



# ADVANTAGE OR PARADOX?

The challenge for children  
and young people  
of growing up urban

unicef 

for every child

# Acknowledgements

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## OVERVIEW

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Approximately a decade ago, the world officially became a majority urban planet. Along with urbanization a great deal of human progress has come to pass, including great leaps in child survival and development. Aggregate statistics regularly show that on average, compared to their rural peers, urban children have access to better essential services such as health care and education, water and sanitation, energy and better outcomes.

This is in part due to factors associated with the so-called ‘urban advantage.’ On average, urban households earn higher incomes, benefit from improved infrastructure, have improved knowledge and reside in greater proximity to services.

A closer look at the evidence, however, suggests that not all urban children are benefiting equally, and that the urban advantage for children is perhaps an overgeneralization. Unplanned urbanization, which is taking place in many parts of the world, is leading to sprawl and low urban population density, undermining the advantage of proximity that is a key component of the urban advantage. Informality and insecure residential status are leaving many urban households excluded from government-provided services. The quality of urban services for the marginalized and disadvantaged is often poor. Environmental and health hazards, such as air pollution, unprocessed waste and wastewater, pollution and poor air quality can heighten the risk of disease. Urban dwellers living in informal conditions often have a lower resilience to shocks and stressors such as natural hazards (including those exacerbated by climate change) or economic turbulence. These factors often leave the poorest urban children at a considerable disadvantage compared to their more affluent urban peers, and sometimes even compared to their rural counterparts.

This is the ‘urban paradox’: though urban residents on average enjoy better access to services and opportunities, a substantial part of the urban population is being left behind. The presumed urban advantage is not available to all. Poverty, previously predominantly a rural phenomenon, is becoming increasingly urban. As more and more children live in cities and towns, it is becoming increasingly critical to understand the prevalence of the urban paradox and the extent to which it is masked by the narrative of the urban advantage.

To better understand this issue, UNICEF examined the best available international evidence for 10 selected indicators of child well-being drawn from the most recent Multiple Indicator Cluster Surveys (MICS) and Demographic and Health Surveys (DHS) from 77 mostly low- and middle-income countries. These indicators cover environmental health, health care and identity, education and knowledge, and survival and physical growth outcomes. Much of the analysis focuses on comparing rural and urban populations and comparing the top and bottom wealth quintiles for these populations.

The analysis has some limitations. The survey data in this report are given as observed. Since surveys are usually designed to be representative at the national level or larger administrative levels, the analyses can reach the limit of the surveys’ statistical power when comparing quintiles within urban and rural populations. In particular, small gaps between groups may fall within the uncertainty range of the samples surveyed. Furthermore, the definition of an urban area is decided by each country’s statistical office, and definitions therefore vary significantly from country to country. These limitations should be kept in mind when interpreting the results in this report.

The report's key findings are as follows:

1. The average country exhibits a clear urban advantage on all 10 indicators of child survival and well-being.
2. The size of this aggregate urban advantage varies across indicators.
3. Urban averages can mask large inequities within urban areas.
4. Inequities also exist in rural areas, and there is no evidence that urban wealth disparities are consistently larger than those in rural areas.
5. Urban wealth disparities diminish with economic development.
6. Much of the urban advantage disappears if we control for wealth.
7. In a number of countries, the poorest and most vulnerable urban children fare worse than their peers in rural areas.
8. Urban wealth disparity gaps are larger in Africa than in other regions.
9. Urban inequality can take different shapes – from only the wealthiest moving ahead to only the poorest being left behind.
10. Maternal education, like household wealth, is an important correlate of child welfare in urban and rural areas alike.

The purpose of this report primarily is to describe urban inequality as observed – within the limits of methodology and available data. In doing so, it raises questions regarding where the observed inequalities come from and what can be done to overcome them. Although the report does not intend to answer those questions, a number of important implications for policies and programmes can be drawn from its results. These include:

- The urban setting has to become an integral part of programming for children.
- Capacities of inclusive urban planning must be further developed on all levels of government – national, regional and local.

- The development of urban systems has to accelerate to keep pace with ongoing rapid urbanization.
- Solutions have to be found for the lack of financial resources needed to improve urban systems and to increase equity within urban areas.
- Better data and better use of existing data are needed to understand the true dimension of urban inequity.

Turning the urban paradox experienced by millions of children and young people into an urban advantage is a key challenge for cities and towns across the world. Now is the time to step up efforts in this area. The 2015 Sustainable Development Goals (SDGs)<sup>1</sup> and the New Urban Agenda<sup>2</sup> that emerged in 2016 from Habitat III (the United Nations Conference on Housing and Sustainable Urban Development that takes place every 20 years)<sup>3</sup> both set ambitious goals for the world's urban areas. By the time of Habitat IV in 2036, a whole new generation of young people will have grown up in urban areas. The deprivations or advantages they experience in childhood and adolescence will critically influence their prospects in adulthood.

The cost of inaction is high: almost 90 per cent of the world's children and adolescents live in Africa and Asia, which are urbanizing rapidly. Today, approximately 1 billion people are estimated to live in slums, the worst form of informal settlement, and hundreds of millions of them are children under 18. Based on current trends, those numbers are likely to triple by 2050.<sup>4</sup> In the absence of new models targeting the urban poor, inequity in child health may widen and an increasing number of urban children will be shut out of overall progress.<sup>5</sup>

Scaling up urban programming for children and young people is now a global imperative in all regions.

# KEY FACTS AND TRENDS ON URBANIZATION<sup>6</sup>

## Urban population

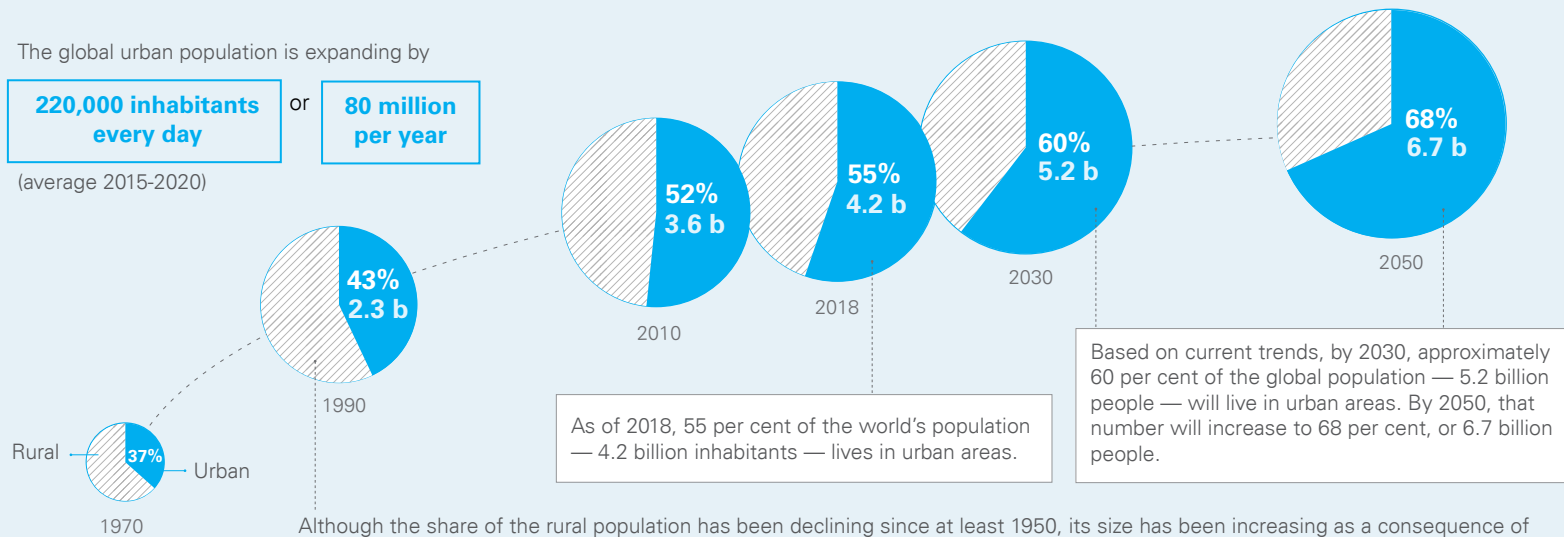
The global urban population is expanding by

