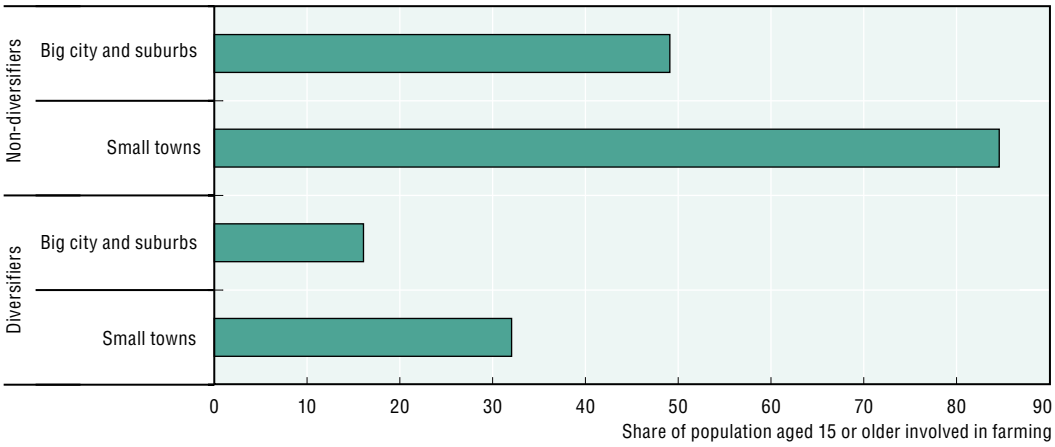
Increased mobility alters family structures and life styles. Different household members may exert activities in different places – the village, the neighbouring villages, the town, the capital or even abroad – thus diversifying their sources of income (Guétat-Bernard, 1998; Tacoli, 2003). Such practices generally do not disturb family cohesion. They sometimes even create a kind of archipelago family economy (Losch, Fréguin-Gresh and White, 2013). Living in multiple places produces functional spaces that often do not correspond to administrative boundaries (Cortes and Fayet, 2009; Ma Mung, 1999). This mobility gradually results in a rural economy that is more diversified and often related to some form of urban economy (Haggblade, Hazell and Reardon, 2007).

Many villagers become urbanised, while urban dwellers continue with some of their previous rural activities, notably urban farming. About 40% of African urban dwellers are "engaged in some sort of agricultural activity" (FAO, 2012). According to Gallup data for the period 2009-14, 85% of dwellers aged 15 or older in the towns of *non-diversifier* African countries are involved in agriculture, while the share is 49% in big cities and suburbs. In Africa's *diversifier* countries, the ratio stands at 32% in towns and 16% in big cities and suburbs (Figure 6.14).

These dynamics lead to new spaces appearing between rural and urban areas, sometimes far from government supervision (Diop, 2010). Urbanisation happens along a continuum of settlements without clear distinction between urban and rural. Next to

the appearance of megacities, urban population growth and urban sprawl have also led to urban corridors (see Chapter 7). Examples are Cairo-Alexandria, the 600-kilometre Ibadan-Lagos-Cotonou-Accra urban corridor and Kenitra-Casablanca-El Jadida. Such conurbations can also create urban regions or megalopolises, such as Greater Cairo, or Gauteng which includes Johannesburg, Midrand and Pretoria. Peripheral urban growth is often a challenge for local governments that are unable to conduct censuses and to provide services to those populations. For instance, the urban growth of Togo's capital, Lomé, happens mainly outside the city's administrative borders: the city has no reliable statistical data, recent urban planning document, or even a land-use inventory for those areas outside its remit. Thus, the municipality has virtually no latitude to increase its receipts (Paulais, 2012: 11; 76; 132).

Figure 6.14. **Urban farming in big cities and small towns among African countries, 2009-14**



Note: Gallup provides the two categories "small towns" and "big city and suburbs" through self-identified questions. *Non-diversifiers* include Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Central African Republic, Chad, Democratic Republic of the Congo, Gabon, Ghana, Guinea, Côte d'Ivoire, Kenya, Liberia, Madagascar, Malawi, Mali, Mauritania, Mozambique, Niger, Nigeria, Rwanda, Senegal, Sierra Leone, Tanzania, Togo, Uganda, Zambia and Zimbabwe. *Diversifiers* are Mauritius (1 000 respondents) and South Africa (4 984 respondents).[6]

Source: Authors' calculations based on Gallup World Poll (2015).

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Urbanisation has reversed or slowed down in some countries

Rural areas remain important also because Africa's urbanisation has not been a linear process: over time, urbanisation trends have varied in direction and pace. Since the 1980s, the Central African Republic, Côte d'Ivoire, Mali and Zambia have experienced periods of de-urbanisation according to their censuses. In Benin, Burkina Faso, Mauritania, Mozambique, Niger, Senegal and Zimbabwe, the growth of large and medium sized-towns has stagnated or increased slowly (Potts, 2009: 253). These episodes of de-urbanisation or slow urbanisation were often related to economic crises caused by the shortfall of commodity exports and the ensuing structural adjustment that cut subsidies to urban populations (Potts, 2012). Although de-urbanisation occurred in other parts of the world (for instance in China during the Maoist era, in Cambodia during Polpot's rule and in Thailand in the aftermath of the 1998 financial crisis), de-urbanisation episodes have been more frequent in sub-Saharan Africa over the past 30 years (Bairoch, 1988; Clark, 2009).

Table 6.2. **Pace of urbanisation trends in selected African countries, 1980-2012**

Counter-urbanisation (urban share falling)	Slow urbanisation (<2% between censuses)	Rapid urbanisation
Côte d'Ivoire 1988-98	Benin 1992-2002	Burkina Faso 1996-2006
Central African Republic 1988-2003	Ethiopia 1994-2007	Cameroon 1987-2005
Mali 1987-98	Malawi 1998-2008	Tanzania 1998-2002
Zambia 1980-90, 1990-2000	Mauritania 1988-2000	
Zimbabwe 2002-12	Niger 1988-2002	
	Sudan 1993-2008	
	Togo 1981-2010	

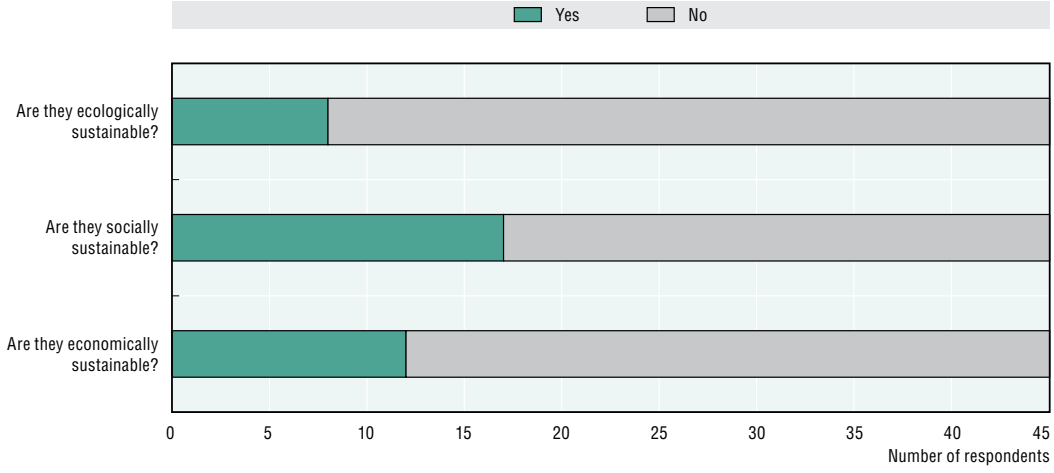
Source: National census data, quoted by Potts, 2013: 11.

According to United Nations estimates, the rural population grew faster than the urban population between 1990 and 2010 in five African countries: Egypt, Liberia, Mauritius, Swaziland and Zambia. In total, 11 African countries experienced negative or slow urbanisation, increasing less than 2.2 percentage points in urbanisation levels between 1990 and 2010: the Central African Republic, Chad, Comoros, Djibouti, Egypt, Liberia, Libya, Mauritius, Niger, Swaziland and Zambia. It is projected that four countries will experience slow urbanisation, increasing less than 2 percentage points in urbanisation levels between 2010 and 2030: Djibouti, Mauritius (which will continue to experience negative urbanisation), Swaziland and Zimbabwe.

Urbanisation represents challenges for development and the environment

Rapid urbanisation with slow structural transformation creates a significant obstacle to achieving the development objectives set by Agenda 2063 and the Sustainable Development Goals. While African urbanisation patterns are diverse, up to now few may be deemed sustainable economically, socially or environmentally, as confirmed by the AEO 2016 experts' survey (Figure 6.15). Without productive jobs in rural areas, most economies have seen labour move from agriculture into urban, low-skilled and informal service activities. Access to public goods remains highly unequal even within urban areas, often putting the social fabric at risk. African cities are facing an unprecedented combination of developmental challenges together with rising environmental risks such as unsafe sanitation, climate change and air pollution.

Figure 6.15. **Are urbanisation trends sustainable in your country? Africans' responses**



Note: Survey responses by country economists of the AfDB and UNDP in 45 country offices in Africa about trends in the country they monitor. Responses are weighted by one per country.

Source: AEO experts' survey, 2016.

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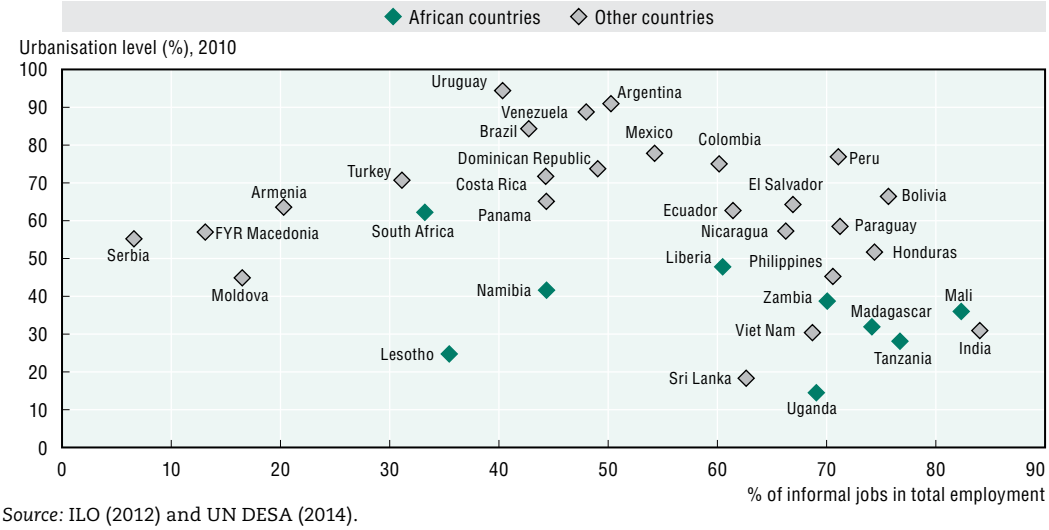
Urban settlements hold informal workers in low value-added service sectors

The steady economic growth and rapid urbanisation of the last decade and a half have not been matched by proportional formal employment creation. The proportion of the labour force in vulnerable employment dropped by only 2% between 2000 and 2015, despite exceptionally robust GDP growth rates of over 5% a year fuelled by a long commodity boom (Parnell, Pieterse and Haysom, 2016). Most male and female workers thus stayed in the informal services sector, for instance as street vendors, with no perspective of moving to more productive activities and durably improving their livelihoods. The informal economy is estimated at 61% of urban employment and 93% of all new jobs created (Kessides, 2005). For African women, the informal economy is estimated to represent 92% of all job opportunities outside of agriculture, overwhelmingly as self-employment or own-account work, though up-to-date statistics are lacking (ILO, 2002, quoted by Kessides, 2005). Informality remains a hallmark of many African countries, though it remains widespread in many other developing countries at different urbanisation levels (Figure 6.16).

Figure 6.16. **Urbanisation levels and share of informal work in total employment in six African countries and 26 non-African countries, 2010**



Source: ILO (2012) and UN DESA (2014).

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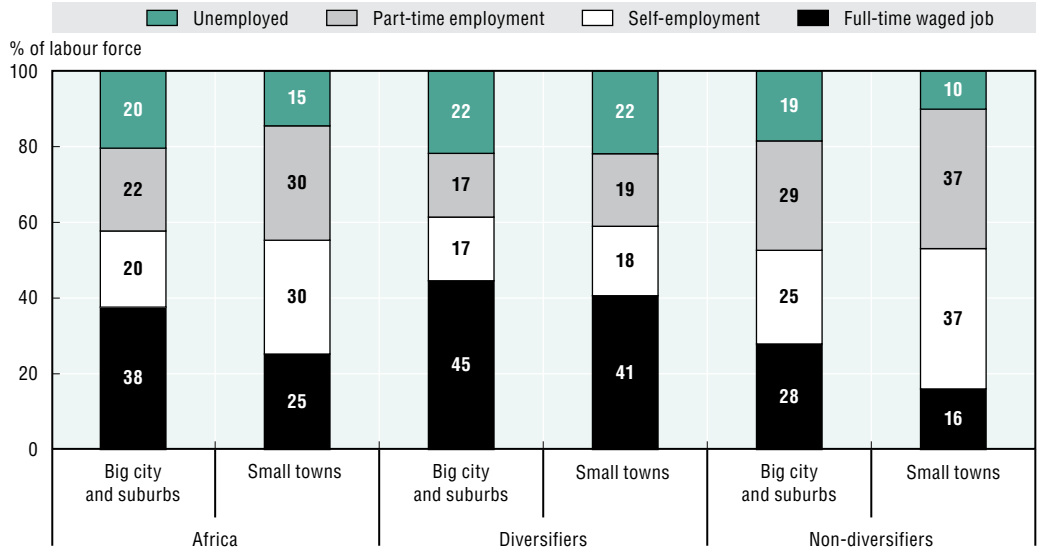
The drivers of informality are many. This informality is often an outcome of accommodating rapid population and economic growth in cities. It is also due to a lack of institutional capacity to protect property rights, enforce regulations and manage planned urban expansion (Spence, Clark Annez and Buckley, 2009: 26-27).

The weak performances of the modern manufacturing and service sectors mean that wage-paying jobs are rare, and most people are trapped in vulnerable employment or are forced out of the labour force altogether. Based on an analysis of Gallup data, Africa's working-age population is more likely to have a wage-paying job in big cities than in towns at 38% and 25% respectively (Figure 6.17). This gap in wage-paying full-time jobs between cities and towns is wider in *non-diversifier* countries than in *diversifier* countries, reflecting the deeper extent of structural transformation in smaller cities and towns in the *diversifier* countries. In contrast, towns have a higher share of populations in vulnerable employment and that are unemployed than big cities, and this share is much higher in towns among *non-diversifiers*. Thus, 84% of respondents are in vulnerable employment and unemployed, in contrast with a combined 55% in big cities in *diversifier* countries.

Figure 6.17. **Type of work by size of African city and country typology (%), 2009-14**



Note: Gallup provides the two categories "small towns" and "big city and suburbs" through self-identified questions. The employment categories are also provided by Gallup. *Diversifiers* include Egypt, Morocco, South Africa and Tunisia. *Non-diversifiers* include Algeria, Botswana, Burkina Faso, Burundi, Cameroon, Central African Republic, Chad, Democratic Republic of the Congo, Ghana, Côte d'Ivoire, Kenya, Liberia, Libya, Malawi, Mali, Mauritania, Niger, Nigeria, Rwanda, Senegal, Sierra Leone, Somalia, Sudan, Tanzania, Uganda, Zambia and Zimbabwe (see Annex 6.A.1).

Source: Authors' calculation based on Gallup World Poll (2015).

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Access to public goods remains unequal in most urban areas

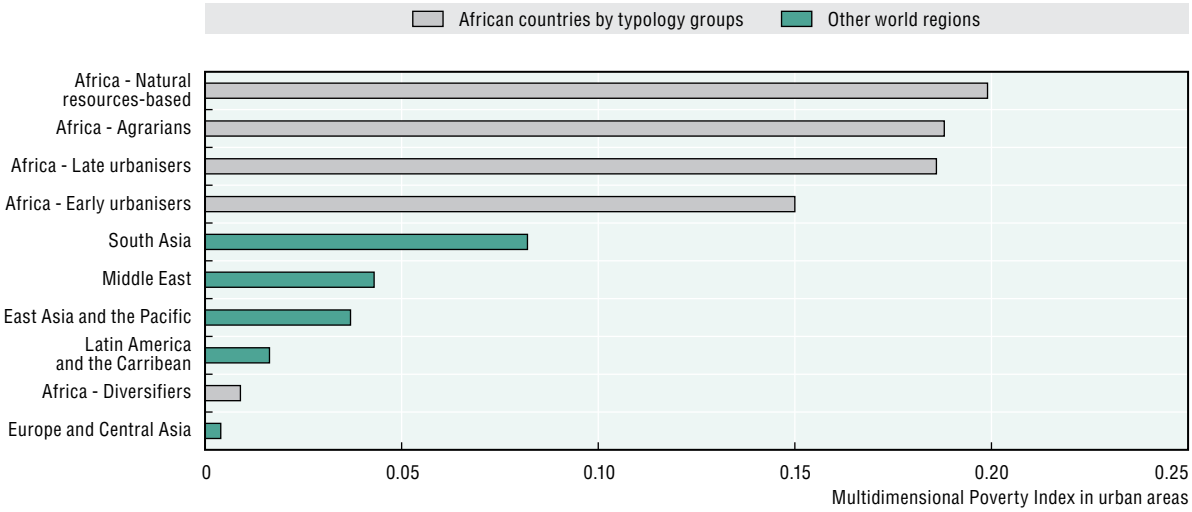
Diversifiers have reduced urban poverty more rapidly than other countries

The incidence of urban poverty is much higher in Africa than on other continents: 62% of sub-Saharan Africa's urban population live in slums (UN-Habitat, 2008).[7] A slum household is defined as deprived in at least one of the five following amenities: durable housing, sufficient living area, access to improved water, improved sanitation or secure tenure (UN-Habitat, 2006). Many African countries face a real risk of tripling their slum population by 2050 (UN-Habitat, 2014).

The Multidimensional Poverty Index (MPI) shows that urban poverty is high in Africa. The MPI is a composite measure of poverty headcount and deprivation intensity faced by households. Africa's urban MPI is 0.151, much higher than the average for the sample of 54 non-African developing countries at 0.026 and twice the level of South Asia, the next poorest region (Figure 6.18):

- Within Africa, the group of *diversifier* countries has an urban MPI level of 0.009. This is considerably lower than the rest of the continent and even lower than all other developing regions except developing Europe and Central Asia.
- The *natural resources-based countries* face the highest level of multidimensional poverty, followed by the *agrarian* countries, the *late urbanisers* and the *early urbanisers*.

Figure 6.18. **Urban Multidimensional Poverty Index by world region and AEO 2016 typology group**



Note: The countries included in each group are **Africa -** *natural-resources based*: Chad, Congo, Democratic Republic of the Congo, Guinea, Mauritania, Nigeria, Somalia, South Sudan, Zambia, Zimbabwe; *agrarians*: Burkina Faso, Burundi, Malawi, Mali, Niger, Uganda; *late urbanisers*: Central African Republic, Ethiopia, Kenya, Madagascar, Mozambique, Rwanda, Sierra Leone, Sudan, Tanzania; *early urbanisers*: Benin, Cameroon, Côte d'Ivoire, Ghana, Liberia, Senegal, Togo; **South Asia**: Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan; **Middle East**: Iraq, Jordan, Palestine, Syrian Arab Republic, Yemen; **East Asia and the Pacific**: Cambodia, China, Indonesia, Lao, Mongolia, Philippines, Thailand, Timor-Leste, Vanuatu, Viet Nam; **Latin America and Caribbean**: Barbados, Belize, Bolivia, Brazil, Colombia, Dominican Republic, Ecuador, Guyana, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Peru, Saint Lucia, Suriname, Trinidad and Tobago; **Africa** *diversifiers*: Egypt, Morocco, South Africa, Tunisia; **Europe and Central Asia**: Albania, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Georgia, Kazakhstan, Kyrgyzstan, Former Yugoslav Republic of Macedonia, Moldova, Montenegro, Serbia, Tajikistan, Ukraine, Uzbekistan.

Source: Authors' calculations based on data from Alkire and Robles (2015).

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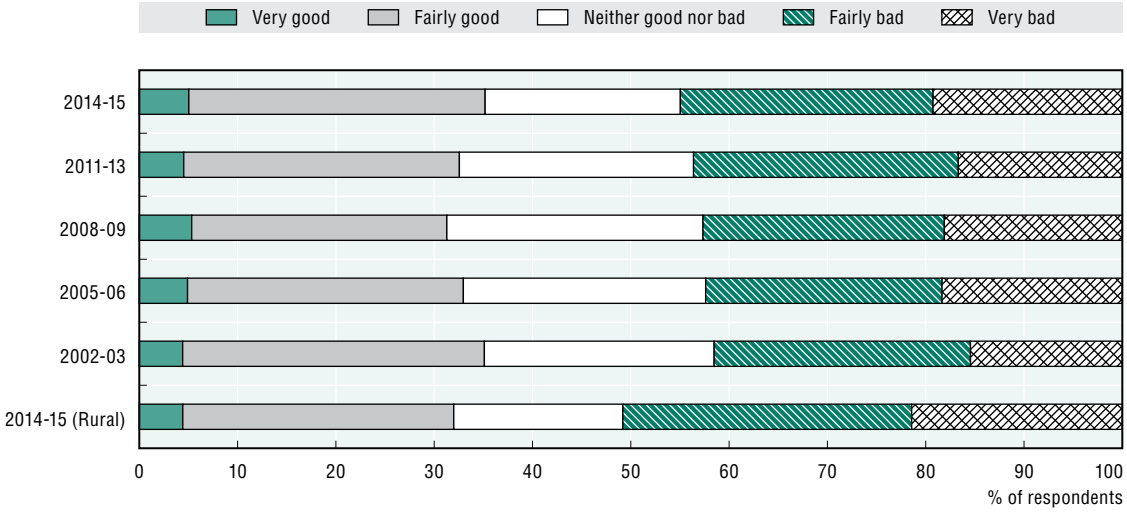
The urban poor in Africa face four main risks: i) health risks resulting from poor living conditions, overcrowding and lack of basic services; ii) livelihood risks from vulnerable employment, hazardous occupation and discrimination in labour markets; iii) external shocks from natural disasters that disproportionately affect informal settlements; and iv) governance risks of not receiving adequate policy attention (Tacoli, McGranahan and Satterthwaite, 2015). Other than the *diversifiers*' group, African urban areas are characterised by higher poverty headcounts as well as more intense deprivations than urban areas in other regions. Thirty-four per cent of Africa's urban inhabitants living outside the *diversifier countries* are deprived in at least three of the ten MPI dimensions, in contrast to 3% in the *diversifier* countries and 9% in other non-African developing countries. Africa's urban poor are most deprived in their living standards, followed by health care. Almost a third of Africa's urban poor do not use clean cooking fuel. A quarter of the urban poor lack access to electricity and sanitation.

Poor living conditions affect well-being in urban areas

The past decade of robust economic growth has not improved subjective well-being of Africa's urban inhabitants. Thirty percent of urban respondents find their living standard good and 5% very good, but the share of positive responses has remained constant at only about 35% since 2002/03 (Figure 6.19). In contrast, the share of urban respondents finding their economic conditions bad or very bad has always been higher and increased from 41% to 45%. Nonetheless, urban residents generally think they are better off than their rural counterparts, 50% of whom consider their living conditions unfavourable.

Figure 6.19. **Self-evaluation of current personal economic conditions by African urban respondents**



Note: The country coverage gradually increases from 16 countries in 2002/03 to 34 countries in the latest wave (2014/15).

Source: Extracted from Afrobarometer (2015).

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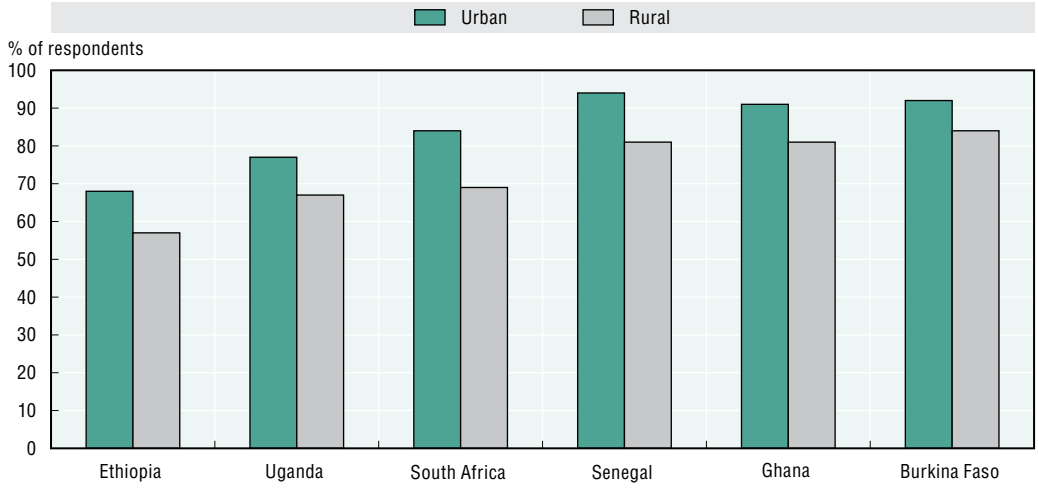
With high urban inequality, segregation is becoming an increasing risk for social cohesion

Africa has some of the world's most unequal cities. The distribution of income among urban households as measured by the Gini coefficient[8] stands at 0.539 for the urban areas in a sample of 12 countries (UN-Habitat, 2010a). Johannesburg has one of the world's highest Gini coefficients at 0.75 (UN-Habitat, 2010b). The social consequences of urban inequality affect human development outcomes, limit access to opportunities and perpetuate inequity (UN-Habitat, 2008). Crime rates and insecurity are high and tend to grow with city size, such as in Johannesburg and Lagos. A survey of 9 sub-Saharan African countries shows that urban residents are much more concerned on average about the problem of crime than rural residents, with differences ranging between 8 to 15 percentage points (Figure 6.20).

The spatial divide heightens social disparities across neighbouring urban areas. Large gated communities heighten spatial segregation and hampers social cohesion. One example is Eko Atlantic City on an artificial island five kilometres away from Lagos that offers exclusive amenities for upper class and expatriate elites (Kester, 2014). In particular for women, perceived or actual threats of violence have direct impacts on their ability to freely move in public spaces. In Nairobi, over 700 gender-based physical violence in public spaces including bus stops and parks were reported in 2010-11 (McEvoy, 2012). Results from a study in Kigali found that 42% of women were concerned about sexual harassment when traveling to educational institutions during the day and 55% after dark (UN Women, 2013).

Figure 6.20. **Africans saying "Crime is a very big problem in our country", 2015**



Source: Pew Research Centre (2015).
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Box 6.4. **The flux of urban refugees to African cities**

The flux of refugees to cities, or urban refugees, poses specific challenges for social cohesion, urban economic productivity and the integration of refugees into society for a decent life. International migration within Africa has been linked to political crises, wars and their economic fallout, increasing the number of refugees in urban areas (Naudé, 2008).

Nairobi, Kenya, has 46 000-100 000 refugees from 8 neighbouring countries. Refugee camps such as Dadaab have become as large as towns, sheltering hundreds of thousands refugees from Somalia since the early 1990s. The influx of refugees to Nairobi's district of Eastlands in the early 1990s led to an increase of over five-fold in rent prices for single rooms pushing many Kenyan tenants out, while refugees often lived in squalid conditions of over-crowding (Campbell, 2006; Lindley, 2007). But the consequences can also be positive: the arrival of refugees created bustling business activity. The Eastleigh Business Community registered a total of 2 800 mainly Somali business people between its founding, in 1999, and 2005 (RCK, 2006).

Other countries have also been affected:

- Sudan's capital, Khartoum, accommodates 1.5 million displaced persons (Paulais, 2012).
- In Egypt, Cairo hosts a million refugees from Sudan, in addition to those from other countries. The situation is similar in Alexandria, Egypt's second largest city. Policies generally ignore urban refugees, though many face abuse (Paulais, 2012: 139).
- In South Africa, local governments have created helpdesks for migrants in the cities of Johannesburg, Matatiele, Musina and Tshwane. They attempted to respond to violent riots against foreigners in 2008 and 2015 (AfDB/OECD/UNDP, 2009).

High environmental risks compound the developmental challenges of Africa's urbanisation

As it urbanises, the African continent faces a conjunction of important environmental and developmental challenges, which other regions have not faced simultaneously with such magnitude. Those include the fast rising impact of air pollution on the health and economy of African people as well as the multiple consequences of global climate change affecting urban areas.

The costs of air pollution are abnormally high

Urbanising Africa faces multiple environmental and developmental issues. Unlike regions that urbanised earlier, Africa must deal with them simultaneously.

Environmental risks – air pollution, unsafe water and unsafe sanitation – require attention. In 2013, ambient particulate matter pollution (APMP) caused at least 246 000 premature deaths. Deaths from household air pollution (HAP) have risen, with indoor air pollution being the number one cause of respiratory illness among women and children in African informal settlements (UN-Habitat, 2008). By contrast, deaths from other long-standing environmental risk factors such as unsafe water and unsafe sanitation have fallen steadily (Table 6.3).

Table 6.3. **Premature deaths from selected major risk factors in Africa, 1990-2010 (five-year intervals) and 2013**

	1990	1995	2000	2005	2010	2013
Unsafe water	837 702	780 095	751 892	644 136	561 342	542 855
Unsafe sanitation	615 540	573 084	551 948	468 815	407 092	391 656
Childhood underweight	474 819	467 921	420 606	309 945	273 294	275 813
Household air pollution	396 094	422 895	436 463	429 199	450 969	466 079
Ambient PM pollution	181 291	190 933	200 854	213 429	227 428	246 403

Source: Roy (forthcoming).

As they face those new challenges, African cities cannot borrow from others' experience. Other world regions have never exhibited such convergence of important environmental and developmental challenges. By 1990, China's childhood underweight death toll was low enough for APMP deaths to dominate it at a ratio of 11:1. By 2013, China's childhood underweight death toll had been more or less eliminated, and APMP deaths dominated it at a ratio of 671:1. Africa can hardly tackle the new risk factor of APMP, with its approximately 250 000 deaths in 2013, together with the old problem of childhood underweight, with its 275 000 deaths. Environmental challenges such as APMP are to a great extent caused by urbanisation and, more specifically, by motorisation. While it can be viewed as a post-industrial risk, APMP is already relatively high in Africa although the continent has reached only the early stages of industrialisation. Developmental challenges like under nourishment also need attention. "Childhood undernutrition" remains the leading risk factor for premature deaths in sub-Saharan Africa.[9] Being underweight is the third cause of premature deaths in Africa (Table 6.3).

Roy (forthcoming) translates premature deaths into economic costs. Using the value of statistical life (VSL) method, measuring the cost of mortalities at the level of society as a whole, he estimates that air pollution cost Africa USD 447 billion in 2013, a third of its GDP (Table 6.4). For Africa, the estimated economic cost of premature deaths from all four selected environmental risk factors, APMP, HAP, unsafe water and unsafe sanitation, exceeds USD 850 billion or almost two-thirds of GDP.

Table 6.4. **Economic costs of premature deaths from selected major risk factors in Africa (USD million), 2013**

	Ambient particulate matter pollution	Household air pollution	Unsafe water	Unsafe sanitation	Childhood underweight
Total (of countries with available data)	215 212	231 798	248 191	160 670	134 468

Note: All computations use the OECD base value of USD 3 million in 2005, which reflects an aggregation of individual values for small changes in risk of death, as found in the OECD countries (OECD, 2012b). This base value is adjusted for differences in per capita GDP and adjusted for post-2005 income growth and inflation. Available data are insufficient to complete calculations for the following countries: Eritrea, Sierra Leone, Somalia and Zimbabwe.
Source: Roy (forthcoming).

Climate change and urban growth will heighten environmental pressures on urban areas

Although African countries contribute less than 4% to global gas emissions, climate change imposes increasingly high costs on the continent (FAO, 2008). Average temperatures in Africa are predicted to increase 1.5-3°C by 2050, magnifying the impacts of climate change that can already be witnessed (UNEP, 2007). Should climate change continue unmitigated, the sole effect of rising temperatures could lead most African countries to be poorer in 2100 than today (Burke, Hsiang and Miguel, 2015). Strong urban demographic growth inevitably magnifies environmental pressures on urban ecosystems. The poorest households, which are highly dependent on natural resources, are the most affected by environmental degradation.

Climate change and environmental degradation caused by urban growth have different impacts on various African cities and regions:

- **Flooding risks in low elevation coastal zones**: 50% of African settlements with 1-5 million inhabitants lie at low elevation coastal zones (Kamal-Chaoui and Robert, 2009). Flooding increases in cities because they have more impervious surfaces (Paulais, 2012). The populations and assets of port cities like Abidjan, Douala or Tunis are vulnerable to sea level rise. Agricultural land may be lost as well (Map 6.2). Egypt's coastal zone contains 40% of the country's total population and is expected to experience a 6.4% decrease in GDP per meter of sea level rise (Brown, Kebede and Nicholls, 2011). For Nigeria, estimates lay at a 0.3% GDP loss, and for Senegal at 12-17%.
- **Abrupt weather changes**: Several countries face changes in weather patterns, varying in duration and intensity. East African countries tend to have heavier rainfall. Southern Africa experiences dryness, drought and wildfires. In parts of the Sahel, lower than average rainfall could lower corn production and endanger access to food, for example in Nairobi as shown by the Agricultural Stress Index (FAO, 2014).
- **Changing rain patterns**: An acceleration of the hydrologic cycle will increase patterns of extreme rainfall (IPCC, 2007). Annual average adaptation costs in Africa could amount to USD 18 billion between 2010 and 2050, mainly costs in the water sector and coastal protection. While the mean flow of water would increase, water availability would drop in Ethiopia's capital Addis Ababa by 73%, in Botswana and South Africa by 20%, and in Somalia by 42% (AfDB, 2011).
- **Heat extremes**: Heat extremes and urban heat islands have impacts on health and vegetation and create further climate warming (Huang and Lu, 2015). Urban heat islands are higher temperatures in the cities resulting from human activity such as pollution, the modification of the physical and chemical properties of

the atmosphere, and the covering of the soil surface. In North Africa, heat stress currently causes 2 000 fatalities per year but they are predicted to rise to 47 000 in 2080 (OECD, 2015). Regions close to the Sahel cities such as Ouagadougou will also be affected. African countries could experience 907 000 deaths in 2080. In a city like Johannesburg, the hottest vulnerable areas identified are suburbs where density is high and vegetation low (Hardy and Nel, 2015).

- **Deforestation**: Fuelwood supplies more than 80% of household fuel in Africa and accounts for 90% of harvested wood. Map 6.3 shows that recent deforestation in Central Africa clusters especially around major transport links and urban centres such as Kinshasa.
- **Desertification**: Land degradation and conflicting land-use patterns are consequences of continuous land desertification, high population growth and exhaustive exploitation of resources. Desertification already affects two-thirds of Africa's land and 65% of its population. It is responsible for large parts of rural-urban migration, for example to Ouagadougou, Burkina Faso (Pauleit, 2015). In the Sahel and in the Horn of Africa, 60 million people are likely to migrate between 2016 and 2020 because of degraded areas.

Box 6.5. **Climate change and rural-urban migration in sub-Saharan Africa**

Climate change has led to rural-urban migration in sub-Saharan Africa. This is largely because the area's agriculture depends heavily on rainfall, more so than other world regions (Barrios, Bertinelli and Strobl, 2006: 4).

- Declining rainfall has increased urbanisation rates in sub-Saharan Africa (ibid.: 18).
- The decline in moisture (measured by an index combining precipitation and potential evapotranspiration) has affected agricultural productivity, pushing rural dwellers to urban areas (Henderson, Storeygard and Deichmann, 2014: 2).
- While rainfall trends have fallen steadily since the 1970s, a 1% fall in precipitation is estimated to have increased sub-Saharan Africa's urbanisation rate by 0.45% (Barrios, Bertinelli and Strobl, 2006: 18).
- Inefficient management of rural water and land resources has also contributed to rural-urban migration by lowering agricultural productivity. Likewise, inappropriate land tenure systems have deterred sustainable investment (Global Centre for Food Systems Innovation 2014: 59).

It is unlikely that urbanisation driven by decreases in rainfall promotes Africa's structural transformation. By pushing the labour force out of rural areas, drier conditions can increase urban productivity in cities endowed with an industrial base, particularly those with an export sector not wholly dependent on local agriculture (Henderson, Storeygard and Deichmann, 2014: 1; 22). However, few African cities have a sufficiently industrialised export base to make productive use of additional rural migration (ibid.: 25).

Policies should focus on productive jobs and public goods for the growing urban population

The history of Africa's urbanisation is certainly singular but not fundamentally different from urbanisation experiences in other world regions. This singularity owes mainly to the continent urbanising at lower levels of income than others but also to a number of policy dysfunctions over the past decades (UN-Habitat, 2014). While

dysfunctions are a part of any urbanisation process, rapid urban growth has compounded their consequences, particularly in terms of urban overcrowding, lack of connectivity and inefficiencies impeding the provision of public goods.

Investment in urban infrastructure must keep up with rapid urban growth

Among the policy-induced factors explaining why urban infrastructure has not kept up with strong urban growth, three areas stand out: public and private actors have not sufficiently upgraded the urban infrastructure; steadily high fertility rates in urban areas have contributed to overcrowding through fast urban growth; and dysfunctional real estate markets have led to the explosion of informal housing.

Governments must upgrade the urban infrastructure

Urban planning and urban finance have greatly lagged all over Africa (UN-Habitat, 2014; 2008). Most African countries have urbanised later than other world regions. Many big cities are colonial legacies that were not planned to host large populations. As such, several African capitals stemmed from a rent-based or extractive vision of the economy that is not conducive to structural transformation (AfDB/OECD/UNDP, 2015).

