

Chapter 2

Geo-statistical analysis of urbanisation dynamics in Africa

With 7 617 urban agglomerations of more than 10 000 inhabitants identified by Africapolis in 2015, Africa is urbanising at an astounding pace. Africa's urban transition is more diverse and multifaceted than commonly conceptualised. Its drivers, patterns and outcomes are not following uniform and past processes. The absence of more comprehensive data has clearly contributed to current misconceptions about urbanisation in Africa. Yet, the design of appropriate policy interventions depends on better understanding the realities and contextual differences of African urbanisation dynamics.

Africapolis provides a comparable data set covering the evolution of the entire urban network between 1950 and 2015 in 50 African countries. This more systematic and homogenous data provides a unique base to better understand the current dynamics, identify the drivers and intensity of urban growth and anticipate future trends. In particular, Africapolis' spatial approach helps apprehend the less appreciated and more unexpected transformations that are taking place.

LEVEL AND PACE OF URBANISATION

Africapolis highlights the staggering pace of the ongoing transformation. Africa's urban population grew from 27 million in 1950 to 567 million in 2015, a 2 000% increase. In 2015, Kenya had more urban dwellers than the whole of Africa in 1950. Fifty percent of Africa's population live in one of the continent's 7 617 urban agglomerations. In nine countries the level of urbanisation is above 66% and a further 30 countries have an intermediary level of urbanisation between 33% and 65%. In 1950, only four countries had a level of urbanisation above 33%, while 35 countries were below 10%.

The level of urbanisation

In 2015, half of Africa's population (50.4%) lived in an urban agglomeration with more than 10 000 inhabitants. North Africa is the continent's most urbanised region (78%), and Egypt and Libya the two countries with the highest levels of urbanisation¹ with 93% and 81% respectively ([Map 2.1](#)). The other two countries with a level of urbanisation above 80% are Gabon (81%) and Sao Tome and Principe (80%). The countries with the lowest levels are Niger (17%), Burundi (21%), Eritrea (24%), Lesotho (26%) and South Sudan (27%) ([Annex D](#)). Outside Africa the only

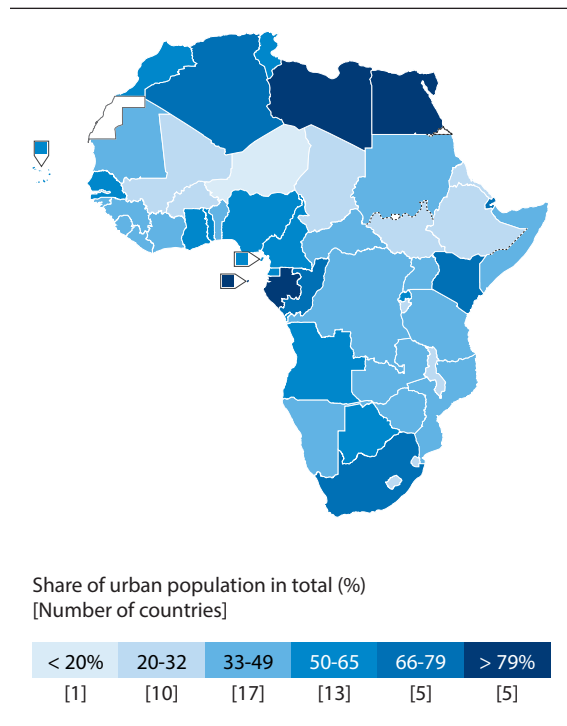
other large countries with similar low levels of urbanisation are Nepal, Cambodia and Sri Lanka. Overall in 2015, 22 countries have a level of urbanisation exceeding 50%.

Overall, countries with higher income levels tend to have higher urbanisation levels. The only two low-income countries (Gross National Income per capita) with a level of urbanisation above 50% are Rwanda, the country with the highest population density and Gambia, a country with one of the smallest land areas. Similarly, the countries with the highest levels of urbanisation, Djibouti, Egypt, Gabon and Libya, are all middle-income countries, and countries whose land areas are almost entirely deserts or with large forest areas, like Gabon. In these countries the share of the agricultural population—the main activity of the rural population—is low. The size of the agricultural population also decreases with income level due to mechanisation and intensification of production, as in South Africa where the level of urbanisation is 70%. The ten countries with the lowest levels of urbanisation are all low-income countries, except Lesotho and Eswatini.

Urbanisation dynamics are influenced by a variety of structural and socio-economic factors, such as geography and climate, population

Map 2.1

Level of urbanisation in Africa, 2015



Sources: OECD/SWAC 2018, Africapolis (database); Geopolis 2018

growth, size and density, income levels and economic structure, policies and institutions and cyclical factors such as environmental disasters, conflict and economic cycles. These factors are not of equal importance and vary over time depending on country contexts and interrelations. Certain factors are more important at lower levels of urbanisation in contributing to urbanisation than when countries are more developed (Bairoch and Goertz, 1986; Farrell, 2018). Also, the diversity in observed outcomes and trends highlights the decisive importance of states, institutions and national contexts on observed dynamics. Hence, while there are general trends, contextual and structural analyses remain necessary to grasp the drivers of urbanisation dynamics at country level.

The pace of urban transition in Africa

A key feature of Africa's urbanisation dynamic is the pace of the ongoing transformation. In 1950, most African countries were essentially agrarian societies with a few urban centres

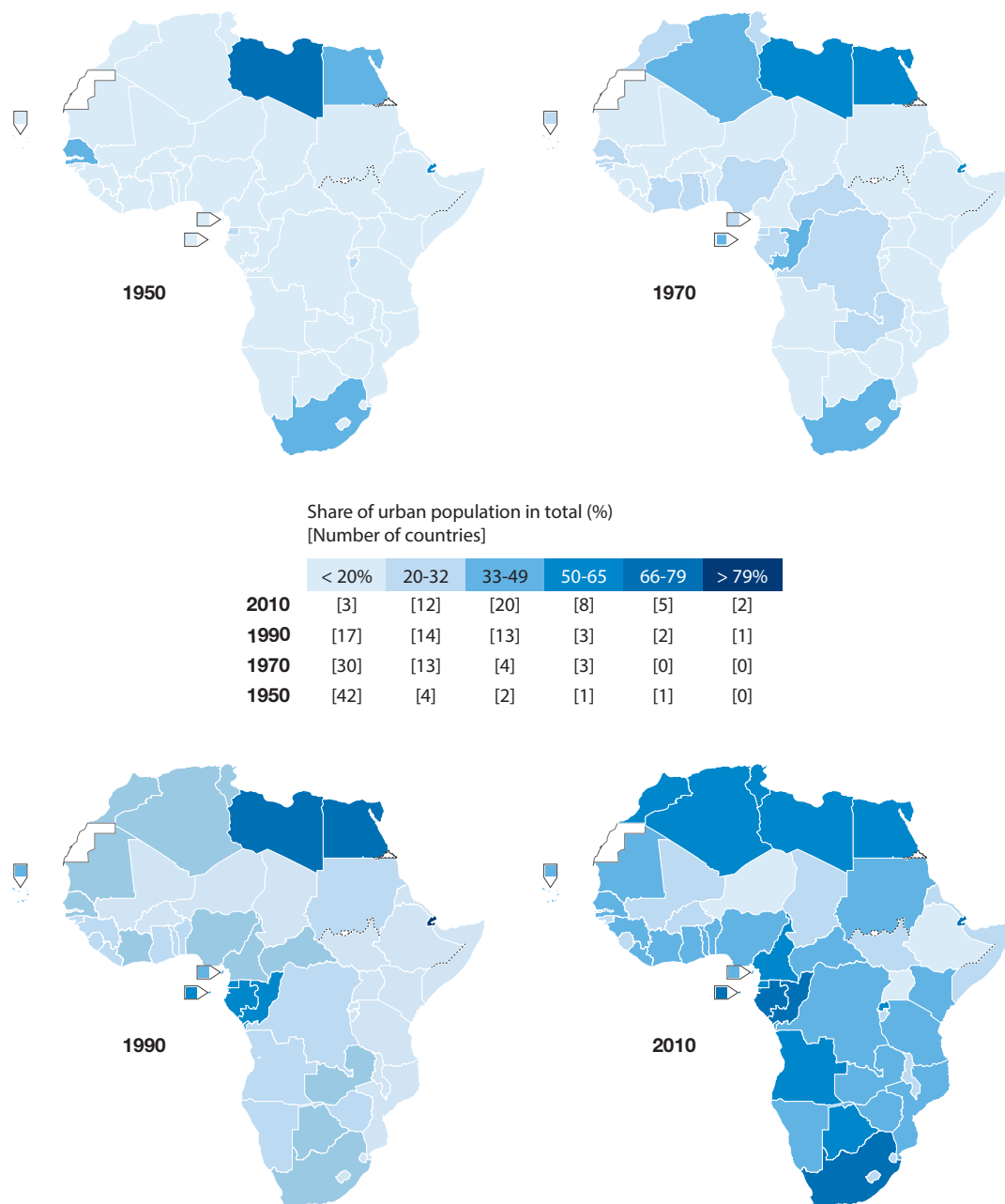
acting as trading, administrative, religious and cultural hubs. Only eight countries had a level of urbanisation above 20%, while in 26 out of 50 countries the level of urbanisation was less than 10% (Map 2.2).

In particular, the last 25 years have seen spectacular transformations. For the continent as a whole, the level of urbanisation increased from 31% in 1990 to 50% in 2015. In 1990, 31 countries still had a low level of urbanisation below 33%, 17 of which were below 20%. By 2015 this dropped to 11 countries, with only Niger below 20%. Rwanda went from only 5% of its population living in urban agglomerations to an urbanisation level of 56%, a level similar to Morocco. Kenya's level of urbanisation increased by 49 percentage points, from 16% to 65%, and Angola's by 37 percentage points, from 26% to 63% in only 25 years (Figure 2.1).