**220,000 inhabitants every day**

or

**80 million per year**

(average 2015-2020)

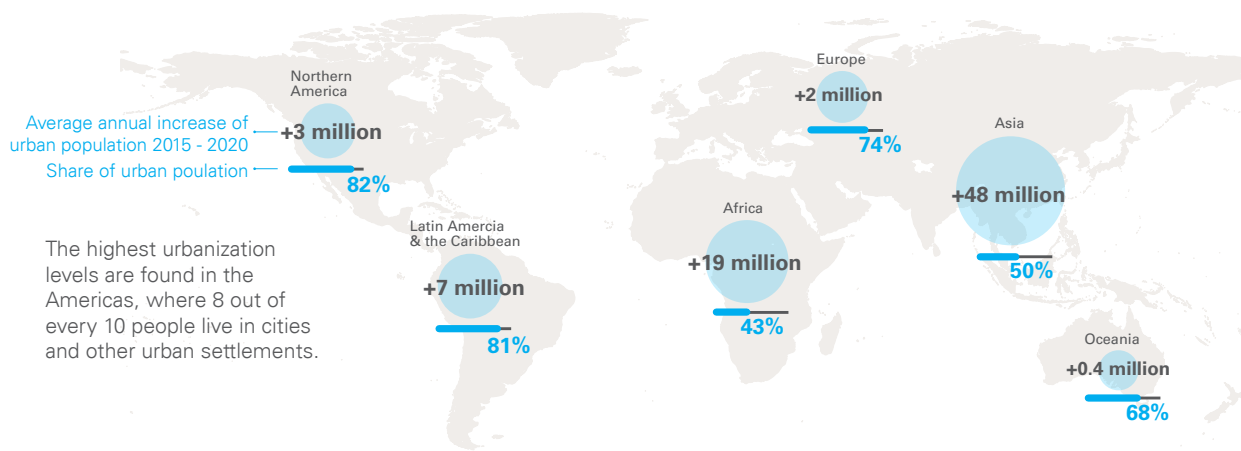


As of 2018, 55 per cent of the world's population — 4.2 billion inhabitants — lives in urban areas.

Based on current trends, by 2030, approximately 60 per cent of the global population — 5.2 billion people — will live in urban areas. By 2050, that number will increase to 68 per cent, or 6.7 billion people.

Although the share of the rural population has been declining since at least 1950, its size has been increasing as a consequence of the fast-growing total population. The rural population is estimated to peak in 2021 at 3.4 billion people.

## Urbanization levels by region



The highest urbanization levels are found in the Americas, where 8 out of every 10 people live in cities and other urban settlements.

Africa and Asia have the lowest levels of urbanization. In 2018, half of Asia's population and 43 per cent of Africa's live in urban areas. However, both regions are urbanizing rapidly.

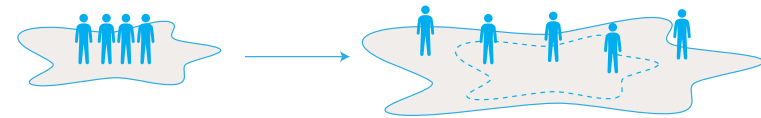
Asia is currently adding 48 million people annually to its urban population, more than all other regions combined. Africa's urban population is the fastest growing, with an average annual rate of urban growth of 3.7 per cent from 2015-2020 – adding around 19 million persons to its urban population every year.

Increase urban population 2018 - 2050



The urban future lies with developing countries. Approximately two-thirds of the world's urban population growth in the coming decades will take place in low- and lower-middle-income countries.

Development of cities

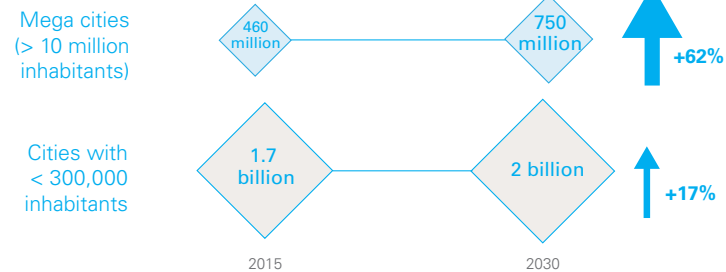


Cities' areas are growing faster than their population, reflecting decreasing population density and larger spread.<sup>7</sup> Much of the growth in the cities is currently taking place in an unplanned fashion, characterized by fragmented urban development, inadequate infrastructure, increased pollution and waste, lack of climate resilience, low compactness and walkability, congestion, and poor quality housing.

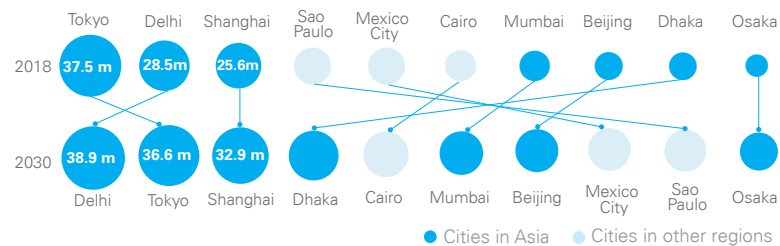
Urban population by size of settlement

Half of the world's urban population lives in cities with half a million or more inhabitants. Megacities, with over 10 million inhabitants, are the fastest growing urban settlements.

The population of megacities is predicted to increase by 290 million (62 per cent), from 460 million in 2015 to 750 million by 2030. Over the same period, the population in cities with less than 300,000 inhabitants will increase by almost the same amount, although this will represent an increase of only 17 per cent (from 1.7 billion to 2 billion).