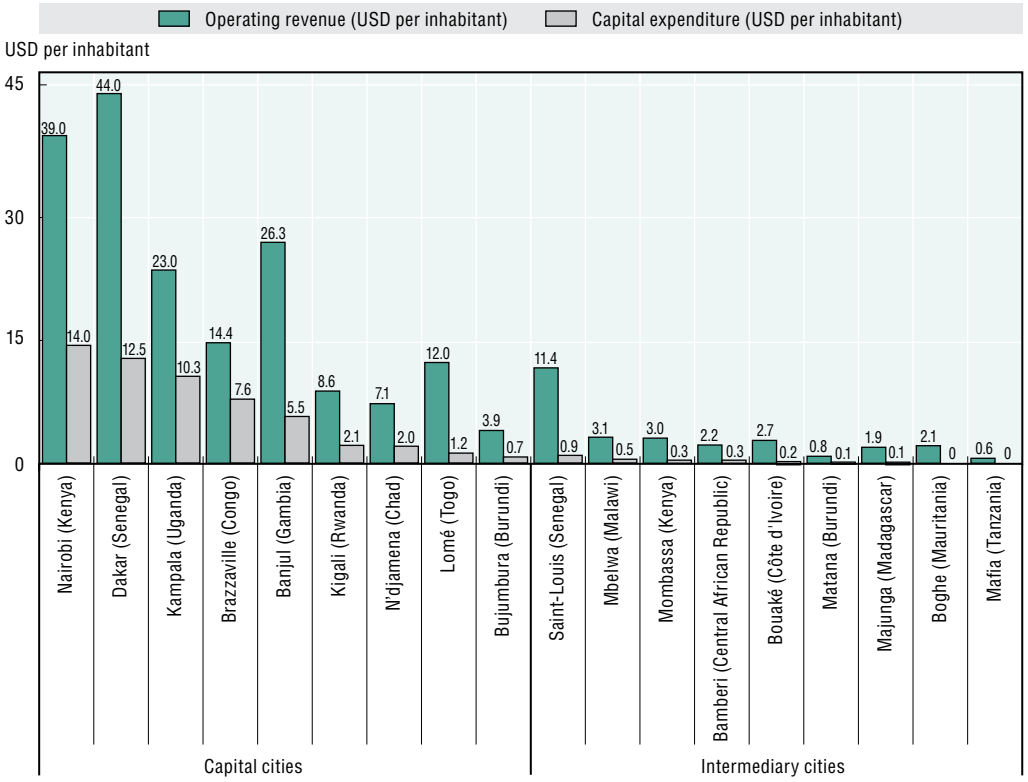
Some planned cities built soon after independence have faced unexpectedly high population density leading to severe congestion. Mauritania's capital, Nouakchott, was built in 1958 as an administrative capital for an expected capacity of fewer than 15 000 inhabitants, but it has grown by more than 9% annually since 1950 to reach almost 1 million inhabitants in 2015 (AfDB/OECD/UNDP, 2015: 182). Similarly, booming urban growth at 5.3% a year in Angola has overwhelmed the existing capacity of provincial capitals where existing systems were originally designed for smaller populations. Two-thirds of the population live in urban slums and peri-urban areas with limited access to basic services. Outside Luanda, only four cities have sewerage collection systems, and these serve only central urban areas covering 17% of the population (USAID, 2010).

Investment in urban infrastructure has not kept pace with rapid urban population growth, decreasing the marginal utility that comes from economies of scale when providing services to a larger urban consumer base. On average in sub-Saharan African countries, gross domestic investment has remained constant at less than 22% of GDP since 1960, whereas it has increased to 42% in the East Asian developing countries (World Bank, 2015). Large pockets of poverty and vulnerable employment have often prevented public and private investment in urban infrastructures, magnifying urban congestion effects.

One-third of developing countries' total infrastructure needs concern urban areas (UCGL, 2007). African cities' investment needs have been estimated at around USD 30 billion per year, of which USD 20 billion for sub-Saharan Africa (Paulais, 2012: 100). Depending on development levels, African countries would need to spend 5-7% of their GDP on public infrastructure, i.e. a minimum of USD 100 billion per year (World Bank, 2005). Determining the local finance gap for specific cities depend on specific needs, urban density and various methods of calculation.

Municipal governments of African cities do not have the resources to tackle these challenges by themselves. Cities' expenses and receipts per inhabitant are very low (Figure 6.21). At around USD 40 per capita per year, the revenues of capital cities such as Dakar and Nairobi fall very short of the financial needs induced by urban growth, and infrastructure expenses cannot match demand (Figure 6.21). The financial situation of intermediary cities is even weaker with less than USD 1 spent per capita per year on average.

Figure 6.21. **Operating revenue and capital expenditure per capita in selected African capitals and intermediary cities**



Source: Yatta (2016) based on CGLUA (2014).
StatLink http://dx.doi.org/10.1787/888933350725

Gender blind infrastructure also contributes to urban dysfunctions by exacerbating inequalities existing between women and men. Women are affected by urban infrastructures unsuitable to their needs. Longer distances from the closest water source contribute to women's time poverty: on average, women in sub-Saharan Africa travel over six kilometres every day for clean water, and women and girls are responsible for 71% of water collection in the region (UN et al, 2010). In Addis Ababa, exposure to violence and sexual harassment in public places influences women's employment choices (ActionAid, 2011). Gender blind infrastructure also affects girls' education opportunities and the unequal time women spend on unpaid care activities.

Policies should provide more affordable formal housing

Weak land rights can constrain urban economies, particularly formal housing markets. Formal housing markets do not respond efficiently to the growing demand of urban housing. Important housing demand outstrips the formal market, causing a housing shortage and contributing to high prices. As a result, formal housing is often unaffordable for middle- or lower-income households, pushing them into the informal housing market. In the East African Community, less than 10% of the population can afford a house on the formal market (CAHF, 2015: 220). Over 62% of sub-Saharan Africa's urban dwellers live in informal settlements.

By and large, Africa's housing markets suffer from inadequate and unco-ordinated housing policies. Land rights and legal ownership are generally weak, except in the *diversifier* countries, which boast some successful examples of containing the expansion

of informal urban housing (see Chapter 7). Land tenure systems in most sub-Saharan African countries are inherited from customary law where land titles do not exist. Land ownership is often unclear, and legalisations of settlement are disputed (Collier, 2013: 8). Land grabbing – the misallocation of public land to private actors with political connections – occurs commonly at the expense of affordable housing. At the same time, informal housing can be extremely expensive relative to residents' income. In Kibera and Mathare, Kenya's largest slums, landlords investing in rental housing are able to reap return rates on their investments as high as 100% and 70%, respectively (Paulais, 2012).

By contrast, *diversifier* countries show examples of improving the housing market in urban areas. Slums in North Africa have diminished substantially, particularly in Morocco and Tunisia (CAHF, 2015: 223). Rate of homeownership is high, for instance at 89% in Mauritius. Comprehensive management of housing and land has contributed significantly to turning Mauritius' real estate sector into a driver of economic growth. South Africa has a well-established property market and a world class cadastral system (ibid.: 136-181). Allocating clearly defined land rights is fundamental for investment in land or infrastructure development (King and Napier, 2015: 7).

More broadly, lack of financial support and inadequate structure of banks affect the construction industry and households. The few formal construction firms in sub-Saharan Africa cater to high-end housing and housing for civil servants (Collier, 2013: 10). Lack of mortgage institutions and inadequate administrative structures of commercial banks prevent firms from financing mass housing. Due to the lack of collateral and restrictive lending policies, 85% of Africa's urban population cannot secure formal housing loans (Mo Ibrahim Foundation, 2015: 22). In the Economic and Monetary Community of Central Africa, only 5% of private-sector employees have access to mortgage finance from commercial banks (CAHF, 2015: 215).

Atypically high construction costs increase the price of formal housing. Materials such as cement are around three times higher than world prices, which also accounts for the low competitiveness of savings and loan agencies (Collier, 2013: 6).[10] Government initiatives to build residential districts have sometimes ended up erecting "ghost cities" due to the high costs of apartments, such as the district of Nova Cidade de Kilamba, built 30 kilometres outside Luanda and hosting only 10% of its capacity (Mo Ibrahim Foundation, 2015: 22).

Lack of urban connectivity has offset economies of agglomeration

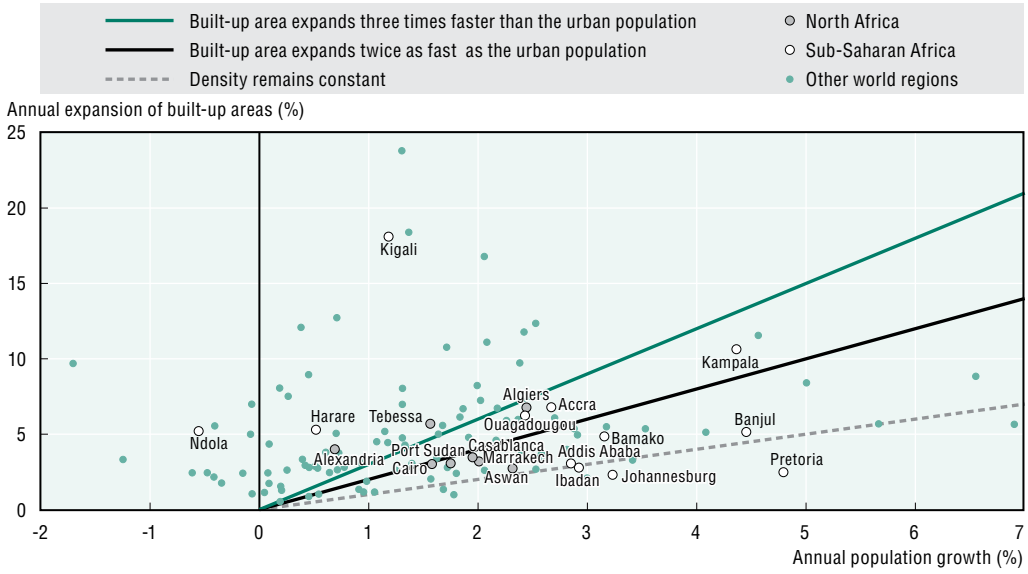
Urban connectivity helps to support economies of agglomeration, or use less material infrastructure to support a larger population. Urban policies must better promote the connectivity among workers and firms (labour markets), among firms themselves (input markets), and among producers and consumers (local and international consumer markets) (Collier, 2016). Urban sprawl spreads people further away from each other, while weak transportation infrastructure increases the cost of connecting them together.

Most cities have expanded through urban sprawl

In many sub-Saharan African cities, urban expansion has been fragmented and sparse, with new development leapfrogging from the central cores (Angel et al, 2010a). African cities thus suffer from the challenges of urban sprawl, decreasing the benefits of connectivity within urban areas.

African cities are expanding into rural areas, similar to the global trend (Angel et al., 2010a). The *Atlas of Urban Expansion* shows that 12 sub-Saharan African cities have a low density at 81 inhabitants/km^2, while 6 North African cities have densities similar to Southeast Asian cities at 155 inhabitants/km^2. The African cities studied have built up rapidly; the lowest rate is 2.3% a year (Johannesburg). The rates have often surpassed and even more than doubled that of population growth. Kigali has expanded by 18% a year, tripling the size of its population in only 15 years. Several cities, such as Kampala, have achieved rapid population growth at 4.3% with even faster physical expansion at 10.6% a year, reducing their density level (Figure 6.22).

Figure 6.22. **African cities' expansion of built-up areas and population growth, 1990-2000**

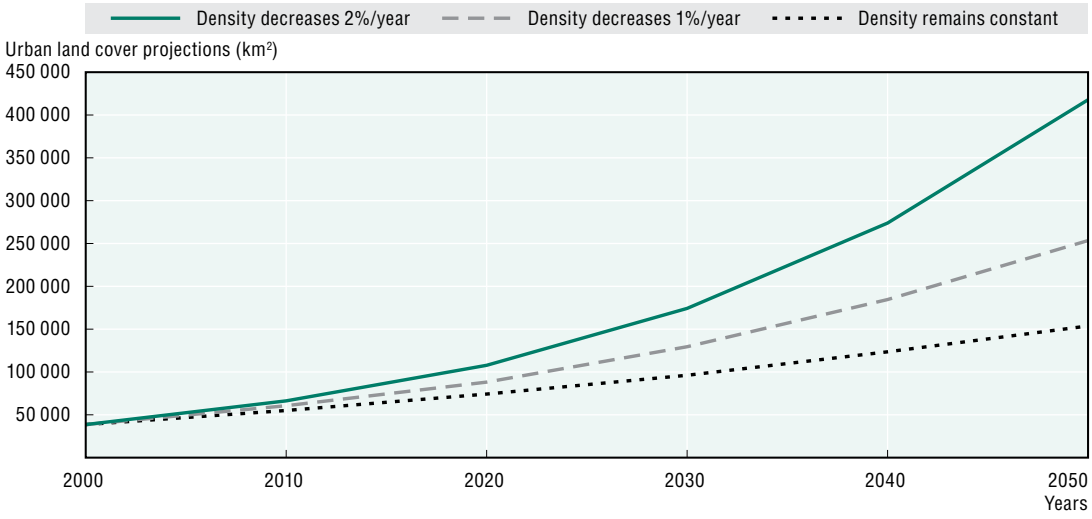


Source: Authors' calculations based on Angel et al. (2010a).
StatLink http://dx.doi.org/10.1787/888933350732

Sub-Saharan Africa's ratio of urban to arable land has changed quickly, though it remains currently low at 1.5%. In Lagos, frontier residential development, replacing forests and farmlands, already affects rural livelihoods at the urban fringe. This problem is compounded by institutional factors such as the skewed distribution of private land, the high costs of undeveloped land, and weak land-use planning regulations. Pro-poor land tenure and housing policy reforms can address such issues (Braimoh and Onishi, 2007).

At current rates of population growth and decreasing density, African urban areas will continue to expand quickly. Sub-Saharan Africa's urban areas will likely grow at least four-fold between 2010 and 2050, even if the rate of land expansion remains constant, since the urban population is expected to quadruple from 295 million to 1.15 billion. However, if the consumption of land per capita increases at 1% or 2% per annum, the land area of cities is likely to increase six- or eight-fold, respectively (Figure 6.23). By comparison, the density of urban areas in developing countries decreased at nearly 2.5% per annum between 1990 and 2000. Between 2000 and 2010, Accra's density decreased at an average annual rate of nearly 2.5%, while Algiers' density has decreased by 4.3% per year (Angel et al., 2015). Such high rates of urban expansion seem environmentally unsustainable as they reduce the supply of ecosystem services such as arable land, freshwater and waste absorption. They may also affect hydrologic cycles and vegetation cover (Grant, 2015).

Figure 6.23. **Projections of urban land cover for Africa, 2000-50**



Note: This figure is based on projections of urban population and average density level. The three scenarios depend on the average urban density level decreasing by 1% or 2% per annum or not changing at all.

Source: Adapted from Angel et al. (2010b).

StatLink http://dx.doi.org/10.1787/888933350745

Public mass transportation systems need improving

Policies should make formal and informal transportation safer and more comprehensive, regular and accessible. Since mass transportation is a public good, states are normally involved in providing it. Today many of Africa's transport systems continue to rely on private solutions. Public transport has been recently developed and is inaccessible for a large part of the population. It takes an average of 25 minutes to commute to work in Accra, compared with 45 minutes in Abuja and up to 60 minutes in Monrovia (UN-Habitat, 2010b: 107-109). Developing mass transportation systems is essential to cost-effectively connect people to jobs and thus increase a city's productivity. The minimum density for a viable public transport system is considered to be 150 inhabitants per hectare.

Policies that favour investment in cost- and energy-efficient public transport networks are needed to improve sustainability and mobility strategies (UN-Habitat, 2008). Mass transportation systems are necessary for environmental sustainability and to avoid car dependency (Glaeser, 2012). They reduce dependence on oil and petroleum; lower air pollution; encourage access and mobility; and increase social interactivity in cities.

Income levels determine transport usage. In South Africa, workers in the lowest-income quintile rely foremost on walking, followed by taxis (25%) and buses (7%) (Statistics South Africa, 2013). The lowest-income households spend at least 20% of their disposable income on transport (South African Country Note). In other countries, over 50% of trips are made on foot (Foster and Briceno-Garmendia, 2010).

Higher income leads to higher access to private car ownership. In many African cities, the use of private motorised transport is low: it varies from 1% of total transportation means used in Dakar and 7% in Dar es Salaam, to 10-20% in Harare and Kinshasa and up to 45% in Ouagadougou where motorcycles are commonly used (Mo Ibrahim Foundation, 2015). Countries with the highest car ownership per 1 000 people are Libya (297), the Seychelles (182), Mauritius (174), Botswana (168), and South Africa (165).

Countries with the lowest are Ethiopia (3.1), Togo (2.3), Sao Tome and Principe (2.2) and the Central African Republic (0.31) (World Bank, 2015).

As fares for urban public transport are too high for poorer populations, informal means of transport prevail. The average family can afford no more than one daily round trip on a public bus, while the poorest households are excluded. Minibuses are more frequently used than large, official buses (Accra 52% vs. 10%, Bamako 10% vs. 1% and Nairobi 29% vs. 7%) (Kumar and Barrett, 2008). Fares for minibuses vary and are often lower than those for large buses (the cost of a trip with minibus compared to a large bus is on average USD 0.25/0.31 per trip (World Bank, 2011). On average, lowest-income quintile households spend 30-50% of their disposable income on daily commutes a month, though commutes cost as much as 105% of their income in Lagos.

Structures of public transport systems have a disproportionate influence on women's time use and well-being. Women are less likely to drive and more likely to make multiple trips and use multiple forms of transport. In Bamako, for example, 87% of women walk for almost all trips compared to 57% of men. Thus, bus timetables, costs of transport and travel routes that do not take women's specific travel needs into account can increase the time and costs of travel and consequently women's time poverty.

The availability of transport and services cause large differences of accessibility between income groups. In low-income countries, one in five respondents to the Afrobarometer survey has no access to transport services. In upper-middle-income countries, over 80% of respondents live in areas with at least three infrastructure services at their disposal (Leo, Morello and Ramachandran, 2015).

Urban planning and governance should focus on informal settlements

Human settlements in Africa have largely grown unplanned (UN-Habitat, 2014; 2008; Grant, 2015). Master plans for African cities were conceived during the colonial period, based on European experience of cities. Few of these plans were implemented as they did not fit with Africa's social, political or economic specificities. The rural bias in the 1970s also contributed to the policy makers' difficulty in coherently planning cities. The shortages of qualified and (active) planners and other built-environment professionals have compounded inadequate planning systems, legal frameworks, and obsolete building standards (Silva, 2015). Moreover, most countries suffer from insufficient funds to carry out urban planning. Some must face challenges of poor governance, corruption and wasted resources.

Urban planning should take account of informal settlements. Some governments have viewed cities' informal settlements, where most urban inhabitants work and live, as leading to a waste of resources. Legislation has sometimes ensnared urban planning, like in the eviction case of 700 000 informal settlers during operation Murambatsvina in Zimbabwe in 2005 (Watson and Agbola, 2013). Urban planning has recently focused on retrofitting central business districts or planning new satellite towns altogether. Certain large-scale luxury projects and gated communities have created spatial segregation and bypassed the development of slums.

The share of public space for parks and roads in Africa's urban land is about 15-20%. This is half of the world's average of 30-40%. According to UN-Habitat (2013), the generally accepted minimum standard for public space in urban areas is 45%, broken down into 30% for streets and sidewalks and 15% for green spaces. This standard aims to achieve a minimum density of 150 inhabitants per hectare.

Box 6.6. **Cities for the next two billion urban dwellers**

The current United Nations population projections suggest that the world will add over 2.3 billion new urban dwellers between 2015 and 2050. The total urban population at mid-century will exceed the entire global population in 2000. Urban form tends to last, and the lock-in effects from urbanisation decisions endure, so the urbanisation decisions of the next 30-60 years are likely to shape living conditions on earth for centuries to come.

Massive urban growth is both a challenge and an opportunity. It is a challenge because mistakes will be costly to reverse. It is an opportunity for reforms of all types. Thus urbanisation and structural transformation need to reinforce one another, especially through the use of urbanisation policies. Urbanisation policies must address issues such as human capital, entrepreneurship and industrialisation, as well as the core urban concerns of infrastructure and urban form.

Environmentally, the stakes are high. The emergence of sprawling, car-dependent cities for the next two or three billion urbanites would be a huge environmental setback. At the same time, policies favouring transit-oriented development, green building design and sustainable land use could help make the current wave of urbanisation part of the solution to the world's environmental challenges, rather than part of the problem (OECD, 2012c). However, time is running out: cities are growing fast and in much of the world they are growing in ways that augur ill for the future when it comes to issues like climate change and air quality.

The experiences of OECD countries, where urbanisation is largely complete, point to some important lessons for today's fast-urbanising countries:

- **Governance matters**. Successful cities require co-ordination across policy sectors and jurisdictions. This is especially true of dynamic issues like resilience and sustainability. Governments must build them into institutions and policy processes, rather than considering them as isolated objectives to be attained by this or that policy intervention.
- **Some mistakes are harder to rectify than others**. For example, the failure to set aside land for public infrastructure and amenities or to provide for an arterial grid of roads can be incredibly costly, or even impossible, to correct once development has taken place and land prices have risen.

National urban policies are critical to all of this. Even where powers are devolved, senior governments largely determine both what cities can do and what they have incentives to do. National policy makers need to be attentive to the way sectoral policies may create unexpected or unwelcome incentives and constraints for cities – as, for example, when regulatory and property tax regimes favour extensive development, in contradiction to policies aimed at curbing sprawl.

Source: OECD (2014; 2015).

Now is the time to prepare for Africa's urban transition

Africa has the opportunity to promote sustainable urbanisation and accelerate structural transformation

Africa's fast pace of urbanisation requires massive investment in infrastructure. In order to accommodate African urbanites, governments and the private sector will have to invest twice as much by 2050 as they have since the years of independence. Investments in urban infrastructure have strong lock-in effects and can determine city

growth half a century after they have been made. Experience from OECD countries shows that retrofitting infrastructure can prove much more costly than carrying out early "no regret" policies (Brahmbhatt et al., forthcoming).

Policy makers are increasingly aware of urbanisation's central place in the process of structural transformation (UN-Habitat and UNECA, 2015). Four-fifths of survey respondents consider urbanisation as an opportunity for sustainable development (Figure 6.24). This departs from the post-independence approach which tended to dismiss Africa's urbanisation as too fast, unmanageable and needing to be constrained (Box 6.7 on urban bias). However, policies attempting to restrain urbanisation instead of tapping its potential for structural transformation remain commonplace. According to a United Nations survey, 80% of African countries continue to desire a "major change in the spatial distribution of their population", and a similar proportion (85%) have implemented policies to limit rural-urban migration (UN, 2013: 109; 114).

Box 6.7. **Economists' "urban bias" in a rural Africa**

The concept of the urban bias largely emerged after African countries' independence. This academic debate contending that cities are harmful to rural development has pitted the rural against the urban and negatively influenced the perception of the role cities can play in Africa's development (Yatta, 2016). Development economists have developed three main notions of the "urban bias":

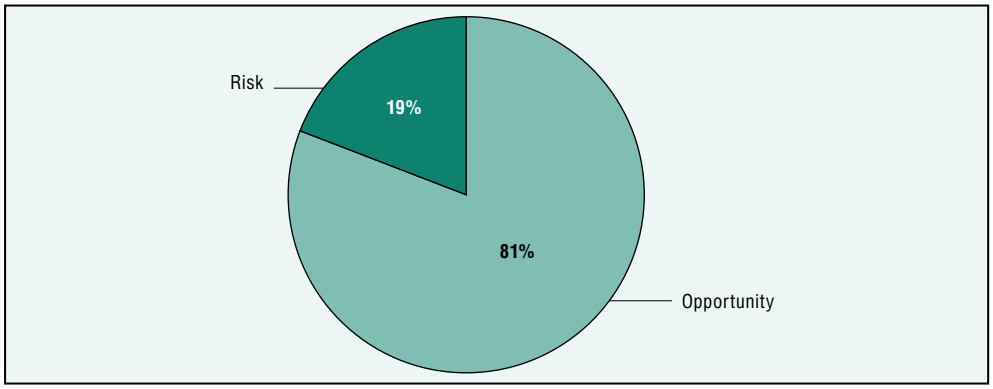
- As a "price twist" leading to rural exploitation by the urban. Developed in the late 1960 and 1970s, this model of price twists describes how prices of goods produced in cities are significantly higher than rural products, whereas agricultural products are sold under value (Corbridge and Jones, 2005).
- As an investment monopoly parasitic to the national economy. Cities absorb a large proportion of the national budget and become net consumers of credits while rural areas provide supply (Schikele, 1968; Chandavarkar, 1985).
- As a waste of human resources by attracting the rural labour force into the unproductive urban informal sector and creating food scarcity (Dumont, 1966; Balogh, 1966). The seminal Todaro Paradox showed that increasing urban working opportunities would increase urban unemployment by attracting more rural-urban migration (Todaro, 1969).

International organisations have echoed this academic debate. The World Bank's "Berg-Report" suggested that ruling regimes in sub-Saharan Africa imposed urban-biased policies to muffle unrest in towns and cities and support their interest group (Berg, 1981).

By the 1990s, the stance of international organisations started changing. In 1991, the World Bank highlighted how urban economic activities could positively influence economic growth (World Bank, 1991). Founded in 1999 at the Summit of Mayors, the joint World Bank-UNDP initiative City Alliances' "Cities Without Slums" started to address urban poverty in developing countries. This more positive perspective was echoed in the *World Development Report 2009: Reshaping Economic Geography* (World Bank, 2009).

The ongoing international debates on the roles of cities and human settlements in advancing regional and global development agendas are therefore an important opportunity to rethink policies. Those that have shaped current, unsatisfactory outcomes can be made more conducive in the future to sustainable development and effective sustainable transformation.

Figure 6.24. **Is urbanisation perceived as a risk or an opportunity in your country?**



Note: Survey responses by country economists of the AfDB and UNDP in 48 country offices in Africa. Response is weighted by one per country.
Source: AEO experts' survey, 2016.
StatLink http://dx.doi.org/10.1787/888933350754

International events highlight Africa's urbanisation and structural transformation

Today, the political momentum is focusing on urbanisation and structural transformation at both pan-African and global levels (Table 6.5). The African Union is developing its urbanisation agenda to support Africa Agenda 2063 in co-ordination with global partners. UN-Habitat's African Urban Agenda (AUA) is supported by Ghana and Nigeria and strives for the buy-in of other African governments. This momentum inspired the drafting of the Abuja Declaration in February 2016, with a view to feeding a Common African Position for the Third United Nations Conference on Housing and Sustainable Urban Development (Habitat III) as "a people-centred and leadership-driven process". The continent aspires to speak with one voice in order for the New Urban Agenda to reflect the pan-African vision of Agenda 2063.

Table 6.5. **Pan-African and international events on sustainable urbanisation[11] and structural transformation, 2014-18**

2014	The African Union establishes a Specialized Technical Committee on Public Service, Local Government, Urban Development and Decentralization, gathering African Ministers of Housing and Urban Development.
January 2014	The African Union's African Common Position on the Post-2015 Agenda prioritises "Structural economic transformation and inclusive growth".
March 2015	UN-Habitat and the Economic Commission for Africa hold a side event on the Role of Urbanisation in the Structural Transformation of Africa at the Eighth Joint Annual Meeting of the African Union's Specialized Technical Committee on Finance, Monetary Affairs, Economic Planning and Integration/UNECA Conference of African Ministers of Finance, Planning and Economic Development in Addis Ababa, Ethiopia.
April 2015	African Ministers of Housing and Urban Development initiate a process of drafting an Africa Common Position on the Third UN Conference on Housing and Sustainable Urban Development (Habitat III).
June 2015	The First Ten Years Implementation Plan (2014-23) of the African Union's Agenda 2063, which lays out the objective of increasing urban investment, is adopted at the 25th Summit of the African Union.
September 2015	The African Union announces it will develop an African Charter on Urban Development and Human Settlements.
December 2015	The 7th Africities Summit is held in Johannesburg, South Africa, co-organised by United Cities and Local Governments of Africa.
March 2016	During the Africa Regional Conference on Habitat III in Abuja, Nigeria, African ministers and civil society organisations adopt the Abuja Declaration opening the way to a Common African Position to Habitat III.
July 2016	African heads of states are scheduled to adopt a Common African Position to Habitat III.
October 2016	Habitat III will be held in Quito, Ecuador.
November 2016	The 22nd session of the Conference of the Parties (COP 22) to the UN Framework Convention on Climate Change will take place in Marrakech, Morocco.
January 2018	UN-Habitat will host the 9th World Urban Forum in Kuala Lumpur, Malaysia.

The Sustainable Development Goal on cities gathers momentum

At the international level, sustainable cities and human settlements are at the heart of the Sustainable Development Goals (SDGs) adopted during the UN General Assembly in September 2015, with SDG 11 aiming to "Make cities and human settlements inclusive, safe, resilient and sustainable". This new, stand-alone urban goal is path breaking because it acknowledges that cities can be pathways to sustainable development (Parnell, 2015). The Draft Africa Common Position on Habitat III undertakes "to ensure that goal 11, as it stands now, needs to be considered together with goals 8, 9 and 10 on matters relating to promoting economic growth as well as full and productive employment; building infrastructure, industrialization and innovation, as well as reducing inequality within and between countries" (AUHF, 2015).

The Third UN Conference on Housing and Sustainable Urban Development is an opportunity to promote Africa's position on the New Urban Agenda. The conference aims to secure renewed political commitment for sustainable urban development, assess accomplishments to date, address poverty, and identify new and emerging challenges. Habitat III and the New Urban Agenda will propose a global strategy for urbanisation for the 20 years until the next Habitat conference.

Annex 6.A1. Methodology for the cluster analysis on urbanisation and structural transformation in African countries

This chapter clusters the 54 African countries into five groups to highlight the diversity of their structural transformation processes. The groups are *diversifiers, early urbanisers, late urbanisers, agrarians* and *natural resources-based countries*. This cluster analysis identifies common characteristics of countries.

This methodology focuses on country characteristics at the national level. We have clustered the African countries following the four processes of structural transformation described by Timmer and Akkus (2008): i) a declining share of agriculture in GDP and employment, ii) urbanisation, iii) a demographic transition from high rates of births and deaths and iv) the rise of a modern industrial and service economy.

First, we filtered the 54 countries by dropping 12 that had a population of fewer than 2.5 million inhabitants in 2013. Such small countries tend to have a much higher share of urban population than larger countries, and their urbanisation processes differ as well. The primary city of larger countries often has more than 2.5 million inhabitants. Despite their small size, we kept Botswana and Mauritius in the sample because both are widely recognised as typical case studies of structural transformation in Africa.

Second, we identified the *natural resources-based countries* within the remaining 42. The literature points out the structural differences of resource-based countries compared to non-resource-based countries. Building on previous editions of the *African Economic Outlook*, we defined *natural resources-based countries* as those where the production of minerals, metals and hydrocarbons accounts for more than 30% of GDP in 2010 (AfDB/OECD/UNDP/UNECA, 2013: Table 6.3).

Third, we classified countries by their urbanisation levels as of 2015, using UN DESA (2014). We defined countries as:

- urbanised when at least 60% of the population resides in urban areas
- having started the urbanisation process when they have an urbanisation level of at least 40% and less than about 50%
- predominantly rural countries when they have an urbanisation level of less than 20%. We kept Burkina Faso and Mali in this category because their agriculture produces more than 35% of their GDP.

Fourth, we distinguished countries by their total fertility rate (TFR) where most data was available – between 2010 and 2015 – using UN DESA (2014). We based the demographic typology on previous editions of the *African Economic Outlook* which grouped African countries by their TFR (AfDB/OECD/UNDP, 2015; see also Guengant and May, 2013). We opted to use national TFRs, instead of urban TFRs (Jedwab, Christiaensen and Gindelsky, 2015b), so as to reflect employment challenges at the national level and integrate rural dynamics into the analysis of structural transformation. Using urban TFR would not produce significant differences in the country clustering. This demographic clustering produced the following categories:

- Countries are classified as more advanced in their demographic transition when the TFR falls below 3.5 children per woman, which corresponds approximately to Egypt's TFR.
- Countries having started the process of fertility transition are those with TFRs between 3.5 and 5.5 children per woman.
- Countries with TFRs of 5.5 children or more are classified as not having started the fertility transition.

The economic dimensions used in the cluster analysis are discussed in greater detail throughout Part II of this report.

Using this process, we have classified African countries as shown in Table 6.A1.1.

Table 6.A1.1. **African countries clustered into groups according to their levels of structural transformation**

Non-resource-based countries				**Resource-based countries**
Diversifiers Advanced in fertility transition, urbanised	**Early urbanisers** Started fertility transition and urbanising	**Late urbanisers** Started fertility transition but not yet urbanising	**Agrarians** Have not started fertility transition nor urban transition	**Natural resources-based countries**
Egypt	Benin	Eritrea	Burkina Faso	Algeria
Mauritius*	Cameroon	Ethiopia	Burundi	Angola
Morocco	Côte d'Ivoire	Kenya	Chad	Botswana*
South Africa	Ghana	Madagascar	Central African Republic**	Republic of the Congo
Tunisia	Liberia	Mozambique	Malawi	Democratic Republic of the Congo
	Senegal	Rwanda	Mali	Guinea
	Togo	Sudan	Niger	Libya
		Tanzania	Sierra Leone**	Mauritania
			Uganda	Nigeria
				Somalia
				South Sudan
				Zambia
				Zimbabwe

Note: * Countries kept in the sample despite having less than 2.5 million inhabitants. ** Central African Republic and Sierra Leone have a total fertility rate of about 4.5 children per woman and an urbanisation level of approximately 40%. Yet their economies are overwhelmingly agrarian (58% of GDP and 56% of GDP respectively).

Notes

1. United Nations estimates project that Africa will be 50% urbanised in 2037.
2. These countries are Botswana, Ethiopia, Ghana, Kenya, Mauritius, Malawi and Senegal.
3. Weeks (1994) argues that "special factors account in part for Africa's rapid rates of urbanisation in the immediate postcolonial period. Colonial prohibitions on migration to cities in East Africa – and control of population movements more broadly – were deeply resented. A one-time stock adjustment that may have had little to do with economic factors took place in the early years to compensate".
4. The UNDP Human Development Index measures countries' achievements in key dimensions of human development: health, education and standard of living (see Chapter 4). The health dimension includes life expectancy at birth, the education dimension years of schooling for adults aged 25 years and over and expected years of schooling for children of school-entering age. The standard of living is measured by gross national income (GNI) per capita.
5. Many varying definitions of intermediary cities exist. For a working definition, see Annex 6.A3 of the *African Economic Outlook 2015* (AfDB/OECD/UNDP, 2015: 170).
6. Only two countries are in the *diversifiers* group because Gallup asked the question solely to sub-Saharan African countries.
7. UN-Habitat's "State of World Cities 2008/2009" refers to data from 2005. This comprehensive estimate has not yet been updated.
8. The Gini index measures the extent to which the distribution of income among individuals or households within an economy deviates from a perfectly equal distribution. A Gini index of 0 represents perfect equality, while an index of 100 implies total inequality.
9. "Childhood undernutrition" encompasses "childhood underweight", "childhood wasting" and "childhood stunting".
10. A saving and loan agency is a financial institution that offers banking and related financial services, especially savings and mortgage lending. It is equivalent to the term "building society" in the United Kingdom.
11. Sustainable urbanisation is the transition of societies from majority rural to majority urban in a sustainable way. Although it has many dimensions (Allen, 2009), this report focuses on its economic, social and environmental ones.

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Chapter 7

How sustainable cities can contribute to Africa's development

Urbanisation can be an important driver of Africa's sustainable development. As Chapter 6 shows, however, this requires new, more effective urban development policies. This chapter identifies the main channels through which urbanisation can accelerate economic, social and environmental development, as well as the policy options to seize those opportunities for structural transformation. Good practices in Africa highlight the need for place-based and participative policies to develop more sustainable cities.

In brief

Urbanisation is playing an essential role in improving sustainable development outcomes in Africa, although it also brings new challenges as Chapters 4 and 6 highlighted. This chapter demonstrates in detail that urbanisation has been improving Africa's prospects for structural transformation through economic linkages and social innovations. New urban development policies can better harness the potential of sustainable cities to foster three types of development:

- economic development, through higher agricultural productivity, industrialisation, more productive urban services and foreign direct investment (FDI) in urban corridors
- social development, by providing cost-efficient transport systems, safer housing, social safety nets, social businesses on a larger scale and safer cities
- environmental development, by sustainably managing natural resources, notably by providing better access to renewable energy, safe water and sanitation, and sustainable waste collection. Managing urbanisation well will be essential to bridge the energy gap, mitigate the rising cost of air pollution and preserve surrounding ecosystems such as urban wetlands.

An annex to the chapter explains the method used to map FDI flows to African cities.

Urbanisation improves the conditions for Africa's economic development

Urbanisation can contribute to economic development and structural transformation through four main channels:

1. **higher agricultural productivity and rural development**, by better connecting rural economic activities, in particular food production chains, to large urban markets
2. **industrialisation**, by providing a favourable business environment where companies realise economies of scale and share knowledge more easily
3. **services-led growth**, by encouraging innovation and developing the skills of the urban labour force, which will increase the supply of modern services for the growing urban middle class
4. **more FDI in African cities**, by attracting investment through better connected urban corridors.

Urbanisation is changing the labour and food markets

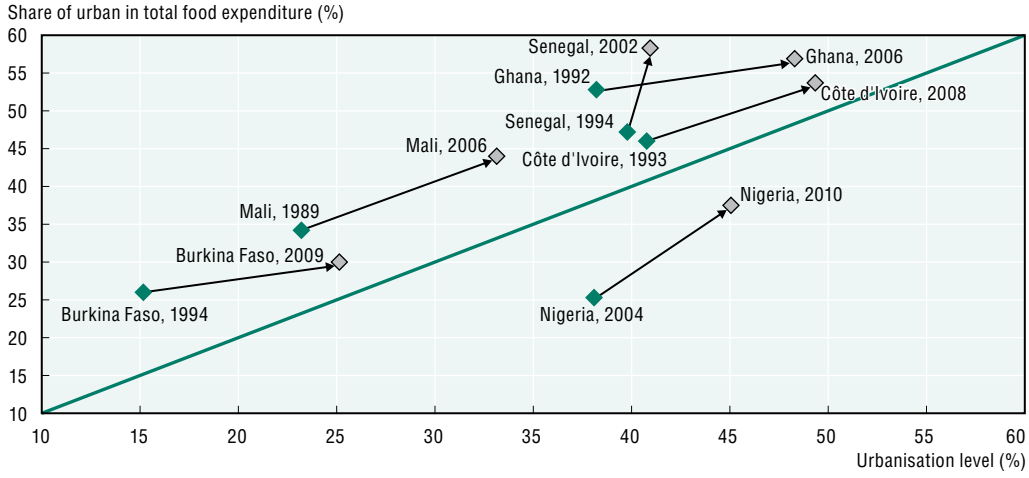
Africa's urbanisation could increase agricultural productivity and rural development by changing the labour and food markets. Between 2000 and 2013, Africa's agricultural sector has maintained a real growth rate of 5.1% per year, well above the population growth rate of 2.7%. Africa's food system is fundamentally changing, and urbanisation plays a central role in this process. Urbanisation i) creates upward demand for food production in Africa; ii) increases efficiency in post-farm segments; and iii) transforms the rural on-farm and non-farm economy (Reardon and Timmer, 2014). Different types of cities play specific roles in realising these transformations.