Since the 1990s the major driver of urbanisation has been high population growth which contributes directly to the natural increase of urban populations. However, indirect contributions in terms of reclassification of rural settlements – through the growth of rural settlements beyond the urban population threshold, through absorption of rural population by the expansion of urban areas and by merging of settlements and through their cumulative contributions - explain a significant part of the growth. For instance, Rwanda's population density doubled between 1990 and 2015, favouring the widespread merging of settlements and the reclassification of rural areas. As a result, the increase in the level of urbanisation was strong and non-gradual. Similar dynamics are observed across the continent, notably in parts of Kenya, Nigeria and Uganda. The importance of rural reclassification in recent urban transitions has also been documented in other parts of the World. In China for instance, the reclassification of rural areas as urban is estimated to have accounted for 40% of total urban population growth between 1978-1990 (Farrell, 2017). In contrast, the absence of accounting for rural reclassification can in some cases explain stationary official levels of urbanisation and large differences with Africapolis data, as in the case of Egypt where official urban parameters have not changed since the late 1960s.

Map 2.2

Evolution of urbanisation in Africa, 1950, 1970, 1990 and 2010



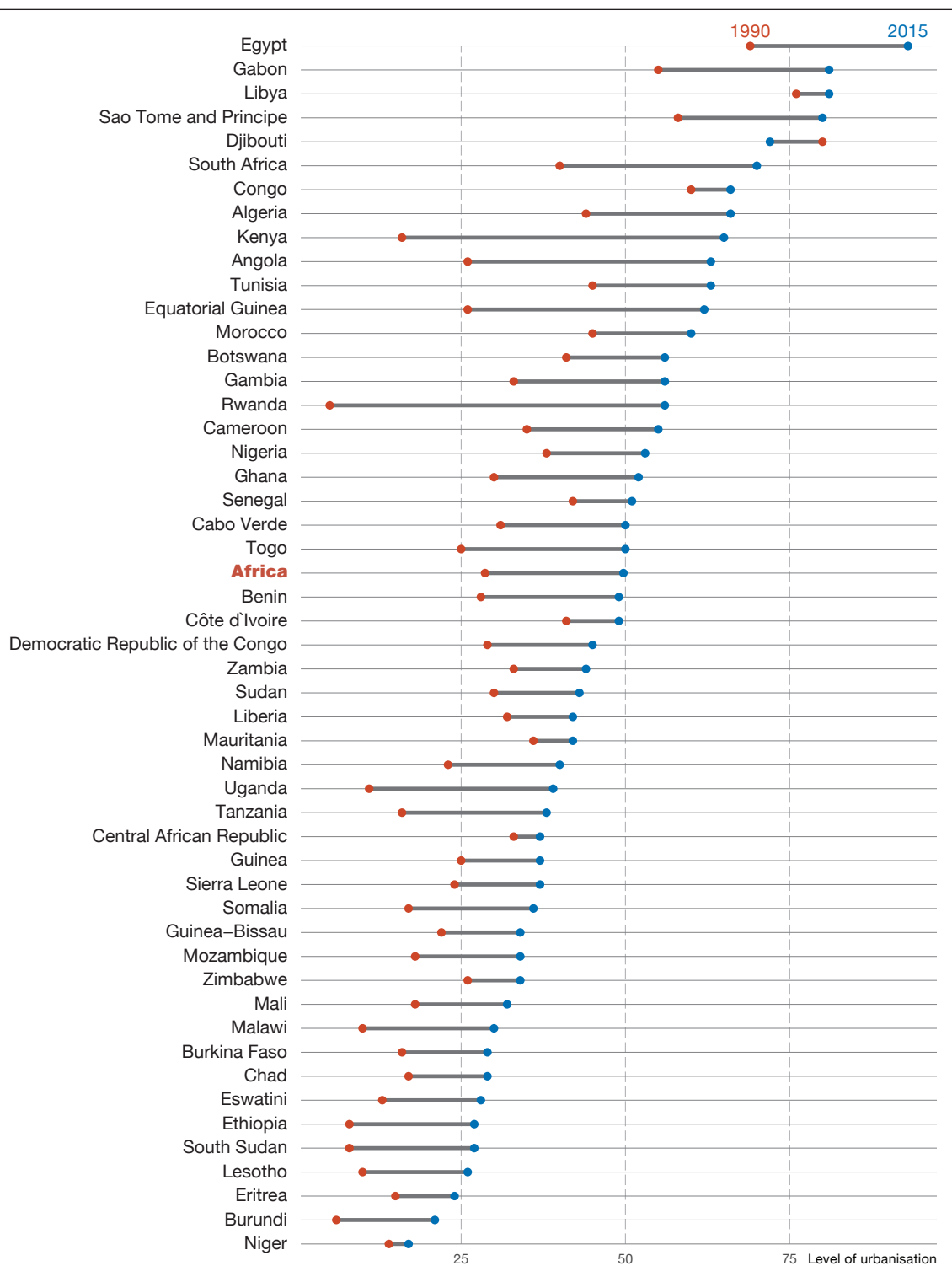
Sources: OECD/SWAC 2018, Africapolis (database); Geopolis 2018

Urban population growth

Probably the most spectacular aspect of Africa’s urbanisation dynamic is the growth in urban population. Africa’s urban population grew from 27 million in 1950 to 567 million in 2015, a 2 000% increase. In 2015, Kenya had more urban

dwellers than the whole of Africa in 1950. Dakar, the capital of Senegal, counts as many inhabitants—3.1 million—as the whole country half a century ago, similar to Abidjan in Côte d’Ivoire, Lomé in Togo, etc. Since 2010, the urban population of Africa grows by 21 million people per year.

Figure 2.1
Change in level of urbanisation in Africa from 1990 to 2015



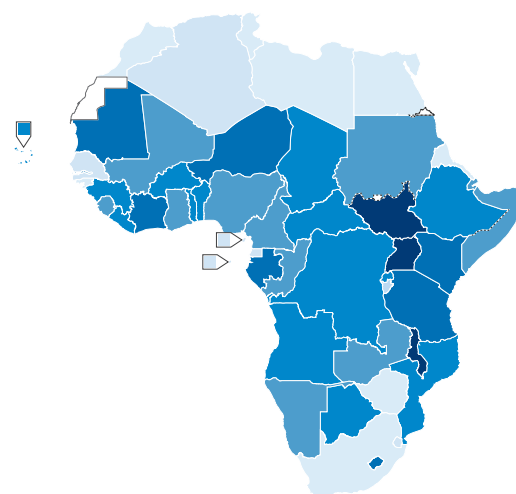
Sources: OECD/SWAC 2018, Africapolis (database); Geopolis 2018

Africa's urban population growth also highlights the dynamic interplay of its different components — natural urban population increase, migration and rural reclassification. Between 1950 and 2015, Africa's urban population grew 4.8% annually. However, in 37 out of 50 countries, the urban growth rate exceeded 4.8% and in 12 countries the urban population growth was 7% and above, implying a doubling in size every ten years (Annex C). These 12 countries include five countries with the lowest levels of urbanisation on the continent (Burundi, Lesotho, Malawi, Niger, and South Sudan) and only one country with a high level of urbanisation above 66% in 2015 (Gabon) (Map 2.3). Some countries with the highest levels of urbanisation in 2015, Egypt, Libya, Sao Tomé and South Africa, are among the countries with the lowest urban growth rates. This apparent contradiction highlights the multifaceted dimensions of the urban transition in Africa and distinguishes it from historical urbanisation processes. Whereas rural-urban migration was historically the major contributor to urban growth, in the case of contemporary Africa the intensity of the natural population increase is a main source of urban growth.

The period between 1950 and 1980 saw the fastest urban growth with Africa's urban population increasing 5.1% annually. Especially in the least urbanised regions of Central Africa, East Africa and West Africa this period was marked by very high urban growth rates, averaging between 6.4% and 8% (Figure 2.2). Between 1980 and 2000, urban growth decelerated to 4.4% for Africa as a whole and increased again to 4.7% for the period 2000–2015. Between 2000 and 2015, urban population growth was particularly high in East Africa at 6.5%, averaging more

Map 2.3

Urban population growth in Africa, 1950 - 2015

Average urban growth (%)
[Number of countries]

3-4	4-4.8	4.8-6	6-7	7-8	8-9.3
[8]	[5]	[13]	[12]	[8]	[4]

Sources: OECD/SWAC 2018, Africapolis (database); Geopolis 2018

than 9% in Burundi, South Sudan and Uganda. Urban population growth was lowest in North and Southern Africa, averaging 3.6% and 4.4% respectively. In all regions except West Africa, the increase in the level of urbanisation was fastest during the 2000 to 2015 period. For Africa as a whole the level of urbanisation increased by 0.9 percentage points annually between 2000 and 2015, with the fastest growth in East Africa and North Africa, at 1.1 percentage points and 1 percentage point respectively.