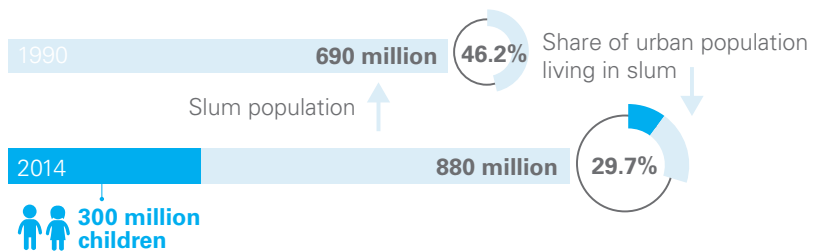


Megacities



Asia in particular will experience rapid growth of large megacities. Currently, the world's three largest cities are in Asia: Tokyo (37.5 million), Delhi (28.5 million) and Shanghai (25.6 million). By 2030, seven out of the 10 largest cities in the world will be in Asia: Delhi, Tokyo, Shanghai, Dhaka, Mumbai, Beijing and Osaka. Many of these cities are at risk of increased flooding due to climate change.

Slum population



While the share of the urban population living in slums fell from 46.2 per cent in 1990 to 29.7 per cent in 2014, the number of people living in slums has actually risen. The world's slum population has increased by 25 per cent over that same period, from 690 million in 1990 to 880 million in 2014 – 300 million of those being children (there is no estimation available for the number of children in 1990).<sup>8</sup>



















# FINDINGS



## Indicators and their labels used in this report

	<b>Water</b>	Use of at least basic drinking water services
	<b>Sanitation</b>	Use of at least basic sanitation services
	<b>Birth attendant</b>	Coverage of skilled attendant at birth
	<b>Birth registration</b>	Birth registration prevalence
	<b>Immunization</b>	DTP3 immunization coverage
	<b>Education</b>	Primary education completion rate
	<b>HIV knowledge women</b>	Coverage of comprehensive knowledge about HIV/AIDS among young women aged 15-24 years
	<b>HIV knowledge men</b>	Coverage of comprehensive knowledge about HIV/AIDS among young men aged 15-24 years
	<b>Stunting</b>	Stunting prevalence among children under 5 years of age
	<b>Mortality</b>	Under-five mortality rate

If not explicitly marked otherwise, disparity gaps are shown as absolute differences, not relative differences. More details regarding the methodology can be found in the Annex.

Indicator values and gaps presented in this report typically refer to the median of sample countries – either the median of the indicator value or the median of the disparity gap (between urban and rural or between richest and poorest wealth quintile). Results are not weighted by country population.

## Most countries exhibit a clear urban advantage in terms of children's survival and well-being.

Looking at the aggregate level, an urban advantage can clearly be seen across countries. In all 10 indicators of child survival and well-being assessed in this report, the urban child population fares better on average than their rural counterparts (see Figure 1). In urban areas, a higher share of urban households has access to basic drinking water and sanitation services. More births are attended by skilled health personnel and are registered, and fewer children are stunted or die before their fifth birthday. Among young people (between 15 and 24 years of age), knowledge about HIV and AIDS is higher in urban areas than in rural. The only indicator where an urban advantage does not show strongly is the DTP3 immunization indicator. This is likely an encouraging sign of the effectiveness of vaccination programmes in rural areas, though system inefficiencies in urban areas may play a role here as well.

**Figure 1:** Levels of selected indicators across countries and areas by urban and rural (2011-2016)



**Notes:** Chart shows the median of country averages (unweighted by population). Higher values represent better conditions, except for stunting and mortality, where lower values represent better conditions. Mortality has a different scale (deaths per 1,000 live births) and levels therefore cannot be directly compared with the other indicators.



## The extent of the 'urban advantage' varies across indicators.

Although an urban advantage can be seen for all indicators, the urban advantage is not identical for all indicators (Figure 2) and the urban population does not fare better in all countries (Figure 3).

The largest differences are in use of basic drinking water, with coverage in urban areas 22 percentage points higher than in rural areas (based on the median values presented in Figure 2). This means that, in half the countries with data, the percent of the population with access to basic drinking water services is at least 22 percentage points higher than that of the rural population. Other indicators showing a comparatively large 'urban advantage' include access to basic sanitation (17 percentage points higher in urban areas), the primary education completion rate (13 points higher), the share of births attended by skilled personnel (12 points higher) and the percentage of young people with comprehensive knowledge about HIV/AIDS (12 points higher for men and 11 points higher for women). Only a small urban advantage can be

found for birth registration coverage and there is hardly any difference in DTP3 immunization coverage rates and urban and rural areas. There is no indicator that shows on average a 'rural advantage.'

Both outcome indicators show a strong urban advantage. Children under five in rural areas have a 37 per cent higher prevalence of being stunted, with a median difference of 8 percentage points between urban and rural areas. They also have 46 per cent higher risk of dying, with a median difference of 16 deaths per 1,000 live births.

This urban advantage is likely related by a number of factors that are only accessible to some children. These include higher average incomes, better infrastructure, greater proximity to services, and the existence of private services such as private clinics or private schools.