Urbanisation increases the consumer base for African food producers

Urban markets have become the main destination of African food production. Domestic and intra-Africa trade account for 95% of the sub-Saharan African food market. The urban sector currently accounts for 40% of the total population, 50% of total food consumption (including home production) and 60% of the food market

(Reardon et al., 2013). Food imports from outside of Africa account for less than 5% of the total food market, although large differences appear between countries.[1] Figure 7.1 shows that urban food expenditure increased faster than urbanisation in six West African countries between 1990 and 2010. Even if Nigeria's urban households, for example, spend a lower share of their expenditure on food (at 55%) than rural residents (at 72%), they still spend more in absolute terms thanks to their higher incomes.

Figure 7.1. **Change in urbanisation levels and urban share of total food expenditures for major food groups in six West African countries, 1990-2009**



Note: Major food groups include cereals, roots and tubers, pulses, oils and oilseeds, fruits and vegetables, animal products and fish, beverages, and other food products.

Source: Adapted from Table 6.3, AfDB/FAO (2015) and World Bank (2015a).

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The more diverse food diets of urban dwellers can raise productivity levels. Following Bennett's law, African consumers are changing their food preferences from starchy staples towards higher-value processed and pre-prepared food as they become wealthier (De Haen et al., 2003; Popkin, 2001; see Box 7.1). While Asian exporters dominate Africa's grain markets such as wheat and rice, urban consumers increasingly consume locally available meat and fresh fruits. The African urban middle class[2] does not consume a higher share of imported food out of its total consumption than the urban poor. Local products also generate higher margins for farmers: selling meat and dairy products to towns and cities can increase farmers' income 5 to 10 times per hectare compared to grains (Tschirley et al., 2015a).

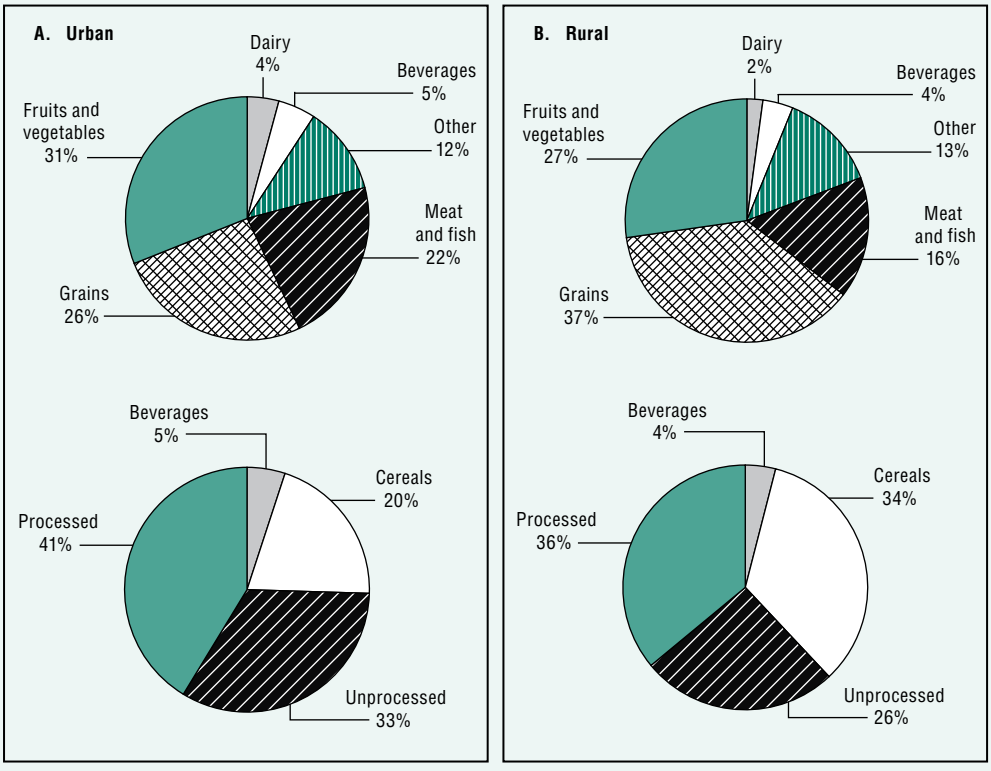
In rural areas too, markets increasingly supply food. This is due to more diversified rural economies, spreading urban products, changing lifestyles and farming methods, and better transportation. Stronger rural-urban linkages are helping the rural supply chain meet the demand of urban areas. Evidence abounds of farmers who have increased their production when connected to growing urban and regional markets (Reardon et al., 2013). This is the case of farmers growing teff in Ethiopia, vegetables in Mali or Senegal, or potatoes in Rwanda or of dairy farmers in Kenya. They have invested in soil conservation, added organic matter into their soils, used productivity-enhancing seeds, breeds and fertiliser, as well as irrigation and machines.

Box 7.1. **Urbanisation and the emerging food economy in West Africa**

Urbanisation has led to more diversified diets in 17 West African countries. Fruits and vegetables, meat and fish now account for 50% of urban households' total food expenditure, while consumption of cereals and pulses is declining. All income groups show higher demand for convenience, reflected in the expansion of street food and stronger demand for processed and pre-prepared foods. Processed foods represent 41% of food budgets for urban households, compared to 36% for rural households (Figure 7.2).

The West African food economy is estimated at USD 178 billion for 2010. This represents 36% of regional gross domestic product (GDP), making it the largest sector of the West African economy. In many countries, the domestic food market is becoming more attractive for farmers than traditional export cash crops. The non-agricultural post-harvest activities of the food economy, such as processing, logistics and retail, are developing quickly. The Sahel and West Africa Club estimates that, today, these activities account for 40% of the sector's value added and will continue to expand with more urbanisation (Allen, forthcoming).

Figure 7.2. **Composition of the West African food basket by food groups and area, 2010**



Note: The sample includes 17 West African countries: Benin, Burkina Faso, Cabo Verde, Chad, Côte d'Ivoire, Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Mauritania, Niger, Nigeria, Senegal, Sierra Leone and Togo.

Sources: OECD (2013a).

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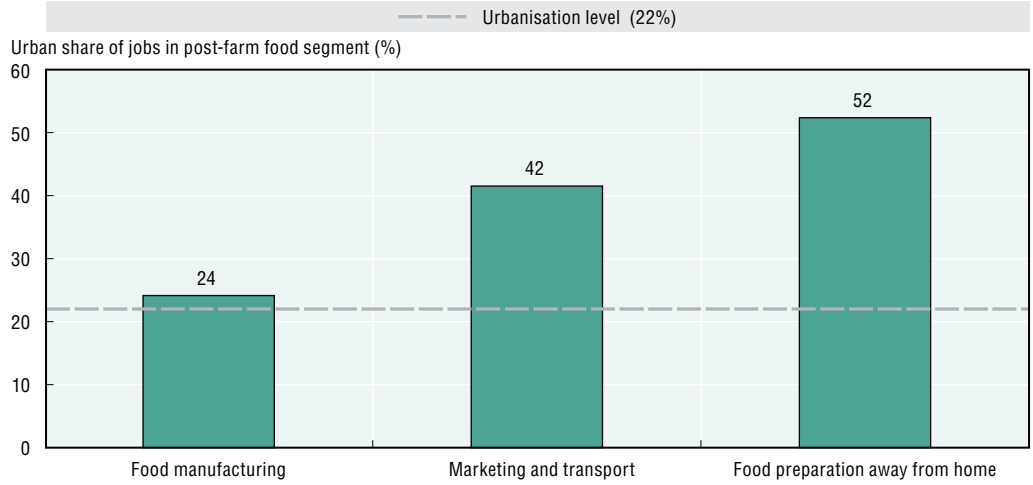
Urbanisation can benefit the post-farm food value chain

More densely populated places tend to support post-farm segments of food value chains, i.e. activities beyond primary production. These include wholesaling, processing, logistics, distribution, retails and food stalls, which benefit from the economic effects of more concentrated urban areas. The larger pool of urban customers enables firms to avoid under-utilisation and other seasonal effects. Research and development and agricultural extension – training farmers in innovative practices and technologies – benefit from linkages with universities and research institutions, nurturing the cross-sector fertilisation of ideas (Jacobs, 1969). Similar to Asia, a "Quiet Revolution" is emerging in African supply chains whereby small and medium-sized enterprises lead investments in post-farm activities such as trucking, wholesale, warehousing, cold storage, processing and retail (Reardon et al., 2013). In six African countries, urban areas account for 42% of jobs in food marketing and transport and 24% in the food manufacturing segment, even though urban dwellers represent only 22% of the total population (Figure 7.3). Indeed, the efficiency of post-farm activities depends on basic infrastructure available in urban areas and on the connectivity between farms and their urban markets. Efficient transport and electricity are necessary to attract productivity-enhancing investments in cold-chain and storage facilities.

Figure 7.3. **Urban share of jobs in each post-farm food segment in six African countries**



Note: These six African countries include Ethiopia, Malawi, Mozambique, Tanzania, Uganda and Zambia.
Source: Adapted and recalculated from Table VI in Tschirley et al. (2015b).
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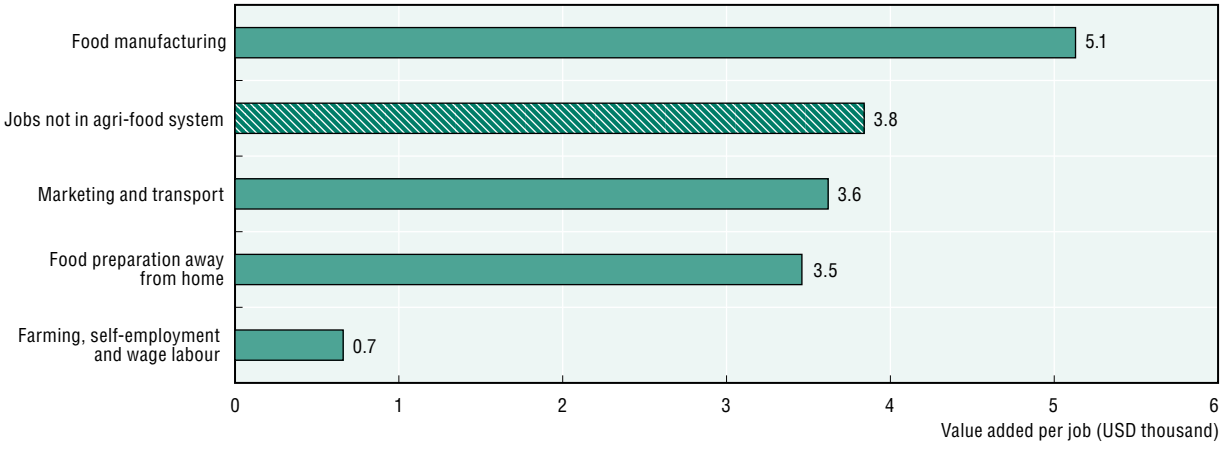
These post-farm segments of food production offer strong potential to increase the efficiency of the food value chains. In the six African countries mentioned above, the post-farm food segments already account for a total of USD 31 billion, or 39% of domestic food expenditure (Tschirley et al., 2015b). Agglomerations in secondary cities create opportunities for further investment in cold-chain and storage facilities. Such investments are key to enhancing productivity in particular by reducing food spoilage. Total food spoilage could feed about 300 million people per year in sub-Saharan Africa (FAO, 2011). Secondary cities and towns also play an important role in enhancing the efficiency of wholesale markets and supply chains and in helping increase human capital to meet the new skill demands of the food system.

In some countries, the development of supermarkets contributes to modernising food production (Reardon and Timmer, 2014), but policies are needed to avoid harming traditional small and medium producers and retailers. Demand from supermarkets can accelerate the trend towards farms' formalisation and commercialisation, by exposing farms to modern technologies through demand for more efficient supply chains. Local supermarkets can also cut intermediary costs by contracting directly with farmers. However, this process of commercialisation can create barriers to entry for small and medium producers and processors. These are typically family farms, which make up the large majority of actors in the food value chain. Ensuring that supermarket development benefits the poor requires a sequenced approach, both fostering productivity, competition and technological learning and applying safeguards for the poor through regulation. Involving retail corporations, smallholders and local communities in adapting regulations over FDI entrance, zoning and opening hours, sourcing requirements, food waste and environmental standards can help ensure proper design and implementation (Altenburg et al., 2016). Opportunities to develop alternative short supply chains should be fostered to diversify food chains and retail options in the interest of both producers and consumers.

Urbanisation can transform the rural non-farm economy

More productive rural non-farm jobs flourish in close proximity to cities and towns. Farmers close to urban areas can also take advantage of employment opportunities in urban and peri-urban areas for seasonal work. The rural non-farm economy needs to sell goods and services in urban areas to function properly. The emergence of local food industries and processing facilities creates more productive employment opportunities than the farming segment, where harvests take up on average three months of labour per year. In Ethiopia, rural households are 30% more likely to start a non-farm enterprise when they are close to clusters of micro-enterprises, and 7% more likely when they are close to clusters of big manufacturing firms in urban areas (Ali and Peerlings, 2012). Labour productivity is highest in food manufacturing, followed by marketing and transport and by food preparation away from home (Figure 7.4).

Figure 7.4. **Labour productivity in different segments of the agri-food system in six African countries**



Note: These six African countries include Ethiopia, Malawi, Mozambique, Tanzania, Uganda and Zambia.
Source: Authors' adaptation from Table II of Tschirley et al. (2015b).
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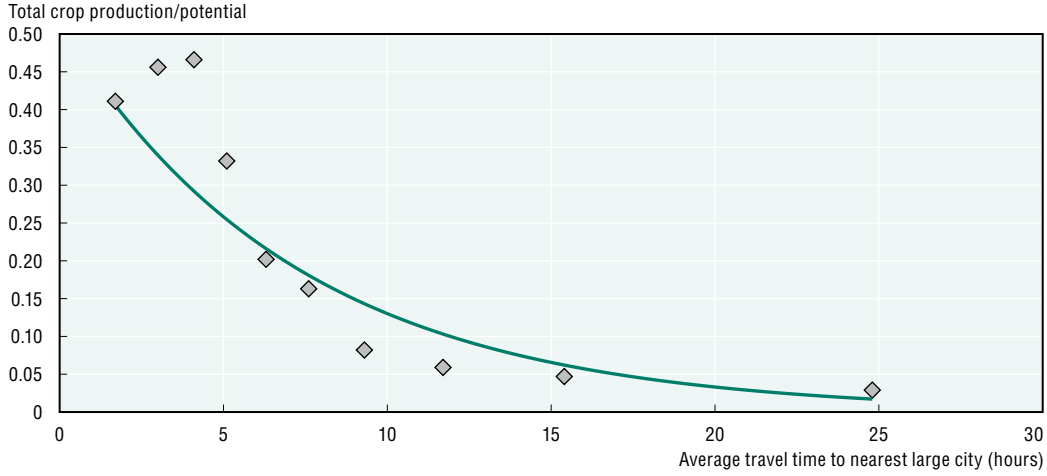
Non-farm activities supported by urbanisation can improve agricultural productivity in four main ways:

1. Income from circular migration and rural non-farm employment is a major purveyor of funds for farm investments.
2. Urbanisation facilitates the development of credit markets and other farm input markets including fertiliser, other farm chemicals, water and machinery, and land rental and purchase/sale markets.
3. Rural workers can buy services from local markets and specialise in their own productions. Specialisation can improve annual labour input per agricultural worker which is an important factor explaining the annual output gap between agricultural and non-agricultural workers. In Ethiopia, Malawi, Tanzania and Uganda, agricultural workers provide 700 working hours a year compared with 1 900 hours a year by non-agricultural workers (Resnick, 2015).
4. Relieving workers from farms increases the land-labour ratio and enables agriculture to adopt modern technologies that are more capital-intensive. In many countries such as the Democratic Republic of the Congo (DRC), Rwanda and Uganda, the availability of arable land is already very low at less than 0.2 hectare per rural worker.

Big and intermediary cities play different roles in the rural transformation

Cities and towns of different sizes play different roles in the transformation process that builds on reciprocal rural-urban linkages. Reardon and Timmer (2014) classify human settlements into three types of zones according to their stage in the transformation. The first, "dynamic, commercial zones", are the large and medium cities and the surrounding areas within their eight- to ten-hour catchments. The second, "intermediate zones", facilitate the rural-urban food supply chains and provide economic pull for rural supply. Their climate and ecological conditions offer medium to high potential for agricultural development, however they have not fulfilled this potential yet. The third, "hinterland, traditional, semi-subsistence zones", are more remote and face much higher ecological and climatic challenges in developing agriculture.

Figure 7.5. **Travel time and crop production in sub-Saharan Africa, 2000**



Note: Each diamond represents travel time deciles based on estimated time to the nearest city with 100 000 or more inhabitants. The line represents an exponential fit of the ten average points. Total crop production/potential measures the ratio of actual crop production (in value terms) to potential crop production (determined by agro-ecology and agronomic characteristics of individual crops and regions).

Source: Dorosh et al. (2012).

StatLink http://dx.doi.org/10.1787/888933350803

Tanzania offers examples of the first two types of zones. Its primary city, Dar es Salaam, is more advanced in retail transformation than two of its secondary cities, Arusha and Mwanza (Ijumba et al., 2015). Large supermarkets and new formats of retail centres often start in Dar es Salaam before gradually expanding to intermediary cities. Nonetheless, secondary cities connected to global markets can play a complementary role to primary cities: Arusha is more advanced than Dar es Salaam in food processing, with more complex product packaging and more companies having larger national coverage. Productivity in farming, logistics and wholesales depends on their proximity to different types of urban centres. Cities that emerge from rural-urban agricultural linkages, such as the peanut basin in Kaolack, Senegal, have a stronger impact on the development of surrounding rural areas than cities growing as enclaves around extractive activities such as mining (Reardon and Timmer, 2014). In addition, improving access to road infrastructure and urban markets could increasingly exploit agricultural potential in the long term. Dorosh et al. (2012) estimate that reducing the travel time to the nearest city of 100 000 inhabitants from 24 to 4 hours increases the ratio of actual to potential crop production by 16 (Figure 7.5). Greater agricultural production also develops the rural non-farm sector in countries at a lower stage of the post-farm food value chain, creating a virtuous circle of agricultural and rural development.

Cities can provide enabling conditions for Africa's industrialisation

Urbanisation can create a demand for industrial products, thereby contributing to structural transformation. Rising incomes shift the household demand towards industrial products, while the middle-class preference for diversity allows value-creation through differentiation. Moreover, mending Africa's infrastructure deficit and building new cities, housing and commercial properties will generate tremendous demand for construction materials and supporting industries. The infrastructure deficit for sub-Saharan Africa alone stands at more than USD 93 billion a year (Foster and Briceño-Garmendia, 2010).

Cities also generate agglomeration economies, which can be classified into three functions: **matching, sharing and learning** (see Chapters 4 and 6; Kayizzi-Mugerwa, Shimeles and Yaméogo, 2014). First, cities can help firms mix and match their unique requirements for labour, material inputs and premises. The concentrated pool of workers and supply industries allows firms to specialise in their comparative advantage and outsource uncompetitive activities. Subcontractors can take advantage of the group of potential customers inside the clusters to scale up their operations.

Second, the larger scales of cities facilitate access to a wider range of shared services and infrastructure. The concentration of users spreads the fixed cost of indivisible goods and facilities such as public mass transportation, skill training centres, universities and machineries. Investments in cities offer surrounding regions better connectivity to national and global customers. Cities provide a diverse range of inputs that enable increasing returns through product specialisation.

Third, cities enable knowledge sharing and the cross-fertilisation of ideas. Proximity facilitates communication and sharing complex ideas among firms, research hubs and related actors through a process of comparing, competing and collaborating. Close contact generates the trust and formation of formal and informal networks of innovation. The innovation-generated productivity gains attract mobile capital and talent to enforce a virtuous circle of endogenous growth.

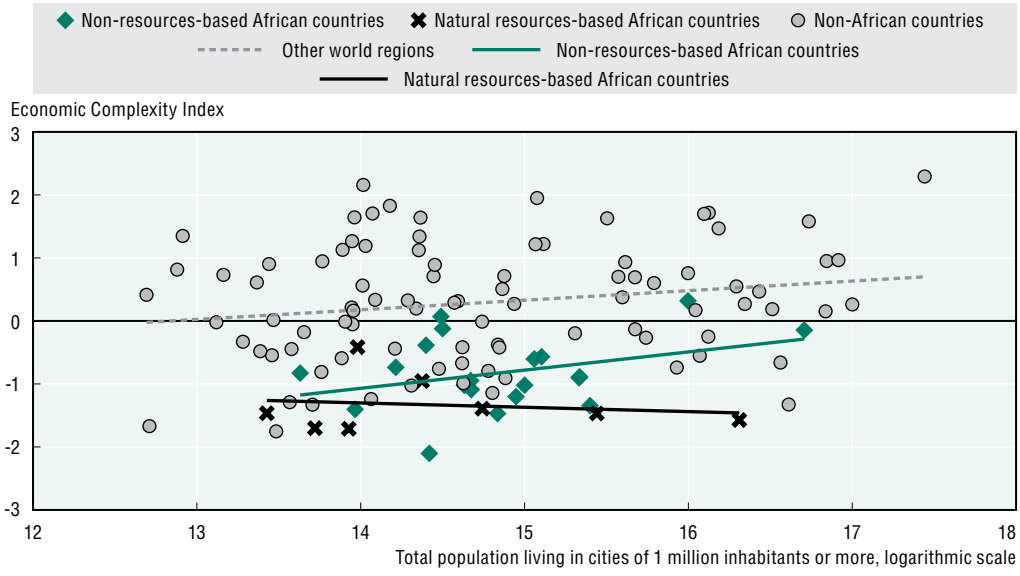
A few empirical studies point to a positive relationship between agglomerations and productivity in Africa. However, robust evidence is scarce because of the dearth of quality data and the difficulty of disentangling agglomeration economies from other economic variables. Most studies find that there is a greater presence of **localisation**

economies from a concentration of firms in the same industry, than **urbanisation economies** stemming from a concentration of firms in various industries:

- Firm-level surveys from Arusha, Dar es Salaam, Mbeya (Tanzania) and Kampala (Uganda), show that increasing the number of firms in the same industry and area by 10% would cut down costs for firms by 0.3-0.4% on average (Iimi, Humphrey and Melibaeva, 2015).
- Using an enterprise census in Ethiopia and controlling for endowment, Siba et al. (2012) find that the entry of each new firm in a cluster increases by 0.91% the total factor productivity of its competing co-locators that produce the same products, but not the total factor productivity of its co-locators producing different products.
- Also in Ethiopia, information sharing enables clustered horticulture farms to achieve a 91% higher sales revenue per worker, a 210% higher value added per worker and a 273% higher gross profit per worker (Mano and Suzuki, 2013). Agglomerated farms frequently share technological knowledge and market information that help improve product quality, deal with diseases and insects, and make decisions based on consumer demands.

Big cities can facilitate innovation and the adoption of new technologies, enabling diversification into new industries and high-tech manufacturing. At a macro level, an economic base with different industries is generally better at absorbing external market risks, such as unpredictable global conditions and fluctuating commodity prices. From a micro perspective, these diversified cities fulfil "nursery" roles by developing new products and trying business processes borrowed from different activities (Duranton and Puga, 2001). This process of trial and error through deductive tinkering adds to the country's know-how and complexity. This can be measured by the Economic Complexity Index for each country through its export basket. For non-resource-based African countries, the size of the population living in cities of at least one million inhabitants correlates with the country's level of economic complexity (Figure 7.6). This pattern is also present for the global sample yet not exhibited in the *resources-based* economies among the five country groups presented in Chapter 6.

Figure 7.6. **Population size of big cities and level of economic complexity, 2013**



Note: The green solid line is the linear fit for non-resources-based African countries. The black solid line is the linear fit for the group of *natural resources-based* African countries. The dotted line is the linear fit for non-African countries.

Source: Population data from UN DESA (2014) and Center for International Development at Harvard University (2016).

StatLink http://dx.doi.org/10.1787/888933350814

By contrast, intermediary cities can specialise in and foster the development of mature industries. Once they have mastered the business processes leading to specialisation, firms switch to mass production and relocate to specialised cities in search of lower production costs. Labour-intensive industries such as textiles thrive in the intermediary cities that offer cheaper labour, land and other inputs for firms and their suppliers.

Cities have supported industrialisation

Cities and urbanisation will play important roles in industrialising Africa. The automobile industry in Durban (South Africa), Casablanca and, more recently, Tangier (Morocco) relies on the skilled-labour pools, available local know-how and interconnected networks among various stakeholders such as universities, research institutions and business associations that epitomise the power of cities. Mauritius' success in textile industries relied heavily on the shipping capacity of Port Louis and on connective infrastructure between the export processing zone and raw cotton producers (Ramdoo, 2014). Similarly, one-third of Tunisia's firms are concentrated in two central business districts – Tunis and Sfax – to take advantage of the close proximity to their consumer base (Ayadi and Mattoussi, 2014). Exporting industries tend to agglomerate in specific provinces, such as textile firms in Monastir, chemical firms in Ben Arous and agro-food firms in Sfax and Nabeul. In most African countries, despite some successes, urbanisation has yet to support industrialisation on a larger scale. Examples abound of cities developing their own manufacturing base, generally in the informal sector, which can export intermediate and consumption goods to other African countries (Box 7.2).

Box 7.2. Intermediate cities can develop their manufacturing base

Several intermediate cities in Africa are developing a manufacturing sector based on trade and the existing informal economy.

- Since the late 1990s, Nigeria's Otigba cluster in Lagos has developed into a sub-regional hub for computer assembly and repairs and for the manufacturing and sales of computer parts.
- Similarly, Nnewi, a city of 750 000 inhabitants in Eastern Nigeria, upgraded from trading imported Japanese automobile spare parts in 1980s to being the manufacturing base of Nigeria's automobile sector. Today, 70% of automobile components used in Nigeria are sourced domestically, mostly from Nnewi.
- In Ghana, the city of Kumasi houses Suame Magazine, a cluster of artisanal workshops for metal engineering and vehicle repairs. As many as 200 000 people work there with complementary skills such as smelting scrap metal, trading automobile parts, fine-tuning truck engines, and retrofitting electronics. To support common challenges faced by firms in the cluster, Suame Magazine Industrial Development Organisation has been working to scale up training and local manufacturing.

Cities provide an entry point for industrialisation policies

Cities provide a possible entry point for efficient policies that can revive manufacturing industries in Africa. The lack of input industries, weak trade logistics, limited access to finance and to industrial land, as well as a dearth of technical and entrepreneurial skills, are often binding constraints to Africa's light manufacturing industries (Dinh et al., 2012). Policies that address them in a co-ordinated manner through "place-based approaches" can exploit synergies, improve accountability and better link governments with the private sector. Cities also provide a testing ground for policy implementation before multiplying to national scales.

Supporting the **clustering of firms** can reduce the per-user cost of programmes such as infrastructure development and allow for spill-overs among enterprises. In 11 African countries, clustering has an overall positive impact on firms' performance (McCormick and Oyelaran-Oyeyinka, 2007). For example, 72% of the clustered firms surveyed felt that clustering enhanced their exposure to different useful ideas and provided them with opportunities to seek common solutions and strategies for shared problems. Subcontracting within the clusters has helped Uganda's fish processing firms to meet European markets' changing standards and trade terms. Firms in the Durban Automotive Cluster co-operated in supplier development, human resource development, logistics and benchmarking. In Tunisia's garment industrial clusters, borrowing and lending tools is common so as to avoid underutilisation of machinery.

In supporting industrial clusters, government action proves more successful when playing a facilitating role rather than a leading role. For example, special economic or exporting zones in Africa are often government-driven initiatives seeking to concentrate investment in one region to jump start export-oriented industries such as automobiles, food processing and textiles. However, notwithstanding the sustained success of Mauritius' early textile and clothing clusters, most have been hampered by various factors, ranging from bad locations to heavy reliance on trade preferences (Farole, 2011). Table 7.1 provides examples of instruments governments can use to support industrial clusters indirectly.

Table 7.1. **Examples of instruments for cluster policies in developing countries**

Labour mobility	*Recruitment of qualified recent graduates*: job fairs, public relations initiatives for the clusters
	Labour mobility among companies and research institutions: direct matching between employers and qualified job-seekers, secondment programmes
	Apprenticeship inside clusters: job and internship information, scholarships for placements, direct matching
Entrepreneurship	*Spinoff formation*: entrepreneurship or business plan competitions
	Venture capital: allocation of venture capital, direct coaching for spinoffs, development of business incubators out of technology centres
Inter-firm co-operation	*Horizontal co-operation among companies*: formation of industry associations or working groups, financial incentive for intra-industry co-operation
	Vertical co-operation among companies: management of co-operation projects, financial support for collaboration, shared use of leading companies' infrastructure, intra-cluster networking events, formation of industry associations
Competition	*Intensive local competition*: public procurement, standardisation and certification, targeted subsidies for exporters
	Competition in the local social hierarchy: entrepreneur awards, social media
Public-private engagement	"*Cafeteria effects*": establishment of technology centres, use of public research infrastructure by industry
	Social networks: field visits and networking events, exchanges or secondments of professionals, collaboration in designing a strategy for a cluster competition

Source: Adapted from Benner (2013).

Infrastructure policies are essential to activating the comparative advantages of all cities. Firms need supportive infrastructure, especially transport and energy, to avoid being spatially trapped inside crowded city centres. In Africa's more diversified economies, automobile sectors have started in primary cities such as Casablanca and Johannesburg. A combination of environmental regulations, spatially targeted investments in physical and soft infrastructure and business networks have enabled mature automobile sectors to shift to secondary cities such as Tangier and Durban. The experience of Thailand has shown that appropriate place-based government intervention can help develop heavy industries and add value to the extraction of natural resources. The country developed petrochemical industries in the Eastern seaboard following the discovery of gas fields in the Siam Gulf.

China's two-pronged strategy provides an example of leveraging the potential of both cities and towns in achieving industrialisation. During the reform period of 1978 to the late 1990s, township- and village-controlled enterprises drove industrialisation and diversification in rural areas, while special economic zones that were allowed to accept foreign direct investment soon became central to China's export-oriented and labour-intensive manufacturing strategy.

African cities can drive service-led growth

Urbanisation creates new opportunities for developing more productive and competitive service hubs that support Africa's structural transformation. First, Africa's service sector already accounts for one-third of total formal employment (ILO, 2014). As shown in Chapter 6, services can absorb low-skilled labour while still enhancing productivity. Second, the growth of service sectors such as tourism indirectly creates jobs in supplier industries. For example, in South Africa, 25% of intermediate inputs into services come from manufacturing (Tregenna, 2008).

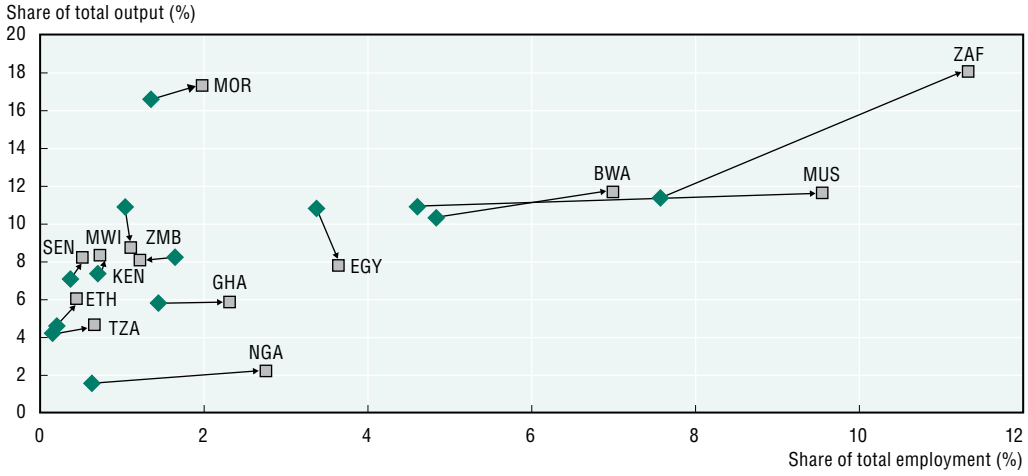
Services also play an increasing role in helping manufacturing firms to access global value chains. Goods and services are intertwined in global production networks. The value created directly and indirectly by services as intermediate inputs represents over 30% of the total value added in manufactured goods (AfDB/OECD/UNDP, 2014; Figure 6.3). Services such as transport, logistics and warehousing, but also banking, insurance, business services, professional services and communication services, play an important role at every stage of the production phase. These services facilitate efficient movements of goods and intermediate inputs across borders to reduce the cost of trade in manufacturing.

African countries have experienced growth in the output share of modern services, which are mostly based in urban areas, albeit at different paces and with uneven job creation effects (Figure 7.7). The five groups of African countries below are divided according to their stages in urbanisation, fertility transition and structural transformation, as explained in Chapter 6 (see Annex 6.A1):

- *Diversifier* countries have the highest output share from modern services such as business, transportation and communication. In 2010, business services accounted for more than 10% of total output in Mauritius, Morocco and South Africa. Mauritius and Egypt have expanded the output of transport, storage and communication sectors to about 15% of the total. Cities such as Cairo and Alexandria (Egypt), Casablanca and Rabat (Morocco), Cape Town and Johannesburg (South Africa), account for more than half the national value added in modern services. Countries such as Mauritius and South Africa have significantly shifted their workers into these highly capital- and skill-intensive sectors.
- Some *natural resources-based countries* also made significant progress in these sectors. Botswana and Nigeria, for example, have expanded their employment share in business services. Surulere in Lagos State (Nigeria) fostered Nollywood, the third biggest cinema cluster in the world.

- In the remaining groups, progress is patchy. A *late urbaniser*, Kenya in particular has significantly developed its services, with large urban centres playing a leading role: Nairobi and Mombasa account for half of the value added in financial and business services and three-quarters of the value added in the transport and ICT sectors. Some *early urbanisers* such as Ghana and Senegal have diversified so quickly into transport and communication that these sectors now account for roughly 15% of total output. However in many *late urbaniser* and most *agrarian* countries such as Ethiopia, Malawi and Tanzania, modern service sectors are still nascent: neither business nor transportation and communication account for more than 10% of output or 3% of employment.

Figure 7.7. **Change in employment and output of business services as a share of the total economy of selected African countries, 2000-10**



Source: Authors' calculations based on Timmer, de Vries and de Vries (2014).
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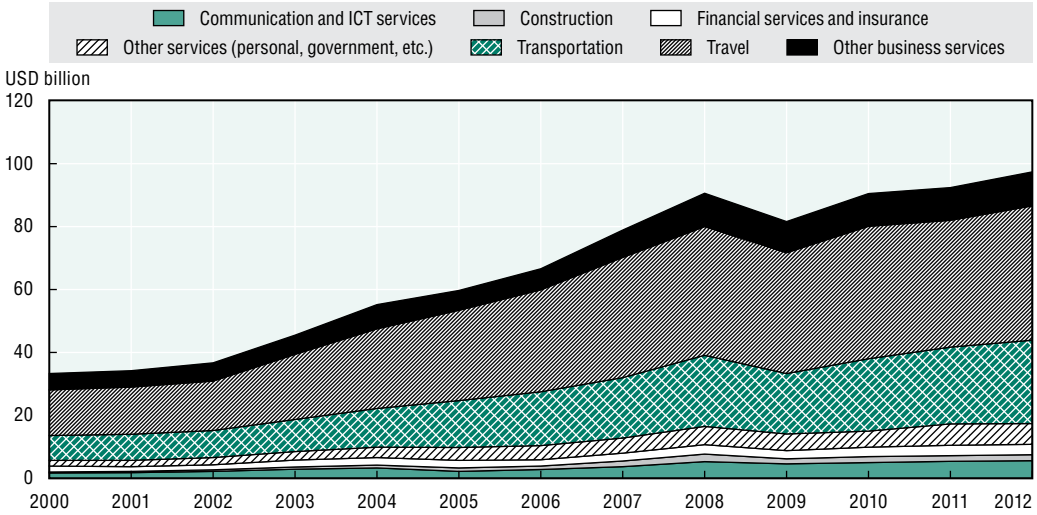
In the longer term, modern, tradable services could significantly absorb more labour without losses in relative productivity. Given the underdeveloped market for modern services in most African countries, lower prices will not necessarily offset production gains in modern service sectors. These sectors are increasingly tradable: global trade in services tripled between 2000 and 2012 with transportation, tourism and business services expanding quickly (Figure 7.8). Africa has only captured 3% of the global trade in services, mostly in the tourism and transportation sectors. It can harness more of this global demand by developing more specialised services and training a skilled labour force. Modern services such as finance and business are more integrated into global value chains, particularly through the trade networks established in Southern Africa with city hubs such as Johannesburg and Gaborone. Furthermore, services are increasingly disaggregated and traded as separate tasks, allowing countries and cities to further specialise in particular segments of the service value chains. Several *diversifier* countries, as well as Nigeria and Kenya, are looking to develop their business process offshoring sub-sectors around established research centres in urban areas.

Figure 7.8. **Service trade in Africa, 2000-12**



Source: Authors' calculations based on data from AfDB/OECD/UNDP (2014).
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In the short and medium terms however, the informal sector should be acknowledged as a source of livelihood. Engaging informal firms through direct procurements or through contracts with enterprises that provide waste, sanitation and water purification services could offer a low-cost solution to improve community welfare. The concentration of people reduces the cost of spatially-targeted investments in education, training and skill-matching; these facilitate the transition of workers into more productive activities. A comprehensive reform package will be necessary to bring these workers under some form of legal protection, ensure minimum wages and non-wage safeguards, train them and match them with jobs for a gradual progression into higher-value, formal work.

Participatory approaches can help integrate informal firms into the urban fabric and facilitate the development of an organised formal urban sector. Appropriate regulations and targeted incentives can enable informal employers to move beyond merely subsisting to saving for and investing in productivity growth. Formal businesses in Africa often have strong links with informal firms to take advantage of their flexibility and market concentration. A participatory approach considering local specificities can be more efficient in engaging informal enterprises into formal processes and mechanisms (see Box 7.3; see also Chapter 4). In Kenya, the second-largest retailer, Tusker Mattresses, is franchising informal retail businesses to penetrate this market (Mulupi, 2016).