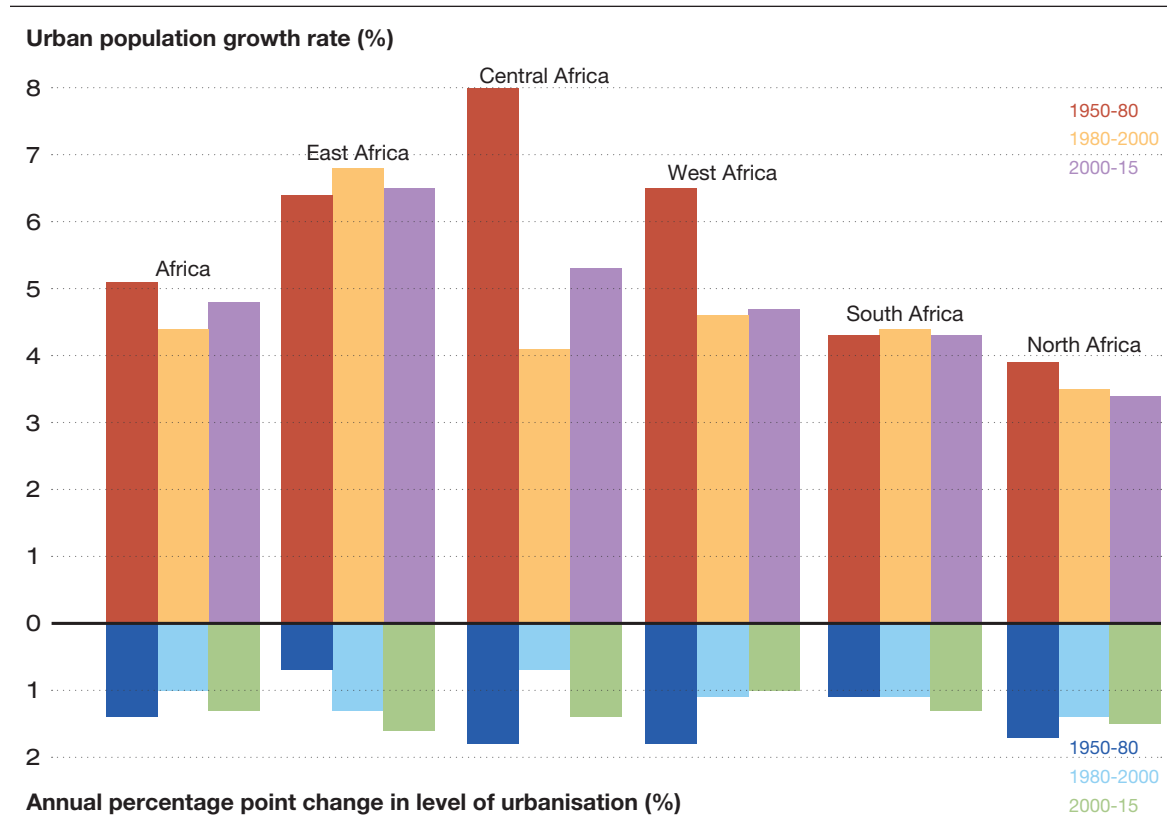
AGGLOMERATION SIZE AND URBAN SYSTEMS

The political division of Africa into nation states played a fundamental role in urban development. This is best observed in the rapid emergence of hierarchical national urban systems, dominated by huge agglomerations, in view of national scales and time. In the space of decades, new national capitals and a few other urban centres

have grown significantly beyond their initial sizes. The growth of big cities continues, concentrating a growing share of the continent's population. They are also quickly moving up in the global urban hierarchy, driven not only by their demographic size but also by their economic weight. Today, Kinshasa, Abidjan and

Figure 2.2

Urban population growth and growth in level of urbanisation in Africa by period, 1950–2015



Sources: OECD/SWAC 2018, Africapolis (database); Geopolis 2018

Dakar are the largest francophone agglomerations in the World after Paris. Cairo is the largest agglomeration in the Arab-speaking world, and Lagos and Johannesburg are among the ten largest English-speaking agglomerations. The quantitative and qualitative discontinuities between the largest agglomeration and the rest of the urban network are huge in most countries and linked to complex social, economic and political relations. Official statistics have a tendency to minimise the existence of such discontinuities through administrative subdivisions and definitional categorisations. However, understanding how national urban systems are structured and connected are important issues for regional policy and socio-spatial equity. Africapolis data show the structure and the large imbalances in national urban networks by capturing the dynamics of individual agglomerations and the entire urban network over time.

The distribution of urban networks

In Africa, as elsewhere, there are many small cities and only a few large ones. In 2015, the continent counted 25 agglomerations with more than 3 million inhabitants and 5 000 with less than 30 000. The combined population of the 10 largest agglomerations equals that of the 5 000 smallest (90 million people). The differences in size across the urban distribution underline the crucial dimension of scale in urban issues. In Nigeria, Lagos is more than 1 000 times larger than Bunkure with 11 600 inhabitants (a difference in scale similar to comparing the size of China's GDP to that of Guinea's). Beyond the differences in size, the qualitative differences are in many cases even more pronounced.

In 2015, the distribution of Africa's urban population was characterised by a large and increasing share of people living in the

continent's largest cities (40%) (here defined as above 1 million inhabitants) and a large share in small urban agglomerations (32%) (here defined as between 10 000 and 100 000 inhabitants) (Figure 2.3). This also highlights another important feature in the urban distribution, the relative weakness of intermediary agglomerations (here defined between 100 000 and 1 million inhabitants). Only 27% of the urban population live in intermediary agglomerations. In a perfect power law distribution, such as Zipf's rank-size distribution, this figure would be 33%. Clearly these distributions vary from country to country, yet the characteristics are similar across most countries.

The distribution of urban population according to agglomeration size has inverted since 1960. In 1960, almost half of the total urban population lived in small agglomerations (47%), while only 15% lived in an agglomeration with more than 1 million inhabitants. The increasing share of people living in large agglomerations is explained by the continued growth of large agglomerations, but also by the growth of intermediary agglomerations that over time become large agglomerations (exceeding 1 million inhabitants) increasing this category, while at the same time reducing the share in intermediary agglomerations. This gradual expansion into higher-size classes is visible across all size categories. The number of agglomerations at the top of the distribution are increasing rapidly over time (Figure 2.3). For instance, in 2015 there were more than 700 agglomerations with more than 100 000 agglomeration, compared to 44 in 1950; 222 agglomerations with more than 300 000 inhabitants, compared to 10 in 1950; and 74 with more than 1 million inhabitants, compared to 2 in 1950. However, driven by the continued emergence of new agglomerations, the overall distribution in the number of agglomerations by size bracket has remained very stable over the past six decades.

The overall number of urban agglomerations has surged from 624 in 1950 to 5 142 in 2000, and increased by another 2 475 agglomerations between 2000 and 2015. This emergence continues to feed the lower end of the urban distribution and thereby balances the growth of agglomerations into higher size brackets. Hence, although the number of urban agglomerations between

10 000 and 100 000 inhabitants increased from 570 in 1950 to 6 910 in 2015, their share in the total number of agglomerations barely changed, and actually declined from 93% to 91% of all agglomerations (Figure 2.3). Of the remaining 9% of agglomerations in 2015, the 100 000 to 999 999 inhabitants category account for 8% (versus 7% in 1950) and the above 1 million inhabitants category for 1% (versus 0.3% in 1950). An additional consequence is the slow growth in the average size of agglomerations. While the urban population increased by more than 1 000% over the 1960-2015 period, the average size of urban agglomerations increased by only 63%, from 46 000 to 74 000 inhabitants.

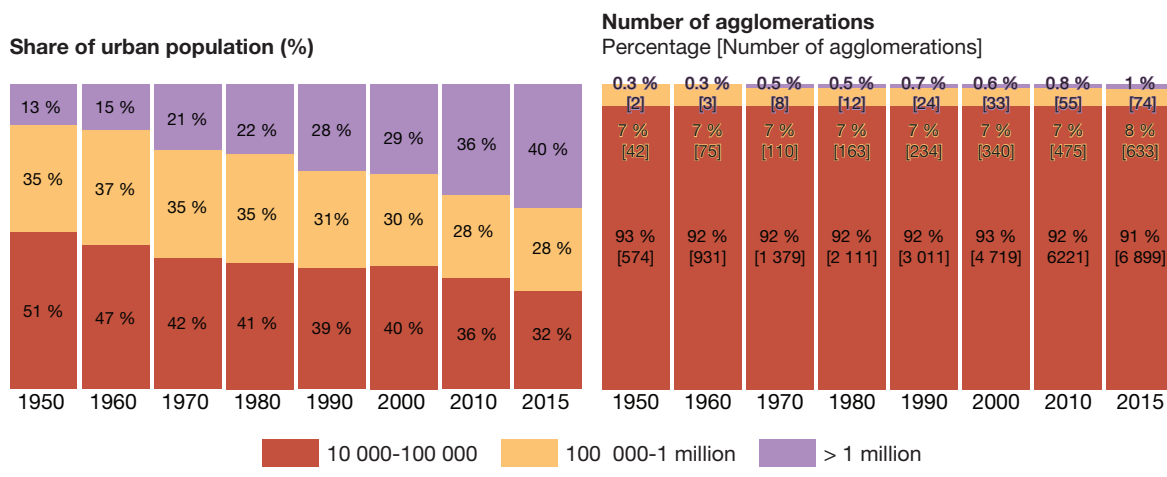
Urban primacy, discontinuities and continuities

Most African countries' urban networks are dominated by huge agglomerations, in view of national scales and time. The largest agglomeration, in some countries two (e.g. Burkina Faso, Congo, Ghana), or three agglomerations (South Africa), dominate national urban hierarchies based on the huge quantitative and qualitative disparity with the rest of the urban network. In Angola, the population of the capital Luanda (7 million) equals the combined population of the next 27 largest agglomerations. In Sudan, Khartoum has as many inhabitants, 5.3 million, as the country's 248 smallest agglomerations combined (out of a total of 301 agglomerations). In some countries, more than half of the total population lives in only one agglomeration (Djibouti, Sao Tomé).

A statistical measure of urban hierarchy in national urban systems is urban primacy. Urban primacy is the ratio between the largest and the second largest agglomeration in the case of monocephalic urban systems, or second and third largest in the case of bicephalic urban systems. This statistical measure is based on the rank-size distribution of urban agglomerations (Zipf's Law). The ratio between the largest and the second largest agglomerations (primacy 1) should be 2 and between the second and third largest (primacy 2), 1.5. In half of the countries (24), one agglomeration stands out by its size (monocephalic) and 10 countries have two agglomerations (bicephalic) that stand out in the

Figure 2.3

Change in distribution of urban population by agglomeration size, 1950-2015



Source: OECD/SWAC 2018, Africapolis (database)

urban network (Table 2.1 and Table 2.2).