**Figure 2 :** Magnitude of 'urban advantage' for selected indicators across countries and areas (2011-2016)

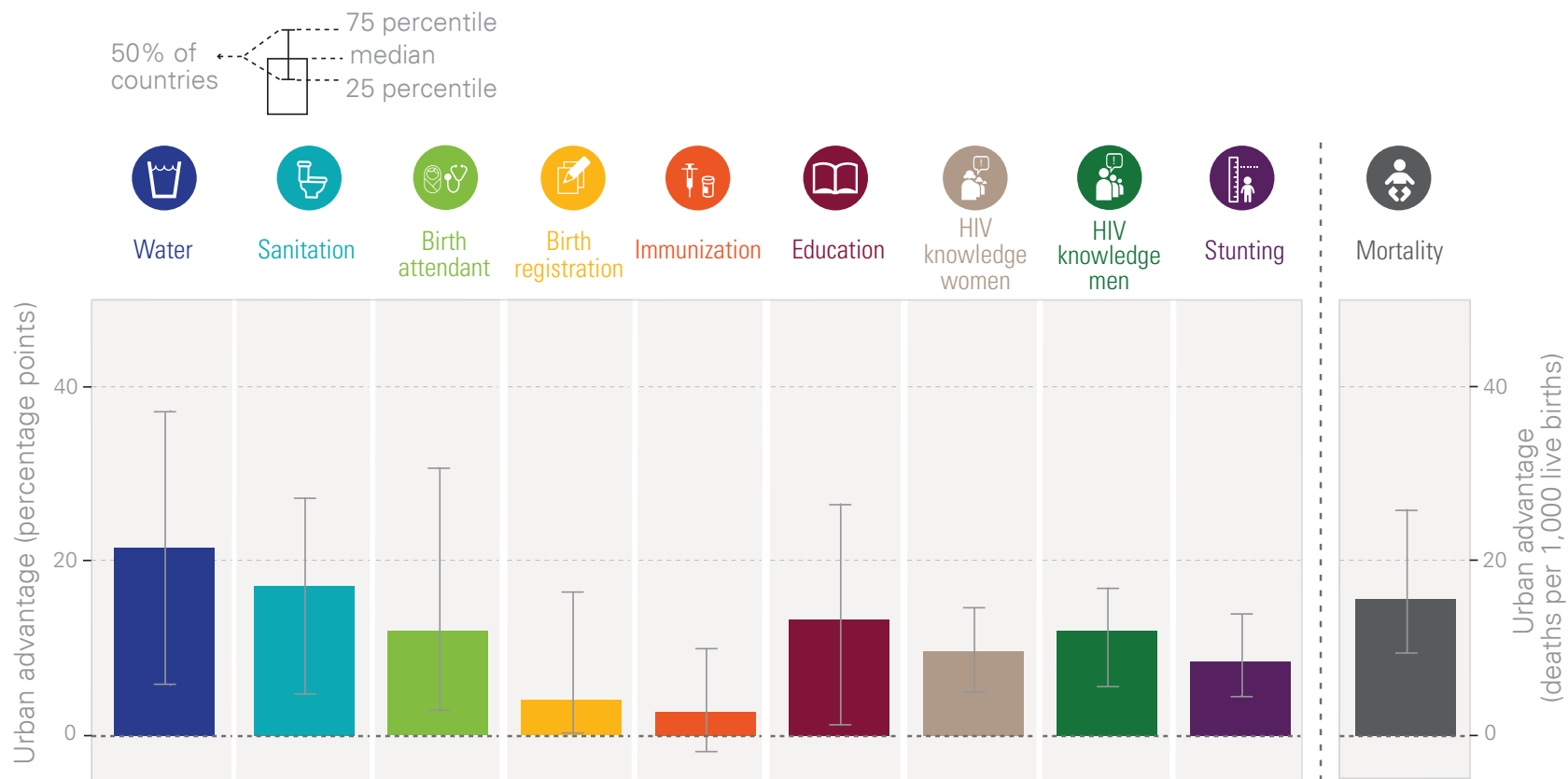
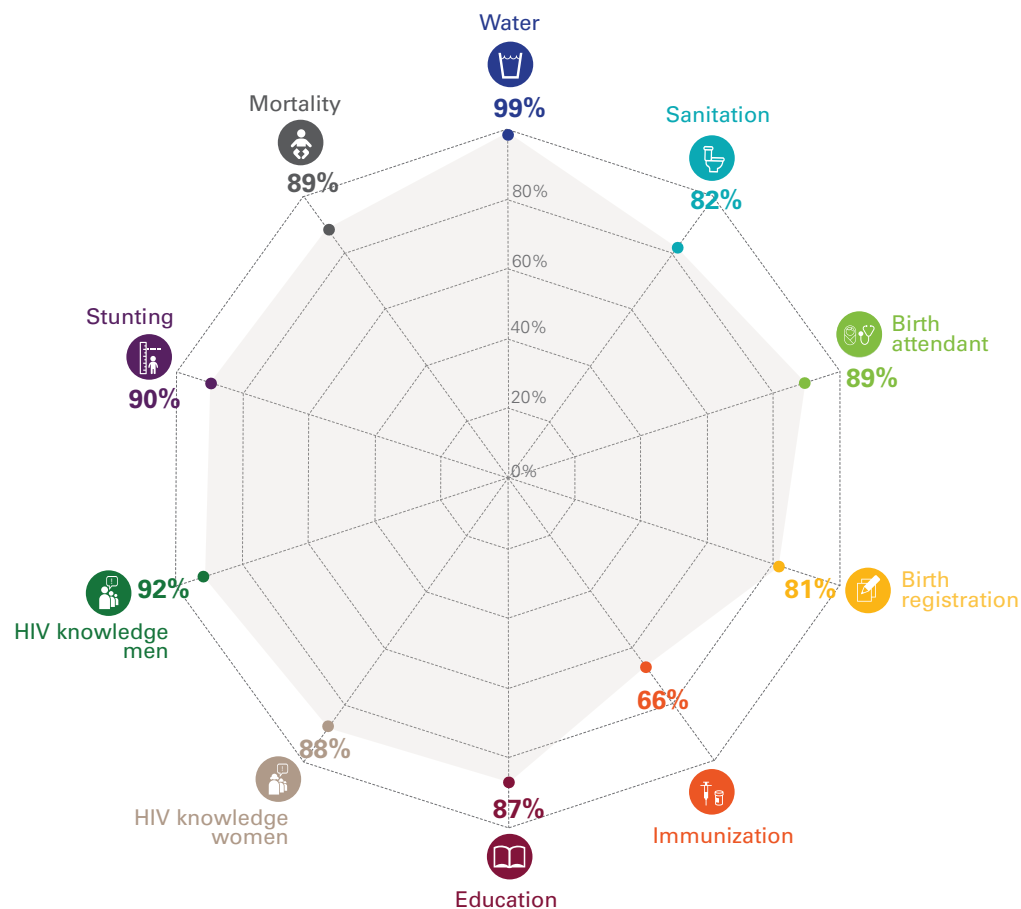


Figure 3: Percent of countries showing an 'urban advantage' for selected indicators (2011-2016)



**Note:** 'Urban advantage' is defined as a positive urban-rural difference of the coverage or prevalence, except for stunting and under-five mortality (where higher values show worse conditions) for which the advantage is defined based on the rural-urban difference. In both cases, negative values indicate an 'urban disadvantage'.

Not every country shows an urban advantage on every indicator. In virtually all countries (99 per cent) the urban population has on average better access to basic drinking water services than the rural population. The urban advantage is slightly less common on other indicators, though on most indicators 9 out of 10 countries have an urban advantage. Only 82 per cent of countries have an urban advantage in sanitation services. This may be related to the frequent use of shared sanitation in urban areas, a form of sanitation that does not meet the criteria for basic services. Birth registration coverage also shows a less common urban advantage. Targeted campaigns in rural areas and the participation of community health workers may play a role here. The indicator showing the least common urban advantage is the DTP3 immunization indicator, with urban areas having a higher coverage rate in just 66 per cent of countries.

Both of the outcome indicators – stunting prevalence and under-five mortality rate – show a more consistent urban advantage. For both indicators, in approximately 90 per cent of the countries, the children in urban areas fare better than their rural counterparts.