Box 7.3. **How participatory local policies can tackle informal street trading**

Informal street trading is often contained by repressive policies because it is generally perceived as an illegal activity overcrowding Africa's city centres. Police forces tend to regularly evict informal street traders by force. However, repressive policies have shown limited success in containing informal traders in the long term. Dakar and Monrovia have used more effective participatory and consultative approaches.

Box 7.3. **How participatory local policies can tackle informal street trading** (cont.)

The city of Dakar is building a commercial centre for former street merchants. From March to April 2011, a local census registered 4 980 street merchants who could participate. They choose their own property developer via the merchants' associations and arrange the new commercial complex according to their needs. The project's overall cost is estimated at XOF 9 million.

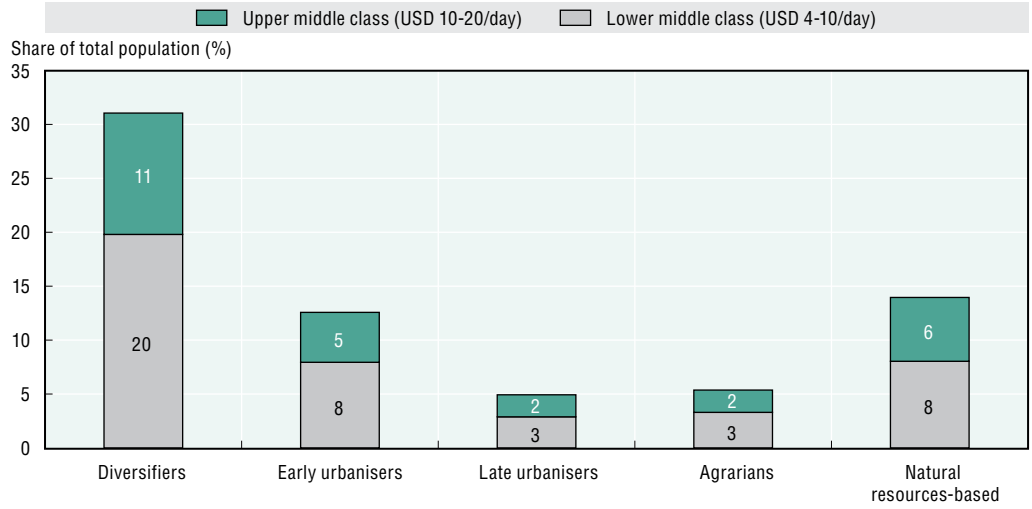
Following negotiations between 2009 and 2011, the National Petty Traders Union of Liberia and the Ministry of Commerce adopted a memorandum of agreement to define a limited trading space on the streets and give rights to petty traders. Petty traders pay fees to the municipality to obtain identification cards and taxes to the ministry to obtain these rights to trade in a designated street. Between the memorandum's adoption in 2011 and 2015, 500 street traders were registered, and conflicts with the police decreased.

Source: Authors' interviews with municipal officers of Dakar and Monrovia, December 2015.

The emerging urban middle class could fuel services growth

The middle class is growing rapidly in Africa, but it has been concentrated in *diversifier* countries (see Figure 7.9).[3] Using the AfDB (2011) definition of the middle class as those with a consumption of USD 4-20 a day in purchasing power parity, a third of the *diversifier* countries' population belongs to the middle class with 11% firmly in the upper middle class in 2008. Elsewhere the middle class is still small: 5% of the population in the *late urbanisers* and *agrarian* countries and roughly 14% in *early urbanisers* and *natural resources-based* countries. Lack of inclusiveness has limited the growth of the urban middle class in *natural resources-based* countries such as Angola, Nigeria and Zambia despite their higher income level.

Figure 7.9. **Share of middle class by income in Africa (%), 2008**



Note: Constant 2005 purchasing power parity USD. Numbers are simple averages, unweighted for population size. Our definition does not include the "floating" middle class, those with consumption of USD 2-4 a day, since this threshold is barely above the poverty line and this group is vulnerable to falling back into poverty.

Source: Authors' calculations based on AfDB (2011).

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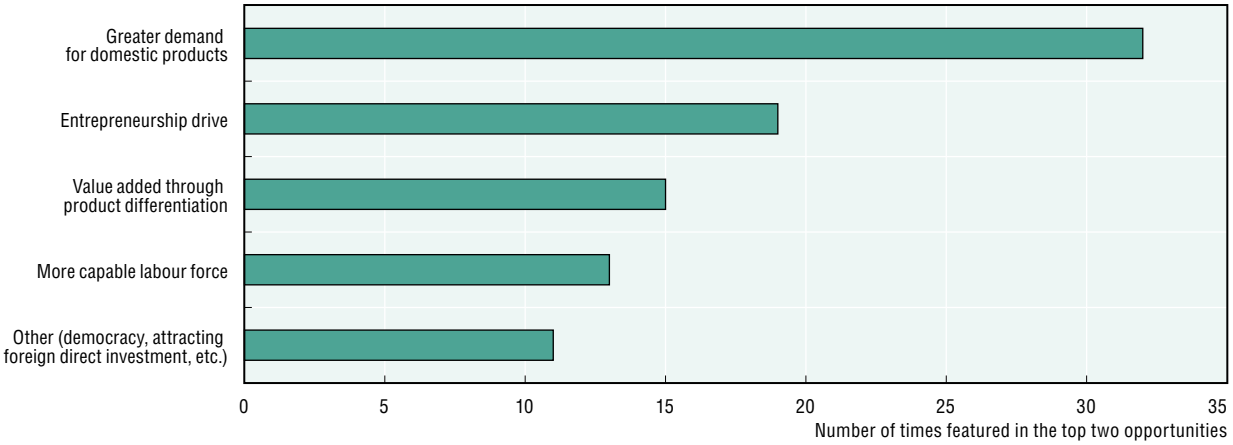
The growth of the urban middle class can boost both supply of and demand for the domestic services sector in Africa.

- First, as they graduate from poverty, the middle class can pursue entrepreneurial activities, creating employment and productivity growth (Acemoglu and Zilibotti, 1997).
- Second, the middle class provides the workforce and resources necessary for entrepreneurs as this group values human capital accumulation and savings (Doepke and Zilibotti, 2007).
- Third, the middle class generates renewed demand for consumer goods, especially durable ones. It has a stronger preference for product differentiation that leads to value added in branding. Consumer spending in Africa could grow from about USD 860 billion in 2008 to USD 1.4 trillion in 2020 (McKinsey Global Institute, 2010).

Growth driven by expansion of the middle class tends to be more sustainable than "export-led" growth (Gill and Kharas, 2007). Our experts' survey shows that this boost in demand is perceived as the biggest opportunity associated with Africa's middle class, followed by their potential as entrepreneurs (Figure 7.10).

Figure 7.10. **Main opportunities associated with the middle class for African countries**



Note: Survey responses by country economists of the AfDB and UNDP in 45 country offices in Africa. Responses are weighted by one per country.

Source: AEO experts' survey, 2016.

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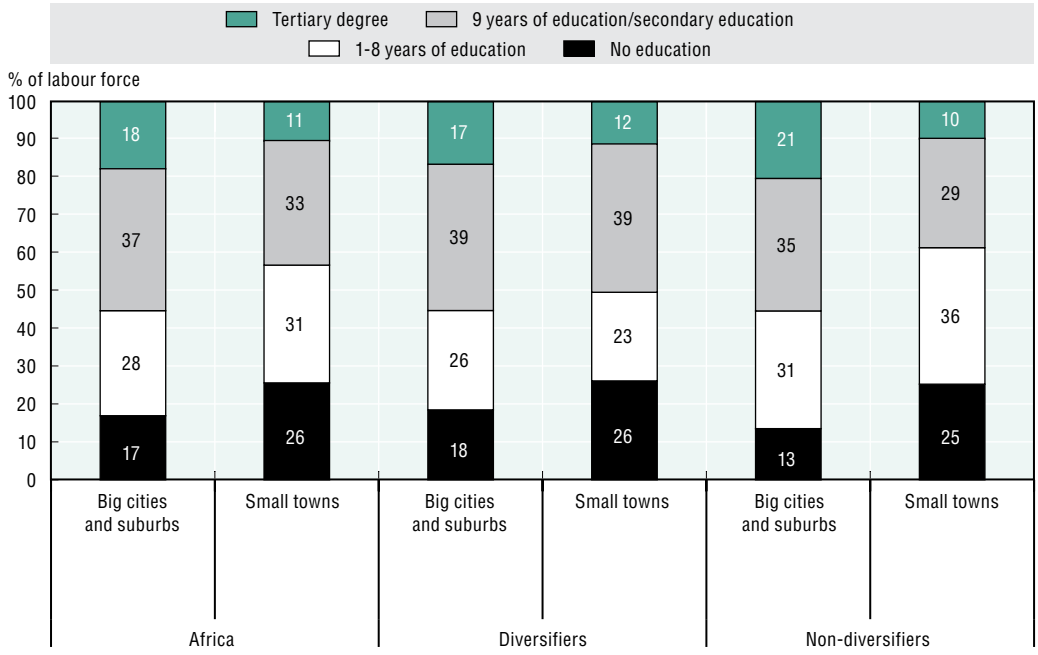
The majority of Africa's middle class resides in urban areas. In Ethiopia, Malawi, Mozambique, Tanzania, Uganda and South Africa, 63% of the middle class with a consumption of USD 4-20 a day resided in urban areas in 2010. Their urban middle class totalled 11.9 million people, or 20% of the urban population, with an annual expenditure of USD 27 billion, or 43% of total urban expenditure (authors' calculations based on Tschirley et al., 2015: Table 4).

Realising the potential of the urban middle class as workers for skill-intensive service sectors requires a continued push for education in urban areas. Overall, Africa's big cities have a higher share of people with tertiary degrees than towns: 18% of the population aged 15 or over in big cities have tertiary degrees as compared to 11% in towns, according to our analysis of the Gallup World Poll (2016). The gap in tertiary degree attainment is more pronounced in *non-diversifier* countries than in *diversifier* countries (Figure 7.11).

Figure 7.11. **Education level of the population aged 15 years or older in Africa, 2009-10**



Note: The *non-diversifiers* include Algeria, Botswana, Burkina Faso, Burundi, Cameroon, Central African Republic, Chad, Democratic Republic of the Congo, Ghana, Côte d'Ivoire, Kenya, Liberia, Libya, Malawi, Mali, Mauritania, Niger, Nigeria, Rwanda, Senegal, Sierra Leone, Somalia, Sudan, Tanzania, Uganda, Zambia and Zimbabwe. The *diversifiers* include Egypt, Morocco, South Africa and Tunisia.

Source: Authors' calculations based on Gallup World Poll (2016) for surveys between 2009 and 2010.

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African cities attract a growing share of foreign direct investment

Foreign direct investment to cities is strategic to develop the necessary urban base in manufacturing and services that could drive Africa's structural transformation. FDI in African cities can be analysed by using data on greenfield FDI, which represents investments where parent firms start entirely new projects and facilities in host countries (see Annex 7.A1). Although Africa has one of the highest regional growth rates of FDI at 2% a year between 2003 and 2014, its volume share of FDI compared to other regions is small. Cairo, Tunis, Tripoli and Algiers are Africa's top global FDI destinations by volume, with Cairo capturing USD 37 billion and Tunis USD 22 billion between 2003 and 2014. The top six cities are Arabic-speaking cities in North Africa, while the Anglophone cities of sub-Saharan Africa rank lower. Johannesburg and Cairo are Africa's prime global cities, one anchoring the south of the continent to the world economy, the other the north. Johannesburg is the first source city of African FDI (71st globally), but ranks seventh as an FDI destination (104th globally). Cairo is second in terms of FDI source and first in terms of destination. With regard to FDI from within Africa, the most popular destinations are Cairo (18%), Luanda (11%), Lagos (10%), Tunis (6%) and Johannesburg (6%). Maps 7.1 and 7.2 show the global FDI networks investing in the main African destination cities for manufacturing and services, respectively (Wall, 2016; forthcoming).

African cities attract higher levels of greenfield foreign direct capital investment than would be expected considering city GDP levels (World Bank, 2015b). Relative to GDP, sub-Saharan African cities featured in the top 10% attractors of greenfield FDI between 2002 and 2012, as often as cities in the East Asia and Pacific region. In Morocco,

Tangiers has utilised national investment in a large new seaport facility and connective infrastructure from the port to the surrounding hinterland to attract a European automobile assembly line. City stakeholders collaborated with the national investment promotion agency and helped set up a dedicated training centre to upgrade the local labour force and address the skill shortage of the automotive sector.

Cities of various sizes can form economies of scale through clustering to attract investors. Regional integration, complementarity and collaboration are essential to improving a city's competiveness. Africa has four major "FDI corridors": i) a North African corridor including Casablanca, Tunis and Tripoli; ii) a Nile corridor including cities like Cairo; iii) a West African corridor including Lagos, Abuja, Abidjan and Accra; and iv) a Gauteng-Maputo corridor which includes cities like Johannesburg, Midrand, Pretoria and emerging Maputo (Wall, 2016; forthcoming). These corridors attract FDI because they are comprised of several primary cities at close proximity to each other and connected through good networks of road, rail and port infrastructure. The West African corridor sees a high concentration of big cities like Lagos, Abuja, Lomé, Accra and Abidjan, which benefit from dense clusters of secondary and tertiary cities and complement each other in a reinforcing urban hierarchy. Finally, each of the four powerful regions depends on globally well-established cities like Johannesburg, Cairo, Casablanca and Lagos to anchor them to the global economy but also on rising investment destinations like Maputo and Kigali.

FDI into urban Africa is both "market seeking" and "resource seeking". Econometric analysis shows that the most significant determinants of FDI in Africa's manufacturing sector are domestic market size and infrastructure (e.g. ports, rail and road) to access natural resources. These two factors explain 28% of variations in FDI attraction to Africa. For comparison, technological readiness is the most powerful explanatory factor of foreign investments in Asia, followed by infrastructure and market size. Hence, the types of technology-sensitive investments that dominate FDI in Asia are not yet present in Africa. Expanding Africa's base in advanced manufacturing may imply further investment into a country's technological absorption capacity, improve the ease of doing business and implement efficient customs regulations.

Foreign investment in Africa's high-tech sector is much more concentrated in fewer highly urban areas than is the case of other sectors (Map 7.3). The quality of infrastructure (road, rail, airports and ports) is the most determinant variable for the production of high-tech goods and for their distribution. The map also shows strong clusters around Nairobi, Johannesburg, Port Elizabeth, the West Africa corridor, North Africa corridor and Cairo corridor (red regions on Map 7.3), and some emergent high-tech clusters for instance between Zimbabwe and Zambia (yellow regions on Map 7.3). Whereas Nairobi is not a hot-spot in terms of total FDI, it receives a significant flow into high-tech industries. This shows that regional strengths can vary strongly across investment sectors (Wall, 2016; forthcoming).

FDI usually brings knowledge and technology to a region, activates the development of local business, and leads to new urban projects, but it does not always directly create many jobs. In 23 African countries, trade and growth are mutually-supportive (Seyoum, Wu and Lin, 2014). However, the growth-enhancing effect of FDI stems from the productivity spill-over to domestic firms rather than from direct employment by FDI firms. The agglomeration economies from industries' locating in a given area are higher in sub-Saharan Africa when domestic firms locate close to foreign multinationals, especially those coming from developing countries from the "Global South" (Sanflippo and Seric, 2014). By contrast, in a sample of 750 cities all over the world, FDI only created

1 400 jobs per city directly, or 0.1% of the employment base, among the FDI-recipient cities in 2012 (Fikri and Zhu, 2015). Among all the jobs directly created by FDI in Africa between 2003 and 2014, 83% were located in cities. Over the same period, FDI in manufacturing is estimated to have directly created over 646 000 jobs, or half the total of FDI-related jobs; FDI in services 281 000 jobs; FDI in high-tech 159 000 jobs; while FDI in resources (or non-urban FDI) created 220 000 jobs (Wall, 2016; forthcoming).

While the success of each investment strategy depends on specific characteristics of the city and country, Zhu, Larrey and Santos (2015) point out a four-step method for city governments: i) identify and communicate the city's value proposition through self-assessment of the city in line with regional and national strategies; ii) build the city's brand and address any negative perceptions; iii) co-ordinate with different institutions and government agencies to provide comparable, credible and timely information to investors, especially on entry requirements into the domestic market while nurturing local partners and networks; and iv) provide targeted incentives to those firms hesitating to invest and foster positive relationships with existing investors.

Urbanisation can help accelerate social development

Urbanisation provides opportunities to accelerate social development in Africa in different ways. First, urbanisation could support inclusive growth and improve material well-being through higher disposable incomes for food, shelter and investment in human capital which enhances one's potential for generating income. Second, agglomeration enables economies of scale in delivering indivisible public goods such as transportation and communication systems. Third, densification creates a web of interconnected community groups and stakeholders in cities which can more easily engage in governmental poverty alleviation programmes, or grassroots social development initiatives. Realising these benefits requires co-ordinated and holistic policies to make structural transformation more inclusive. This section highlights how new urban development policies might do the following:

- improve transportation infrastructure within and between cities to connect people, resources and ideas across regions
- improve housing conditions, income equality and gender equality
- lift vulnerable groups out of urban poverty by providing new social safety nets and public employment programmes
- expand social businesses to better tap the potential of the urban informal economy
- curb urban insecurity.

Better transportation infrastructure within and between cities can connect people, resources and ideas across regions

Transportation policies will have a significant impact on sustainable development. Continuing to develop mass transportation systems, notably public transportation, *within* cities will decrease congestion costs and contribute to more sustainable cities. Better transportation networks *between* cities will strengthen regional linkages.

Mass intra-city transportation systems can foster more inclusive development

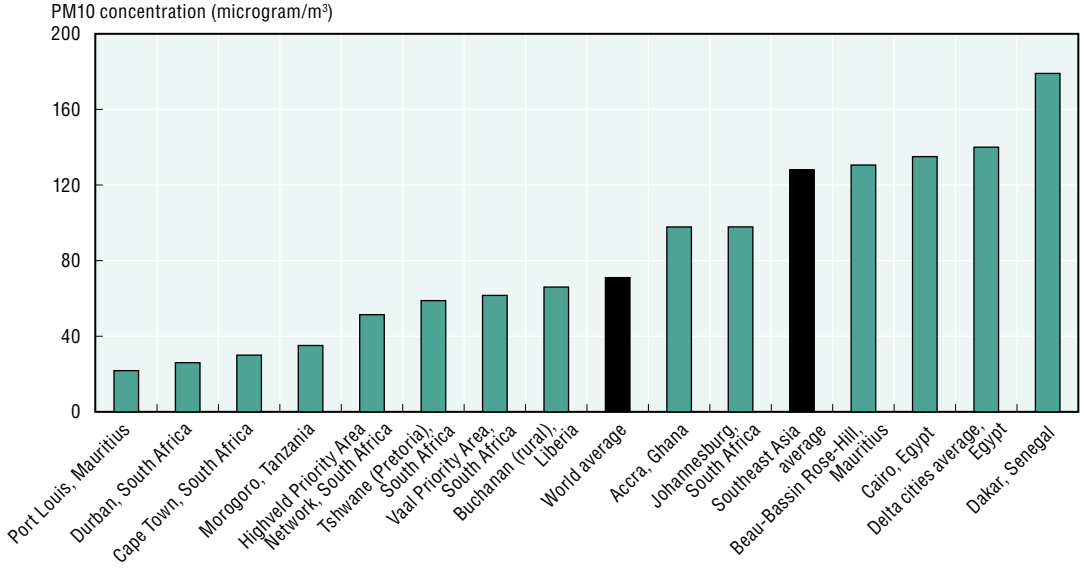
Good transportation increases the efficiency of doing business in the cities. It reduces the costs of moving goods and people and enables "just-in-time" logistic development. Experience from other regions of the world show that reducing the uncertainty of transit time is as important for increasing business efficiency as reducing transportation time.

Better connective networks allow firms to expand their catchment areas and scale up their operations thanks to a larger, more diversified pool of potential customers. Improving connections between city centres and their surrounding areas enables firms to move out of cities centres to scale up operations while reducing congestion costs (McCormick and Oyelaran-Oyeyinka, 2007).

Transportation policies play a major role in connecting the urban poor to jobs. The urban poor usually face a spatial mismatch, such as those residing in the ghettos of Johannesburg's outskirts, for example. Car-oriented transit disproportionately hurts the poor who cannot afford their own vehicles and cannot find jobs within a walkable distance from their homes. An experiment in Addis Ababa showed that reducing transportation costs could increase the intensity of one's job search, decrease participation in temporary and informal work, and increase the likelihood of permanent employment by six percentage points (Franklin, 2015a). In Lagos where transportation costs account for 20% of the urban poor's income, the Bus Rapid Transit system started in 2008 has provided 2 000 direct jobs and 500 000 indirect jobs. The system reduced the cost of public transportation by 30% and offered a more stable price even amid a fuel scarcity.

Transportation policies help curb pollution. A review of 27 African countries reveals that the majority have adopted environment protection acts, and established vehicle fuel parameters, emission standards and air quality controls (SEI, 2012). A substantial improvement has been the phase-out of lead, which started in 2003, and is now essentially completed. However, monitoring and enforcement remains limited: only eight countries have operational routine monitoring systems for air quality. The annual mean concentration of particulate matter smaller than ten microns in diameter (PM10) is higher in many African cities than the average city at global level (Figure 7.12).

Figure 7.12. **Annual mean concentration of particulate matter smaller than ten microns in diameter (PM10) in selected African cities**



Source: WHO (2014).

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Given that the bulk of African transport infrastructure has yet to be built to accommodate the 867 million Africans that will live in urban areas by 2050, African cities can learn from past successes and mistakes. Africa has less than 3% of the world's motor vehicles but more than 11% of global road fatalities (SEI, 2012). Making roads more friendly to non-motorised use can reduce the death and injury costs of traffic accidents. The modernist ideal of car-centric urban planning in the early 20th century has proved to be detrimental to the well-being of urban residents and environmentally unsustainable (Frenchman, 2014; Glaeser, 2012). In OECD countries, the transportation sector contributes to half of total air pollution. Many OECD countries are trying to break the cycle of car dependency and reverse their consequences at great costs. The experiences of Paris and London have shown that constructing more roads will not solve the traffic congestion problem due to the additionally generated vehicle use. Compact cities promoting non-motorised and public transportation can efficiently connect the urban flow of people, goods and ideas at a lower social cost per capita.

Some African cities are developing integrated public transport networks to break the cycle of car dependency and create better connectivity within cities. This model reflects the pursuit of efficient and integrated public transport that improves mobility, inclusivity and access in cities. Table 7.2 lists several initiatives identified in this report's country notes.

Table 7.2. **Mass transportation systems in selected African cities**

Project	Stakeholders	Cost	Development outcome of the project	Price per trip
Addis Abeba Light Rail, Ethiopia 2012-15	Operated by Shenzen metro group and constructed by Ethiopian Railways Cooperation.	USD 475 million (financed 85% by China Railway Engineering Cooperation)	Capacity of 60 000 passengers per hour, total length of 31.6 km for the two lines. The first 17km of rail connect the industrial suburbs south of Addis to the centre. Another east-west line is still under construction, and additional lines are planned.	ETB 2-6 (USD 0.27-0.82)
Lagos Bus Rapid Transit (BRT-Lite), Nigeria Launched in 2008	Run by Lagos Metropolitan Area Transport Authority.	USD 1.7 million per km	Africa's first Bus Rapid Transportation system serves 47 different routes, carries as many as 200 000 passengers per day who pay on average 30% less in fares and spend 40% less time travelling. The transport sector employs 2.5 million people (15% of the city's population). The system relieves congestion in the city and provides more effective public transport at lower cost.	NGN 20 (USD 0.23)
DART System (Bus Rapid Transit), Dar es Salaam/Tanzania Phase 1: 2003-present Phase 2: from 2017	Will be managed in Public Private Partnership with two private bus operators.	USD 290 million for Phase 1 (funded by the World Bank) USD 159.32 million for Phase 2 (funded by AfDB, AGTF and the Government of Tanzania)	Capacity of 495 000 passengers per day. By using cleaner fuels and reducing the roadside concentration of greenhouse gas emissions, it is environmentally efficient.	TZS 500-900 (USD 0.80-1.45)
Rea Vaya Bus Rapid Transit (BRT), Johannesburg, South Africa Phase 1: 2007-09 Phase 2: 2009-12	Financed by Public Transport Infrastructure and Systems Grant (PTIS) by central government.	USD 300 million overall	Used by 45 000 commuters per day. The Employment Framework Agreement (EFA) signed between the city and the taxi industry whose drivers received training was expected to create 700 permanent jobs in Phase 1A and 3 300 temporary jobs during the construction period.	ZAR 3.5-9 (USD 0.64-1.67)
Constantine Tramway, Algeria 2007-13	Setram/Alstom (49%), ETUSA (36%) and the Entreprise du métro d'Alger (15 %), with a second line to be constructed by the French RATP.	DZD 44 billion (line 1) (about USD 400 million)	Capacity of 100 000 passengers per day over 8km for the first line. The extension will serve the new city Ali Mendjeli and the airport.	DZD 40 (USD 1.28)
Casablanca Citadis Tramway, Morocco Phase 1: 2009-12 Phase 2: 2016-18	Moroccan government, local government Alstom, CDG Capital, Banque Populaire du Maroc and King Hassan II Fund.	MAD 6 billion (about USD 400 million)	Provides service to 100 000 passengers a day over 31 km.	MAD 6 (USD 1.68)

Note: Prices are converted into international USD, 2014 prices.
Source: AEO experts' survey, 2016; AEO Country Notes, 2016.

Transportation policies are more efficient when developed in tandem with land-use planning and along urban catchment areas. Angel et al. (2015) recommend that capacity-constrained governments first focus on predicting urban growth, in order to set aside the public space for parklands and establish the arterial grid. An arterial grid of dirt roads allows allocating public space without spending much on infrastructure. The eventual spending can occur later as the city expands and new residents need more services. Involving the peri-urban population and identifying the functional catchment areas of cities help establish more coherent governance structures beyond administrative boundaries.

Better transportation networks between cities can improve regional linkages

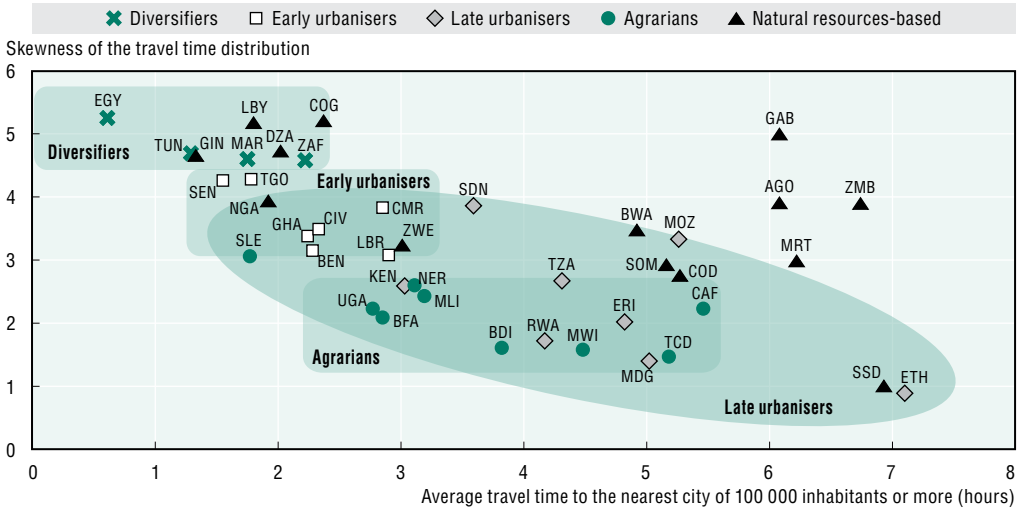
Inter-city transportation holds the key to spatially inclusive urban development (AfDB/OECD/UNDP, 2015). In a study of 15 African countries whose primate city is a port, Storeygard (2013) finds that reducing transport costs by 1% can raise growth in the hinterland city by 0.2%. The effects differ depending on the surface of roads: cities connected to the port by paved roads are chiefly affected by transport costs to the port, while cities connected to the port by unpaved roads are more affected by connections to secondary centres. This suggests that firms in cities not connected to the port may rely more on their rural hinterland and intermediate cities for trade.

Each group of African countries exhibits a different pattern of road networks and connectivity. The accessibility of the road network can be characterised by the distribution of average per-person travel time to the nearest settlement with more than 50 000 people and the skewness of this distribution (Figure 7.13).

- The *diversifier* countries have moderately aggregated populations where 90% of the population live on 20-40% of the land surface. Their more developed networks of cities and good transportation leave a small proportion of the population in inaccessible areas as shown by the low average travel time and high skewness level.
- The transportation network in *early urbaniser* countries slightly lags behind the *diversifiers* as manifested by their lower average and more skewed distribution of travel time to the closest towns of 50 000 inhabitants. They often have a more uniform distribution of the population than countries in other groups. This results from a fairly even distribution of rain-fed areas and a more frequent expansion of agricultural land due to farming crops such as cacao and cotton which lead to spreading out the population.
- *Late urbanisers* and *agrarian countries* have the least developed road networks. Average travel times to the nearest towns and cities are high, at three hours or more, and a large share of the population is located in remote, inaccessible areas.

Governments can increase connectivity between cities and deepen regional integration through development corridors. Corridors link different cities and regional markets through transport, fostering trade exchanges while providing positive externalities to local populations. In a regional context, an urban corridor becomes a line of economic integration. Unlike the colonial **import/export corridors** connecting landlocked countries to the coast which contribute relatively less to intra-regional and inter-cities trade, **development corridors** connect cities of different countries among themselves and with regional trade markets, following coastal, trans-Sahelian or trans-Saharan directions (see Table 7.3).

Figure 7.13. **Average travel time to nearest urban areas and skewness of the distribution in Africa, 2010**



Note: The x-axis represents the average per-person travel time to the nearest settlement with more than 50 000 people and the Y-axis is the skewness (measuring the asymmetry of the probability distribution) of the average per-person travel time. A lower skewness level in this case implies a longer right tail of the distribution, which means more people in the country reside in the remote, inaccessible areas.

Source: Linard et al. (2012).

StatLink http://dx.doi.org/10.1787/888933350885

Table 7.3. **Main corridors in Africa**

Corridor	Passing by	Length
Cairo-Dakar	Cairo – Tripoli – Tunis – Algiers – Rabat – Nouakchott – Dakar	8 636 km
Algiers-Lagos	Algiers – Tamanrasset – Agadez – Tamanrasset – Kano – Lagos	4 504 km
Tripoli-Cape Town	Tripoli – N'Djamena – Kinshasa – Windhoek – Cape Town	10 808 km
Cairo-Cape Town	Cairo – Khartoum – Addis Ababa – Nairobi – Dodoma – Lusaka – Gaborone – Cape Town	10 228 km
Dakar-N'Djamena	Dakar – Bamako – Ouagadougou – Niamey – Kano – N'Djamena	4 496 km
N'Djamena -Djibouti	N'Djamena – Djibouti	4 219 km
Dakar-Lagos	Dakar – Banjul – Bissau – Conakry – Free Town – Monrovia – Abidjan – Accra – Lomé – Cotonou- Lagos	4 010 km
Lagos-Mombasa	Lagos – Yaoundé – Bangui – Kisangani – Kampala-Nairobi – Mombasa	6 259 km
Lobito-Beira	Lobito – Lubumbashi – Lusaka – Harare	3 523 km

Box 7.4. **Urban corridors contribute to West Africa's structural transformation**

The case of the Abidjan Lagos Highway Corridor (ALHC) illustrates the contribution of urban corridors to West Africa's structural transformation. The ALHC links Abidjan (Côte d'Ivoire) to Lagos (Nigeria), passing through Accra (Ghana), Lomé (Togo) and Cotonou (Benin), connecting functional, urban economic areas and building on economic interdependency. This line concentrates 70% of West Africa's regional economy. It is designed to promote the integration of these five national markets and help overcome the size limitations of several of them. Urban corridors provide local populations with simultaneous access to several types of infrastructure and services, such as highways, electricity, water and ICT connections. Connecting the Lagos-Abidjan-Dakar and Tanger-Rabat corridors would open opportunities for accelerating economic expansion from West Africa towards North Africa. Financing a highway between Senegal and Mauritania will complete the South-South co-operation between the Arab Maghreb Union countries and the Economic Community of West African States (ECOWAS). The African Development Bank finances urban corridors such as the ALHC, reinforcing integration between African cities.

By reducing trade costs, cities specialise in niche functions and complementary products. Improved transport and communication can expand the market catchment for firms. Better transportation between cities reduces the transaction cost of sourcing intermediate inputs from specialised cities within a chain. Network analysis of non-resource FDI in African cities reveals that cities can, but do not necessarily, compete with other cities from the same region. More specialised cities tend to attract more FDI, because foreign investors find it more difficult to substitute a specialised city with competitive advantages in a given sector by another investment destination. Reducing trade costs can also strengthen certain cities' positions as "broker gates" of investment in other cities: Johannesburg is the primary broker of all flows into Africa, followed by Nairobi, Lagos and Cairo. These cities offer stock exchanges and infrastructure that can facilitate financial flows into the surrounding regions (Wall, 2016; forthcoming).

Facilitating safe housing is key for urban development

Cities can improve housing conditions, particularly in informal settlements or slums, to ensure more inclusive development (see Chapter 6).[4] Numerous practices of slum upgrading in Africa show that place-based and comprehensive packages of sectoral reforms, financing, job creation, urban governance and empowerment of community groups can overcome the interlinked challenges of informal settlements and vulnerable jobs.

- South Africa's free stand-alone housing programme has shown that access to affordable housing can alleviate house chores for women, reduce household poverty and increase female participation in the labour force (Franklin, 2015b). Increased tenure security has positively increased housing investment in many countries.
- In Nairobi, improved tenure security and basic infrastructure at home creates an "enabling" environment for slum dwellers to pursue entrepreneurial activities which can provide additional income and diversify household livelihoods (Gulyani and Talukdar, 2008).
- On the downside, certain slum upgrading programmes may also have often excluded tenants, subtenants and newly-established occupants who tend to be the most vulnerable. In Nairobi, certain programmes targeting housing inside slums have led to higher property values captured by structure owners rather than aiding low-income tenants (Gulyani and Talukdar, 2008).

A participative and holistic approach can allow policies to be sufficiently flexible and tailored to the needs and capacity of local populations. Local governments and city authorities can play a key role in planning land use more effectively and in mobilising local resources, while co-ordinating with regional and national authorities. Where rental mode dominates the slum housing supply, the government can facilitate the negotiations between tenants and owners and use infrastructure investment and tenure legitimisation as incentives to explicitly enhance owner occupancy in slums (Gulyani and Talukdar, 2008). Participatory slum upgrading has produced impressive results in several cities, for instance in Dar es Salaam since 2004 (Collin, Sandefur and Zeitlin, 2015).

Morocco's Villes sans bidonvilles programme provides a good example of place-based and participatory slum improvements. Between 2000 and 2010, Morocco ranked second globally in achieving 46% of the objectives in slum improvements under Target 11 of the 7th Millennium Development Goal. By the end of March 2010, 154 000 households benefited from a housing unit, including 62 000 households in the 40 centres already declared slum free. The success of the programme relied on the following:

1) actively involving local authorities and holding them accountable through specific contractual frameworks (City Contracts)
2) enabling the private sector to supply the majority of housing
3) increasing affordable housing stock with a goal of 100 000 social housing units and service land plots annually.

The Villes sans bidonvilles programme aimed to build a consensus among all stakeholders in choosing between three types of interventions: on-site re-housing, relocation and *in situ* upgrading. Innovative financial business models attracted private-sector participation, while targeted subsidies alleviated access to finance constraints for the majority of the poor. The programme was financed 40% through the general budget and a tax of USD 12 per tonne of cement, 30% through beneficiary household contributions and the rest through profits from housing sales to upper-income householders and from international donors.

Similarly, Tunisia's slum upgrading policy decreased the prevalence of slums from 24% of the total housing stock in 1975 to 2% in 1994 (World Bank, 2003). The Agence de Réhabilitation et de Rénovation Urbaine (ARRU) introduced a significant amount of formal housing to the market, alongside construction improvements and an increased rate of infrastructure connection. Between 2007 and 2009, ARRU's rehabilitation programme allocated 70% of its budget to infrastructure and public facilities and 30% to small and micro enterprises (UN-Habitat, 2008).

Social safety nets can lift vulnerable groups out of urban poverty

The recent development of social protection schemes in Africa can be extended to urban areas to also benefit the urban poor. Social protection schemes – be they public or private, formal or informal – are intended to lift individuals out of poverty and protect them from the risks of falling back into poverty. In 2015, 40 African countries provided unconditional cash transfer schemes, twice the number in 2010. Social assistance programmes support 15% of all households in extreme poverty, versus 25% in rural areas. These programmes are evolving to respond better to the demands of the growing urban poor, many of whom are extremely poor (Chapter 6).

Burkina Faso, the DRC, Ethiopia, Mali and Tanzania have recently started implementing what the World Bank refers to as a "first generation" of urban social protection programmes. Their common objective is to alleviate poverty and mitigate inequality, while connecting individuals to services, enhancing human capital and promoting economic activity. Achieving effective coverage remains a challenge, however. General subsidy schemes are generally regressive, whereas the benefit levels and targeting methods require adjusting to the higher cost of living in cities. Individuals' high mobility in informal settlements and income fluctuations make it difficult to target beneficiaries. Administrative fragmentation and poor information flows between national and local entities also impede the effective implementation of social protection schemes.

Box 7.5. **South Africa's Expanded Public Work Programme**

South Africa's Expanded Public Work Programme (EPWP) shows that social protection programmes can support urban services and promote economic activity. The EPWP was established principally to employ the large numbers of low-skilled workers structurally excluded from the formal economy. They were initially hired to construct and maintain infrastructure in informal urban settlements. The programme has expanded to include social services and environmental work. It creates more than 1 million short-term jobs per year, at a cost to government of approximately ZAR 30 billion (USD 1.8 billion, or 0.8% of GDP). The average duration of an EPWP job is 70 days, and the daily wage is well below the minimum for formal sector employment but (pro rata) above the level of the most generous monthly social grant. The EPWP interacts with other social protection arrangements. Participants are covered by unemployment insurance and workers' compensation benefits. Although such coverage is globally low in South Africa, it is higher in urban areas than in rural areas: 4.3% vs. 1.9%, respectively. Ensuring such coverage may help sustain the gains in welfare that this first generation of urban social protection schemes hopes to achieve. Social insurance mechanisms should also be consistent despite inevitably irregular and small contributions by precarious workers.