In several African countries urban primacy is among the highest recorded in the world. Liberia has the highest urban primacy (primacy 1) with the capital Monrovia (1.2 million inhabitants) more than 21 times larger than the second agglomeration Buchanan (58 000 inhabitants). Another eight countries have a primacy 1 of ten and above (Table 2.1). Morocco, Rwanda and Somalia are the only three monocephalic countries, besides South Sudan, with an urban primacy around two. The average urban primacy in the 24 countries with one dominant agglomeration is 8.7. In countries with bicephalic urban networks, the primacy 1 is generally low, whereas the discontinuity is between the next biggest agglomerations, with an average primacy 2 of 5. Congo has the highest primacy 2, with Pointe Noire (850 000 inhabitants), the second largest agglomeration, almost nine times larger than the third-ranked agglomeration, Dolisie (97 000 inhabitants). Other countries that show a similar structure in their urban systems include Burkina Faso, Equatorial Guinea, Ghana and Uganda (Table 2.2)

In Africa, urban primacy continues to increase in most countries. In some cases, notably capital cities, this highlights the important role of policy on urban growth and urban hierarchy. However, it also shows the inability

of intermediary agglomerations to position themselves as genuine sub-regional metropolises, defying the dominance of the largest agglomeration. The growth in intermediary agglomerations is slower, but importantly less sustained, more irregular and highlighted by the fact that in many countries the “second” agglomeration changes over time. In Togo, the second agglomeration was Sokodé in 1960, then Kara in 2010 and Tsévié since 2015. In Chad, the second rank was taken by Sarh (1960-70), Moundou (1990), then Abéché (2010) and again Moundou (2015). In Sierra Leone, it changed between Bo (1960), Koidu (1970), again Bo (2000), and Kenema (2010). Yet, in only two countries has the position of the largest agglomeration changed in the past 60 years. In Cameroon and Burkina Faso, Yaoundé and Ouagadougou become the political capitals post-independence and their growth started to exceed that of Douala and Bobo Dioulasso, their respective former largest cities.

Metropolitan discontinuity and rural-urban continuity

The high urban primacy observed in Africa underlines the strong quantitative (population size) and qualitative (socio-economic and political) discontinuity between metropolises and intermediary agglomerations. The ‘urban’ classification or network is often perceived as a

Table 2.1

Urban primacy in some monocephalic national urban systems in Africa

Country	Largest agglomeration	Primacy index « Prim1 »	Share in the national urban population
Liberia	Monrovia	20.4	69%
Djibouti	Djibouti	12.5	81%
Angola	Luanda	11.3	44%
Burundi	Bujumbura	10.9	51%
Guinea	Conakry	10.8	54%
Togo	Lomé/Aflao [TGO]	10.7	51%
Sao Tome and Principe	Sao Tome	10.3	84%
Mali	Bamako	10.0	49%
Central African Republic	Bangui	9.9	52%
Guinea-Bissau	Bissau	9.3	78%
Sudan	Khartoum	9.3	33%
Lesotho	Maseru	8.8	58%
Côte d'Ivoire	Abidjan	8.5	46%
Mauritania	Nouakchott	8.2	69%
Chad	N'Djamena/Kousséri [TCD]	7.6	31%
Sierra Leone	Freetown	7.3	56%
Gambia	Serrekunda	7.0	70%
Tanzania	Dar es Salaam	6.4	29%
Gabon	Libreville	6.2	59%
Mozambique	Cidade de Maputo	5.1	30%
Namibia	Windhoek	5.0	40%
Eritrea	Asmara	4.7	40%
Tunisia	Tunis	4.3	35%
Zambia	Lusaka	4.0	52%

Source: OECD/SWAC 2018, Africapolis (database)

Table 2.2

Urban primacy in some bicephalic national urban systems in Africa

Country	Largest agglomeration	Second-largest agglomeration	Prim1	Prim2	Share in the national urban population
Congo	Brazzaville	Pointe Noire	1.9	8.7	78%
Equatorial Guinea	Bata	Malabo	1.2	6.5	75%
Burkina Faso	Ouagadougou	Bobo-Dioulasso	3.4	6.0	56%
Uganda	Kampala	Mbale	1.7	5.1	43%
Eswatini	Manzini	Mbabane	1.2	4.6	82%
Zimbabwe	Harare	Bulawayo	3.4	4.3	61%
Ghana	Accra	Kumasi	1.6	4.1	51%
Malawi	Lilongwe	Blantyre	1.0	3.7	45%
Cabo Verde	Praia	Mindelo	2.0	3.3	85%
Somalia	Mogadisho	Hargeisa	2.4	3.0	53%

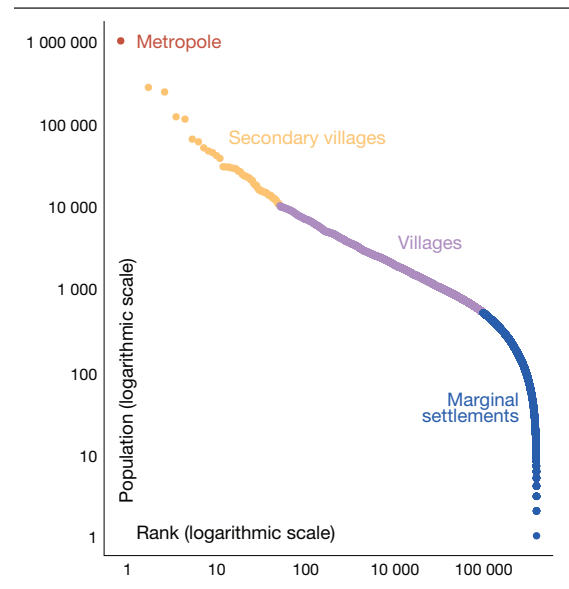
Source: OECD/SWAC 2018, Africapolis (database)

homogenous continuum, yet in Africa the urban network is composed of strata separated by important discontinuities. This is made apparent by the high primacies within urban networks and their systematic character across Africa. The discontinuity between metropolitan agglomerations and intermediary agglomerations is further underlined by their contrasting growth patterns. Africapolis data highlights that the major discontinuity that characterises current African settlement structures is between a metropolitan and urban strata, and not between urban and rural. The four settlement strata that can be identified are:

- “Metropolitan” strata, often made up of one agglomeration, most often the political capital,
- “Urban” strata, that follows a rather linear distribution,
- “Rural” strata, also linearly distributed, but not in continuity with the urban strata,
- “Marginal/scattered” strata, following a concave distribution. (Figure 2.4)

Therefore, the network of “urban agglomerations” does not appear as one homogeneous system, consisting of two clearly identifiable subsets (metropolitan and urban). The assumption of a

Figure 2.4
Discontinuities and continuities in population settlement strata in Niger, 2012



Source: Geopolis 2018

hierarchical continuum of population settlements biases political strategies by favouring homogeneous action in nonhomogeneous urban areas.

Box 2.1

Rural-urban discontinuity

Definitions of urban imply a discontinuity between “cities”, which represent the urban world and “villages” which represent the rural one. This highly political and qualitative boundary is represented by a minimum population threshold for localities that are viewed as urban. It is an incomplete illustration of the transformations observed and the development of certain rural areas into urban areas through densification.

The hierarchical distribution of rural settlements is poorly understood. However, understanding the characteristics of rural settlement is important given the prevalence of urban sprawl and high densification in rural areas, which lead to the emergence of

new agglomerations. The low interest given to rural settlements is reflected in national statistical definitions, where “rural” is not defined intrinsically, but as the “non-urban” population, or “rest of the population”. Rural is often misunderstood as “agricultural”. This report highlights two layers within the “rural” category.

On the one hand, the rural layer is made up of villages with little hierarchy between them. On the other hand, there are very small settlements ranging from one individual to a few households linked to agricultural, pastoral, forest, artisanal or mining holdings; or to temporary occupation by itinerant populations.

THE EVOLVING GEOGRAPHY OF URBAN AGGLOMERATIONS

These transformations have also massively transformed the geography of the urban network and the density of urban clusters. The patterns of this emergence however are not homogenous and highlight the importance of rural transformations and demographic growth in driving African urbanisation. These processes, made apparent by *Africapolis'* spatial approach, and their implications in explaining the emergence and creation of certain types of urban agglomerations have been largely absent from research and policy debates. Anticipating the future of Africa's urban evolution will also depend on better integrating these dynamics.

Transnational and national patterns in urban clusters

Patterns in urban growth and urbanisation dynamics can also be understood through the evolving geography of urban agglomerations. The number of agglomerations in Africa continues to grow rapidly through the emergence of new agglomerations. Yet, the patterns of emergence are not homogeneous. Highly dense urban clusters are emerging, while other areas maintain low densities, which lead to clear differences in terms of densities across and within territories.

The two countries with the most extensive urban networks, Nigeria (1 236) and Egypt (1 061), account for 30% of the 7 617 identified urban agglomerations, followed by the Democratic Republic of the Congo (DRC), Ethiopia, South Africa and Algeria which account for another 25% of Africa's urban agglomerations (*Map 2.4*). The other 44 countries account for the remaining 45% of agglomerations (3 280), with several countries having less than ten urban agglomerations (Sao Tome and Principe, Cabo Verde, Eswatini, Guinea-Bissau, Djibouti) (*Annex F*). However, many national urban networks are part of larger transnational urban clusters and corridors.