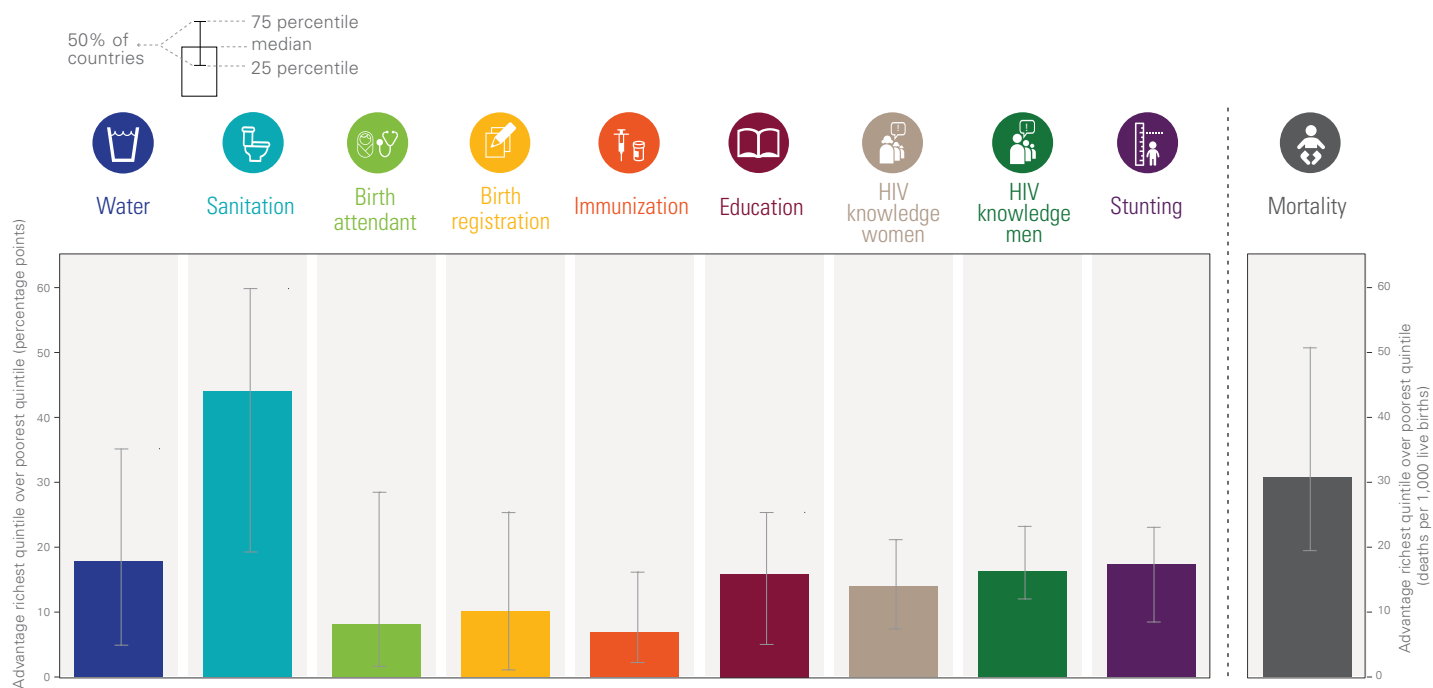
## Urban averages can mask large inequities within urban areas.

Not all children fare equally in urban areas; some are more vulnerable than others. Many advantages are generally strongly associated with household wealth.

Among all indicators, the wealthiest quintile of the urban population has better access and outcomes than the poorest quintile (see Figure 4). The wealth advantage is largest for sanitation: in half of the countries, the gap between the richest and the poorest urban quintiles is at least

44 percentage points. In one-quarter of all countries, it is 60 percentage points or higher. There is also a large wealth advantage in access to at least basic drinking water services. The gap between the richest and poorest urban quintile is at least 18 percentage points in half of the countries assessed, and in one-quarter of the countries it is 35 points or higher. This may be due in part to the fact that access to water and sanitation facilities helps determine a household's value on the wealth index that we use; see the Annex for further discussion of this matter.

**Figure 4:** 'Wealth advantage' for selected indicators in the urban population across countries and areas (2011-2016)

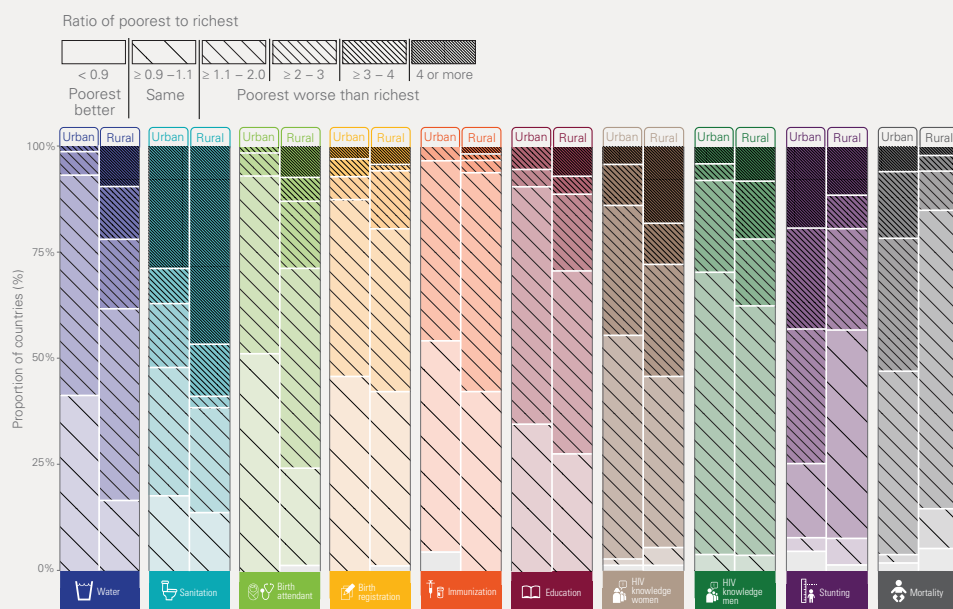


**Note:** The urban 'wealth advantage' is defined as a positive difference in the coverage or prevalence between the richest urban quintile and the poorest urban quintile, except for stunting and under five-mortality (where higher values show worse conditions) for which the advantage is defined based on the difference between poorest and richest quintile. In both cases, negative values indicate a 'wealth disadvantage'.



### Urban inequity can be dramatic – in one out of five countries, stunting prevalence among the poorest urban is at least four times higher compared to the wealthiest

Share of countries and areas with relative wealth disparity gaps (ratio richest to poorest quintiles) by urban and rural (2011-2016)



**Note:** The ‘relative wealth disparity’ is calculated as the ratio of richest quintile to poorest quintile – except for stunting and under-five (where higher values show worse conditions) for which the ratio between poorest to richest quintile is used. A ratio of one indicates complete equality between poorest and wealthiest; a ratio higher than one indicates better conditions for the wealthiest quintile; a ratio of lower than one indicates better conditions for the poorest quintile. To account for uncertainties around the estimated indicator values, a range of plus/minus 10 per cent around the ‘neutral’ ratio is regarded as showing no inequality (i.e. 0.9 to 1.1).

Inequalities between the richest and the poorest can be huge – both in urban areas and in rural areas. In half of the countries analysed, children in the poorest quintile are at least twice as likely to die before their fifth birthday as their richest urban peers. The relative disparity is even more pronounced for stunting, where prevalence in the poorest urban quintile is at least twice as high as for peers in the richest quintile in approximately 8 out of 10 of the countries analysed, and at least four times higher in 2 out of 10 countries. For both stunting and under-five mortality, relative inequality is higher in urban areas than in rural areas – a pattern opposite to that of the other indicators.