Box 7.5. **South Africa's Expanded Public Work Programme** (cont.)

The EPWP has not made the impact on unemployment that had been expected, however. Its decentralised model – whereby the national government incentivises local administrations to leverage their budgets and employ their own staff – has experienced major challenges in terms of buy-in, reporting and compliance with national guidelines. Moreover, the continuing structural weakness of the formal labour market has caused a high proportion of participants to remain in the programme rather than take up formal employment. However, the innovations piloted by the EPWP, both in terms of programme design and institutional structure, are a benchmark for large-scale programmes elsewhere in Africa and beyond.

Expanding social businesses can help tap the potential of the urban informal economy

African urban dwellers adopt and create new forms of social businesses adapted to their urban realities. Social businesses have long existed in Africa, extending back to traditional systems of mutual support. Unlike traditional businesses, social businesses are not driven by profits but by the mission to provide solutions to social challenges. Nowadays, mutual assistance groups or community enterprises (mainly co-operatives) are widespread in urban areas (Fafchamps and La Ferrara, 2012). Co-operatives offer financial services to underprivileged people. In Kenya, for example, Savings and Credit Cooperative Societies provide alternative to banks for low-income earners. Moreover, the informal economy often relies on digital payment technology. The spread of digital payment systems (e.g. mobile phone-based money transfers such as MPesa in Kenya and Tanzania or Orange Money in Côte d'Ivoire) allows integrating more formal businesses with informal micro-entrepreneurs by providing both greater financial flexibility (working capital, micro-credits, etc.) and more efficient monitoring of transactions. In addition, using digital applications, informal entrepreneurs can manage operations even better by working from a simple smartphone such as Sokotext and Kaymu, which can link urban consumers in informal settlements to local fresh food producers, for instance.

Innovative business models joining formal businesses and informal micro-entrepreneurs are being developed. The Bel Group uses its digital platform Sharing Cities to build on existing networks of street vendors to develop its distribution strategies across Africa. The company partners with many stakeholders, public, private or voluntary, to provide sellers benefits in the form of micro-insurance, micro-credits, vocational training and administrative support to help them formalise their activities. This initiative allows Bel Group to optimise its distribution network while improving the livelihood of sellers and contributing to the gradual formalisation of their businesses (Ménascé, forthcoming).

Social businesses can offer manufacturing and affordable social services. In Agadir (Morocco), more than 7 000 women work in some 150 co-operatives that produce beauty products using oil from the region's argan trees. The 60 women workers receive 100% of the profits, and the co-operative carries out actions to improve living standards in rural and urban Morocco. South Africa's International Centre for Eyecare Education provides eye care products at a price affordable for the poor.

Some African countries are already implementing concrete policies to support the development of social businesses. For example, in 2014, the Malian government adopted the National Policy for the Promotion of the Social Economy and the Action Plan for

2014-2018. The policy includes simplification of the legislation, support to existing social enterprises networks and better access to credit for social enterprises. South Africa's New Growth Path framework of 2011 explicitly recognised the role of the social economy in creating sustainable jobs while the Preferential Procurement Regulations reaffirmed that engagement with disadvantaged South Africans was a key criterion for winning public sector procurement (Littlewood and Holt, 2015). Common strategies to help develop social businesses across Africa and on other continents include these:

- promote appropriate legal frameworks that simplify the institutionalisation of informal initiatives (e.g. allow co-operatives to operate in different sectors)
- facilitate access to finance for social businesses
- provide financial support directly to social businesses based on their needs
- increase awareness about social entrepreneurship through training programmes, research and communication strategies
- support existing networks that promote social entrepreneurship and foster their development.

Holistic and integrated strategies can promote urban security

The multi-faceted nature of violence and crime requires an integrated and holistic strategy. The Lagos State Security Trust Fund launched in 2007 has managed to reduce the levels of insecurity and perceptions of crime problems (UNODC, 2011: 19). The initiative aims for broader community response by fostering effective and enduring public-private partnerships at all stages. Its multi-faceted strategies have included job creation, improved social services, redevelopment of public spaces and the building of a culture of prevention rather than repression. Similarly, the Safer Cities Programme by UN-Habitat combines crime prevention, the establishment of ward tribunals, neighbourhood watch initiatives, employment creation and skills training for youth, and safety audits for women.

Urban projects successfully providing public goods and safety highlight the importance of community involvement. Municipal actors and local communities such as neighbourhood watch organisations, women's associations and religious organisations are influential in urban Africa (Kilcullen, Mills and Trott, 2015). Women's safety audits have been experimented in Durban, Dar es Salaam, Nairobi and Abidjan. They have permitted women to identify safe spaces and make recommendations based on lighting, signage, isolation, movement predictors, maintenance and overall design. In Lagos, the Makako floating school project relied on community involvement. The Lagos State Ministry of Physical Planning and Urban Development is incorporating the school into a regeneration plan for the entire Makoko slum.

Tailored policies responding to the specificities of local contexts through multi-partnerships can prove efficient. In the Western Cape province, the Community Safety Improvement Partnership programme has organised Policing Needs and Priorities meetings in 150 police stations to define local priorities and needs. The Chrysalis Youth Development Programme trained more than 1 450 young people in the safety and security sectors between 2012 and 2015 (ISS, 2015). These programmes reveal extensive interaction between the public and private sectors within the public security sphere (Abrahamsen and Williams, 2008: 547).

Africa's urbanisation can contribute to environmental development

Urban areas can facilitate the efficient use of environmental resources through sharing land, other natural resources, goods and services. For example, cities endowed with efficient mass transportation systems reduce per capita pollution more substantially than less densely populated places that rely on individual motorised transportation (Glaeser, 2012). Moreover, sustainable cities show potential for shifting to greener methods of production, because they bring larger economies of scale: "urban green growth is fostering economic growth and development through urban activities that reduce environmental impact, for example low air pollution and CO_2 emissions; low consumption of natural resources including water, energy and undeveloped land; and the protection of ecological services" (OECD, 2013b: 9).

Tackling urban environmental challenges is strategic for Africa's sustainable development. The stakes may be even higher for Africa than for other world regions (see Chapters 4 and 6).

- Because it is still urbanising, Africa can reap huge benefits by leap-frogging to a green economy. For instance, two-thirds of urban investments are to be made between now and 2050. Making investments in "no regret" urban infrastructure and planning urban development are necessary. Today's technologies provide additional momentum for a new ecological model of service delivery in African urban areas, thus shaping more sustainable cities (Cartwright, 2015).
- The costs of environmental degradation are high in Africa given the continent's levels of human development (see Chapter 6; Roy, forthcoming). Ignoring the already high costs of air pollution – in terms of both public health and economic cost – will act as a binding constraint on sustainable development. The environmental impact of local urban development goes beyond administrative boundaries to reach peri-urban and rural areas. Further, Africa is more vulnerable to climate change than other world regions, although it does not contribute much to this global challenge.

Urbanisation is an opportunity to address climate change more efficiently by developing more sustainable cities. Urbanisation gives governments the chance to use and manage natural resources more sustainably, to sustainably manage waste, to create green jobs for the low-skilled population, to improve public health through better access to safe water and sanitation, and to minimise the rising costs of air pollution.

Policy makers can play an important role in making structural transformation more sustainable. Table 7.4 presents some examples of activities in various urban sectors that can reduce their environmental impact.

Table 7.4. **Urban activities that can reduce cities' environmental impact**

Sector	Activities
Land-use planning	Zoning that allows for a mix of land uses so as to reduce travel distances between home, work and other activities Tax reform to encourage the development of underused lands in urban cores and to discourage urbanisation of underdeveloped land on the urban fringe
Transport	Expansion of and/or improvements to public transport Physical improvements to encourage walking and cycling Fees for personal vehicle travel (e.g. congestion charges)
Buildings	Retrofitting of existing building stock to increase energy efficiency Minimum energy efficiency standards for new buildings
Energy	Installation of distributed renewable energy generation (e.g. solar panels) District heating and cooling systems Fees that discourage peak energy use
Waste	Recycling of household and industrial waste Waste-to-energy and landfill methane-to-energy systems Fees that discourage waste generation
Water	Fees that encourage water conservation Governance mechanisms to improve efficiency of water delivery

Source: OECD (2013b).

Where city-level data is scarce, material flow analysis and data scaling from national to city levels can be used to identify different types of African cities according to their energy consumption, as depicted in Table 7.5. This approach can inform the growth of cities and the management of resource consumption through better energy efficiency, material cycling, waste management and more sustainable infrastructure in urban systems. A sustainable urban metabolism can be defined as an urban system restoring biodiversity, reducing carbon emissions to a minimum of two tonnes of CO_2 per capita and improving resources efficiency, so that on average city dwellers consume approximately eight tonnes per capita (Swilling, 2015: 4). Resource consumption by cities is a result as well as a driver of the urban economy. Accounting for urban consumption of resources, identifying the mechanisms behind their mobilisation, and measuring the intensity and efficiency of urban consumption patterns can help better understand the potential for urban resource efficiency and sustainability.

Table 7.5. **Classification of African cities based on socio-metabolic transition**

Group 1 Resource-poor cities	Low consumption of all materials except biomass and water. This suggests limited industry and low income and that the city is growing fast.	Kinshasa, Kigali, Antananarivo, Lagos, Ouagadougou, Niamey, Port Harcourt, Bujumbura, Bangui, N'Djamena and Addis Ababa
Group 2 Cities in transition	Medium consumption of biomass, water, electricity, construction materials and fossil fuels.	Pointe-Noire, Luanda, Kampala, Douala, Libreville, Mombasa, Nairobi, Harare, Lusaka, Maputo, Dar es Salaam, Abidjan, Accra and Kumasi
Group 3 Resource-sufficient cities	Medium or high consumption of biomass, electricity, fossil fuels and construction materials.	Algiers, Constantine, Alexandria, Cairo, Casablanca, Cape Town, Johannesburg, Malabo, Tunis, Marrakesh and Durban

Source: Swilling (2015).

Renewable energy can help fill the energy gap

Investment in green energy can help solve Africa's challenge of synchronising economic and environmental development. It would relieve firms of their energy constraints while avoiding repeating other regions' experiences of rising household and ambient air pollution.

Increasing access to electricity is a chance to invest in renewable resources

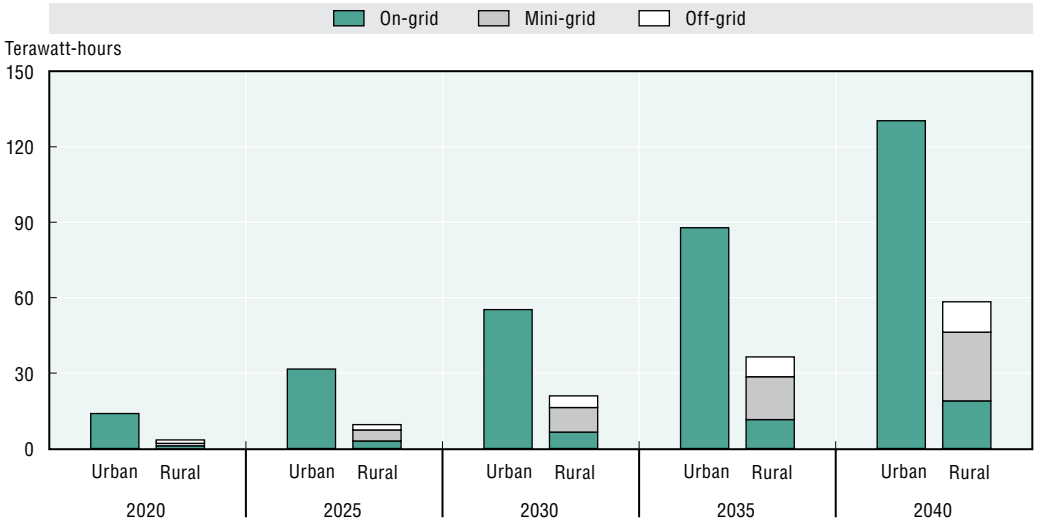
Tackling the energy challenge, especially in urban areas, can improve the performance of African firms. Inadequate or unreliable access to electricity remains one of the biggest binding constraints on economic development:

- Power outages are considered one of the biggest obstacles faced by firms. In sub-Saharan Africa, 49% of small and medium-sized enterprises consider electricity as a major constraint. The manufacturing sector experiences power outage 56 days per year on average. Investing in generators costs three times the price of purchasing electricity from the public grid.
- Unreliable electricity is one of the main reasons preventing firms from growing bigger. In the informal sector, power outages cause up to 16% loss of sales revenues compared to 6% in the formal sector. Outages also discourage start-ups as they lack capital to invest in generators.
- Lack of access to electricity also leads banks to decline loans because it increases firms' economic risks.

Bridging the energy gap is easier in urban areas than in rural ones. In its *Africa Energy Outlook*, the International Energy Agency (IEA) has developed a "central scenario" to meet Africa's electricity demand. In that scenario, two-thirds of the population gaining access would live in urban areas and be connected to a main grid. Figure 7.14 shows that this increase in electricity access would add around 190 terawatt-hours (TWh) to total

power consumption in 2040, mainly through urban on-grid access. Currently, around two-thirds of sub-Saharan Africa's population, or 635 million people, do not have access to electricity. Over a third of the area's urban population lacks access to electricity, compared to less than 5% in developing Asia or Latin America. Sub-Saharan Africa's electricity demand per capita averages 400 kWh, 75% below developing Asia and less than the electricity needed to power one 50-watt light bulb continuously for a year.

Figure 7.14. **Projected electricity demand from the sub-Saharan African population gaining access to electricity, 2020-40**



Note: These projections correspond to the "New Policies Scenario" of the IEA (2014).
Source: IEA (2014).
StatLink http://dx.doi.org/10.1787/888933350896

The IEA estimates that **increasing the electrification rate in sub-Saharan Africa from around 30% today to 70% in 2040 would cost USD 205 billion in capital investment**. This sum is less than one-fifth of total power sector investment in the region. Achieving this level of investment requires steadily improving the investment conditions for electricity access-related projects, while rapidly improving capacity and effective co-ordination among the various actors involved. Clarity and consultation over the pace of grid extension allows the stakeholders, including local communities, to make an informed assessment of the best options for expanding access. Donor programmes likewise need to be managed carefully, both to ensure that the beneficiaries are fully involved from the outset, not least to guarantee adequate and on-going maintenance, and to avoid undercutting fledgling commercial energy providers.

Renewable energy sources in Africa are mainly wind and solar (IRENA, 2015), though hydropower and geothermal sources also show potential to supply sustainable cities with renewable energy.

- Africa could potentially generate 460 petawatt hours (PWh) annually through wind energy. Wind energy is currently the lowest cost source of electricity available and generated a 2 462-megawatt (MW) capacity at the end of 2014. Installed wind power capacity in Africa is likely to rise to 75-86 gigawatts (GW) by 2030 (GWEC, 2014). Morocco has the largest wind network. South Africa's Cookhouse wind farm is the continent's largest, with 66 turbines generating 138 MW of clean power.

- For solar energy, Africa has the potential to generate 1 130 PWh per year through photovoltaic and concentrated solar power technology. Africa's cumulative installed capacity in 2014 was 1 334 MW, with South Africa leading the growth. In poorer countries such as Mali, more than 7 926 solar photovoltaic home systems and 500 institutional systems have been built.
- Other sources of renewable energy also show great potential. Hydropower plant projects with a combined new capacity of 17 GW are under construction on the continent. The Grand Inga project on the Congo River envisages the installation of 40 GW of hydro-generating capacity. Africa has installed 606 MW of geothermal capacity, of which 579 MW in Kenya. For biofuel sources, the potential is substantial especially in the countries along the Equator, yet their capacity will have to balance with concerns of food security and demographic growth.

Each African country needs tailored policies for renewable energy that tap its own potential. Countries can also benefit from connecting to regional power pools to diversify and share the generation capacity through deeper regional integration, better interconnection and information exchange. Table 7.6 shows illustrations of sustainable energy projects in Cape Town.

Table 7.6. **Sustainable energy projects in Cape Town, South Africa**

Project, location and timeframe	Stakeholders	Development outcome of the project
Western Cape Industrial Symbiosis Programme, launched in 2013	Funded by Western Cape Government Department of Economic Development and Tourism, delivered by GreenCape.	The Green Economy initiatives of the Western Cape Government connect local industries using each other's by-products. Impact estimates (2013/14) show an additional ZAR 2.1 million in sales, ZAR 100 000 in private investments, cost savings of ZAR 1.5 million, 23 tonnes of landfill diversion and savings of 1 820 megawatt hours (MWh) per year in energy.
IShak, 1994-2010	Initial funding by the South African government's Green Fund providing ZAR 17 million. Initiated by the Sustainability Institute Innovation Lab.	This community-based infrastructure initiative around solar electricity utility serves at least 1 500 end users. Residents living in the Enkanini informal settlement (in Stellenbosch) are offered electricity service on a commercial but subsidised basis. Revenues from fees plus a free basic electricity subsidy cover long-term running costs of the service.

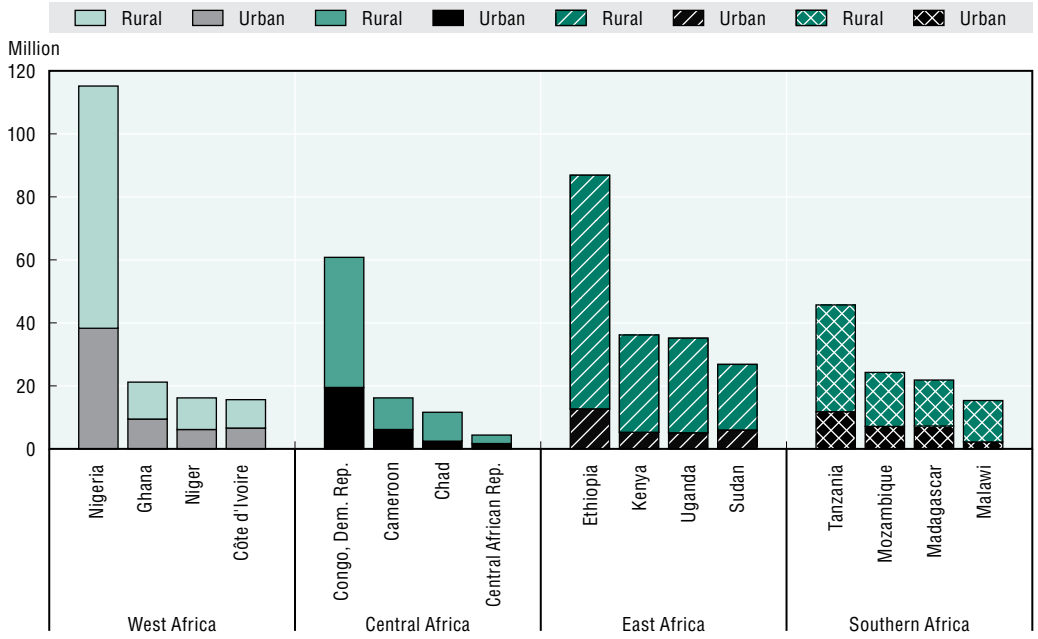
Source: AEO experts' survey, 2016; Cartwright (2015).

By combining policies that target renewable energy and small manufacturing firms, African countries can stimulate private employment creation. Renewable energy uses up to ten times the labour intensity of traditional energy (Cartwright, 2015). In addition, smaller firms and particularly manufacturing ones show the highest annual employment growth. Africa could use a wide range of technologies to avoid lock-in to unsustainable and inefficient types of energy. For example, mobile phone data can be used for electrification planning, allowing local governments to provide electricity to areas with scarce information on energy consumption.

Targeted policies can increase access to clean cooking, particularly in urban areas

Household air pollution, mostly stemming from the traditional use of solid biomass for cooking, costs Africa USD 232 billion in premature death tolls in 2013 (Roy, forthcoming). Some 755 million people in sub-Saharan Africa, 200 million of whom live in urban areas, rely on fuelwood and charcoal for cooking, typically with inefficient stoves in poorly ventilated spaces. Even when people have access to modern fuels in cities, such as liquefied petroleum gas (LPG), natural gas, biogas or electricity, they may also continue to use solid biomass, a phenomenon known as "fuel stacking". Within urban areas, charcoal is a popular fuel choice as it offers higher energy content per weight than wood, making it easier to transport, store and distribute. Policies and effective regulation of the charcoal market will increase the share of more efficient kilns. Figure 7.15 shows the urban and rural populations who rely on solid biomass for cooking.

Figure 7.15. **African populations relying on solid biomass for cooking, 2012**



Source: IEA (2014).

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In the *Africa Energy Outlook's* "central scenario", the investments for access to clean cooking in sub-Saharan Africa will reach USD 9.5 billion over the period to 2040. These investments are largely made in urban areas where households mainly switch to LPG. Policies play a major role in households' decisions to spend a portion of their incremental income on cleaner cooking facilities, which they generally would not consider. Among the regional initiatives in place, ECOWAS initiated a programme in 2012 called the *West African Clean Cooking Alliance*. It aims to ensure that by 2030 the entire ECOWAS population has access to modern cooking fuels and devices. Kenya has plans to eliminate kerosene use in households by 2022 and has a relatively developed market for improved biomass cook stoves in urban areas. In Senegal, incentives have supported LPG use, and less than 25% of the urban population now uses solid biomass.

Multisectoral and co-ordinated policies can mitigate the rising cost of air pollution

Removing coal and petroleum subsidies could create large welfare gains. Phasing out energy subsidies would account for more than a 50% welfare gain in Africa and at least a 50% reduction in deaths from air pollution (Coady et al., 2015: Figure 12). Furthermore, Africa's *diversifier* countries may consider implementing transport-related mitigation measures already tested in OECD countries, such as road-user pricing or subsidies for company-car usage, and adapt them to the local context (Harding, 2014; Roy, 2014).

Low oil prices provide an opportunity for African countries to gradually phase out costly fossil fuel subsidies. Fossil fuels cost African governments 5.5% of GDP in 2015, including 1.8% of GDP to cover the difference between the final energy price and the actual cost of fossil fuels. However, a gradual approach may be desirable, given the size of the required price increases and uncertainty about the optimum level of taxes. A slow increase would allow time for households and firms to adjust and for governments to further refine estimates and implement measures to protect the poor. The funds

released from phasing out the subsidies can be used for targeted social protection to ensure the welfare of those most affected by a price hike.

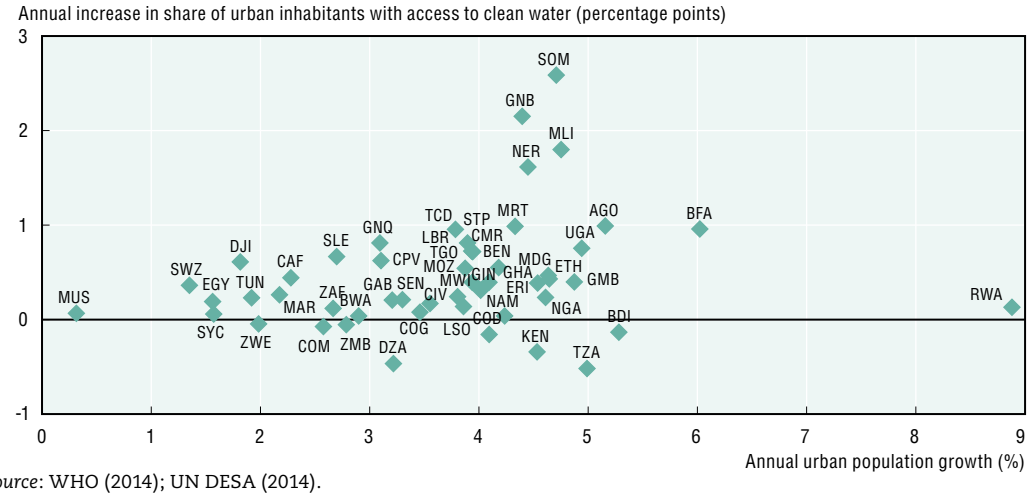
The need to mitigate Africa's main environmental risks is obvious. Household air pollution (HAP) is Africa's most significant environmental problem, followed by unsafe water and unsafe sanitation. Opportunities lie in comprehensive programmes of public investment in urban improvements, simultaneously tackling these problems, along with APMP as part of a comprehensive urban policy agenda. The cost for Africa of these four environmental risk factors was USD 850 billion in 2013 and is heading towards USD 1 trillion in the near future. A cost-benefit analysis must be performed and peer-to-peer learning applied in regard to "old-style" environmental problems, such as unsafe water and household air pollution, which advanced and emerging economies have largely eliminated. But new environmental risks, such as APMP, should not be ignored because their costs are rising (see Chapter 6).

The world has an interest in helping Africa reduce its air pollution. "Local" air pollution is also a transnational and indeed a global problem that requires international co-ordination. For example, black carbon is an important greenhouse pollutant; it is a product of open wood fires and of "the exhaust pipes of unsophisticated diesel vehicles" (Roy, forthcoming). As Africa's population will increase to approximately 40% of the world's population in 2100, its air pollution could significantly contribute to climate change.

Better access to safe water and sanitation in urban areas significantly improves public health

232 million more urban residents in Africa have access to improved water in 2014 than in 1990, and 128 million urban residents more have gained access to sanitation over the same period. Countries that have made the most significant progress are those starting from a lower base such as Guinea-Bissau, Mali, and Niger where less than two-thirds of the urban population had access to water in 1990. By 2015, these countries have increased the share by at least 40 percentage points. Other countries are catching up albeit at slower pace. Angola, Cabo Verde, Central African Republic, Mauritania, and Tanzania have successfully increased the rates of urban access to improved sanitation by more than 20 percentage points during this period. In contrast, urban access to water, sanitation and hygiene (WASH) services delivery has deteriorated in several countries during the same period as in Algeria, the DRC and Sudan.

Figure 7.16. **Access to improved water in urban areas and urban population growth in Africa, 1990-2015**



Source: WHO (2014); UN DESA (2014).

StatLink http://dx.doi.org/10.1787/888933350912

Policies in several countries have successfully increased urban access to improved water and sanitation despite strong urban population growth. In Mali, the share of population with access to improved water has increased from 53% in 1990 to 97% in 2015 even if the urban population has increased by 5% a year during the same period (Figure 7.16). The combination of decentralisation and public-private partnerships has enabled the urban water service sector to operate more efficiently than other utilities in West Africa (USAID, 2010a). Water service management is decentralised to about 700 administrative districts or communal councils, while a semi-private firm, *Energie du Mali SA*, holds concessional contracts to provide service and expand coverage to 16 urban areas including Bamako.

Box 7.6. **Decentralisation for improved water supply and sanitation performance in Angola**

In Angola, infrastructure investments in the water supply and sanitation sector as well as decentralisation of service delivery have significantly transformed the sector. Service delivery was decentralised to autonomous or commercial provincial water and sanitation utilities with technical assistance from the central government. As a result, between 1990 and 2015 urban access to an "improved water source" increased from 52% to 75%, and urban access to improved sanitation increased from 65% to 89%.

Source: USAID (2010b).

Good management of urban wetlands leads to flood control, storage and purification of water and preserves biodiversity

Urban expansion requires sustainable management of ecosystems surrounding urban areas, and the case of wetlands shows their value is often ignored. The International Water Management Institute estimates total value of wetland services in Africa at USD 25 billion a year (McCartney et al., 2010). While significant, this is far less than the USD 70 billion for Asia, showing potential for greater returns. Wetlands and mangrove forests buffer coastlines against storms, ocean surges and sea-level rises, serve as spawning grounds for fish, and allow for activities such as beekeeping, carbon sequestration, fisheries, aquaculture, fuelwood harvesting, ecotourism, research and education.[5] Table 7.7 shows a variety of ecosystem services from wetlands with African case studies.

Table 7.7. **Typology of ecosystem services from wetlands**

Services	Ecosystem service	Example
Supporting	Nutrient cycling	The swamps of Kampala's Lutembe Bay filter silt, sediment and excess nutrients from surface run-off, sewage and industrial waste.
	Biodiversity	Zambia wetlands support over 400 bird species and 120 fish.
	Primary production	Photosynthesis takes place in aquatic plants and wetland vegetation.
	Recharging aquifers	Standing wetlands are a key resource for water cycles.
Provisioning	Capture of species	Urban and peri-urban fishing includes fish from freshwaters. The African inland catch exceeds 2.5 million tonnes per year.
	Collection of plant foods	Palm species are collected for food in the Okavango Delta.
	Collection of materials	Papyrus is harvested to make mats and baskets in Uganda.
	Livestock grazing	Over a million goats graze the Inner Delta of the Niger River.
	Crop growing	Rich peat soils support productive agriculture.
	Energy source	Papyrus is compacted into fuel briquettes in Rwanda.
	Timber from wetland forests	Fuelwood and building timber is also collected from mangroves and riparian forests.
	Medicines	Freshwater plant species are used as medicine in Tanzania.
	Freshwater resources	Many African cities draw their drinking water from nearby wetlands, rivers and lakes.
Regulating	Flooding	Wetlands absorb floodwater.
	Storm protection	Mangroves and coastal forests help to buffer cities against storms and ocean surges.

Table 7.7. **Typology of ecosystem services from wetlands** (cont.)

Services	Ecosystem service	Example
	Carbon sequestration	Wetlands and particularly peatlands are major carbon stores.
	Climate stabilisation	Evaporation from major lakes helps to reduce climatic extremes and stabilise temperatures.
	Water purification	Wetlands help to neutralise various pollutants entering the water system from cities and agriculture.
Cultural	Recreational	Wetlands can be a tourist attraction. The Okavango Delta brings 120 000 tourists a year, creating jobs for 600 guides.
	Spiritual	Many wetlands have local sacred values; Lake Fundudzi in South Africa is believed to be the home of ancestral spirits.

Source: Prepared by the WWF for this edition of the *African Economic Outlook*.

Unplanned urban expansion can endanger wetlands' ecosystems. When wetlands are degraded or destroyed, the associated ecosystem services are lost, for instance in the Sierra Leone River estuary and Haramous-Loyada in Djibouti. Urban expansion around Lagos, Nigeria, caused losses of wetlands in four local government areas of 38-100% between 1986 and 2006 (Adelekan, 2009). Map 7.4 highlights the four cities which are likely to see their urban expansion taking place on the watersheds that supply them with fresh water, possibly reducing their water provisions.

But planned management can help to reverse losses. Fish catch from Lake Malawi tripled after part of the lake was protected and stocks were allowed time to recover (Drill, 2008).

Waste management is an opportunity for sustainable development

Waste management can generate valuable resources and be a source of energy and jobs for more sustainable cities. Recycling can limit the demand for virgin material and products from extractive industries. Waste, methane collected from landfills and bio digesters can produce heat, electricity and other sources of energy. Landfill gas projects can reduce methane emissions from municipal solid waste landfills by capturing 60-90% of carbon emissions (Agbelie, Bawakyillenuo and Lemaire, 2015). In Kampala, where 40% of the residents have their waste collected, community involvement in solid-waste collection and recycling has prevented drain blockages, flooding and contamination of Lake Victoria (Cartwright, 2015: 22). Table 7.8 provides illustrations of projects led by different types of stakeholders in selected African countries.

Table 7.8. **Sustainable waste management projects in Africa**

Project, location and timeframe	Stakeholders	Development outcome
Recycling factories, 2008-present. Viana (Luanda) and Lobito (Benguela), Angola	Moncartel/Neuerth Group	The Portuguese group Moncartel constructs recycling factories for glass, plastic and engine oils. Neuerth Group invested USD 20 million in a scrap steel recycling plant with the capacity of producing 1 200 tonnes of aluminium bars per month.
Zabaleen Waste Collection, Cairo, Egypt	Zabaleen Community	65 000 *Zabaleen* waste collectors pick up about 9 000 of Cairo's 15 000 tonnes of daily household rubbish. Up to 80% is recycled.
Solid Waste Recycling, Mauritius	Mauritius' Solid Waste Recycling Company Ltd.	The company produces 20 000 tonnes of compost per year out of municipal solid waste; this has enhanced agricultural productivity and replaced imports of chemical fertilisers for agriculture.
Reliance Compost, launched in 1998. Cape Town, South Africa	Local municipalities	Reliance Compost removes green waste and turns it into organic compost for sale to the agricultural sector. In Cape Town, the company employs 220 people and saves 180 000 tonnes worth of CO_2 emissions per year. In Western Cape, it has reduced 13 million cubic meters of green waste in land fields since 1998.
AgriProtein, launched in 2014. Cape Town, South Africa	Africa Enterprise Challenge Fund, Stellenbosch University, The Bill and Melinda Gates Foundation, Biocycle initiative	This project consists of using municipal waste as a feedstock in breeding fly larvae, which are sold to livestock and poultry farmers to reduce dependence on fishmeal and scarce fish stocks. The environmental savings from lower fossil fuel consumption, land use and carbon emissions is USD 2 500 for every tonne of MagMeal produced.

Source: AEO experts' survey, 2016; AEO country notes 2016; Cartwright (2015); ILO (2014); Swilling (2015).

Currently sub-Saharan Africa generates about 62 million tonnes of waste per year. The urban lifestyle and urban sprawl increase the costs of waste disposal (Cartwright, 2015). Bio-waste from vegetables and other biological products still make up the majority of Africa's waste, at 50-80% (Okot-Okumu, 2012). A global trend in the increase in electrical and electronic goods points towards a change in waste composition and more plastic and e-waste in Africa's cities. Africa has the lowest waste collection rate, below 50% on average compared to OECD countries' rates largely over 90% (World Bank, 2012). In Egypt, collection rates lie at only 40% of total municipal solid waste, recycling at 2.5% and unsound disposal at 83.5% (D-Waste, 2016).

Reforming the waste collection system allows for financial savings. In Dar es Salaam, the collection rate of solid waste production is only 37%, however the municipality's waste collection operating costs approach 50% of the overall municipal budget (World Bank, 2012). While most African cities spend 20-50% of their annual budget on solid waste management, only 20-80% of the waste is collected (MSO, 2013). The legislation for different waste streams is often fragmented and low collection coverages suggest inefficiency in waste management (UNECA, 2012).

In the long run, African sustainable cities can develop a zero waste approach adapted to the local context. The zero waste approach could eventually achieve 100% recycling through better waste management (Zero Waste Europe, 2014). In 2001, the Polokwane Declaration on Waste Management developed a zero waste plan for South Africa by 2022 (Mohee and Simelane, 2015). A zero waste city requires combining social, political, economic and technical interventions in targeted urban areas that complement one another. Options for policy makers include user-pays waste charges, the demarcation of space for recycling, bio-digesters, upcycling and composting.

Annex 7.A1. Methodology for mapping financial flows to African cities

Today highly dense global and regional networks of foreign direct investment (FDI) have emerged, tying cities together worldwide (Wall et al., 2011; Wall and van der Knaap, 2011). FDI concerns a firm in one country investing in a firm in another country, with the intent of gaining control over its operations. It is made up of two parts: "mergers and acquisitions" and "greenfield investments". Mergers consolidate particular firms into one, and acquisitions take monetary possession of other firms. Greenfield investments represent investments where parent firms start entirely new projects and facilities in host countries. Greenfield investments relate more directly to the actual development of urban economic activities and are therefore analysed in this chapter, notably for Maps 7.1, 7.2 and 7.3.

The data analysed in this study concern "cross-border" greenfield investments. The data draws from the Financial Times' database fDi Markets (2016), which is the most complete set of data on international investments between cities and countries. The data concerns global FDI flows to African cities.

- First, the fDi Markets data was verified by testing it against similar data used in the UNCTAD 2015 report, which also partly made use of the same database. The results show very high correlations across a similar panel for the same period (2003-14).
- Next, missing values of fDi Markets data were completed using the Orbis database (Bureau van Dijk, 2016) and online sources. The data was then geocoded with Cartesian co-ordinates for all the origin and destination cities in the Africa dataset. Based on this data, the three maps were generated by means of ArcGIS software.
- To derive the main variables determining FDI to African, Asian and European world regions, we have used data on the volume (count) of greenfield investments and the indicators from the *Global Competitiveness Report 2014-2015* indicators (World Economic Forum, 2015), creating a matching panel of nine years, i.e. 2006 to 2014.
- Out of 24 sub-indicators, we created composite indices for the following 7 categories to calculate each country's competitiveness index: goods market efficiency, infrastructure, macroeconomic environment, labour market efficiency, technological readiness, market size and health. Each index is adapted to the scale and nature of this study: we selected a set of dimensions and indicators corresponding to factors that contribute to inward greenfield investments in countries. The selection of the indicators is based on theory and the P2 computation. This computation uses a synthetic distance index that combines all indicators into a single value. This allows comparisons between entities (both temporal and spatial) and is considered to be an exhaustive synthetic indicator because it is not based on a reduction of information.
- To calculate the P2 distance (Pérez-Luque et al., 2015; Bonet-García et al., 2015), we started with a matrix X of order (m, n) in which m is the number of spatial units (countries) and n, the number of variables. Each element of this matrix, xri, is the value of the variable i in the spatial entity r. The P2 distance indicator calculates the distance of each spatial entity with regard to a theoretical spatial entity of reference. Initially, a distance matrix D is calculated as:

$$Dri = |Xri - X^*i|$$

  where x/i is the r-th element of the reference base vector X/ = (x/1, x/2, . . ., x/n). For each variable a reference value must be defined to compare different spatial entities.
- Next, all basic assumptions were tested on the data including multicollinearity, heteroskedasticity, normality and outliers. Because the dependent variable is considered to be count data, we employed the negative binomial model, which is a member of the Poisson estimation family.

Source: Prepared by Ronald Wall and Dorcas Nthoki (2016), Institute for Housing and Urban Studies/Erasmus University Rotterdam on assignment for UN-Habitat, Nairobi for this edition of the *African Economic Outlook*.

Notes

1. Food imports, at USD 86 billion per year on average between 2011 and 2013, represent only a small share of the urban food market (authors' calculations based on UNCTAD, 2014).
2. The middle class is defined here as those with an income of USD 4-20 a day in purchasing power parity (AfDB, 2011).
3. There are multiple definitions of the middle class in developing countries. Some are non-monetary definitions such as aspirations and lifestyle, or asset-based measures. Most definitions set a monetary threshold based on per-person income or consumption using monetary data. They reflect different ideologies, and each has its own limitations in methodology.
4. A slum household is defined as deprived in at least one of the five following amenities: durable housing, sufficient living area, access to improved water, improved sanitation or secure tenure (UN-Habitat, 2006).
5. In Viet Nam a USD 1.1 million investment in community restoration of mangroves saved an estimated USD 7.3 million per year in sea dyke maintenance.