At the continental level six major urban clusters are observable: (1) North African cluster, (2) Nile River cluster, (3) West African cluster, (4) Ethiopian Highland cluster, (5) Great Lakes

cluster, and (6) South African cluster (*Map 2.5*). Together, these urban clusters cover only 10% of the continent's land area (2.7 million km²), but account for 60% of urban agglomerations and 65% of the total urban population (370 million) in 2015². The majority of the remaining 3 000 agglomerations are part of less dense clusters and territories, like the Sahel corridor, the eastern steppe and savannah between Somalia and Mozambique and the Congo Forest Basin.

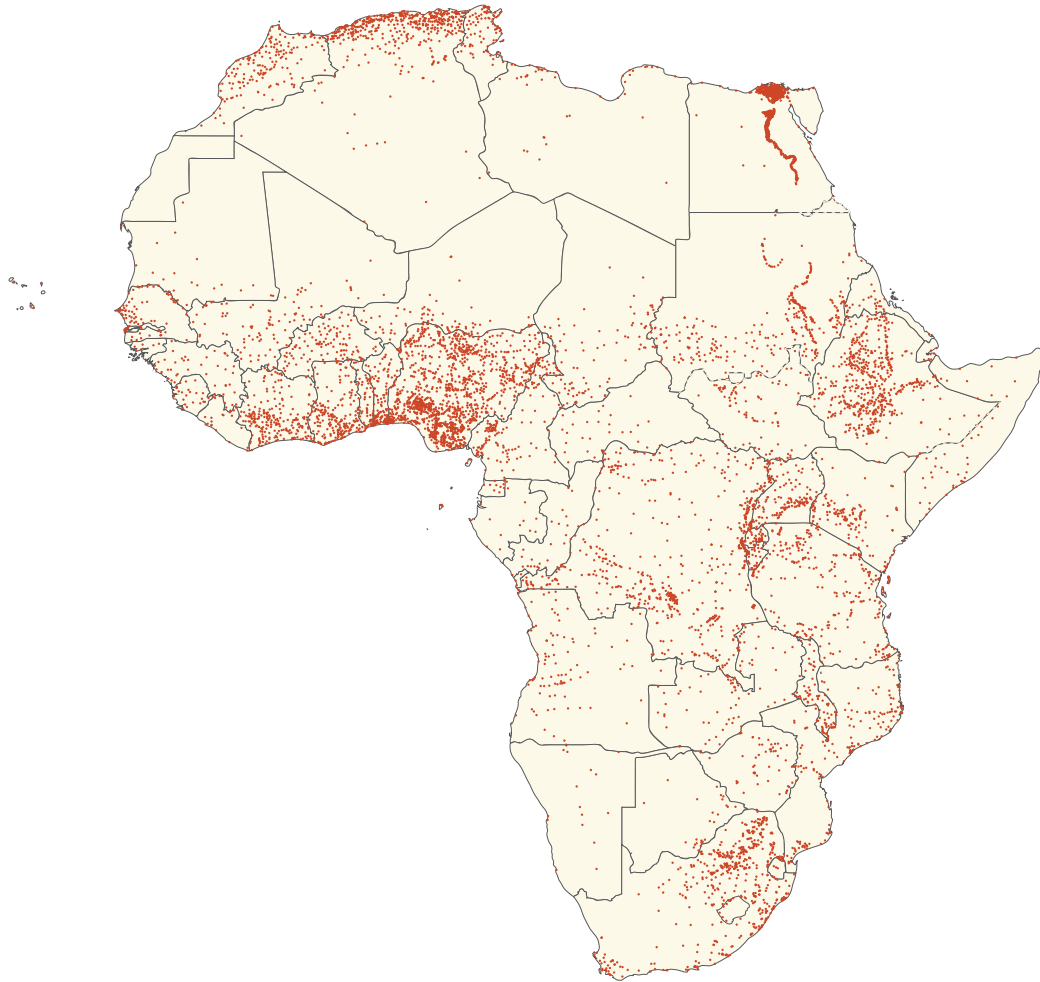
The West African cluster is the largest in terms of the number of agglomerations (1 700), total urban population (134 million) and area (1.2 million square kilometres). The Nile River cluster, the only single country cluster, is the second largest in terms of urban population (83 million) and the densest with an average distance between agglomerations of four kilometres. The Ethiopian cluster, which stretches into parts of Eritrea, is the smallest in terms of total urban population (23.5 million) and least dense with an average distance between urban agglomerations of 16 kilometres. The Ethiopian and Great Lakes clusters have a similar number of agglomerations, (around 440), yet in the Great Lakes cluster the urban population is twice as large (53 million versus 23 million). Both are located in the interior of the continent without a coastal front, also highlighting a broader emerging aspect of Africa's urban geography: the relatively minor coastal orientation of its urban network.

Outside these clusters, less dense clusters are distinguishable — such as the Sahel Corridor, an ancient home of nomadic pastoralism stretching from Senegal to Eritrea. Other areas with less dense clusters include the areas associated with forest agriculture around the Congo Forest basin and the eastern savanna region which stretches from Somalia to Mozambique.

The emerging urban patterns and their heterogeneity are not random, but underline Africa's settlement history. This history has been shaped by migratory patterns, settlement logics and land use structures. The location and emergence of urban clusters is the product of multifaceted interactions between the environment, socio-economic conditions, population growth and urbanisation. The areas with the

Map 2.4

Distribution of agglomerations in Africa, 2015



Source: OECD/SWAC 2018, Africapolis (database)

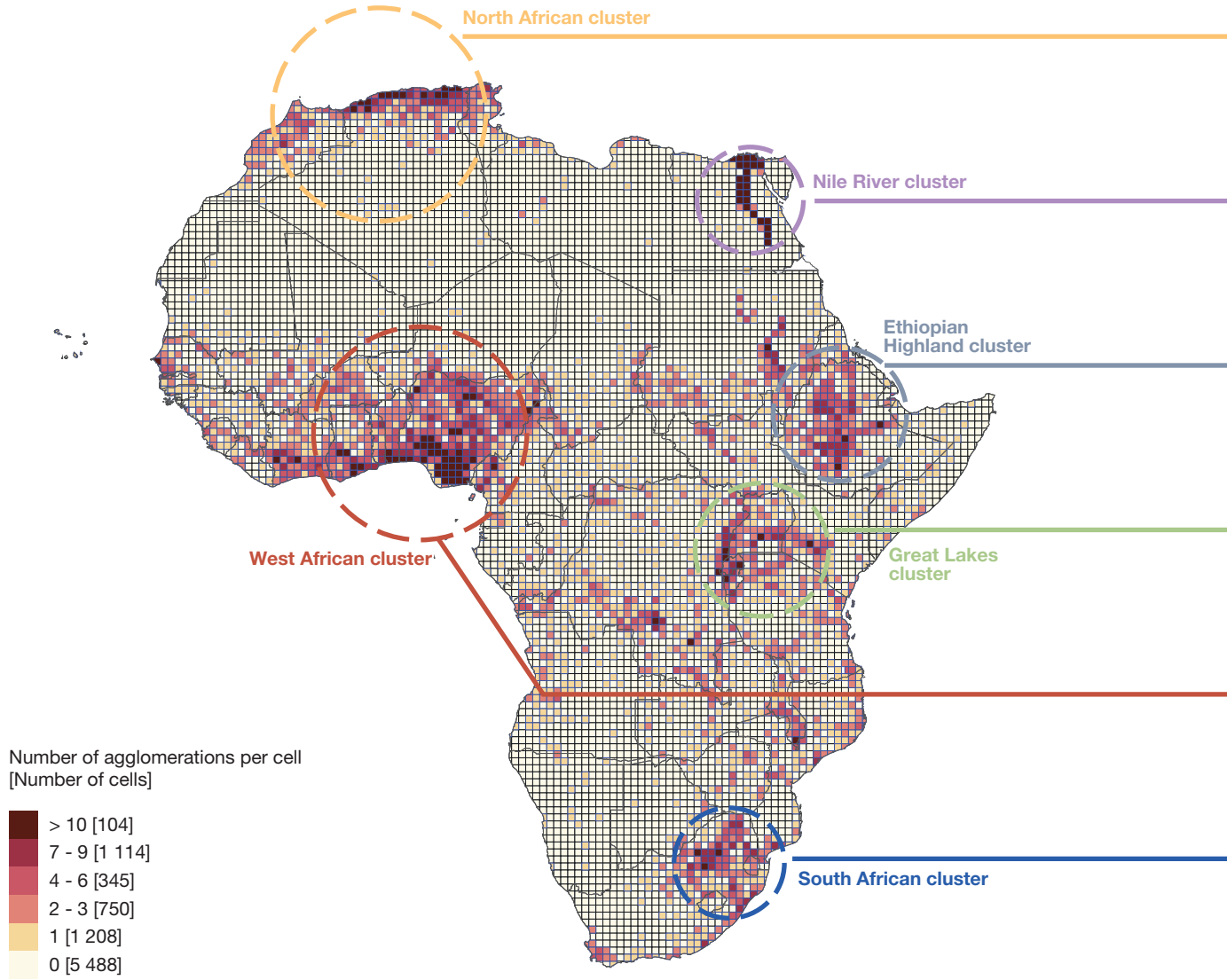
highest numbers of urban agglomerations in sub-Saharan Africa are found in southeastern Nigeria, corresponding to the Yoruba settlement area with an ancient presence of agricultural activities ([Image 2.1](#)). Similarly, the Ethiopian Highland, Great Lakes and South African urban clusters, are all densely populated rural areas in temperate highland areas (between 1 200 and 2 500 metres in altitude), with a long history of agricultural activities. The South African cluster also comprises intense and longstanding mining and industrial activities.