The extent of these relative wealth disparities illustrates why it is difficult to generalize about human well-being in urban areas. Furthermore, inequality in child well-being is not confined just to childhood outcomes – it is already manifest in access to essential services. Sanitation shows one of the largest relative disparities: in half of the countries analysed, children of households in the poorest urban quintile have basic sanitation services that are at least two times lower than children from the richest urban quintile. Coverage is four or more times lower in almost half of the countries analysed in rural areas.

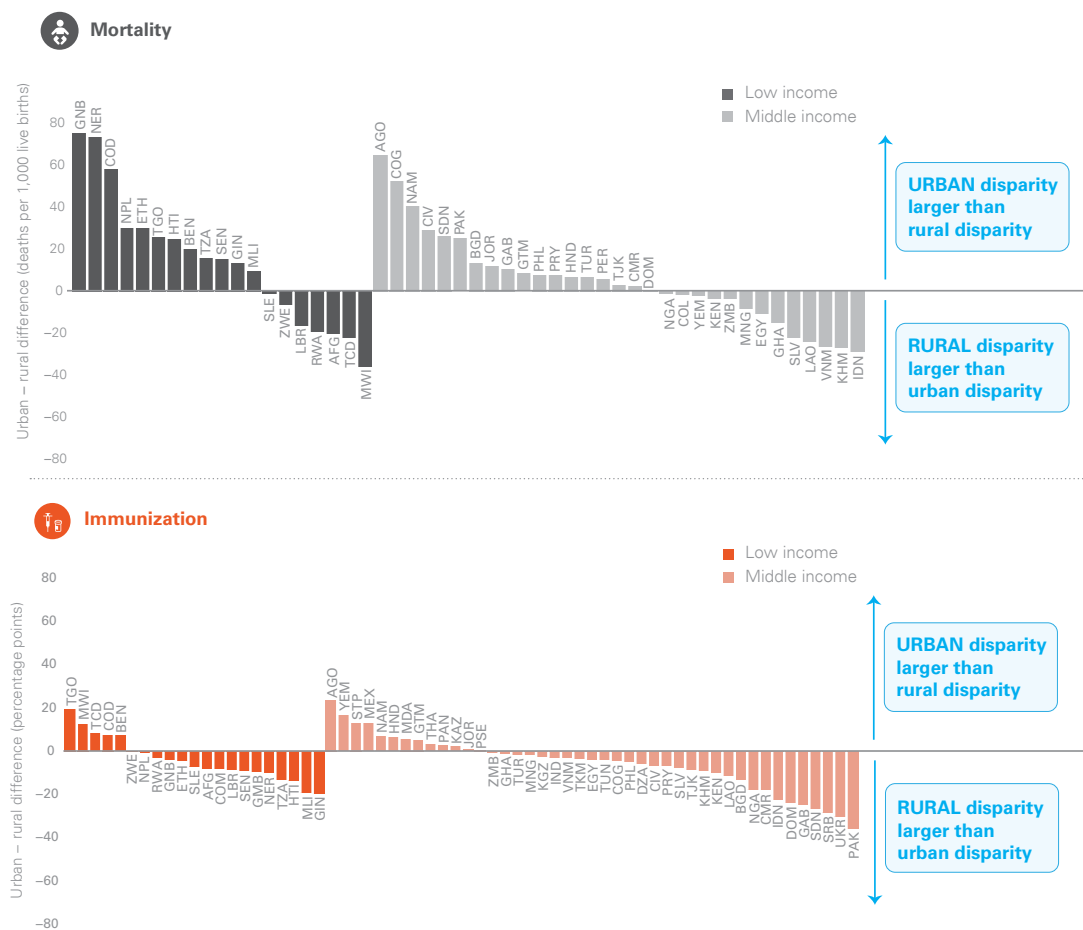
This examination of relative wealth disparities does not account for the fact that the absolute level of each indicator is higher in some countries than others, so the results should be interpreted with care. The relative wealth disparity metric is instead intended to shed light on the inequalities in the conditions facing the richest and poorest in urban and rural areas of the same country.

## Urban wealth disparities are not consistently larger than rural wealth disparities.

Comparing the wealth disparity gaps in urban and rural areas can generate insights into living conditions between urban and rural areas as well as differences in access to and quality of crucial health- or education-related services.

Larger wealth inequity might be expected in urban areas, mirroring the higher income inequality which is regularly observed in urban settings. Overall, though, there is no simple relationship between residence and the size of the wealth disparity gap. In approximately half of the indicators, the disparity gap is larger in urban areas than in rural, while the other indicators show the opposite pattern. Figure 5 shows under-five mortality, where the majority of countries show larger urban wealth disparities than rural, and DTP3 immunization, where the opposite holds true.

**Figure 5:** Difference between intra-urban and intra-rural wealth disparity gap of under-five mortality rate and DTP3 immunization coverage, by country and country's income level group (2011-2016)



**Note:** See Annex for a reference table with country codes and country and area names.



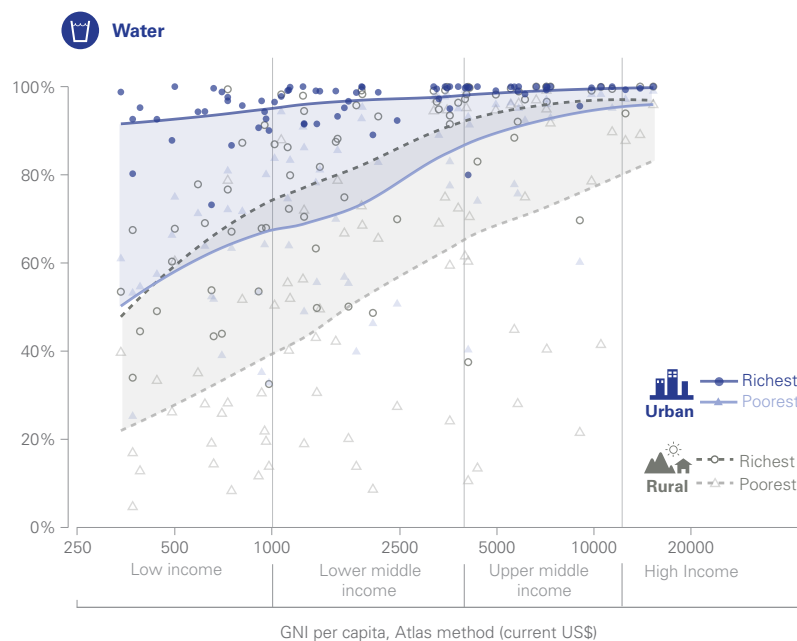


A country's income level has a strong influence on the size of wealth disparity gaps in urban areas on most indicators (see Figure 6). In low-income countries, the absolute gaps between the richest and poorest quintiles are usually higher than in middle-income countries. With increasing national income<sup>9</sup>, the basic but important services analysed here also become accessible for the relatively poorer part of the population. However, other disparities such as access to decent jobs and good quality educations presumably remain, and could conceivably even get worse.