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Chapter 8

National urban strategies for sustainable cities in Africa

While urbanisation does not in and of itself create structural transformation, it is a fundamental megatrend that will continue to profoundly transform African societies and economies in the coming decades (Chapter 6). More can and must be made of this megatrend for advancing the agenda of sustainable development on the continent (Chapter 7). Although policy priorities and sequencing will depend on each country's specific context, new and ambitious national urban strategies will need to tackle three broad challenges: i) how to better manage the country's economic and social spaces in the context of rapid urbanisation; ii) what governance structures should frame the design and implementation of those strategies; and iii) how to finance the necessary investment.

In brief

This chapter proposes elements of a new policy agenda for improving the contribution of sustainable cities to Africa's structural transformation. It explains how urbanisation may be harnessed through deliberate policy and enabling services. Participative, multi-sectoral and place-based national urban strategies can catalyse citizen-led urban development to increase well-being in cities and in their catchment areas. While strategies will necessarily be context-specific, countries will likely have three overarching priorities: clarifying land rights; accelerating and improving the provision of infrastructure and services; and managing the growth of intermediary cities. Successfully implementing those new urban strategies requires effective multi-level governance systems, brought about by context-specific decentralisation, capacity building and increased transparency at all government levels. National and local governments also can draw from a wide range of financial instruments to support urban development. Mobilising all of those instruments will be necessary to bridge the financing gap and fulfil the potential of Africa's urbanisation.

New strategies can promote sustainable cities for Africa's structural transformation

How can African governments put in place or improve their national urban strategies successfully? The *African Economic Outlook 2015* laid out seven main steps guiding the design and implementation of regional development strategies by governments and local stakeholders, of which urban strategies may be considered as a sub-set (AfDB/OECD/UNDP, 2015). The first section below considers the first two after a short introduction: step one: collect as much reliable data as possible with local stakeholders; and step two: identify integrated priorities that complement existing national development strategies. The second section identifies core policy priorities that apply to most African countries as a contribution to step three: define a strategy of multi-annual policies. The third section focuses on phasing in the multi-level governance system necessary for steps four to six: implement policies, monitor implementation and evaluate outcomes. The last section reviews options for mobilising financial resources (step seven) in support of national urban strategies.

While Africa's sturdy urbanisation trends have produced a number of positive effects, in most countries urban policies have yet to promote structural transformation in a sustainable manner. As a result, "slum urbanism" is a reality for most of Africa's city dwellers. It is characterised by low productivity and exposure to multiple risks and is void of conventional urban advantages (Pieterse, 2011). In many countries, this situation compounds existing societal inequalities along ethnic, economic and gender dividing lines. In turn, pressing social problems produce short-term and reactive policies which cannot solve the structural challenges nor seize the opportunities generated by urbanisation. African countries can break this vicious circle of inadequate urban policies and slum urbanism by adopting new, comprehensive, effective national urban strategies, with a view to making African cities sustainable (Box 8.1).

The New Urban Agenda to be agreed on at the Habitat III Conference in October 2016 can give impetus to that process. Shaped by the Sustainable Development Goals, COP21 and a series of preparatory meetings and documents (Table 6.5), Habitat III focuses the attention of decision makers on the imperative of forging the policies, governance and financial arrangements necessary to benefit more from urbanisation.

In the context of this New Urban Agenda, and in line with the basic principles defined in the *African Economic Outlook 2015* for promoting regional development, Africa's new

urban strategies should be multisectoral, participatory and place-based. They should be designed and implemented as part of multisectoral development strategies, in order to address in a coherent and effective manner the complex urbanisation challenges documented in Chapters 6 and 7 of this report. They should be participatory so as to draw from the knowledge of the various actors involved and fit their needs. Finally they should be place-based, and especially consider the continuum of rural-urban linkages, to ensure that the urbanisation dividend is reaped by urban and rural dwellers alike.

Box 8.1. What is a sustainable city?

Definition. This report applies the Brundtland Commission (1987) definition of sustainable development as "meeting the needs of the present without compromising the ability of future generations to meet their own needs" at the city level. It goes beyond a strictly ecological definition and is similar to the World Bank (2013) definition of "urban communities committed to improving the well-being of their current and future residents, while integrating economic, environmental, and social considerations".

Measurement. Several indices measure the sustainability of cities, such as UN-Habitat's *City Prosperity Index*, The Economist Intelligence Unit's *Africa Green City Index*, Arcadis' *Sustainable Cities Index*, AT Karney's *Global Cities Index*, or Mastercard's *Global Destination Index*. However, most are limited by the lack of data at city level. New methods based on the concept of "urban metabolism" can offer a solution (Currie et al., 2015): Resource Flow Mapping uses geographic information systems to illustrate the distribution of urban and national resource flows and their volumes. Maps 8.1 and 8.2 present the example of flows of water in Cairo and Egypt at local and national scales. They show that 50% of the city's water, entirely drawn from the Nile River, goes for refined uses and the other 50% for unrefined uses. Refined water is consumed mostly in residential areas, followed by commercial areas, industry, government agencies and other. Cairo treats only a small amount of wastewater: 17.8%. The untreated water is dumped in the Nile and the North Lakes, polluting the country's main water sources.

Remit. This report considers the sustainability of cities at local as well as national levels. Cities "import" resources such as energy, water, air and food and often store their waste far away. Their resource consumption footprint therefore goes well beyond their immediate surroundings. Labour and capital mobility also imply that their development has a profound impact on the entire country. Finally, as the functional and built-up areas of a city often surpass its administrative boundaries, managing it calls for more encompassing governance systems that take into account its surrounding areas.

Progress in designing and implementing strategies is uneven across Africa

To date, 16 out of the 51 African countries reviewed by Yatta (2016) have adopted national urbanisation strategies, i.e. less a third of African countries. Of the 35 which have no explicit urban strategy, 7 have considered formulating one, while 28 have yet to. Table 8.1 reviews the strategies of those 16 countries, their priorities and extent of implementation: most of them focus on infrastructure, social service delivery, financing and land ownership. Urban poverty, spatial distribution and mobility are other recurrent issues. Six countries (Algeria, Benin, Burkina Faso, Ethiopia, Mali and Niger) aim to foster regional economic centres outside of the main urban agglomerations and provide basic services balancing rural and urban regions. Ghana, Morocco, Senegal and Swaziland are most advanced in formulating clear and pertinent urbanisation plans; the latter two have embedded their urban strategy in national development plans.

Table 8.1. **Urbanisation strategies in 16 African countries**

Country	Name of national strategy	Time frame	Strategies	Comments
Algeria	Stratégie de développement des villes	2000-25	-Balanced urban growth -Improved urban economy and environment	Linked to national spatial strategy
Benin	Agenda spatial	Permanent	-Specific economic functions planned for different regions -Territorial development	Insufficient means to implement
Burkina Faso	Programme de Développement des Villes Moyennes	Permanent	-Balanced growth of big cities -Rural-urban linkages	Incomplete implementation Insufficient financing
Côte d'Ivoire	Programme d'infrastructures urbaines d'urgence	2008-15	-Infrastructures	International Development Association grant of USD 144 million for targeted interventions in five sectors: drinking water, urban sanitation, solid waste, urban roads and local authorities
Ethiopia	Urban local government development project	2014-19	-Municipal services and infrastructure	Connected to urban management strategy
Gabon	Stratégie Nationale d'Habitat et de Développement Urbain	Permanent	-Housing -Infrastructure -Institutional development	Insufficient resources
Ghana	National Urban Policy	2012-30	-Balanced urban growth -Rural-urban linkages -Improved urban environment -Infrastructure -Affordable housing	Implemented with international agencies, weak links with national development
Malawi	Malawi City Development Strategy and Slum Upgrading Programme	2010-20	-Urban management -Institutional development -Infrastructure	Insufficient resources and co-ordination among regional authorities
Mali	Politique Nationale de la ville	Permanent	-Quality of livelihoods -Enhancing local economies -Infrastructures	Based on the strengthening of the role of intermediary cities and on the importance of rural-urban linkages
Morocco	Stratégie Nationale de Développement Urbain	Permanent	-Regional growth poles -Large-scale infrastructure -Promotion of middle-sized cities	Competitive cities, growth poles favouring social cohesion and efficient use of resources
Niger	Stratégie Nationale de Développement Urbain	2010-30	-Stronger urban networks -Urban management -Land rights -Infrastructure and services	Insufficient resources
Rwanda	Stratégie nationale de mise en place des infrastructures publiques et de renforcement des capacités des institutions administratives décentralisées	2000-20	-Infrastructure and capacity building	Political commitment but insufficient resources
Senegal	Programme d'Appui aux Communes	2006-10	-Capacity building -Legal tools -City contracts -Investment -Infrastructure	Implemented on a national scale through 450 city projects and supported by the Agence Française de Développement
South Africa	Integrated Urban Development Framework	2014-present	- Integrated package of spatial planning (transport, housing, infrastructure, land governance, local economic development, community empowerment and urban governance)	In its formulation process
Swaziland	Local Government Project	2011-17	-Institutional support -Infrastructure	In line with national development
Uganda	National Urban Policy	2013-30	-Urban management -Institutional development -Infrastructure	Insufficient resources

Source: Yatta (2016) and République de Côte d'Ivoire (2016).

Having an urban strategy is not enough. It needs to be integrated into the long-term national development strategy, decided on and implemented coherently with the participation of local actors, and supported by adequate financing. Some countries provide successful examples of meeting some of these challenges. **Morocco** in particular has devoted considerable human, financial and technical resources to implement its strategy: cities are considered engines for regional and national growth and part

of a strategy to make the country more competitive. The government encouraged investments in skills and connective infrastructures in the two port cities (Tanger Med Project and Casablanca port), and fostered the development of new towns such as Chrafate or Tamensourt. **Ethiopia** has also undertaken important reforms towards political, fiscal and administrative decentralisation, laying emphasis on the process of capacitating cities (Box 8.2). Participatory exercises building alternative future scenarios help identify opportunities as Ethiopia urbanises. Developing special economic zones or clusters is one of several policy options envisioned to unlock the potential of the country's secondary urban growth centres. The Ethiopian Cities Prosperity Initiative and its index developed by Ethiopia's government and UN-Habitat help monitor progress.

Box 8.2. **Ethiopia's integrated approach to urban and socio-economic development**

Two main policies underpin Ethiopia's integrated approach. First, the Growth and Transformation Plan (GTP) has framed Ethiopia's urban policies since 2010. The Ministry of Urban Development, Housing and Construction foresees three five-year episodes of large-scale industrial and structural development. Initiated at the national level, the GTP emphasises participatory governance involving citizens and private actors. Second, the "Ethiopian Cities Resilient, Green Growth and Governance Program Package" focuses on multiple development pillars, including job creation, urban planning and capacity building (Cheru, 2014).

In addition, substantial financial resources have been allocated. For instance, a loan of ETB 4.8 billion by micro finance institutions helped create some 3 million jobs between 2005 and 2011. A total of 583 877 micro and small enterprises were granted credit for various business activities.

In other countries, however, most existing urban development strategies simultaneously face several major challenges. They are not adequately co-ordinated with other key policy frameworks, such as infrastructure investment programmes. Also, consulting the various stakeholders of the urban system proves difficult, as closely intertwined formal and informal economies make it hard to even recognise all of them; finally, limited capacity and finance impede effective implementation: several of the 16 countries are deemed to have allocated insufficient resources to carry out their strategies.

Effective strategies start with reliable data and participation of civil society

Urban strategies are only as good as their evidence base

The data collection and analytical component of national urban strategies helps grasp a country's demographic shifts and economic geography in its sub-regional and global contexts. It identifies the binding constraints (e.g. infrastructure, energy, skilled workers, information) holding back the specific potential of cities and regions. Policy makers can then better understand the contribution of specific places to job creation and economic output by sectors, and how different categories of the urban system relate to rural areas and other cities. Optimising the connections between sectors or regions ultimately enhances the aggregate productivity and performance of the national economy.

For example, Nairobi might be a crucial export node of freshly cut flowers for the European market, but it depends on growing regions well beyond the capital city, and on the connective infrastructure to quickly ship the flowers from the point of production to processing sites close to the airport. It is essential for policy makers to understand

how this value chain operates spatially and how effective cross-municipal border management can optimise the prospects of this sector for it to grow.

The resulting economic map should then be overlaid with demographic movement and mobility analyses, which are key to managing national logistics and planning investment for the provision of essential services to populations. To assess the relative strengths and weaknesses of a country's functional urban areas, one may categorise them by number of inhabitants. A territorial (place-based) analysis – rather than traditional, national analysis by sectors – allows assessing multi-sectoral performance and exploring both the formal and informal dimensions of the local economy.

Such analysis requires drawing from the unique knowledge of local actors, including informal ones. While this is inevitably difficult, a number of successful examples exist. Some from Dakar, Monrovia and Morocco's Villes sans bidonvilles programme, among others, are documented in Chapter 7 and others in Box 8.3. The coming 2020 census round provides an opportunity to gather complementary data on informal settlements by inserting a location identifier in the questionnaire (e.g. *de jure* population, housing conditions, economic activities, infrastructure and services).

Box 8.3. **Data collection by citizens' initiatives**

Several initiatives involve citizens collecting social and environmental data used for proposing, driving and monitoring new education, housing, health and infrastructure projects. "Citizen-experts" working at village and neighbourhood scales can collect information quickly and with local insight. For instance, the Map Kibera (2016) project started in 2009 gave marginalised communities greater visibility, information and power to change their living conditions. Similarly, the Spatial Collective works at grassroots level doing demand-led community mapping that feeds geographic information systems, which can be turned into powerful visualisation devices.

New technologies such as geographic information systems (GIS) can enable cheaper, more accurate and faster data collection. The data can serve, for example, for spatial analysis of populations vulnerable to climate change or for detecting growth hotspots in a city (Table 8.2). In Kampala and Abidjan, mobile phone data analysis is providing new information on economic and mobility patterns, although not yet from fully representative samples.

Table 8.2. **New technologies for urban governance and data collection**

Project	Stakeholders	Development outcomes
Revenue collection information system (LGRCIS), 2014, Arusha, Tanzania	Governments of Denmark and Tanzania, World Bank	Using satellite data and GIS to identify and register taxpayers and satellite photographs to register houses. Increased tax revenues by 71% between 2014 and 2015.
City Dashboard, 2013, Fez, Morocco	City of Fez, AfDB, Microsoft	Monitoring service performance and 70 quantitative and qualitative socio-economic, service-visibility, and quality-of-life indicators.
Know Your City Campaign	Slum/Shack Dwellers International working with different African affiliates, e.g. the Ghana Federation for the Urban Poor	Collecting "slum data" through mapping, house-to-house surveys or settlement profiling. More than 600 settlement profiles created since 2009. Also serving policy negotiations with city authorities.
AfriLabs	Pan-African network of technology hubs	Serving some 40 tech hubs in 20 African countries and providing business start-up incubators, co-working spaces, innovation labs, and community-building and peer learning spaces.

Source: AEO experts' surveys, 2016; AEO country notes, 2016; Cartwright, 2015; Swilling, 2015.

Urban priorities must be integrated into long-term, national development strategies

National urban development strategies can succeed when a government identifies the priorities that contribute the most to the country's long-term development strategy. Priorities must be few, to avoid scattering resources, and place-based so as to avoid the lack of co-ordination often induced by purely sectoral approaches (AfDB/OECD/UNDP, 2015). Alternative scenarios for a city's future can help formulating the priorities more effectively, by developing foresight studies involving formal and informal stakeholders. The Ethiopian Urban Expansion Initiative is an example of how scenario building and data collection can help plan for the country's expected rapid urbanisation (Box 8.4).

Box 8.4. **The Ethiopia Urban Expansion Initiative**

The Ethiopia Urban Expansion Initiative (UXI) assists rapidly growing cities in preparing for their spatial expansion. It was established in 2013 by New York University Stern Urbanization Project and Ethiopia's Ministry of Urban Development, Housing, and Construction. The UXI relies on a planning mechanism that prioritises securing land for a 1 km2 grid of arterial roads and environmentally sensitive public open spaces. It emphasises leadership by local planners and is tailored to match the capacity of the officials responsible for implementation. It aims for a 30-year planning horizon, with the understanding that more detailed area plans can be developed as the city expands. The UXI has been incorporated into the national Growth and Transformation Plan II, which forecasts urbanisation in mid-sized cities as a key part of Ethiopia's plan to become a middle-income country by 2025.

The UXI started by calculating future land area per person for four mid-sized, rapidly growing Ethiopian cities: Bahir Dar, Hawassa, Adama and Mekele. This was combined with population estimates to identify the amount of land for expansion that would be needed in 2040. These cities then created small urban expansion teams led by a local senior administrator tasked with developing and implementing the arterial grid plans. The cities initially worked with regional governments to expand their municipal boundaries and then started a programme of surveys to estimate the total cost of compensation for the land for the arterial road network – no more than 5% of the total land in the 2040 expansion area. This was followed by the submission of budget requests and a commitment of USD 8.9 million in 2014/15 and USD 24 million in 2015/16. The cities have begun formal surveys and compensation payments and are constructing roads on the immediate periphery. The four cities have paid compensation for many hundreds of kilometres of roads and have constructed 41.5 km.

In Hawassa, surveying and compensation of the entire network is nearly complete, and 16 km of 30-metre wide arterial roads have been constructed on the urban periphery (see Map 8.3). Municipal revenue from plot leasing in Hawassa has increased 2.2-fold since the start of the programme, and spending on roads has increased 6-fold. In Bahir Dar and Mekele, 4 647 additional residential plots have been made available for leasing, comprising an area of 77.6 hectares.

Priorities include land reform, infrastructure and urban networks

While urban development strategies must be highly context-specific, this report suggests that new urban strategies in most countries are likely to include three generic priorities that cut across the sectoral priorities identified in Chapter 7:

1) clarifying land rights and their enforcement
2) delivering better infrastructure and services
3) improving the pivotal function of intermediary cities between rural areas and primary cities.

Urban land reform lies at the heart of new national urban strategies

Urban land is the primary building block of cities, and land policy lies at the heart of Africa's sustainable urban transition and structural transformation. Who owns land and how it is managed will determine the density of a city, the street layout, the zoning scheme, building codes and tax regimes. Land-use management systems, formal and informal, shape the dynamics of economic agglomerations, natural resource use, social inclusion and political representation.

Land-use management systems often hinder sustainable urbanisation

African land-use management systems are not fit for increasing sustainable urban development and absorbing the rapid population expansion of the next decades. Current systems are not only complex, they are typically not well understood and are rarely effectively recorded or formally codified. They typically draw from an eclectic, often contradictory mix of old colonial planning norms; privatised settlement and company towns; the ancient practices of royal, communal or tribal land; or *ad hoc* and unregulated regimes that have emerged around informal settlements.

As a result, land regulation is often chaotic, hindering Africa's economic growth, creating environmental risks and entrenching social inequality. "In cities and rural areas, insecure tenure and informal settlements combine with other factors [...] to reduce public revenues, infrastructure investment, employment and economic growth" (UN-Habitat, 2008: 5). In addition, elites controlling the land are difficult to identify, incentivise or control; yet their support is essential for improving how cities are run.

In the case of cities, the current mismatch between land and fiscal systems prevents governments, especially local governments, from undertaking the large-scale investments needed to shift urban development trajectories. The lack of transparency over urban land markets impedes effective and sustainable personal and corporate investment, creates opportunities for political power bases to flourish outside of democratic structures, and makes land-based climate mitigation and adaptation measures difficult to enforce. In most countries, urban land reform should thus be a priority in the context of national urban strategies.

Impetus for urban land reforms is growing across the continent

Africa is land rich and, until recently, the absence of large, complex urban settlements and a disregard for the role of towns in the wider economy may have distracted from the urgency of urban land reforms. Rapid urban growth, the rise of land-based corruption and the consolidation of unsustainable urban land management practices are now raising awareness of those issues.

The nature and modalities of such reforms should, again, be context specific: there is no single way to achieve sustainable authority over urban land. However, more secure land rights should be a key objective, as they are a prerequisite for long-term urban investment anywhere. Furthermore, systems of urban land regulation are most effective for preserving the environment and less prone to aggravate inequalities (e.g. against women) when they are appropriate, legible, predictable and free of corruption. They should also be complemented by formal affordable housing, property taxes and land construction in order to harness the land value (see the last section of this chapter). The scope of land reform extends beyond urban administrative boundaries to rural-urban periphery, so as to mitigate potential conflicts on land use change.

Land being much more than an economic asset, urban land reform implies much more than a narrow technical, legal exercise. Urban land shapes the African identity, because urban land regulation, finance, economy, inheritance law, culture, design and construction materials are inextricable parts of the urban fabric. Recent experiences demonstrate that reforms can be successful when based on pragmatic approaches adapted to local contexts. **Chad** is currently revising its land ownership and customary law, which dates back to 1967, so as to formalise customary practices. Public consultations helped identify areas needing clarification, such as the legal processes of expropriation or land title registrations. **Ethiopia** led a land reform in 2003 aiming at better establishing land titles. It introduced a system of certification mainly relying on a locally elected Land Administration Committee in order to register customary titles at low cost. In three years, some 20 million land titles have been granted through a decentralised and participatory approach (OECD, 2016).

In **Malawi**, over 90% of land is governed by a customary regime, and even if customary law guarantees usufruct rights, they are unregistered and not recognised under statutory law, hindering access to land and agricultural development. In 2004, the government instituted the Community-Based Rural Land Development Project, based on voluntary acquisition, farm development and registration of redistributed land. Selected family beneficiaries received a grant of USD 1 050 of which up to 30% was for land acquisition, and the rest for farm development and shelter. The project lasted until 2011 and cost about USD 27.3 million, partly funded by the World Bank, the government and private donations.

Delivering better infrastructure and services is the primary catalyst for sustainable urban development

Investment in infrastructure shapes the nature of urbanisation and the location and productivity of households, informal business and established firms of all sizes. Affordable energy, sanitation, solid waste, transport and health care services provide the means by which urban citizens become more productive. Where infrastructure is insufficient, expensive and poorly maintained, it underpins the high cost of urban services and reduces the potential of reaping an urbanisation dividend (Chapter 6).

This situation remains widespread. Although data is limited, an estimated 62% of urban people in sub-Saharan Africa live without at least one of the ingredients of formal urbanism: water, sanitation, housing and sufficient space under secure tenure. On average, while urban dwellers have greater access to services than their rural counterparts, the backlog remains acute and the cost of services roughly double that in developing countries on other continents. Sixty percent of urban dwellers did not have access to "improved sanitation" in 2015, 28% of urban dwellers had no access to electricity (down just 2.6% since 2011). Many urban dwellers with grid-access experienced daily outages, and half the children under five had never visited a health care practitioner.

How can countries better manage urban infrastructure and service delivery so as to move on from the prevalent "slum urbanism"? Our central argument is that improving the provision of all urban services requires: i) tailoring infrastructure and service systems around the needs of residents; ii) ensuring that prices are affordable to them; and iii) circumventing slow and costly central co-ordination. In particular, in order to bring down costs and enhance efficiency, experience points to: i) planning for an integrated delivery of soft and hard infrastructure; ii) engaging positively with informal settlements; and iii) making full use of innovative technologies.

Hard and soft infrastructures should come together

The strategic agenda of National Infrastructure Investment Strategies (NITS) is to address the needs for physical infrastructure together with the provision of services and the crafting of adequate institutional frameworks. In particular, NITS recognise the importance of soft infrastructure, including governance institutions, legislation, public engagement capacity and fiscal accounting mechanisms, for the efficacy of hard infrastructure (UCLG, 2014). NITS are multi-sectoral and sequenced with other urban policies. They specify, locate and address the financing of the infrastructure to deliver the wide range of services listed below. The groups of African countries referred to – *diversifier*, *early urbaniser*, *late urbaniser*, *agrarian* and *natural resources-based* – are classified according to their stages in urbanisation, fertility transition and structural transformation (see Chapter 6).

- **Economic infrastructure and services** such as energy, transport, information and communication technology, and land-use management are critical in all country groups, though particularly in the *diversifier* and *early urbaniser* countries to increase productivity and competitiveness.
- **Social infrastructure and services**, including education, health, housing, and care for the elderly and children, leverage the innate human capital that aggregates in cities.
- **Basic infrastructure and services** such as water and sanitation, waste collection and management, transport, and energy are necessary everywhere, but most critical in *late urbanisers, agrarian* and *natural resources-based* countries. They increase productivity and remove negative externalities such as indoor air pollution, water contamination and congestion that coalesce in cities to constitute poverty traps.
- **Quality-of-life services** – public safety, urban planning, culture and entertainment, sport, and accessible public spaces – provide the basis for inclusive cities and new urban identities. The lack of attention to ecological capital from much of Africa's existing built environment results in costly engineered infrastructure, the destruction of social safety nets provided by ecosystems and the inefficient functioning of the built infrastructure stock as dams silt up, flood buffering capacity of wetlands is destroyed and places of cultural and recreational value are lost (Chapter 6). Quality-of-life services also offer opportunities for labour absorption and place making, particularly where low educational attainment precludes a portion of the urban population from accessing skilled jobs (Chapter 7).

Engaging urban communities is key to improving infrastructure and service delivery

In the context of "slum urbanism", urban infrastructure development requires understanding how the urban poor and rural migrants have begun to access services where the state did not cater for them (Angelakis and Rose, 2014; Jaglin, 2014). Many urban Africans have to invent their own service delivery systems outside of formal governance. These institutions are not necessarily egalitarian or efficient and they do not necessarily optimise productivity. They are, however, an entrenched fact of life in how cities are organised and run. At their best these organisations reflect an organic strength in urban systems that could be harnessed. And yet traditional infrastructure plans are not well equipped to support "informal" service provision efforts; in many cases, instead, these organisations are criminalised and victimised.

A more positive approach to engaging informal settlers may be considered to meet Africa's urban challenge, for at least two reasons. Firstly, Africa's limited fiscal resources offer little choice but to prioritise service delivery models that are rooted in local communities, draw on local resources, and are labour intensive, highly transactional and

able to deepen both social and financial capital at the neighbourhood scale. Universal access to services will require, at least partly, legitimising and incorporating these contingency forms of service delivery with formal state-supplied services.

Secondly, the participatory delivery of infrastructure can generate a sense of place, where the location and construction of infrastructure engages local needs and ideas, and where the people who benefit from services are charged with infrastructure monitoring and maintenance. Ecological infrastructure and ecosystem goods and services are well suited to this purpose (wetland maintenance, greening of public spaces and coastal zone rehabilitation), but there is equal potential to engage the urban labour force in waste management, aspects of infrastructure maintenance, energy monitoring, non-motorised transport systems at community level, and community policing (Chapter 7). The forging of new urban identities through public work schemes and place making, is considered particularly valuable in the context of Africa's circular migratory patterns. Numerous successful examples exist of urban infrastructure strategies engaging non-government actors in policy and service endeavours deliberately (Box 8.5).

Box 8.5. **A participatory approach to transforming settlements of the poor in Uganda's intermediate cities**

The Transforming the Settlements of the Urban Poor (TSUPU) programme was launched in 2010 as a partnership initiative of the Government of Uganda and support partners (Shack/Slum Dwellers International, co-ordinated by Cities Alliance). It aligns urban development efforts at the national, local government and community levels in five intermediate cities: Mbale, Mbarara, Jinja, Arua and Kabale. The programme aims to increase the capacity of actors at each level to manage urban growth, improve access to services, and formulate and implement inclusive urban development policies. It privileges community participation.

The programme organised slum communities by mobilising women-led savings groups and federating these at the settlement, city and national levels. These groups were supported to profile and map all slums in each city producing data for planning. The programme institutionalised spaces for dialogue between communities, academia, business and local government where urban stakeholders reflect on the rich, community-gathered data. The TSUPU project then established Community Upgrading Funds in each municipality so small projects in informal settlements could implement local partners' resolutions.

Community groups have completed close to 100 upgrading projects in each of the 5 secondary cities in partnership with local authorities. These small projects have catalysed efforts in the cities to undertake settlement-wide upgrading and secure the tenure of thousands of informal settlers. The efforts of informal settlers' groups to convene forums have resulted in allocations of municipal office space for community data centres in 10 urban councils. Since the first phase of the programme officially ended in 2013, the slum dweller movement (National Slum Dwellers Federation of Uganda, NSDFU), local and national government partners have expanded TSUPU to an additional 14 municipalities and Kampala's five divisions.

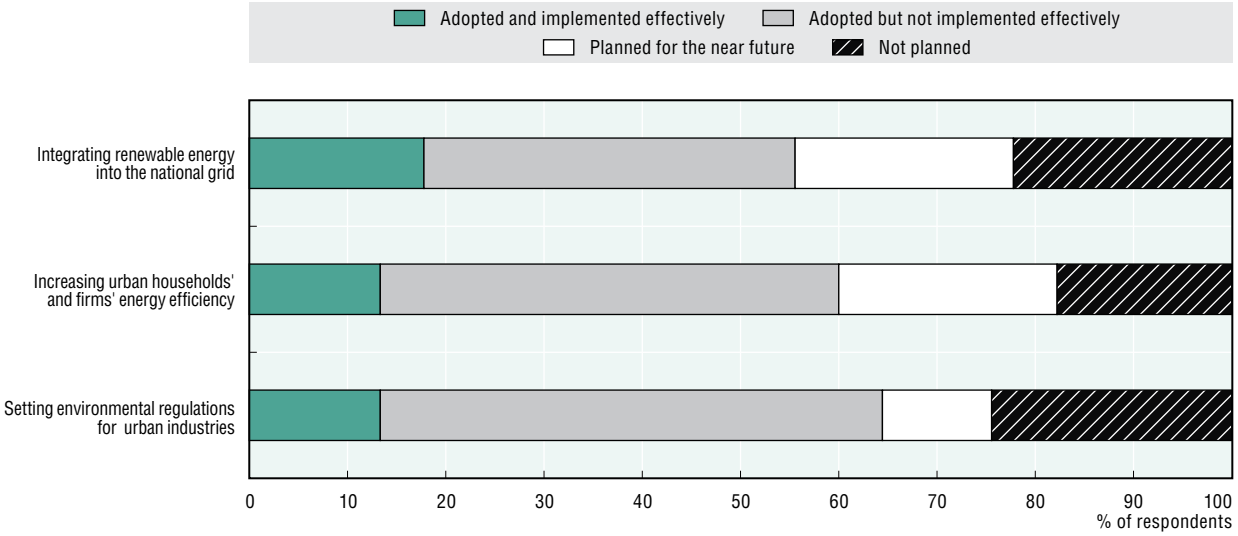
New technology can reduce the costs of infrastructure and service delivery

Sustainable urban development could tap new service delivery opportunities created by the use of new technologies in the water, sanitation and energy sectors more efficiently. Providing enough electricity to only 70% of the 635 million Africans who do not have grid access would require an estimated USD 205 billion in capital investment for the next two decades in urban and rural areas (Chapter 7). This gap can be bridged, but it is huge considering the weak fiscal resources of cities. Yet, the 300 million urban Africans without access to electricity spend up to 50 times more per kilowatt hour (as much as

USD 10/kWh) on charcoal, candles, batteries and kerosene; most urban companies rely on expensive diesel powered generators as back-up (APP, 2015). Africa's grid reticulated electricity is twice as expensive as Latin America's and three times Asia's. It is often unreliable: 19 sub-Saharan African countries experienced at least 10 electricity outages per month between 2005-08, which cost firms an average of USD 307 per hour (Dinh et al., 2012; Lighting Africa, 2010).

Channelling this money into more efficient energy solutions would create new business opportunities and improve energy security (see Chapter 7). However, their institutional, technical and financial fit with the needs of urban energy users has driven their uptake so far, rather than policies. Results from our AEO survey show that less than 20% of African countries have implemented strategies on sustainable energy use (Figure 8.1). To be relevant, infrastructure plans must resonate with commitments made under the Paris Agreement in the form of Intended Nationally Determined Contributions.

Figure 8.1. **Prevalence of strategies on sustainable energy use in Africa, 2015**



Note: Survey answered by country economists of the AfDB and UNDP in 45 country offices in Africa. Response is weighted to one answer per country.

Source: AEO experts' survey, 2016.

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Planning the growth of intermediary cities contributes to national development

National urban strategies are not only about articulating a metropolitan agenda. They are holistic approaches to linking cities and towns of different sizes and with different, evolving functions.

Intermediary cities are essential to reaping the urbanisation dividend but need special attention

Dealing with the conundrum of Africa's towns and planning for the growth of intermediary cities are essential elements of any national urban strategy. As shown in Chapter 6, two-thirds of the growth in the urban population by 2030 is expected to take place in cities of less than 500 000 inhabitants. Intermediary cities and towns will thus play an increasing role in sustaining the benefits of urbanisation in terms of poverty alleviation and in fostering structural transformation at two main levels:

1) Intermediary cities and towns help alleviate the congestion of megacities by capturing a share of demographic growth and rural migration (AfDB/OECD/UNDP, 2015). They can enhance the country's overall governance capacity by better mobilising the available capacity in provincial and national governments. Intermediary cities and towns will assume a more active role as economic and social service hubs.
2) They spread the benefits of urbanisation nation-wide and across borders by enhancing productivity and promoting development in surrounding rural areas (as described in Chapter 7). Connections between smaller and intermediary cities and the rural hinterland within the national and transnational economy are therefore critical. Intermediary cities can leverage economies of scale to deliver public services to surrounding areas and develop labour-intensive industries such as textiles and agro-processing or services like tourism, especially those services that do not require high knowledge spill-overs.

But whether those capacities and connections are there to ensure that growing intermediary cities and towns effectively play those roles will crucially depend on new investment and the quality of public policies, by national as well as local governments. Indeed, most towns and intermediary cities suffer from rapid expansion, high poverty, little investment and scant formal employment opportunities. Even in a *diversifier* country such as South Africa, most intermediate cities have a narrow single-sector economic base that depends largely on old technologies vulnerable to external market shocks. Unless their potential is actively developed, intermediary cities and towns run the risk of a relatively rapid economic decline, expanding further the patterns of "slum urbanism".

Tapping the specific assets of intermediary cities requires differentiated policies

In line with the new paradigm of regional policy making, mainstreaming the promotion of intermediary cities into national urban strategies should aim to tap their specific assets and unexploited potential rather than compensate them for their disadvantages, whether induced by size or location (see Chapter 8 in AfDB/OECD/UNDP, 2015). This requires the following:

- Base the allocation of resources on a thorough understanding of how the optimal organisation of urban services in intermediary cities – e.g. markets, clinics, schools, taxi ranks, post offices, and police and petrol stations – might complement subsistence agriculture and serve the needs of residents.
- Improve connections both between urban cores and their immediate hinterland and between intermediary cities and the regional and global economy, which can also reduce peri-urban slums currently existing in most African cities.
- Focus on the development of functional urban areas rather than administrative perimeters, including functional, transnational urban corridors. The West African seaboard, along the coast of the Gulf of Guinea, which incorporates big cities as well as smaller coastal hubs, is a pressing example of the imperative for cross-national collaboration on such corridors, not least to ensure that the collective response to urban risks takes account of towns' realities within larger regional plans.
- Differentiate the planning, finance and institutional support between towns and intermediary cities in a way that allows them to assume a distinct function in the national urban network by tapping their specific locational or sectoral advantages. This can be done through new infrastructure investment or the relocation of a major public service providing long-term job opportunities; for instance, it might

make more economic sense to locate certain administrative services in cities rather than in towns where less of the population would benefit from them. Categorising intermediary cities for targeted support needs to be flexible and multi-layered and allow them to move up or down the hierarchy over time. The experience of South Africa shows that too narrow a focus on the size criterion over functional characteristics can lead to pressure from local leaders to reclassify intermediary cities as metropolitan regions without due consideration for changes in their actual economic potential. The categorisation process may thus: i) include other aspects such as local governance performance and international competitiveness; and ii) ensure through adequate incentives that becoming a metropolitan municipality is not the only development pathway for intermediate cities. Table 8.3 illustrates possible urban functions of intermediary cities within the national urban network.

Table 8.3. **Different urban functions of intermediary cities**

Urban function	Description
Regional market	The city is the main area for production and exchange of goods and services in the local and regional economy.
Service centre	The city offers public and private services to the intermediate community and surrounding population.
Regional capital	The city hosts regional or national political and administrative institutions.
Tourist centre	The city promotes activities linked to domestic or international tourism.
Communication hub	The city acts as a platform for movement of people, goods and information.
Economic location	The city holds a strategic role in the national, regional and global economy thanks to its geographic location and development strategy (e.g. duty-free zone).

Source: Adapted from Song (2013).

Several African countries are promoting intermediary cities

Although they are still a minority, several African countries are already explicitly targeting the promotion of intermediary cities as a vehicle for a more sustainable urbanisation:

- Ethiopia has identified intermediary cities as key actors of its national economic plan: 16 urban centres of less than 500 000 inhabitants now receive targeted support to develop manufacturing and tourism while Diré Dawa has a special administration status.
- Madagascar has adopted a multi-sectoral strategy for urban growth poles, investing in roads and water supply, as well as in vocational training, higher education, service delivery and capacity building. This has created 13 000 new formal jobs, mainly in the cities of Nosy Be and Tolanaro (Speakman and Koivisto, 2013: 97).
- Morocco has invested in intermediary cities like Tangier and Meknès by developing tourism and the industrial sector. The government's new regional plan (*découpage territorial*) extends decentralisation and greater means for regional development to cities within Casablanca's periphery, such as Sidi Slimane and Beni Mellal.
- Rwanda is investing in intermediary cities as a response to rapid population growth. The plan focuses on the economic development and improved access to public services in Huye, Muhanga, Musanze, Nyagatare, Rubavu and Rusizi. Four provincial industrial zones which specialise in agro-processing and low-skill manufacturing (Bugesera, Huye, Nyabihu and Rusizi) aim to strengthen rural-urban economic linkages and increase economic opportunities in rural areas.
- South Africa has been aiming to streamline the role of intermediary cities by implementing a differentiated approach to municipal financing, planning and support for these cities.

Multi-level governance can promote urban development strategies

To effectively implement national urban strategies depends on three major actions in the area of governance: i) empowering local levels of policy making; ii) attracting and growing the necessary capacity for local governments to function; and iii) enhancing transparency at all levels of government. A cross-cutting challenge to multi-level governance and service delivery is to stitch together the initiatives of local communities, often developed in the absence of formal state involvement, with the financing and roll-out of formal services.

African urban policy makers at different levels of government need empowering

Central governments are neither equipped, nor well-placed to design and implement national urban strategies on their own. Urban policies, unlike the wider regional development policies, require "a more sophisticated participatory multi-level government approach, involving national, regional and local governments plus other stakeholders, with the central government playing a convener role" (AfDB/OECD/UNDP, 2015). While the notion is widely accepted at pan-African level, effective implementation has been slow and difficult as would be expected in policy areas where political stakes are high. A number of key principles, however, can guide reforms towards effective multi-level governance.