The continued emergence of new agglomerations

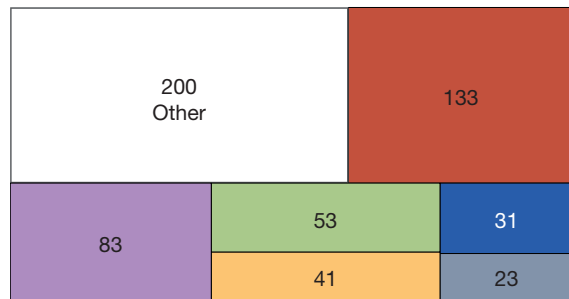
In 1950, Africa had 624 urban agglomerations with more than 10 000 inhabitants. By 2000, the number had increased eight-fold reaching 5 142 and has since increased by another 2 475 agglomerations to reach 7 617 in 2015 ([Map 2.6](#)). In 2015, Nigeria had twice as many urban agglomerations than the whole continent in 1950; Sudan had as many agglomerations as the whole of sub-Saharan Africa in 1950. The continued emergence of new agglomerations is an important component of Africa's urbanisation dynamic. The new

Map 2.5

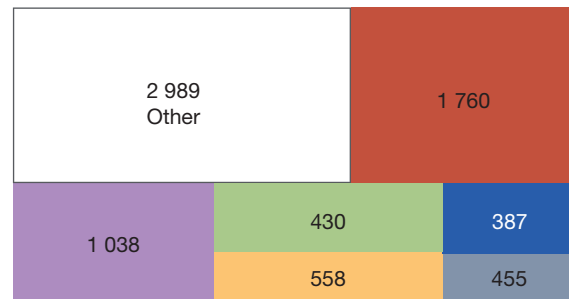
Major urban clusters in Africa, 2015



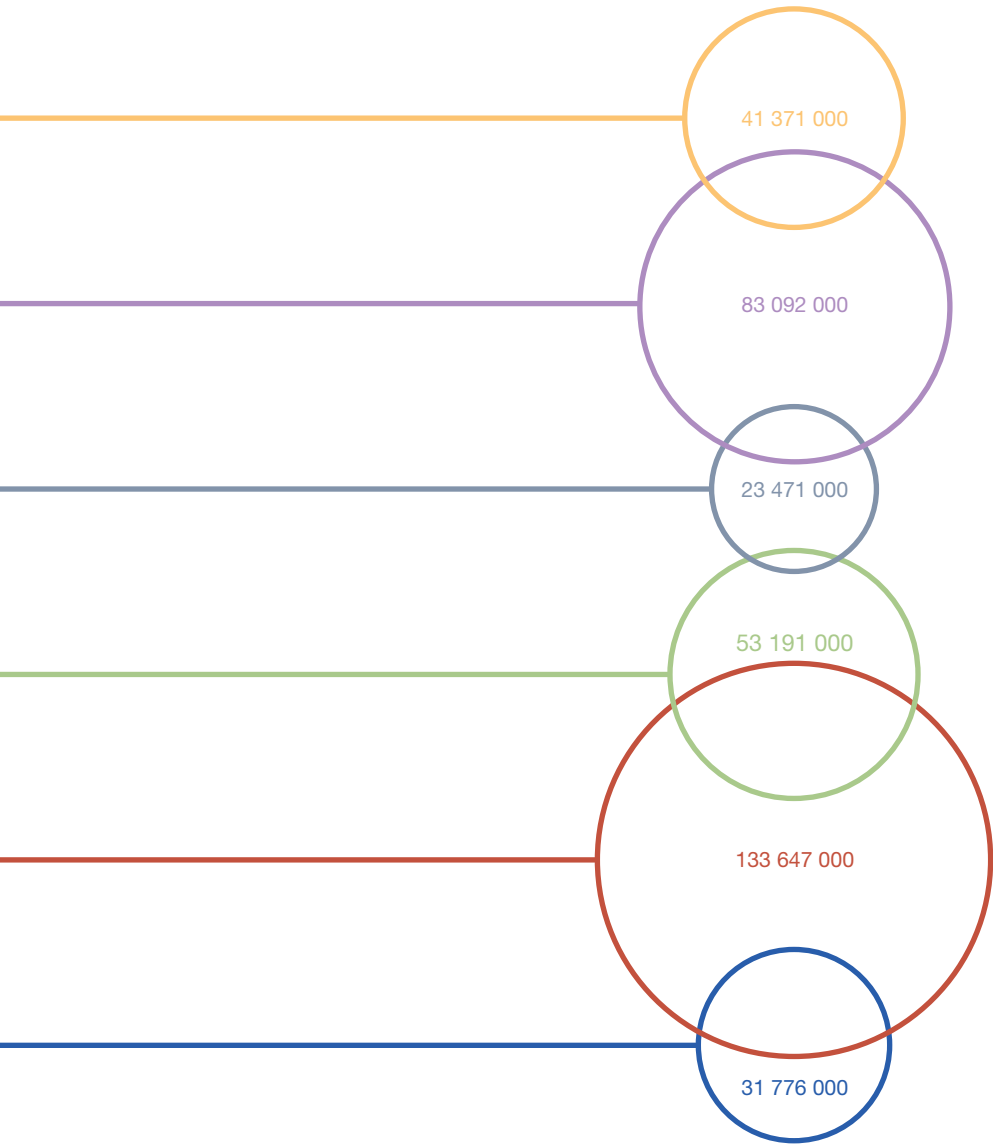
Urban population (in millions)



Number of agglomerations

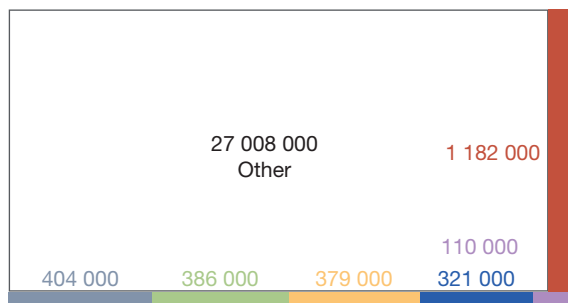


Urban population

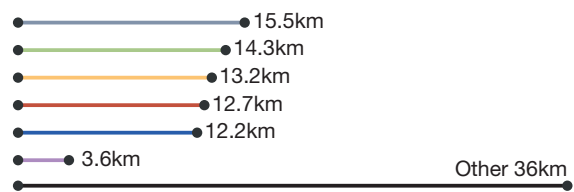


Ethiopian Highland cluster South African cluster North African cluster
 West African cluster Nile River cluster Great Lakes cluster Other

Total area (km²)



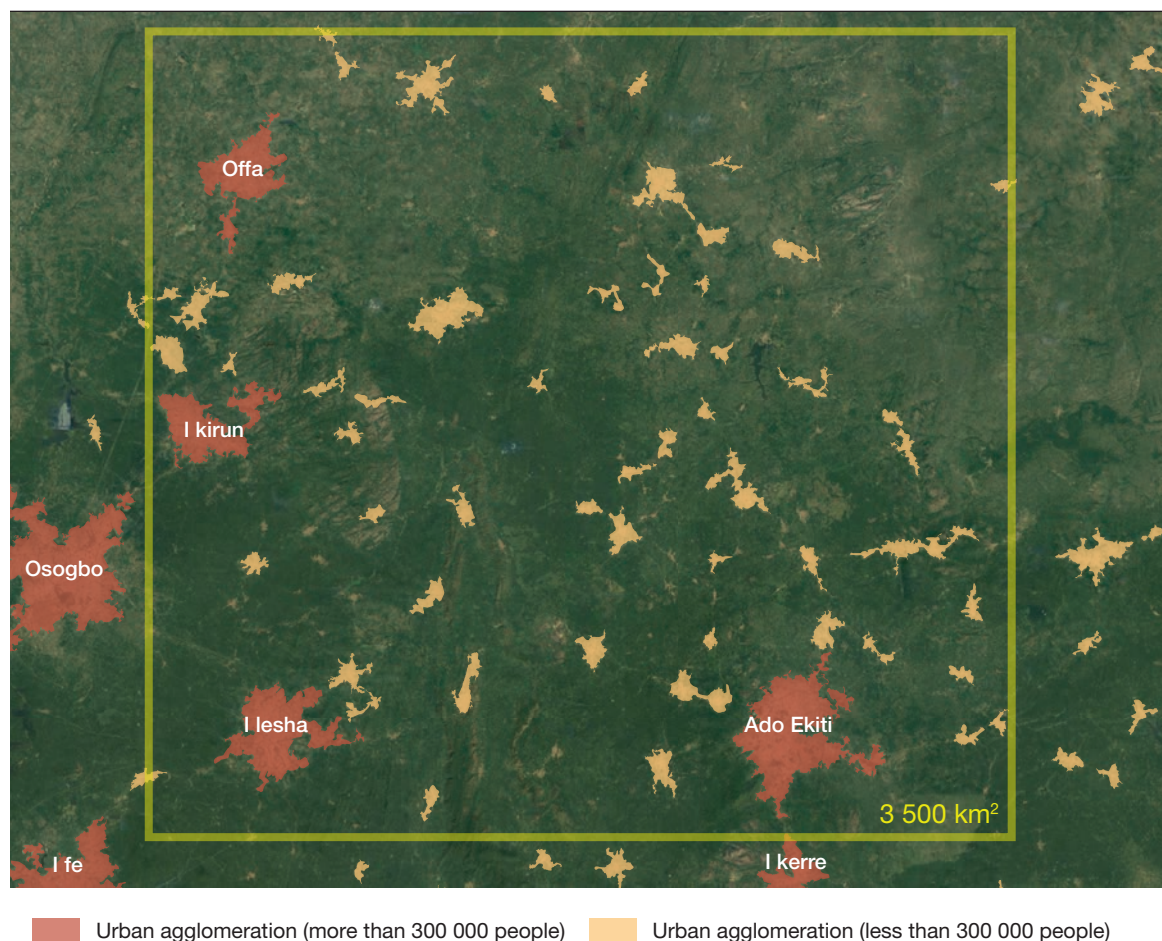
Average distance between agglomerations (km)



Sources: OECD/SWAC 2018, Africapolis (database); Geopolis 2018

Image 2.1

Density of the urban cluster in the Yoruba settlement area (Nigeria)



Note: The square covers an area of 3 900 square kilometres and contains 38 agglomerations with more than 10 000 inhabitants each.