For some of the indicators analysed, however, the wealth disparity gap in urban areas remains large or even slightly widens for countries in the lower-middle income range, before finally decreasing significantly at higher income levels. Exceptions to this are the immunization indicator, which shows a flat trend in the lower income range followed by an only slight decrease from the middle income threshold; and the indicators on comprehensive knowledge about HIV and AIDS, where the trend is flat over the whole income level range for men and women. This suggests that other factors might be more important in influencing the size of the gap for this indicator.

In rural areas, the narrowing of the wealth disparity gap between richest and poorest is less marked as incomes increase. For example, in use of basic drinking water services (see Figure 7) the gap between the richest and poorest urban quintile is approximately 30 percentage points in low-income countries but narrows to approximately four percentage points for upper-middle countries. In contrast, in rural areas the gap of approximately 41 percentage points for low-income countries only halves to approximately 22 percentage points for upper-middle income countries.

**Figure 7:** Use of basic drinking water services for urban and rural population by wealth quintile (poorest and richest only) and by country's gross national income (GNI) per capita across countries and areas (2011-2016).



**Note:** The lines show LOESS trendlines for the respective residence-wealth-group data across countries and areas. The shaded area shows the 'gap' between poorest and richest among urban and rural population, respectively.

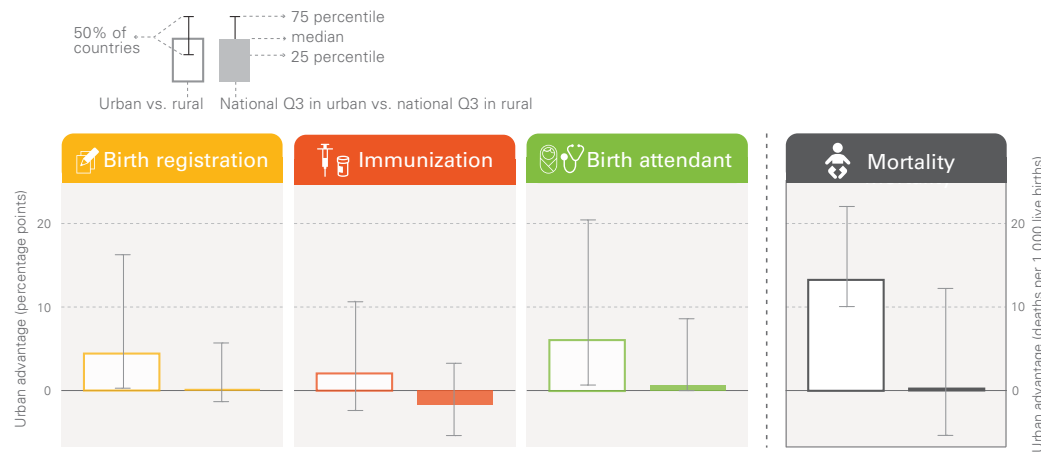
## Much of the urban advantage seems to disappear if we control for wealth.

The urban advantage observed so far in this report is partly due to greater availability of services and easier access of service centres in urban areas. However, it is also partly explained by the observed greater wealth of urban households. Among a separate sample of 88 countries, on average, 83 per cent of the richest quintile lives in urban areas, with just 17 per cent in rural areas (unweighted averages). The opposite is true for the poorest quintile, with only 16 per cent of the population in the poorest quintile living in urban areas, and the remaining 84 per cent living in rural areas (see box).

To control for wealth, we compare the population in the national middle quintile (Q3) that lives in urban areas to those living in rural areas. Because these individuals are in the same national wealth quintile, their households were observed with similarly valued assets, indicating similar levels of wealth.<sup>10</sup>

Under this analysis, the urban advantage is almost entirely eradicated when aggregating over all countries (see Figure 8) among the four indicators we analyse. In birth registration, for example, while the average urban population (left bar) has a median coverage 4.5 percentage points higher than the rural population, the median difference is less than 0.1 percentage points when comparing the urban and rural population of the middle wealth quintile (right bar). Similar results can be seen for other indicators.

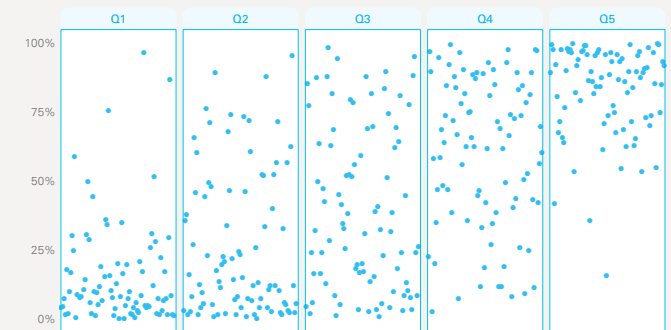
**Figure 8:** The urban-rural gap – comparing urban-rural gaps using national averages and national middle quintiles only (Q3) for four indicators



### Urban/rural residence and household wealth

The analysis behind Figure 8 uses wealth quintiles that are based on a different methodology than otherwise used in this report. In general, households are grouped into wealth quintiles according to a number of household assets (see Annex for more details). While in the rest of the report households are grouped into quintiles separately for urban and rural areas (resulting in, for example, the richest 20 per cent of the urban households), for the analysis behind Figure 8, households are grouped first into quintiles based on the national level and then sorted by urban and rural. As the chart below shows, richer households are overwhelmingly situated in urban areas, while poorer households are mostly in rural areas. As a result, the poorest quintile of rural households differs in its composition of household assets from households of the overall poorest quintile who happen to live in rural areas. Comparing households of the same national wealth quintile living in urban and rural areas lets us compare groups of households of similar ‘wealth’ composition as judged by their assets.

Percentage of population living in urban areas by national wealth quintile (from Q1, poorest, to Q5, richest), by countries (2010-2015)



**Note:** Each dot represents one country. Dots are spread out horizontally to avoid over-plotting.

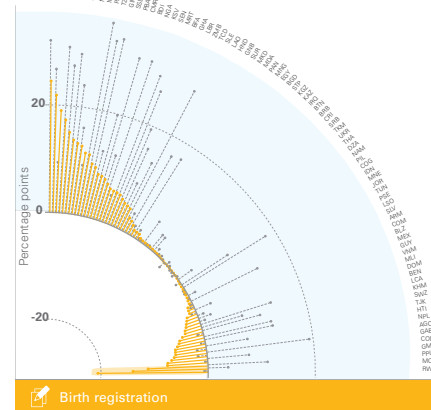
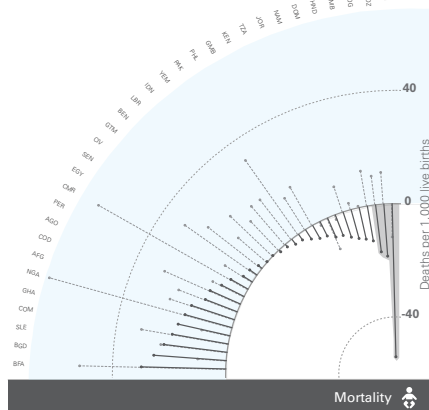
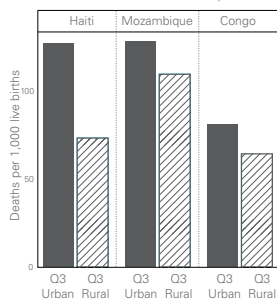
Analysis at the country level provides a more varied picture (see Figure 9) with some cases where the urban advantage remains and others where it transforms into a disadvantage.