Countries recognise the need to empower local governments but have yet to promote effective decentralisation

African countries largely agree on the need for pursuing more comprehensive decentralisation to achieve the vision spelled out in Agenda 2063. In June 2014, the African Union (AU) adopted the African Charter on Values and Principles of Decentralisation, Local Governance and Local Development (AU, 2014). This has brought the pan-African policy environment in line with global norms.[1] At the same AU conference, heads of state and government approved the creation of the High Council of Local Governments as an AU institution. Its purpose is to reflect the voice of local governments in the deliberations of the African Union. The African Charter and the High Council provide a new impetus for decentralisation and a strong basis for driving reform across the continent. At the time of writing, however, only Chad, Republic of the Congo (Congo), Guinea Bissau, Mauritania and Mali have signed the Charter, and Mali is the only country to have ratified it (Elong-Mbassi, 2016). Furthermore, in many countries the lack of progress in fiscal decentralisation has greatly hampered progress in administrative and political decentralisation (AfDB/OECD/UNDP, 2015).

Delayed multi-level governance stands in the way of crucial infrastructural investment decisions based on thorough spatial analysis. As shown in the *African Economic Outlook 2015*, much existing infrastructure and development planning has been done while ignoring the spatial dimension, i.e. their systemic economic, social and environmental implications at local level and in the wider regional context. This often produces suboptimal investment decisions, made without understanding how the advantages brought about by urbanisation can best be seized to meet the goals of structural transformation, social inclusion and greater environmental sustainability. As a result, dysfunctional urban development further prevails.

Although local governments and stakeholders detain unique knowledge on such systemic implications, without decision-making powers they are deprived of the capacity to carry out more effective projects at the city level. Weak decentralisation often means that local projects depend excessively on decisions from the central

government, and this can discourage local initiatives. Where central states concentrate the responsibilities of defining and achieving national sustainable development policies, decisions are likely to remain ill-suited to solving African cities' economic, social and environmental challenges. These challenges – while global in nature – are deeply anchored and intertwined in local contexts. Sustainable policies can therefore only be effective in the long run if aligned with local needs and owned by local people (Pinel, 2013).

The pace and extent of multi-level governance reforms depend on local contexts

The main reasons for the mismatch between discourse and implementation in the multi-level governance reform agenda are to be found in the specific context of each country's specific political environment, including social hierarchies, status of land ownership (see above) or the vested interests of key decision makers. Every country and subnational area can therefore only put international commitments into action gradually through trial and error, as part of their own, individual process of political reforms. Conflict, competition and risks of embezzlement will arise during the reallocation of authority, power and resources. Effective multi-level governance reforms thus require committed political leadership in order for negotiations to produce practical decisions about the form, pace and focus of decentralisation. Examples from Africa across the five groups classified according to their levels of urbanisation and fertility rates (see Chapter 6) illustrate the importance of history, the socio-political context and the design of reform processes for successful implementation.

Angola (*natural resources-based*): Since Angola's civil war almost wiped out capacity at communal and municipal levels, the central government has been managing Luanda directly, securing the flow of foreign direct investment into infrastructure and real estate. When Luanda annexed the two adjacent municipalities Icolo e Bengo and Quiçama, and part of Cacuaco in 2011, an "administrative committee" was directly appointed to govern the new city and is therefore not a reflection of direct citizen control or democratic election. This may explain why investments purveying to the needs of elites have been financed, while issues of large-scale urban poverty, ill-health and lack of basic services continued to prevail (Lawanson, 2015).

Ethiopia (*late urbaniser*): The country's governance structure has three main tiers: federal, regional and local. The 1995 constitution recognises and assigns powers, functions and revenues between the federal government and the nine regional states and partly treats two cities – Addis Ababa and Dire Dawa – like state-level governments. The regions establish local governments according to their own constitutions. The most prevalent structures – *woredas* in rural areas and urban local governments – provide education, health, justice, security and "municipal" services (roads, drainage, etc.). However, most local governments are unable to cope with rapid economic and demographic growth due to lack of authority, fiscal resources and skilled personnel. While local governments can collect revenue to cover the costs of basic services, user charges are insufficient. While bigger cities depend on unsustainable land-lease revenues, many of the others lack control over the terms or rate of the lease. Intergovernmental transfers barely cover recurrent expenditure, let alone capital requirements (World Bank, 2015a).

Nigeria (*natural resources-based*): The government comprises three distinct administrative levels: national, state and local. The 1999, post-military rule constitution lodged responsibility for basic services with both state and local governments without a clear delineation of their respective roles. State governments have their own revenue sources and receive intergovernmental transfers, while local governments are merely administrative extensions of the state. Thus in a megacity state such as Lagos, the state government is clearly the dominant actor, creating a large democratic distance between local communities and institutions making decisions about regional infrastructure and service delivery (Lawanson, 2015).

Senegal (*early urbaniser*): In 2013, the parliament passed a law increasing decentralisation and reforming the *Code des Collectivités locales* (Local Government Code). It did not grant local authorities the power to collect taxes but clarified which tax revenues local councils are entitled to. It granted greater fiscal autonomy to local authorities and gave taxpayers the right to ask about local fiscal decisions (République du Sénégal, 2013).

South Africa (*diversifier*): The South African 1996 constitution provides one of the most empowering approaches to democratic decentralisation. Instead of delineating responsibilities between the three government levels, it extends the notion of autonomous "spheres" to local government, charging it with an explicit developmental mandate. A schedule of functions is set out in the constitution for each sphere. Many functions are concurrent between the three spheres of government, but even in those cases, local government may still come to a different decision to other spheres of government. This autonomy is underpinned by significant powers to raise local revenues. In fact, provincial governments rely more on transfers from national government. Two years after the constitution was adopted, a White Paper on Local Government was published which sets the basis for rolling legal reform to entrench the constitutional vision.

Key principles can help advance effective multi-level governance

National urban and regional development strategies must have explicit multi-level governance arrangements to enable more sustainable and inclusive patterns of urbanisation. An underlying dilemma is that African countries with a weak national government capacity tend to have even weaker local government institutions. Efforts to improve their urban planning capacity are essential in the medium term (see next section), but an immediate challenge is to identify the multi-level governance architecture that builds on the local context. Since no blueprint can be applied across all African countries, a number of guiding principles may help define adequate multi-level governance systems in a pragmatic way.

First, the basis for decentralisation is recognising that **local actors are best placed** to calibrate housing and public transport investment with land-use management regulations. Infrastructure is inherently spatial, and certain public functions shape the built environment more than others. For example, energy, transport, housing and land-use management are essential to foster denser, mixed-use and inclusive urban forms. Combining them in strategic locations within a spatially coherent framework can improve economic opportunities and influence urban form but is not easily co-ordinated at the national scale. The information asymmetries that prevail between national and local actors are part of the rationale for promoting the active participation of local stakeholders (AfDB/OECD/UNDP, 2015: xxvi). It is impossible for national or provincial authorities, acting without local stakeholders, to understand enough the nuances and complexity of local areas. It falls to local actors to ensure that strategic investment decisions, inputs and the complex array of interests are mutually reinforcing.

Second, certain functions that address the overall efficiency of the territorial system are best co-ordinated and financed at national and regional scales. This includes managing water basins and addressing inter-regional logistics imperatives (long distance roads, freight, airports, ports) and the cross border migration of the labour force. Dedicated structures such as metropolitan authorities can enable the governments of cities, surrounding communes and peri-urban areas to work together across functional areas for better metropolitan transport or water governance. However, such functions must speak to the local management of the built environment, which highlights the importance of legislated co-ordination forums. South Africa's Inter-governmental Relations Framework Act (IGR Act no. 13 of 2005) provides one such example. The Act provides for regular and systemic policy discussions between different levels of government on all matters of intergovernmental concern. It outlines mechanisms for

settling intergovernmental disputes and for collaboration on strategic initiatives that span domestic boundaries. In each province of South Africa, the involved government actors can determine the scope and focus of the inter-governmental forum. This creates a mechanism for context-specific dialogue, co-ordination and joint effort without losing the national perspective. The president also convenes his own national, provincial and metropolitan political forum.

Third, any effective intergovernmental system must be designed to allow local empowerment of the majority of urban dwellers who are effectively building their own communities, towns and cities in the absence of effective state provision (see previous section). Over time, urban management has to evolve to stitch together the "top-down" policy agenda of the state and the "bottom-up" efforts of the citizens. There is wide scope to improve the efficacy and impact of both of these. This will undoubtedly find expression over time in the emergence of various types of partnerships.

Box 8.6. **Small steps to guide multi-level governance reform**

For post-conflict and fragile states, "muddling through" may be a strategy for implementing certain governance reforms. The approach focuses on building institutions through a series of small, incremental steps, especially when these involve positive deviations from extant realities. Andrews, Prichett and Woolcock (2012) propose a Problem-Driven Iterative Adaptation (PDIA), based on four core principles:

1) PDIA focuses on solving locally nominated and defined problems in performance.
2) It seeks to create an authorising environment for decision-making that encourages experimentation, as opposed to requiring agents to implement projects exactly as pre-designed.
3) It embeds this experimentation in short-time feedback that facilitates rapid experimental learning, as opposed to enduring long lag times in learning from ex post "evaluation".
4) It actively engages broad sets of agents to ensure that reforms are applicable, legitimate and relevant, as opposed to a narrow set of external experts promoting the top-down diffusion of innovation.

China's "crossing the river by feeling the stones" approach to reforms illustrates these principles.

Building public-sector capacity is a pillar of national urban strategies

Effective multi-level governance requires new sets of skills, managerial approaches and institutional culture across all levels and dimensions of the public sector that implement or contribute to urban policies. In many African countries, inadequate local capacity is compounded by the lack of incentives for qualified professionals to embrace a career in local government. Moreover, many governments lack building professionals such as engineers, planners, urban finance experts, project managers, local economic development practitioners, environmental and building regulation inspectors, transport planners, engineers, and land-use lawyers. Thirty-six African countries do not have an urban planning school. Among those that do, Nigeria has 10 times less registered urban planners than the United Kingdom despite having 20 million more urban inhabitants. Africa needs tens of thousands of professionals to manage its cities and towns. It also needs a new breed of professionals that can cope with the complexities of the urban environment shaped by informal actors as well as global information networks.

Filling this gap requires systematic capacity-building programmes. Governments need the leadership and skills to produce, implement, monitor and evaluate urban strategies and action plans. Civil society organisations and businesses involved in the urban agenda can also benefit from the same learning environment. New African institutions and networks are forming to plug this capacity gap, but these initiatives need to be scaled up and adapted to local contexts. Here are three successful examples:

- South Africa's eThekwini Municipality established the Municipal Institute of Learning (MILE) to build capacity for local government. Since 2009, MILE has trained 3 600 local government practitioners in strategic planning, water and sanitation, solid waste management, and revenue management. The programme has provided technical support to municipalities neighbouring Durban, as well as in Malawi, Mozambique, Namibia and Zimbabwe. It fosters collaboration and learning partnerships and networks with local and international universities, research institutes in Africa and international development agencies.
- The Association of African Planning Schools is a network of 54 university-based city and regional planning schools across the continent. It trains urban planners in Africa to address issues such as informality, land, participation, governance, climate change, spatial planning and infrastructure. Moreover the network initiated an African planning law reform process.
- The Ethiopian Civil Service University and Ministry of Urban Development and Housing scaled up their graduate-level training in urban management to about 350 Master students per year between 2008 and 2015, representing a 12-fold increase since 2006.

To be successful, a national capacity building programme must involve many stakeholders. It should include the senior nodal point in the government, ideally with the president; the national department responsible for territorial planning and development; the department responsible for regional and local government; and the national departments charged with infrastructure and economic development. This cluster must work with the respective national association of local governments to refine the capacity-building agenda and develop a coherent programme bringing together the various stakeholders. Once the coalition for capacity-building and the right career incentives for young professionals are in place, it is possible to leverage the resources and offerings of various international agencies, according to the local priorities and demands.

Finally, incentives such as funded bursaries tied to in-service professionals can help ensure that adequate skills are available in more remote centres, as experimented in Ethiopia and Zambia. International experiences of in-service training in various sectors, such as the deployment of doctors to rural hospitals, could be adapted for building professions. Innovative approaches could also be explored.

Transparency is a key to the success of multi-level governance reforms

Embedding transparency in the seven steps set out at the beginning of this chapter for the formulation of urban development strategies can help attract finance, increase the efficiency of projects and improve fiscal legitimacy.

As the next section shows in more detail, accessing new finance for urban development requires providing potential financiers with information on opportunities and risks, as well as accountability systems documenting infrastructure inventories, rates and levy collection, cost recovery and debt-asset ratios. Beyond financial actors,

however, local actors, close to the point of expenditure, service delivery and citizen experience, should be among the main beneficiaries of enhanced transparency and accountability. **Open data** is one of several instruments for redefining the relationships between urban actors. By turning data into widely available resources, it can generate socio-economic innovations, pave the way for new entrepreneurial ambitions or be the source of new jobs. However, access to national data alone is not enough to enable civic participation: citizens need to believe in the quality of the information and government responsiveness. Several countries have developed open data initiatives:

- In Cameroon, the Association Internationale des Maires Francophones (AIMF) is encouraging the full participation of citizens in the budget cycle. A local government budget management system based on a software called SIM_ba helps inform decisions and foster accountability and data availability. As it rolls it out to different communes, AIMF claims that the use of open data might increase the share of administrative and public accounts deposited before the Audit Bench of the Supreme Court from 10% today to at least 50%. The software is being used in other countries including Burkina Faso, Chad, Comoros, Congo, Guinea, Mali, Madagascar, Niger and Togo.
- The Kenya Open Data Initiative (KODI) was launched in 2011 to give free access to government datasets and promote more transparent and effective governance. It stalled in 2013, as the dataset was not updated, but was re-launched in July 2015 with an improved online portal bringing more timely and diverse data. Today, 31 ministries contribute data, alongside increasing efforts of local governments. Journalists and civil society are being trained to use it. More than 94 million visitors have been able to consult 830 data sets, 92 maps and 301 charts. KODI remains a top-down initiative but plans to adopt more participatory means of generating data by working with grassroots open data and crowd-sourcing movements. It has generated interest from Ghana, Rwanda and Tunisia.

Finally, **participatory budgets** featuring a specific type of open data on the collection and use of local taxes can improve tax legitimacy. They promote fiscal decentralisation, making local authorities more inclusive, autonomous and accountable. The YTAX system set up by Enda Tiers-monde shows how new technology can facilitate participatory budgets by integrating all actors who manage local taxes: the collector, the inspector, the controller and the mayor. Each actor has an account within the system and is thus accountable to the others.

African governments can use various sources to finance national urban strategies

Step seven of the urban development framework outlined at the outset of this chapter is to mobilise financial resources in support of national urban strategies and the new urban agenda for Africa's structural transformation. As explained above, the financing gap is huge, and bridging it requires context-specific solutions that tap the opportunities available in different countries, by:

1) empowering local authorities and making them accountable as part of the multi-level governance reforms outlined above
2) raising new financial resources through innovative finance mechanisms
3) harnessing the international community's financial resources and opportunities for knowledge exchange.

Massive investment in a wide range of infrastructure is necessary for promoting vibrant and inclusive African cities (Box 8.7). How to mobilise the necessary financing is addressed here.

Box 8.7. **The size of sub-Saharan Africa's urban infrastructure gap**

Sub-Saharan Africa needs to invest around USD 90 billion per year in infrastructure, of which USD 60 billion in new infrastructure and USD 30 billion in maintenance. This estimation is based on the Africa Infrastructure Country Diagnostic (AICD), which assesses infrastructure needs globally using a sample of 24 countries. The AICD approach divides infrastructure into three categories:

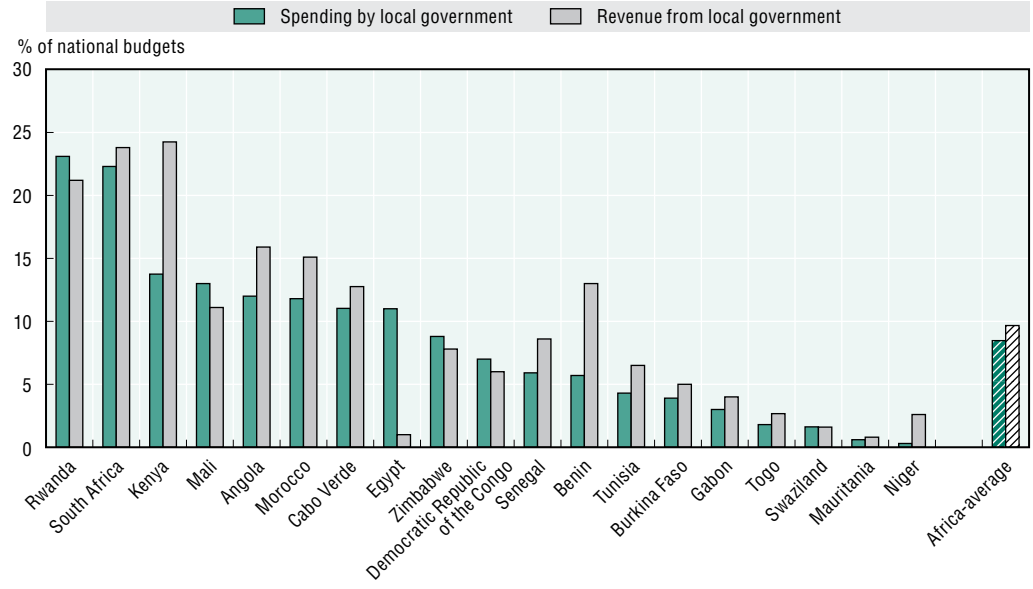
- productive infrastructure at the national level (for example energy generation and transmission, telecommunication networks, highways, railways, airports and ports) which represent 34% of total needs (about USD 31 billion)
- public utilities and services in urban areas (for example roads, electricity, water and telecommunications) which represent 32% of total needs (about USD 29 billion)
- public utilities and services in rural areas (for example roads, electricity, water, drainage and irrigation) which represent 34% of total needs (about USD 31 billion).

The base-cost approach, which looks more specifically into needs for urban investment, estimates that sub-Saharan Africa requires between USD 12.5 billion and USD 35 billion per year depending on urban extension and population densities. This estimate does not include the cost of land and superstructure facilities (Paulais, 2012: 96-102).

Fiscal decentralisation comes with capable and accountable local authorities

The lack of financial resources of local authorities in Africa is striking. To ensure that momentum for policy reform is established and maintained, attention to the financial dimensions of the urban reform agenda is essential. According to preliminary estimates by the Global Observatory of Local Finances, 9.5% of national revenues are granted to local authorities in 19 African states (Figure 8.2), compared with 26% in the European Union.

Figure 8.2. **Local authorities' revenues and spending as share of African national budgets, 2013**



Note: Preliminary data. The collection of data and checking is ongoing, and the first results have yet to be fully validated. The panel does not include federal states. Data is for the year 2013 except Angola (2012); Burkina Faso (2012); Cabo Verde (2011); Egypt (2010); Gabon (2007); Mauritania (2008); South Africa (2012); Togo (spending 2006); Tunisia (2012); Zimbabwe (2012).

Source: UCLG (forthcoming).

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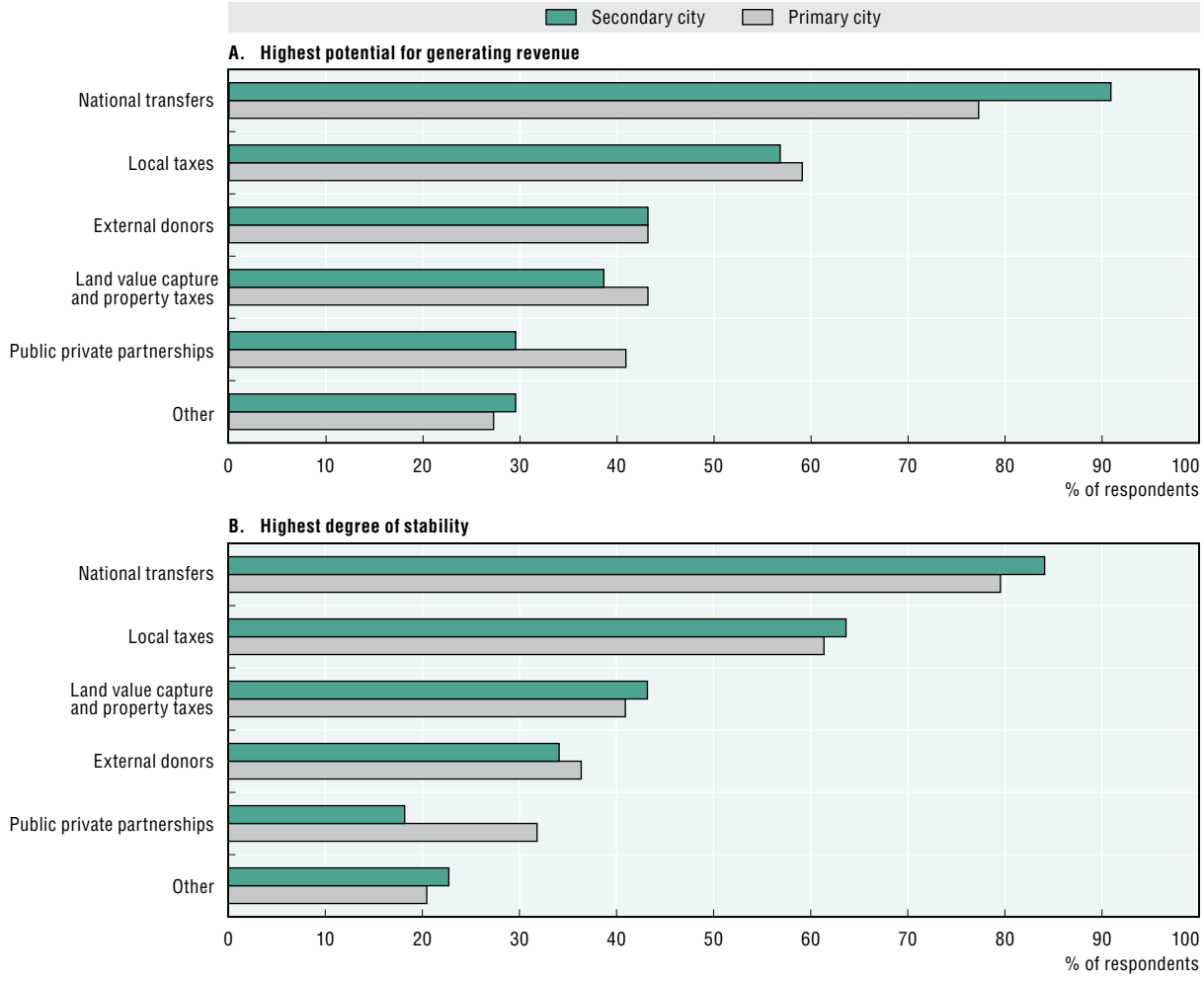
Cities cannot address the infrastructure challenge without sufficient empowerment. The difficult task of providing social assistance to the poor, which is so important in African cities, can be best managed at the local level. Further, local budget decisions are more likely to result in well-located infrastructure, aligned to local needs that will crowd in local resources. However, fiscal decentralisation has proven the most controversial aspect of multi-level governance reforms due to low capacity and weak accountability. Local authorities must prove they are accountable, transparent institutions able to deliver basic services.

The financing tools cities can use depend greatly on the local context (Figure 8.3). According to the AEO survey, central government transfers and local taxes are ranked as having the greatest potential for revenue mobilisation, both in terms of magnitude and stability of funding. However, central government transfer is rated more important in secondary than in primary cities. In about 40% of the countries, funding from external donors, land value capture mechanisms and public private partnerships (PPPs) feature as other important sources of revenue for local governments. Engaging in PPPs seems more common in primary cities. Globalisation has brought opportunities for innovative finance, but not all cities can use these new tools equally. Co-operation between local governments can also rationalise resource mobilisation efforts.

Figure 8.3. **Experts' ratings of local government revenue sources, by revenue potential and stability in primary and secondary cities**



Note: "Other" includes local government bonds, remittances, and loans from local development banks and from private financial institutions. Survey answered by country economists of the AfDB and UNDP in 45 country offices in Africa. Response is weighted to one answer per country.

Source: AEO experts' survey, 2016.

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Enhanced local finance and effective multi-level governance are two sides of the same coin

Provided local governments are transparent and accountable, fiscal decentralisation can allow them to finance urban infrastructure through three main channels:

- national transfers, which remain the core of cities' revenue in many countries
- local taxes and complementary instruments such as land value capture mechanisms
- private finance.

National financial transfers and specialised financial institutions can boost cities' resources

Mechanisms of equalisation and modalities of transfers vary greatly across African countries, depending on the extent of the fiscal disequilibrium, the institutional context of decentralisation or their history. For example, Nigeria automatically transfers 13% of oil revenue to the states hosting production, 60% of which is granted directly to local authorities. In South Africa, a formula determines the revenue support grant by using costs estimates. In Uganda, fiscal transfers to local authorities are conditional and determined on an ad hoc basis. For an analysis of political, administrative and fiscal decentralisation in Africa, see also AfDB/OECD/UNDP (2015: 189-193).

A dozen countries have set up specialised financial institutions (SFIs) to expand local authorities' financial capacity, because most local authorities can hardly access commercial credits and private capital markets. The status and mandates of SFIs depend on diverse administrative contexts, levels of economic development and willingness of the central government to delegate financing mechanisms. SFIs must also respect macro-prudential guidance. In Tunisia, SFIs have led to over-indebtedness of local governments (UCLG, 2010: 53). Table 8.4 sketches a typology of SFIs.

Table 8.4. **Specialised financial institutions in African countries**

Characteristics	Country	Financing institution	Donor loan	Capital market	Own resources	Taxation	Central government
State-owned or private-sector SFI	Morocco	FEC	√	√	√		
	Nigeria	UDBN	√	√			
Active municipal credit mechanisms	South Africa	DBSA/INCA	√	√	√		
	Tunisia	CPSCL	√	√	√		
Investment fund	Burkina Faso	FICOM/ FPCL	√				√
Limited or non-existent municipal credit mechanism	Cameroon	FEICOM				√	
	Kenya	LGLA	√		√		√
	Mali	ANICT	√				
	Senegal	ADM	√		√		√

Note: FEC = Fonds d'Équipement Communal, DBSA = Development Bank of Southern Africa, INCA = Infrastructure Finance Corporation Limited; CPSCL = Caisse de Prêts et de Soutien des Collectivités Locales; FEICOM = Fonds Spécial d'Équipement et d'Intervention Intercommunale; LGLA = Local Government Loans Authority; ANICT = Agence Nationale d'Investissement des Collectivités Territoriales; FICOM = Fonds d'Investissement pour les Collectivités Décentralisées; UDBN = Urban Development Bank of Nigeria.
Source: Paulais (2012).

Local governments can use local tax and land value capture mechanisms more effectively

Cities can also increase their revenues by expanding the fiscal base to local property and economic activities. Strengthening local fiscal capacities is indispensable for all African countries: it can build the capacity of local governments but also increase fiscal legitimacy in general, including among agents in the informal sector. However, local tax collection is estimated to be about 1% of national income in most countries (AfDB/OECD/

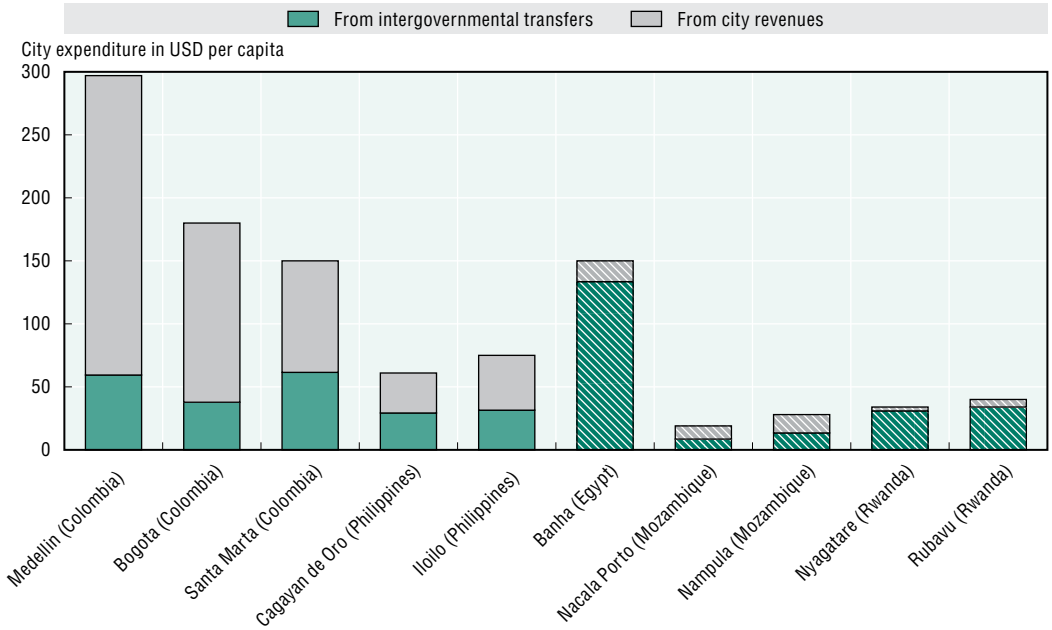
UNDP/UNECA, 2010: 114). Yatta (2016: 19) estimates that local taxation is extremely low in seven Central and West African countries according to three indicators:

- Local governments taxed an estimated 0.7% of local households' revenues.
- Tax on local property is close to 0%.
- The local collection rate was estimated at 0.20-0.58% of the "gross local product": when a city generates USD 100 its return is less than USD 0.60.

Evidence suggests similar situations in other countries. Out of 42 African countries, at least 5 do not levy any local tax (AEO experts' survey, 2015).

Comparing the revenues of some African cities to some in Colombia and the Philippines reveals the difficulties African cities face in generating local resources (Figure 8.4). A dearth of local revenues results in African cities' strong dependence on national transfers. Transfers make up over 85% of the revenues of cities such as Banha, Egypt, or Nyagatare and Rubavu, Rwanda. Having too few locally generated resources contributes to African cities' financing gap.

Figure 8.4. **Revenues from transfers and locally generated resources, selected cities in Africa, Colombia and the Philippines**



Note: USD in purchasing power parity, 2013.
Source: UN-Habitat (2015a).
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Developing efficient and fair local fiscal systems can require difficult, profound and context-specific reforms. For instance, most local taxes are direct taxes, although direct taxes tend to be more subject to tax evasion when fiscal legitimacy is low. In addition, local taxes can be more difficult to collect than indirect taxes, in particular where tax collection is not within local governments' capacity. Local economic accounts in Central and West Africa show that the urban informal sector is sometimes taxed at 0.30%, against 0.10% for the formal sector. In some cases, the informal sector may effectively pay value-added tax on much of their input already purchased as final goods, while the formal sector may benefit from certain tax exemptions, for instance those enticing new investments (Yatta, 2016: 19). Expanding the local tax base, however, especially property tax, is politically sensitive. The right tax mix largely depends on the national and local context.

The capture of land value can complement local revenue collection, although it should not replace local taxes because they are legitimate fiscal instruments. In a context of rapid urban expansion, land could give national or local authorities a powerful tool for structuring and financing urbanisation. Land value capture can usefully internalise the fluctuation of land prices that come with the urbanisation dividend. Usually, it requires a three-step process:

- Regulatory decisions (change in land use, infrastructure investment, etc.) trigger an increase in land values.
- The government then institutes a process to capture part or all of the gains in land valuations.
- The captured land value finances infrastructure investments to offset the negative effects that come with higher land prices, such as densification and gentrification. For instance, the government can use these funds to provide affordable housing (Suzuki et al., 2015).

One example is the *tiers associé* (associated third party) initiative started in 2007 in the context of Morocco's National Slum Removal Policy. To relocate informal settlements, households were collectively granted a plot of land with rights to build up to three or four floors. Two households may form an association with a third party who finances the construction in exchange for parts of the new building, and the households receive two apartments. This mechanism allowed the rapid creation of formal housing, commercial real estate and free land for urban development (Toutain, 2015). Table 8.5 shows some examples of land-based financing initiatives.

Table 8.5. **Land-based financing initiatives in Africa**

Mechanisms	Examples	Description
Formal urban extension through voluntary private land readjustment	Land readjustment in the secondary city of Huango, Angola	Land readjustment operations on a 312-hectare (3.12 km^2) rural area in the Fatima district have generated 255 lots for housing. A 35% land surface and a land title were given to original owners, 30% to public utilities and the 35% remaining sold to finance the project. USD 800 000 were collected from land sale and financed small infrastructure upgrades.
Property tax and land titling	Registre Foncier Urbain (RFU), Benin	By clarifing land titles, the RFU intended to increase property taxes and local fiscal revenues. These dramatically increased in the early 1990's but decreased towards the end of the decade, mainly for two reasons: 1) the central administration retains the power to collect taxes, and local taxes are not a priority; and 2) local policy makers hesitate to promote a tax that is unpopular among voters.
Public land sale	Sale of public land in Addis Ababa, Ethiopia	In Addis Ababa, 94% of land is sold by the communes at a price set by administrative rules. For 2014, the revenue from the sale of land development rights represented 6% of the city's total budget of USD 900 million and 9% of its total investment spending.

Source: UN-Habitat (2013) and UCLG (n.d.).

Land value capture opens perspectives for the future. However, it remains incipient partly due to Africa's structural weaknesses related to difficult land registry and titling procedures (see above), dysfunctional real estate and financial markets, and weak planning policies. Land value capture mechanisms are often ad hoc and difficult to replicate due to a lack of institutionalisation. Rampant corruption and favouritism can lead to powerful elites pocketing the increase in land value, as observed in Bamako, Mali (Durand-Lasserve et al., 2015). Land value capture mechanisms are often the product of negotiations between various public bodies, owners, users and real estate agencies, which implies reaching a consensus on the value and on sharing the benefits (Suzuki et al., 2015). Securing land rights and institutionalising a system for giving formal approval to land development projects remain a prerequisite.

Fiscal decentralisation allows local governments to raise private finance

Within strict macro-prudential regulations, the third dimension of fiscal decentralisation consists in enabling local governments to use financing mechanisms from the private sector, such as local debt instruments. With a better tax base, local governments can borrow from financial markets, provided they respect national guidance for macroeconomic stability:

- Johannesburg gained access to capital markets in 2004 and has successfully emitted six municipal bonds, the last one valued at ZAR 90 million in December 2015.
- In Cabo Verde, local governments can borrow from commercial banks within certain limits to avoid over-indebtedness. Credits are mostly limited to five years and have relatively costly interest rates of 13-14%. To reduce risks, the central government has to approve every loan. Cabo Verde's average local government budget is relatively high: in 2007, it represented EUR 276 per inhabitant, against EUR 7 in Senegal.
- Federal states in Nigeria are allowed to borrow on domestic capital markets with the permission of the central government. Lagos State generates 60% of its own resources. Through the emission of bonds and public private partnerships, Lagos has managed to mobilise additional resources and improve local infrastructure since 2008 (Paulais, 2012: 321-51; quoted in AfDB/OECD/UNDP, 2015).

Nonetheless, Nigeria's bond-emission model cannot be a universal solution. It is mainly appropriate for large entities and local governments with high growth perspectives. Besides, local governments may not necessarily obtain the approval of national authorities, who may object for financial, administrative or political reasons.

Another instrument consists in attracting foreign direct investment (FDI) into urban infrastructure. Globally, some USD 50 trillion in savings and pensions are available (CCFLA, 2015). Some of it could finance the development of Africa's urban infrastructure, but the continent receives insufficient investment finance (AfDB, 2012). USD 328 billion was spent on African infrastructure between 2009 and 2014, but FDI inflows to Africa have contracted as a result of the decline in commodity prices (Chapters 1 and 2). Cities in *diversifier* and *early urbaniser* countries (Accra, Casablanca, Cairo, Tunis, Johannesburg and Lagos) are showing some resilience to the downturn. Initiatives such as Africa50 infrastructure fund and the Private Infrastructure Development Group provide African governments with technical expertise and a pipeline of standardised projects that reduce transaction costs for external investors. To alleviate risk for investors, African governments can use hedging mechanisms such as risk insurance and commitment devices offered by international organisations such as the Multilateral Investment Guarantee Agency, the insurance arm of the World Bank.

Innovative finance offers new ways of raising and allocating resources

Innovative finance mechanisms can offer new ways to deliver services and avoid the obstacles of financing service infrastructure through conventional "user-pay" arrangements. Providing **partial access to state-owned utilities** and facilities could encourage investment, if well-structured and transparent. In Ethiopia, Kenya, South Africa and Tunisia, private-sector involvement in state-owned energy, waste management and water utilities has attracted investment and improved accountability. While private-sector involvement presents the risk of corruption of public entities, a well-structured process can reduce financing constraints. Examples of how public assets can be leveraged to attract private finance for services include the extraction of valuable material from state land-fills, such as at Lagos' Olusosun landfill, and others that convert landfill gas into energy (such as Durban's Bisaser Road) and municipal green waste into compost (e.g. Cape Town's Reliance Compost). New gas reserves present opportunities to apply this approach, which could lead the way to a less onerous, more stable and inclusive energy sector in Africa.

Co-production of infrastructure investment can lead to virtuous cycles of services, work and reduced risk. While low per-capita income is a general finance problem in Africa, the potential of mobilising local financial resources from across the socio-economic spectrum remains untapped. This is most likely when local authorities and community-based organisations are not excluded. For example, the excessive household expenditure on batteries and paraffin directed companies to privately financed models of household energy. Household resources can be added to international finance to produce affordable services. This is shown by energy service companies Off-Grid Electric and M-KOPA Solar in East Africa and by the sanitation "bio-centres" in the informal settlement of Kibera, Nairobi. Bills can be paid by mobile phone technology, which is growing rapidly. In the process, local authorities can generate greater financial leverage from their available balance sheets and enhance them with private resources.

Green funds and climate finance can offer new sources of investment, if they address structural challenges in attracting investment and use these funds efficiently. All but two African countries made Nationally Determined Mitigation Commitments, at COP21 in Paris. Adopting renewable energy technologies will have to catalyse financial innovation. The Green Climate Fund of the United Nations Framework Convention on Climate Change will provide new funding options for low-carbon projects. The greater hope is that African countries will use the fund's USD 16 trillion investment in renewable energy and clean technology to comply with the Paris Agreement and the 2°C warming limit (Mathres, 2016). Climate funding for African cities can modernise the manner in which infrastructure is financed. It can also replace centrally co-ordinated mega-infrastructure projects with alternatives, such as locating energy sources closer to the point of demand. However, the multinational agencies dispensing these funds need to align with local needs and initiatives.