Sources: *Google Earth* (accessed October 2015); OECD/SWAC 2018, *Africapolis* (database); *Geopolis* 2018

agglomerations translate into the forming of a denser urban network increasing the proximity between agglomerations and between urban and rural environments.

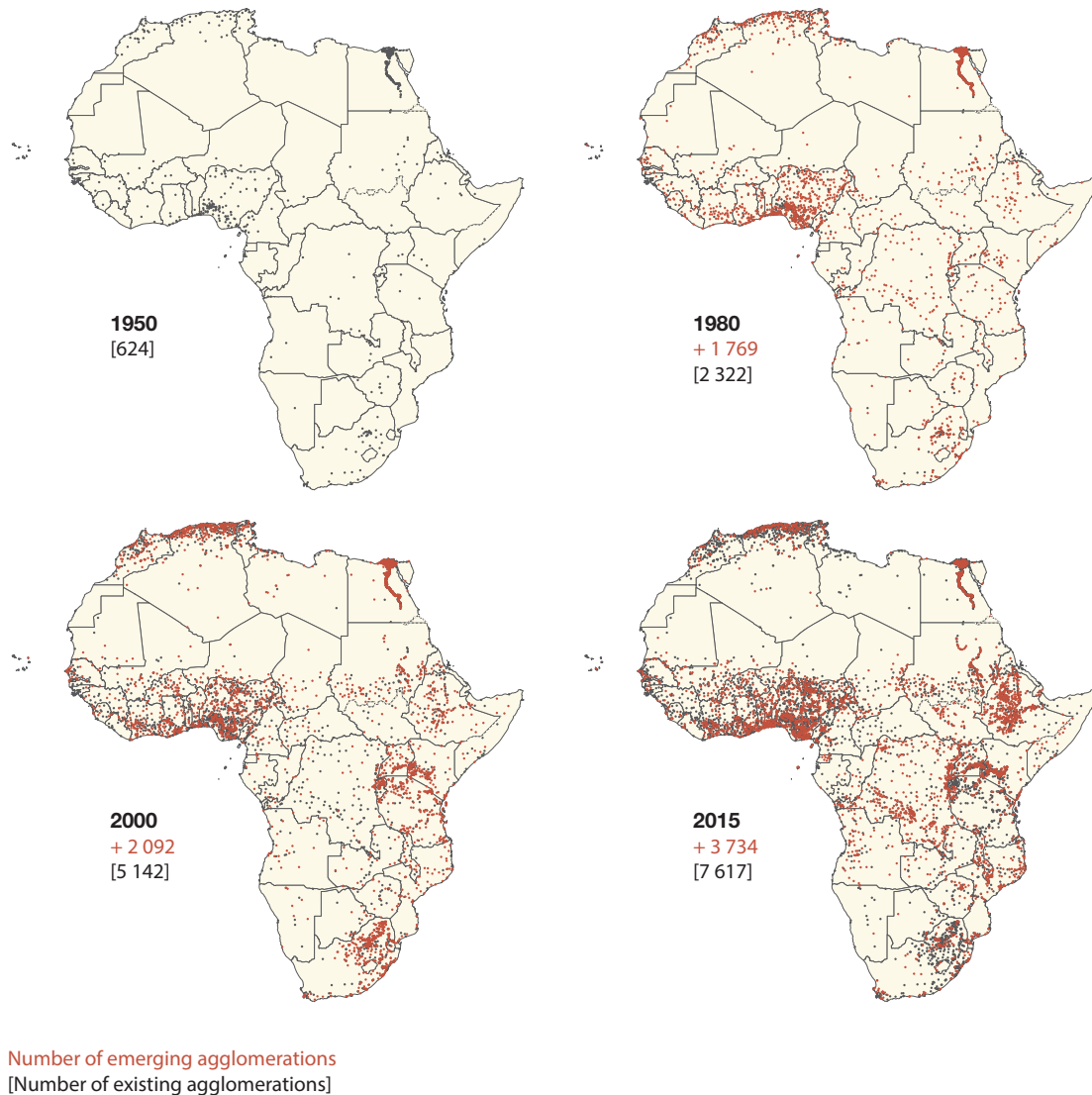
Most countries saw a spectacular increase in the number of agglomerations since 1950. In 32 countries the number of agglomerations increased by at least 1 000% between 1950 and 2015. The strongest increases in the number of agglomerations were recorded in South Sudan (from 1 to 90), Ethiopia (from 6 to 510) and Mozambique (from 2 to 167). The largest increase in the number of agglomeration occurred in Nigeria and Egypt, which had 1 137 and 851 agglomerations respectively in 2015. Nigeria and Egypt are also the two countries that have the largest urban

network. Nigeria is the most populous country in Africa, and Egypt is the third most populous country on the continent. There is a very strong correlation between the total population and the number of urban agglomerations, with notable exceptions: Uganda, Burundi and Kenya have relatively fewer agglomerations compared with their total populations while Sao Tome and Principe, Botswana and Algeria have relatively more agglomerations compared with their total populations.

Between 2000 and 2015, the number of agglomerations increased by more than 50% in 33 countries and more than doubled in 16. The fastest increases, above 300%, were in Djibouti, Burundi, South Sudan and Malawi. In many

Map 2.6

Emergence of new agglomerations in Africa, 1950, 1980, 2000, 2015



Sources: OECD/SWAC 2018, Africapolis (database); Geopolis 2018

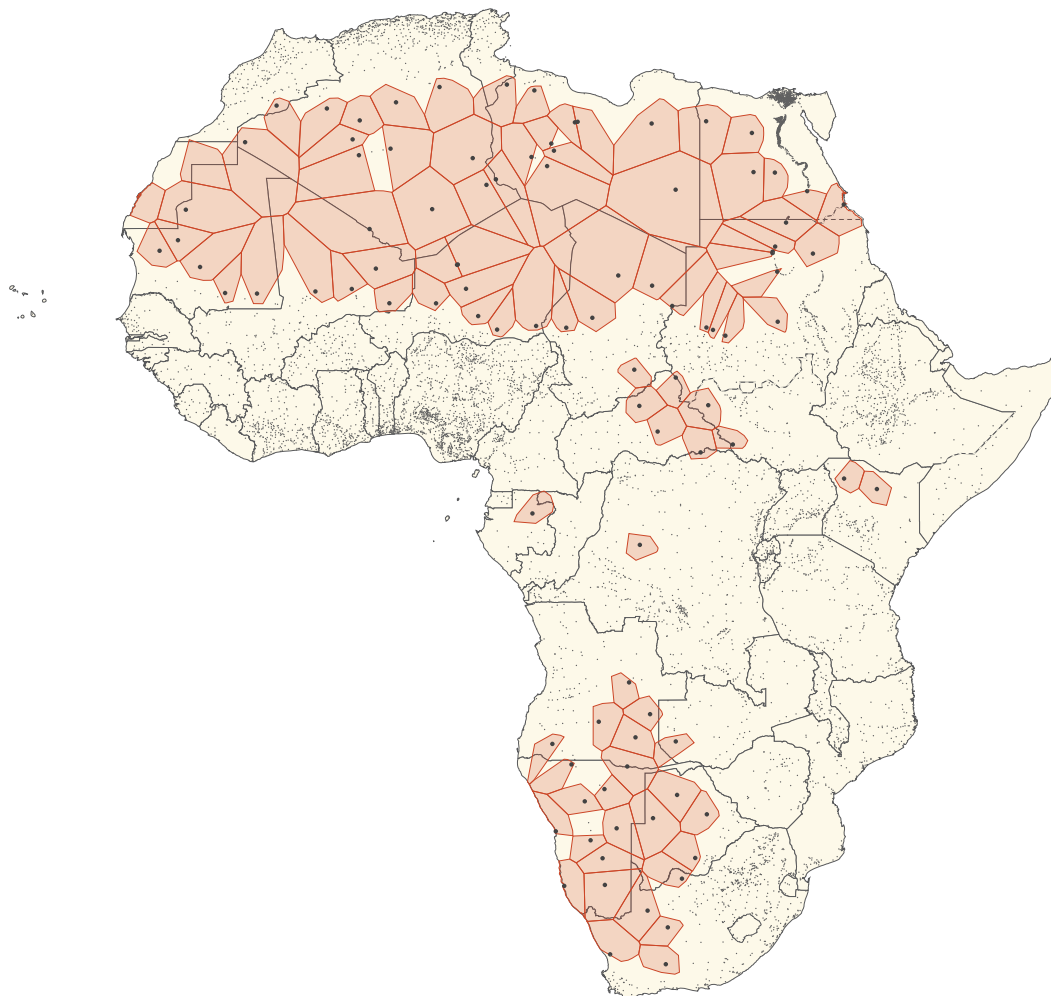
cases, new agglomerations emerge as the result of the ongoing transformation of rural areas leading to a reclassification from rural to urban. This in-situ urbanisation process results in very different configurations depending on local contexts, notably the form of rural settlement structures adapted to the local environment. The emerging agglomerations are the result of an increasing population density that is accompanied by a gradual reorganisation of activities, people and space and notably by a reduction of agricultural activities. During this process,

the distinctions between rural and urban are increasingly blurred.

In addition, an increasingly observed feature is the emergence of agglomerations within larger metropolitan regions. This recent reality reflects a growing diversity of mobility pattern, urbanisation processes and urban policies. An increasing number of people looking to move to the continent's capitals and metropolises are moving to the 'metropolitan area'. People leave expensive and congested centres and resettle in satellite towns and suburbs. In several countries,

Map 2.7

The 100 least-connected urban agglomerations in Africa



Note: This map shows the 100 least-connected urban agglomerations in Africa. Eighty percent of the least-connected agglomerations are in the Sahara and the Kalahari Desert.

Source: OECD/SWAC 2018, Africapolis (database)

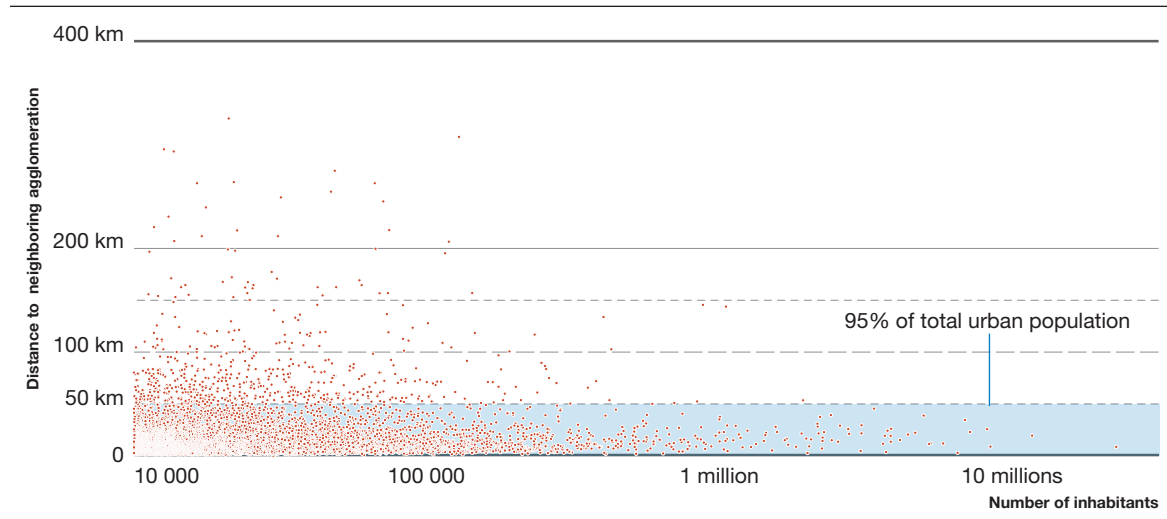
urban planning strategies favour this process by developing and investing in housing and services in commercial-industrial areas outside congested city centres.

Correlatively, in Egypt, Kenya, Libya and Rwanda, the number of agglomerations decreased between 2000-15. This decline is due to the spatial growth of existing agglomerations leading to the merging of two or more agglomerations to form one continuous agglomeration. The merging and absorption of agglomerations is observed in all countries. In total, 1 260 agglomeration merged between 2000 and 2015. However, since the number of emerging agglomerations

exceeds the number of merged agglomerations, the total number continues to increase. Between 2000 and 2015, 3 800 agglomerations emerged, resulting in a net-increase of agglomerations. Both processes—emergence and merging—are functions of density increases (demographic growth or population inflows) and distance (proximity to other urban areas), explaining their correlation with existing urban clusters. Sixty percent of the newly emerged agglomerations between 2000 and 2015 and 84% of merged agglomerations are situated within one of the six urban clusters.

Figure 2.5

Distance to nearest neighbouring agglomeration and agglomeration size in Africa, 2015



Source: OECD/SWAC 2018, Africapolis (database)

Proximity and distance

The average distance between agglomerations dropped from 58 kilometres in 1950 to 20 kilometres in 2015. Although, these averages mask strong differences across countries and regions, a large majority of Africa's urban population lives close to neighbouring agglomerations. This proximity between urban agglomerations has strong implications for inter-urban mobility, connectivity and regional integration.

In 2015, 368 million Africans (or 65% of the total urban population) lived in an urban agglomeration less than 20 kilometres distant from a neighbouring agglomeration. In comparison, only 31 million urban dwellers (5% of the total urban population) live in an agglomeration more than 50 kilometres from the closest neighbouring agglomeration (Figure 2.5). In 13 countries the average distance between agglomerations is below continental average (20 kilometres). The average distance between agglomerations within the six major population clusters is 12 kilometres. Only three countries have lower average distances (Egypt, Gambia and Sao Tomé).

Only 53 agglomerations, with a combined population of 2.1 million people, are more than 150 kilometres distant from another urban agglomeration. The largest agglomerations at such levels of remoteness are Port-Gentil in

Gabon (130 000 inhabitants), Nouadhibou in Mauritania (130 000 inhabitants), Agadez in Niger (120 000 inhabitants), Tamanrasset in Algeria (117 000 inhabitants) and Boosaaso in Somalia (116 000 inhabitants). The most isolated agglomeration is al-Jawf in Libya with 43 000 inhabitants at a distance of 565 kilometres from the nearest neighbouring agglomeration. Similar cases of isolation exist in the desertic and semi-desertic areas of the Sahara and the Kalahari Desert. These least-connected urban agglomerations also emerge by mapping the 100 largest Voronoi cells of an agglomeration³ (Map 2.7). Each of these Voronoi cells exceeds 35 000 square kilometres. Hence, there are 100 regions in Africa the size of Belgium with only one urban agglomeration. In many cases, these agglomerations emerged from political and administrative reasons (military and state control of national territories, or decentralising the provision of health, education and other public services). They can also arise from economic activity and the exploitation of natural resources, as well as from agricultural development projects in dry areas. In such cases, natural population growth and settlement trends are not the primary drivers of urban growth.

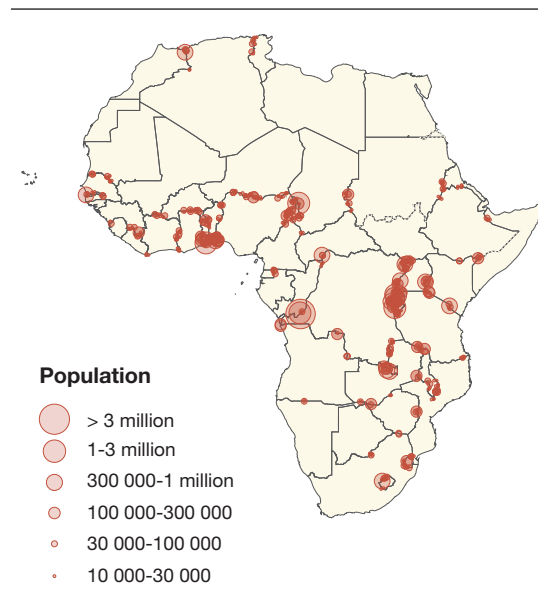
Box 2.2**Africa's border cities**

A remarkable feature of Africa's urban network is the prevalence of border cities. Lomé and Aflao, at the border between Togo and Ghana, are one agglomeration separated by just 50 metres. The same for Cinkassi/Cinkansé between Togo and Burkina Faso; for Pweto (DRC) and Chilengi (Zambia); Busia (Uganda) and Busia (Kenya); with many other cases at the border between Nigeria-Niger, Chad-Cameroon, Zambia-Tanzania, Uganda-Sudan, Senegal-Mauritania, etc. There are 47 border cities at less than ten kilometres from another urban agglomeration in a neighbouring country. In total, there are 635 border cities that are less than 40 kilometres from another. More than 42 million people (similar to the population of Spain) or almost 8% of the total urban population of the continent live in these agglomerations. Six of these have more than one million inhabitants, including Kinshasa, the continent's fifth largest city with 7.3 million inhabitants. The others are Lomé (Togo), Brazzaville (Congo), N'Djamena (Chad), and Bujumbura (Burundi). Africa has nine national capitals that are located at a national border: Bangui, Brazzaville, Gaborone, Kinshasa, Lomé, Maseru, Mbabane, N'Djamena and Porto Novo.

However, this border dimension is very unequally distributed across Africa. North Africa has only 19 border cities in total and large swathes of southern Africa have only a few smaller ones. In the Great Lakes region and in West Africa, border agglomerations are an important feature of the urban network. In Burundi, 27 out of all 33 agglomerations are cross-border. In Benin, Gambia, Lesotho, Eswatini,

and Togo, more than half of all agglomerations are in proximity to a border.

This feature of Africa's urban network, also the result of its colonial and political past, highlights the growing inter-urban proximity across countries. Urban policies that reduce the friction generated by the 32 000 thousands kilometres of land borders in Africa, by facilitating the mobility of people, goods, capital and ideas will increase the contribution of cities and their inhabitants to the continental integration process.

Map 2.8**Africa's border agglomerations**

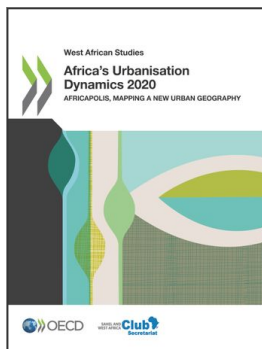
Source: OECD/SWAC 2018, Africapolis (database)

Notes

- 1 The term 'level of urbanisation' refers to the share of the urban population in the total population and is used to differentiate more clearly between the process of urbanisation and urban growth. The former refers to an increase in the share of people living in urban areas, while the latter refers to the growth in the number of people living in urban areas.
- 2 The method used consists in dividing the area of Africa by the number of agglomerations. The whole area covers 29.7 million square kilometres and has 7 617 agglomerations. If the distribution of agglomerations was even, each agglomeration would be in the centre of a square of $29\,700\,000/7\,617$, or about 3 900 square kilometres, giving a side of about 62.5 kilometres. A grid resulting from this calculation is created and then superimposed on a map of the agglomerations.
- 3 A Voronoi cell is based on a nearest neighbour calculation, where each cell corresponds to the area that is closest to the agglomeration inside the cell. Larger cells indicate a less dense urban network.

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