Finding ways to value **ecological capital** offers potential for service provision. In the absence of formal services, many urban residents rely disproportionately on goods and services provided by the natural environment for potable water, flood buffering and recreation (see Chapters 6 and 7). Though vulnerable, ecosystem goods and services can be fiscally efficient. This is the logic behind the Upper Tana-Nairobi Water Fund (Box 8.8). Finance recognising the role of ecological capital can create jobs for low-skilled unemployed urban youth.

Other innovative finance mechanisms for Africa's urban development are available. These include funding from emerging countries, sovereign wealth funds, remittances and diaspora bonds (AfDB/OECD/UNDP, 2015: 219).

Box 8.8. **The Upper Tana-Nairobi Water Fund**

The planned Upper Tana-Nairobi Water Fund, which focuses on the watershed that supplies Nairobi with 95% of its water, would be the first of its kind in Africa. A water fund supports both water and soil conservation. It funds "green infrastructure" using natural systems and is cheaper than "grey infrastructure" such as reservoirs, multiple dams and water treatment plants. Water funds have been implemented in cities such as Quito or Rio de Janeiro.

For a budget of USD 10 million over ten years, key investments include management of riparian areas (the interface between river and land), agroforestry, terracing, reforestation, grass strips and road mitigation. Local farmers are expected to benefit from reductions in soil erosion and related damages to production and to water quality and supply. The area would therefore enjoy increased agricultural productivity (TNC, 2015).

Phasing out fossil fuel subsidies could free up investment in renewable energy

A hypothetical scenario modelled for this report shows how phasing out fossil-fuel subsidies could free up investment in renewable energy. Globally, investment in renewable energy systems has undergone an unprecedented boom: from USD 39 billion in 2004 to USD 329 billion in 2011. In sub-Saharan Africa, coal-fuelled electricity generation is projected to drop from 56% of total energy in 2012 to 27% by 2040. By the same year, renewable energy sources are estimated to provide 41% of total electricity, over half of which from hydropower. Investing in off-grid renewable energy is an attractive option in sub-Saharan Africa where 50% of the urban population live without grid connection. Off-grid solar energy, in particular, can enable users to access lighting and in some cases afford mini renewable-based electricity generators.

According to analysis by the ReCalc programme of World Wildlife Fund for Nature (WWF) on a sample of 24 African cities, re-allocating fossil-fuel subsidies could free up some USD 16 billion for investment in renewable energy between 2017 and 2025 (Table 8.6). These investments could increase the cities' installed electricity capacity by 6 600 megawatts and generate 16 million megawatt hours annually. At current consumption levels, the added capacity would meet the demand of 55 million more people. Replacing fossil fuel by renewable sources for electricity could reduce lifetime greenhouse gas emissions by 590 million tonnes of carbon dioxide and directly save 20 million litres of water.

Table 8.6. **ReCalc scenario replacing fossil-fuel subsidies with investments in renewable energy for 24 African cities**

City	National pre-tax fossil-fuels subsidies (2015)	Net investment in renewable energy (2017-25)	Capacity added (2017-25)	People whose annual electricity consumption would be covered (annually)	Greenhouse gas emissions averted (2017-74)	Water consumption averted (2017-74)	Jobs created (2017-74)
	USD billion	USD billion	Megawatts		Million tonnes CO2 equivalent	Million litres	
Abidjan	0.99	1.7	692	7 563 470	55	1 723 013	42 012
Accra	0.10	0.1	26	194 348	2	63 816	1 555
Antananarivo	0.11	0.1	42	188 266	4	132 418	2 497
Cape Town	2.51	1.3	523	203 471	35	1 224 320	31 382
Dar es Salaam	0.75	0.6	256	5 890 533	24	801 073	15 107
Douala	0.77	0.6	309	3 837 944	31	1 026 728	17 052
Durban	2.51	0.8	406	157 817	27	949 708	24 340
Harare	2.70	1.9	751	3 037 570	71	2 346 154	44 249
Jos	0.92	0.0	14	215 978	1	39 806	823
Kampala	0.32	0.1	52	290 245	6	197 304	2 931
Kigali	0.03	0.0	10	58 210	1	39 529	588
Kinshasa	0.68	0.8	320	9 921 751	33	1 063 633	17 663
Kumasi	0.10	0.1	33	247 137	3	81 176	1 980
Libreville	0.10	0.3	120	358 661	12	400 853	6 655
Luanda	0.96	1.8	706	7 291 376	66	2 203 822	41 562
Lusaka	2.06	2.4	948	3 774 481	89	2 960 824	55 838
Maputo	1.05	0.3	133	679 462	12	414 552	7 818
Marrakech	0.25	0.1	28	77 529	2	77 988	1 652
Matola	1.05	0.3	117	600 013	11	366 016	6 903
Mombasa	0.16	0.0	13	224 642	1	47 736	709
Nairobi	0.16	0.1	45	812 782	5	172 662	2 565
Ouagadougou	0.14	0.2	78	396 313	6	192 601	4 707
Pointe-Noire	0.69	1.1	441	7 896 555	45	1 467 183	24 363
Tunis	1.04	1.4	560	962 151	46	1 560 855	33 038
TOTAL	**16.3**	**16.1**	**6 621**	**54 880 707**	**590**	**19 553 772**	**387 992**

Note: The International Monetary Fund does not provide data for Gabon or Ghana, and subsidies' estimates from the International Energy Agency have therefore been used. Based on electricity consumption per capita (World Bank, 2015b), sub-Saharan average has been used for four countries lacking data (Burkina Faso, Madagascar, Rwanda, Uganda).
Source: Prepared by the WWF for this edition of the *African Economic Outlook*. More information on the tool is available at http://recalc.wwf.no/.

International co-operation can support national urban strategies

International co-operation can provide funding and technical know-how to support integrated urban strategies. Since 2000, the African Development Bank has invested over USD 3.2 billion in urban water supply and sanitation and is setting up a sub-national financing policy and a municipality trust fund. The Agence Française de Développement (AFD) has recently adopted an integrated urban strategy based on a regional approach, mobilising local actors and promoting decentralised co-operation. AFD also accommodates the financing to the level of maturity of urban plans: direct loans to local authorities, and credit facility or loans to states for on-lending to local authorities. The AFD has made loans to the cities of Johannesburg and Ouagadougou, but few other donors have yet made loans to local governments.

Other donor agencies have often helped urban governance through: i) enhancing co-ordination with clear jurisdictional boundaries between the central government and local authorities; ii) granting greater financial autonomy to the local authorities mainly by improving their fiscal base; and iii) establishing equalisation mechanisms between local authorities. Box 8.9 shows how co-operation between local, national and international actors can help monitor the achievement of Sustainable Development Goal 11 on sustainable cities.

Growing South-South co-operation can diffuse trial-and-tested experience among countries facing common challenges. For example, the Bus Rapid Transit (BRT), a model of public transport originally implemented in Curitiba (Brazil) in 1974, has been adopted by many cities in the Southern Hemisphere, including Lagos in 2008. The standards and priorities required by the BRT system, relative to the more complex solutions in the North, prove more appropriate for African cities facing uncontrolled urban growth and "slumisation" without adequate capacity. Similarly the successful Chamanculo slum upgrading initiative in Salvador (Brazil) characterised by strong community participation, inspired similar experimentation in Maputo (Mozambique).

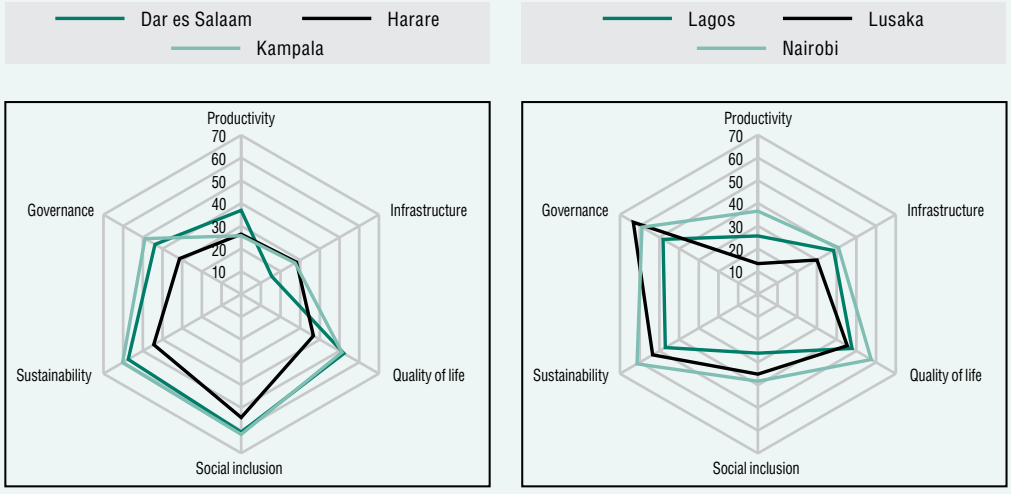
Box 8.9. **Measuring progress towards Sustainable Development Goal 11**

New methods and processes of data collection allow city governments to monitor their progress towards SDG 11, urbanisation and their own agendas. UN-Habitat has adapted the City Prosperity Initiative (CPI) to the global monitoring framework of the SDGs, including SDG 11, and the future New Urban Agenda. By adopting the CPI, a municipal government can monitor progress by using a single platform for multi-scale decision making between different levels of government. The CPI is already being implemented in more than 200 cities in Egypt and Ethiopia. The government of Addis Ababa has been using a contextualised CPI to monitor the implementation of Ethiopia's Structural Transformation Plan. After an initial assessment, local authorities are organising public consultations to understand critical problems and to propose action plans to address them.

However, many indicators proposed to monitor progress in the SDG 11 prove challenging for cities to measure. The Mistra Urban Futures centre found that the draft targets and indicators for SDG 11 pose significant challenges for all five local governments it works with (Bangalore (Bengaluru), India; Cape Town, South Africa; Gothenburg, Sweden; Greater Manchester, United Kingdom; and Kisumu, Kenya). The issues of data availability, ease of access or collection, and perceived relevance pose difficulties for the African, European and Asian cities. Even indicators like the availability and accessibility of transport services reveal important disparities. The diversity of urban contexts also hinders the application of universal measures. For example, the European definition of sub-standard housing, based on tenure types and security, proves inappropriate to classify two-thirds of Kisumu's residents. Similarly, informal and semi-regulated transport services would be included in most African and Asian cities yet excluded from cities in other world regions (Simon et al., 2015).

Box 8.9. **Measuring progress towards Sustainable Development Goal 11** (cont.)

Figure 8.5. **Examples of the City Prosperity Index for six African cities**



Note: Each dimension has a scale of 0 to 100, with a higher score representing a better outcome in the respective dimension.

Source: UN Habitat (2015b).

StatLink http://dx.doi.org/10.1787/888933350960

Note

1. The UN-Habitat Governing Council, a subsidiary body of the United Nations General Assembly, adopted Guidelines on decentralisation and strengthening of local authorities in 2007. The Guidelines are the only non-binding international declaration supporting decentralisation as a strategy for development, the only other comparable document being the European Charter of local self-government, which only applies to the members of the Council of Europe.

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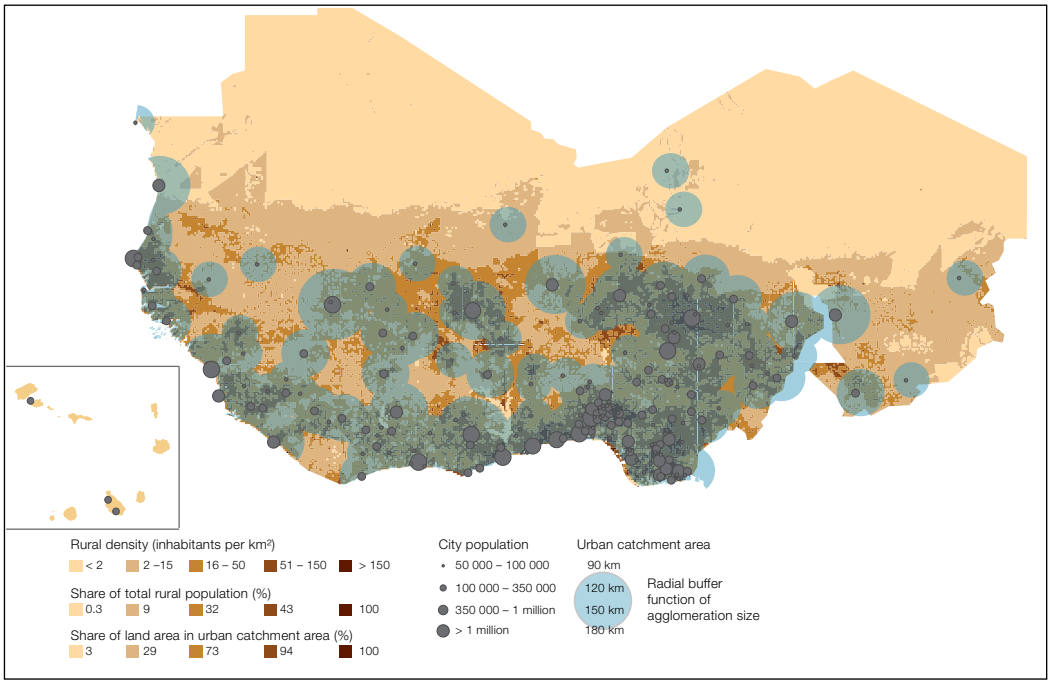
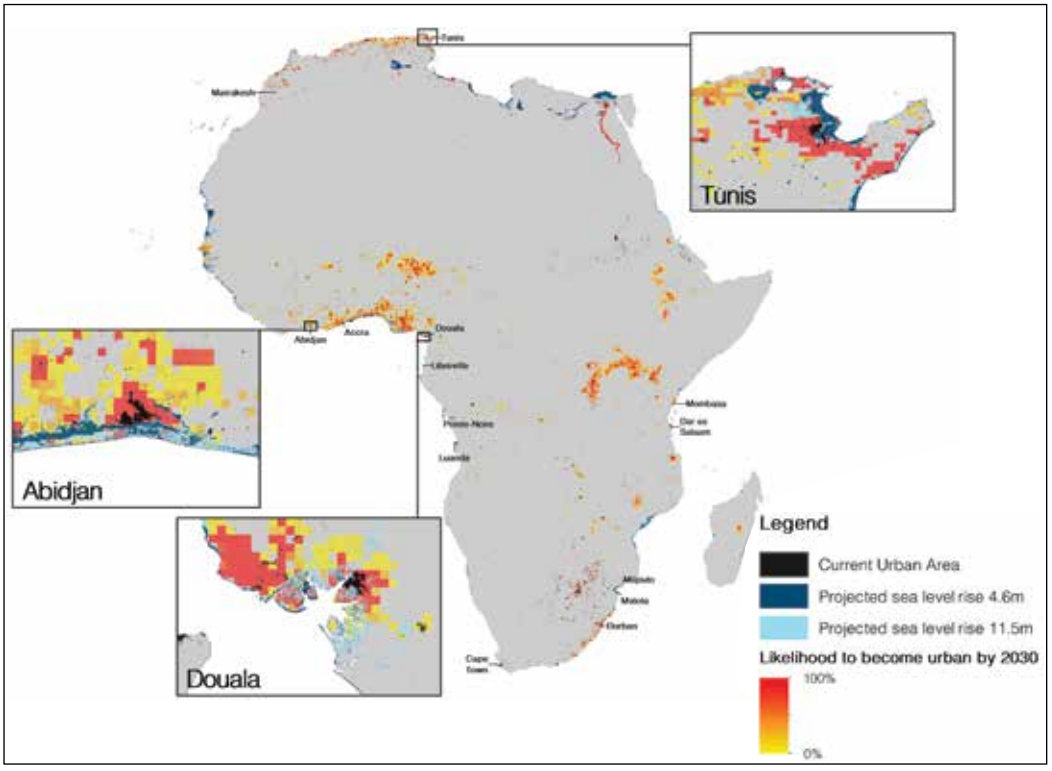
Maps

Map 6.1. **Population settlements and urban catchment areas in West Africa, 2000**



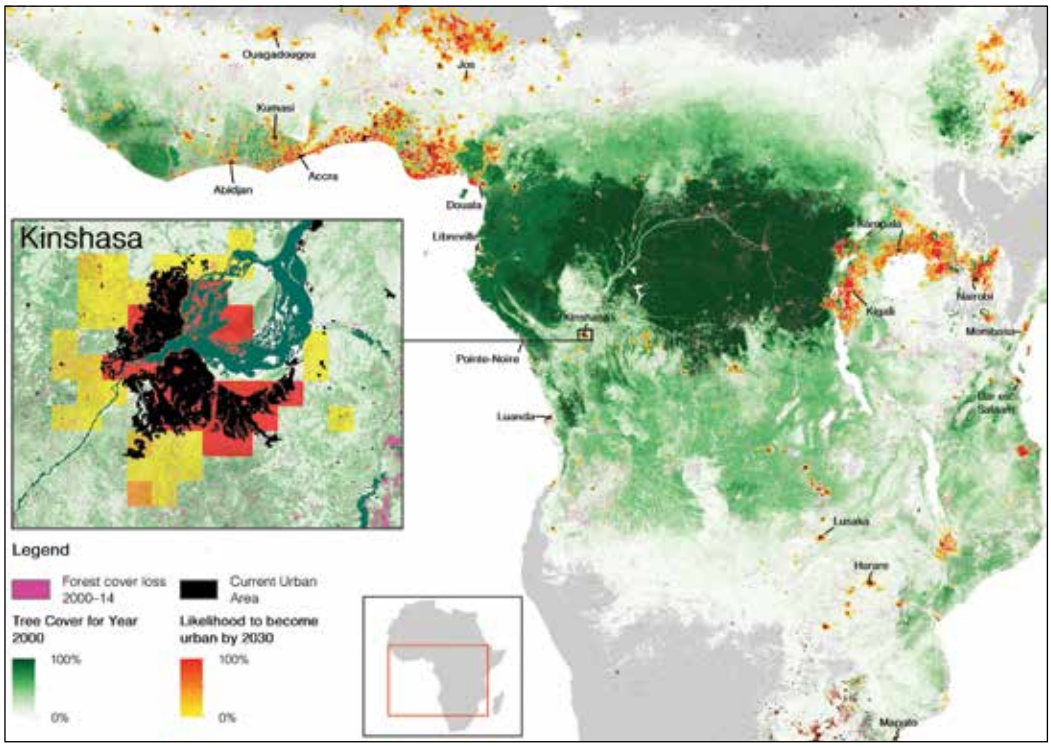
Source: OECD (2013), *Settlement, Market and Food Security*, West African Studies, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264187443-en.

Map 6.2. **African coastal cities affected by climate change**



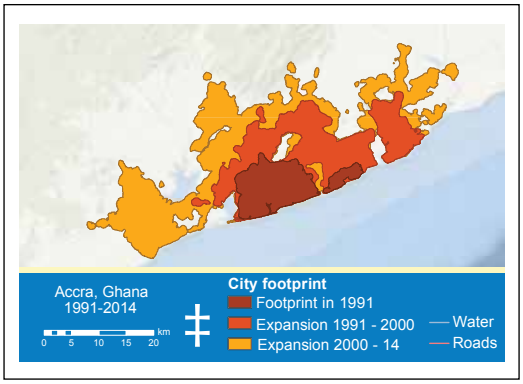
Source: WWF (2016), prepared for this edition of the *African Economic Outlook*, World Wildlife Fund, Washington, DC.

Map 6.3. **Current and future urban areas, forest cover and deforestation in Africa**

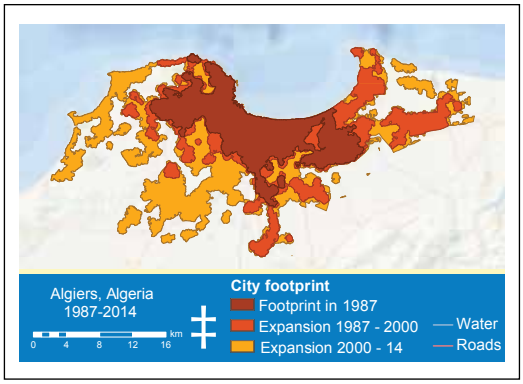


Source: WWF (2016), prepared for this edition of the *African Economic Outlook*, World Wildlife Fund, Washington, DC.

Map 6.4. **Accra's urban expansion (Ghana), 1991-2014**

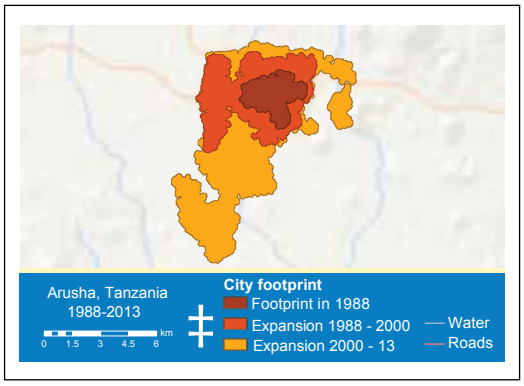


Map 6.5. **Algiers' urban expansion (Algeria), 1987-2014**

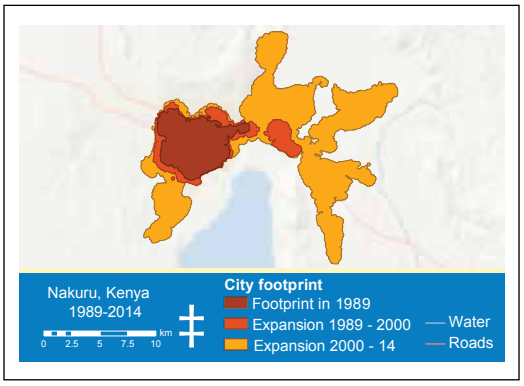


Source: UN-Habitat (forthcoming), *Atlas of Urban Expansion: The New 2016 Revision*, UN-Habitat/New York University/The Lincoln Institute of Land Policy.

Map 6.6. **Arusha's urban expansion (Tanzania), 1988-2013**

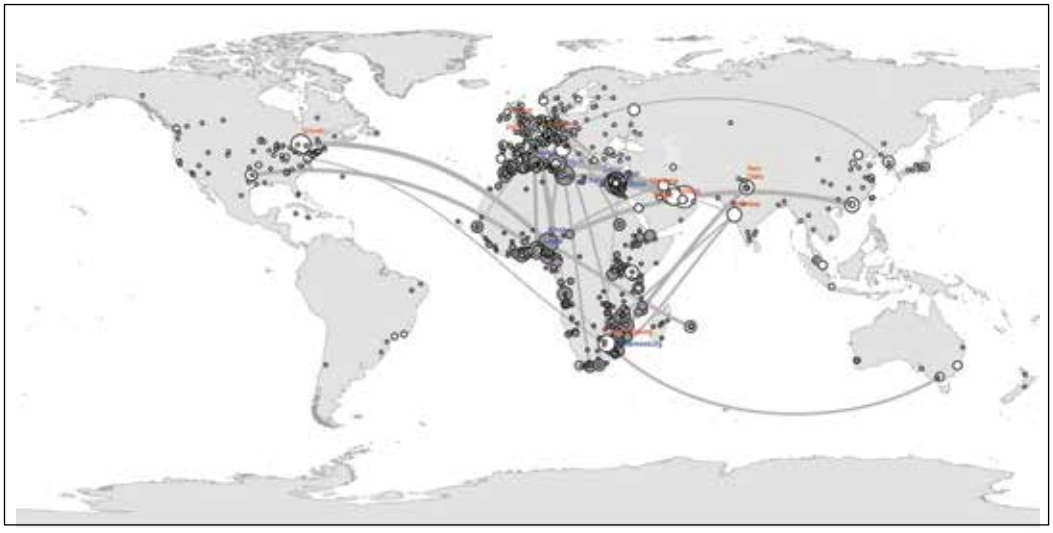


Map 6.7. **Nakuru's urban expansion (Kenya), 1989-2014**



Source: UN-Habitat (forthcoming), *Atlas of Urban Expansion: The New 2016 Revision*, UN-Habitat/New York University/ The Lincoln Institute of Land Policy.

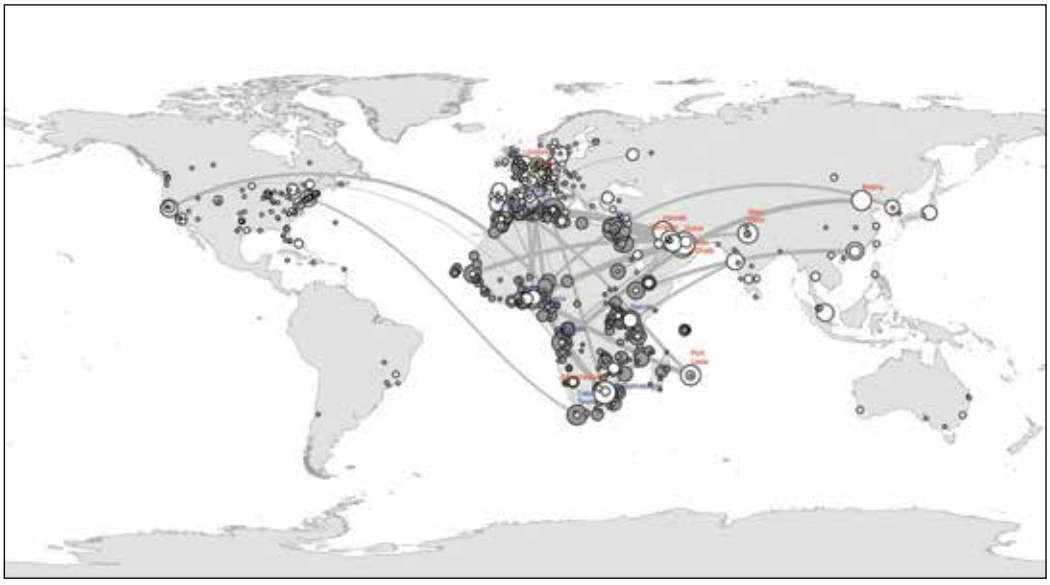
Map 7.1. **Network of the top 50 foreign direct investments in Africa's manufacturing cities, 2003-14**



Note: The cities written in red are the top ten source cities, and those in blue are the top ten African destination cities.

Source: Wall, R. (forthcoming), based on raw data from fDi Markets, Orbis and IHS-Erasmus, in A. Badiane, J. Maseland, R. Wall and K. Rochell, *State of African Cities 2017*, UN-Habitat, Nairobi.

Map 7.2. **Services network of top 50 investments from top 10 source cities to top 10 African destination cities, 2003-14**

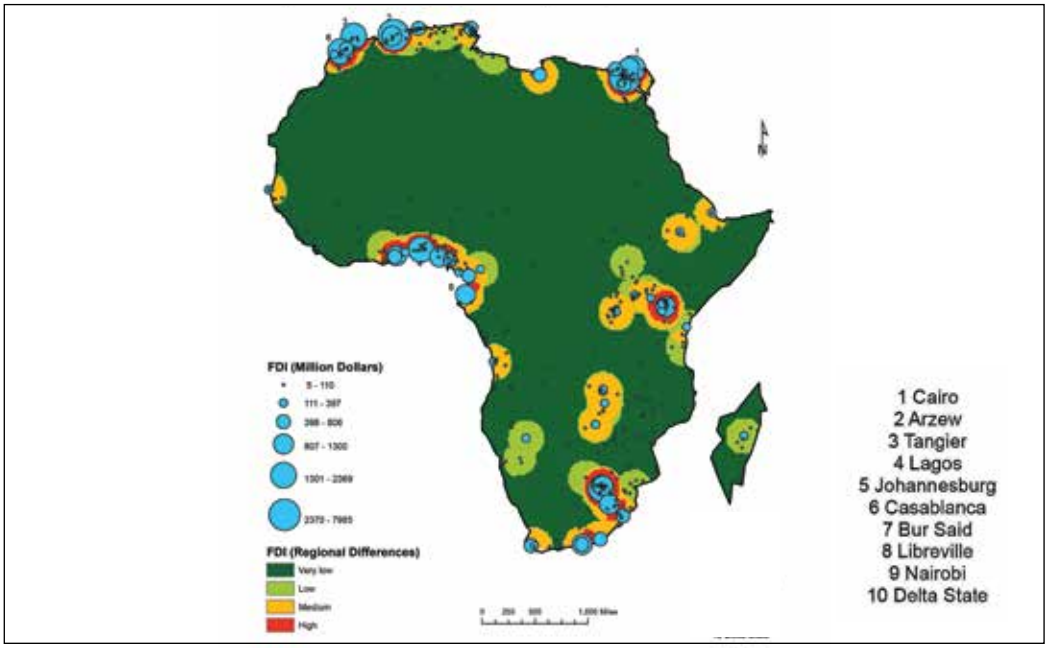


Note: The cities written in red are the top ten source cities, and those in blue are the top ten African destination cities.

Source: Wall, R. (forthcoming), based on raw data from fDi Markets, Orbis and IHS-Erasmus, in A. Badiane, J. Maseland, R. Wall and K. Rochell, *State of African Cities 2017*, UN-Habitat, Nairobi.

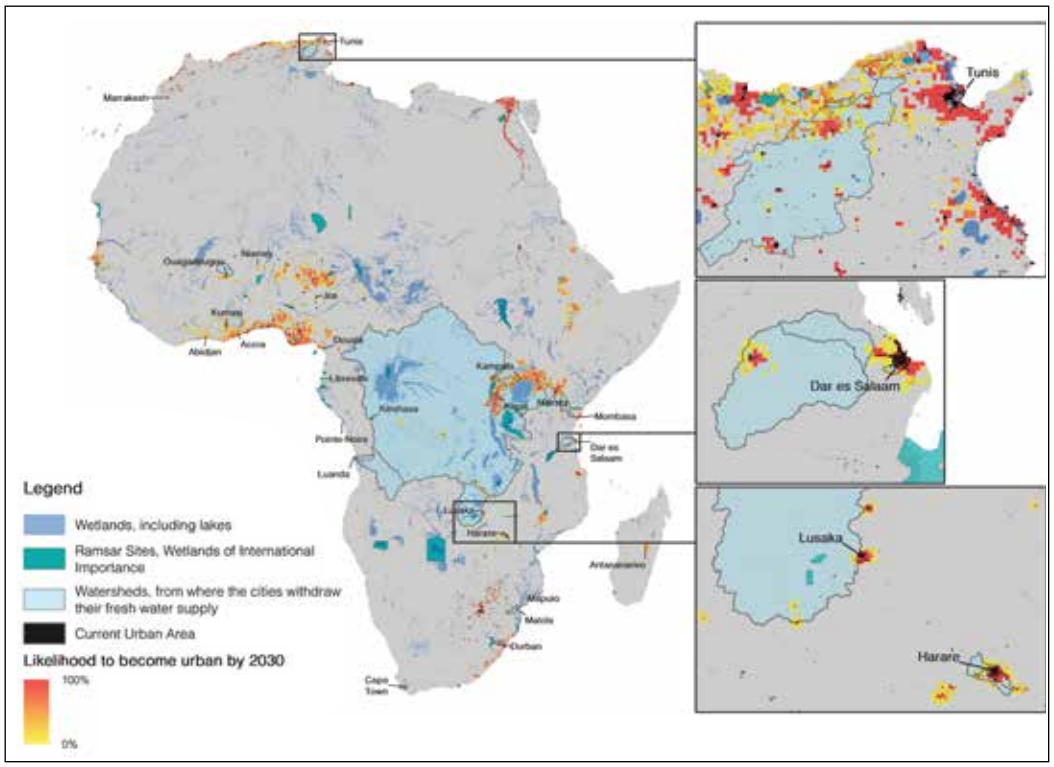
Map 7.3. **Africa's city regions attracting hi-tech foreign direct investment at four levels, 2003-14**

interpolation using a geographic information system



Source: Wall, R. (forthcoming), based on raw data from fDi Markets, Orbis and IHS-Erasmus, in A. Badiane, J. Maseland, R. Wall and K. Rochell, *State of African Cities 2017*, UN-Habitat, Nairobi.

Map 7.4. **Current and future urban areas in relation to watersheds in Africa**



Source: WWF (2016), prepared for this edition of the *African Economic Outlook*, World Wildlife Fund, Washington, DC.

Map 8.1. **Egypt resource flows: Water**

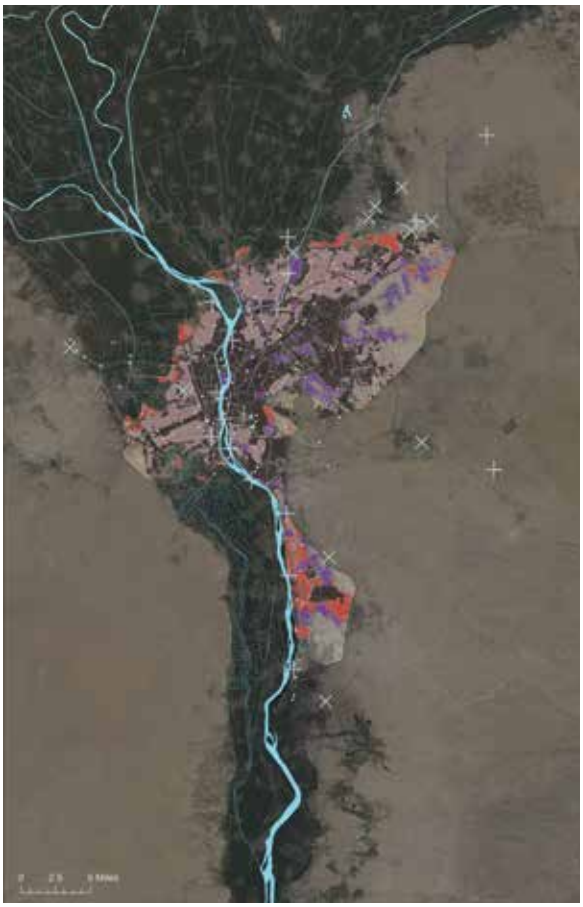
Egypt depends on the Nile River for most of its water needs. Water provision is insufficient with consumption 6.3% higher than production. Any change in water provision would have a major effect on agriculture.

Resource – Egypt draws water from five different sources. The Nile River is the major source, accounting for 79%. Additional sources are aquifers (9%), desalination plants (0.1%), rainwater (1.9%) and recycled agricultural drainage and treated water (10.2%). With 95% bare land, Egypt's hot desert climate forces urbanisation to develop close to water sources: the Nile Valley and the coastlines of the Mediterranean and Red Seas.

Use – Agriculture is a major consumer of non-purified water (64.4% of total water consumption). Most of the purified water feeds into households (13.5%), and industrial uses accounted for 1.7%. Some 3% of the water evaporates due to the climate, and 21.6% of the water is lost through leaks in the distribution network.

Waste – Only 35% of the domestic wastewater and 50% of the agricultural wastewater are treated. Large amounts of untreated wastewater are discharged into the Nile River, lakes and the Mediterranean Sea, contaminating some of the water sources.

Map 8.2. **Cairo resource flows: Water**



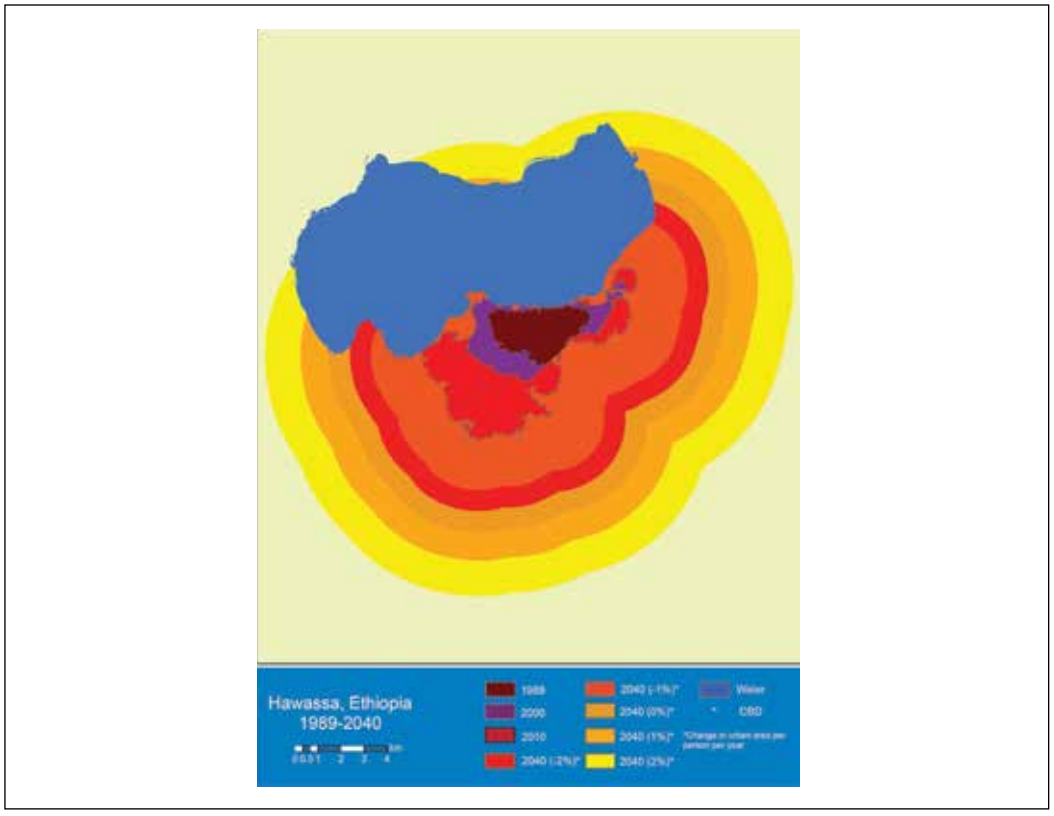
Resource – Cairo draws its water entirely from the Nile River.

Use – Half of the city's water is refined for the following: residential areas (22.2%), commercial areas (1.3%), industry (3.1%), governmental agencies (5.6%) and other uses (8.4%). No information is available regarding the exact use of the unrefined half of the water. Some 17.5% of the refined water (or 8.6% of the total water provision) is lost due to leaks in the distribution network.

Waste – Only 17.8% of wastewater is treated. The remainder is dumped in the Nile and the North Lakes.

Source: Dudek, P., N. Magdy and J. Fernandez (forthcoming), *Urban Metabolism – Resource Flow Mapping: The Case of Cairo and Egypt*.

Map 8.3. **Recent and projected urban expansion of Hawassa (Ethiopia), 1989-2010, 1989-2040**



Source: New York University (2016), prepared for this edition of the *African Economic Outlook*, Ethiopia Urban Expansion Initiative, New York.