**Figure 9:** The urban-rural gap – comparing urban-rural gaps using national averages (grey bars) and middle wealth quintiles only (Q3, blue bars) for four indicators, by country.

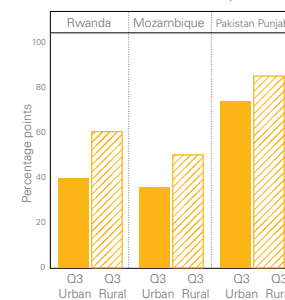
**How to read the chart:** Each quarter shows the results for one specific indicator (top left quarter for under five mortality, top right for birth registrations, bottom left for skilled attendant at birth, and bottom right for immunization). Each line represents the result for a specific country. The dotted lines show the difference between urban population and rural population for a specific indicator. The solid lines show the difference between the population of the national middle-quintile by wealth living in urban areas and the population of the national middle-quintile by wealth living in rural areas. Lines in the area with light blue background color indicate an urban advantage and those in the white area suggest an urban disadvantage. See Annex for a reference table with country codes and country and area names.



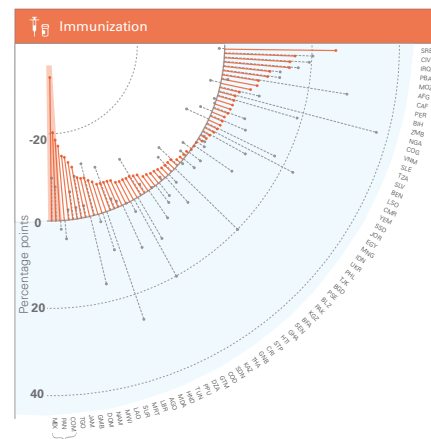
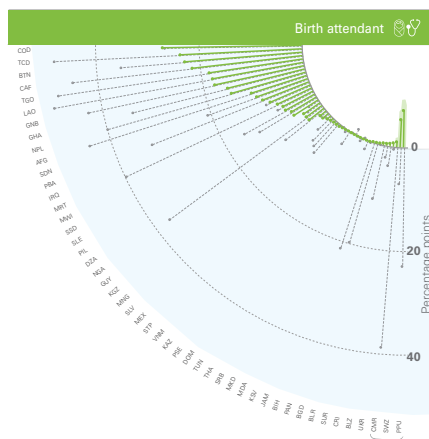
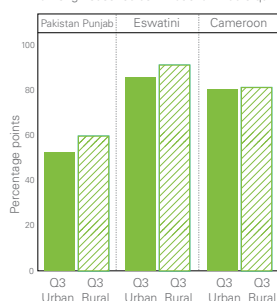
Countries with largest urban *disadvantages* among households in national middle quintile



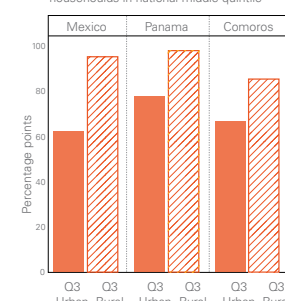
Countries with largest urban *disadvantages* among households in national middle quintile



Countries with largest urban *disadvantages* among households in national middle quintile



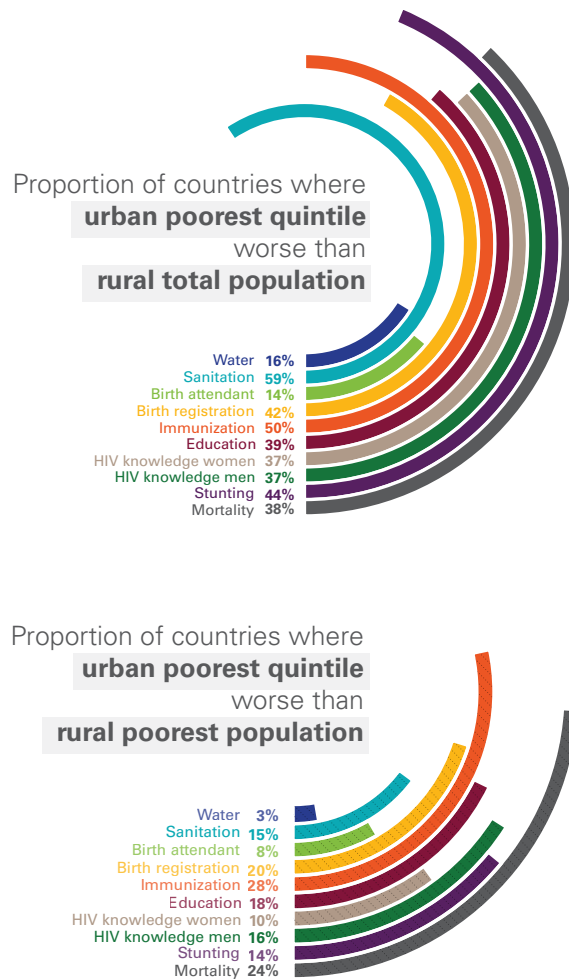
Countries with largest urban *disadvantages* among households in national middle quintile





## In a number of countries, the most marginalized urban children fare worse than their peers in rural areas.

Figure 10: Share of countries in which the poorest urban quintile fares worse than the rural population on average (left) or worse than the poorest rural quintile (right) (2011-2016)



Intra-urban disparities can be so large that many of the most disadvantaged children in urban areas fare worse than children in rural areas (see Figure 10, left panel). For example, in approximately 60 per cent of countries analysed, the percent of children in the poorest urban quintile with access to basic sanitation is lower than the percent of all rural children with access. The same is true for DTP3 immunization coverage in approximately half the countries. For birth registration coverage and lower primary education completion rates, this is the case in approximately 40 per cent of countries. Similarly, in 44 per cent of the countries the poorest urban children have higher stunting prevalence than children in rural areas and their under-five mortality rate is 38 per cent higher.

Even when comparing with the poorest quintile in rural areas, children in the poorest urban quintile fare worse in quite a number of countries (see Figure 10, right panel). In almost 30 per cent of the countries analysed, the poorest urban children have lower DTP3 immunization coverage, and in 20 per cent birth registration coverage is lower compared to children in the poorest rural quintile.

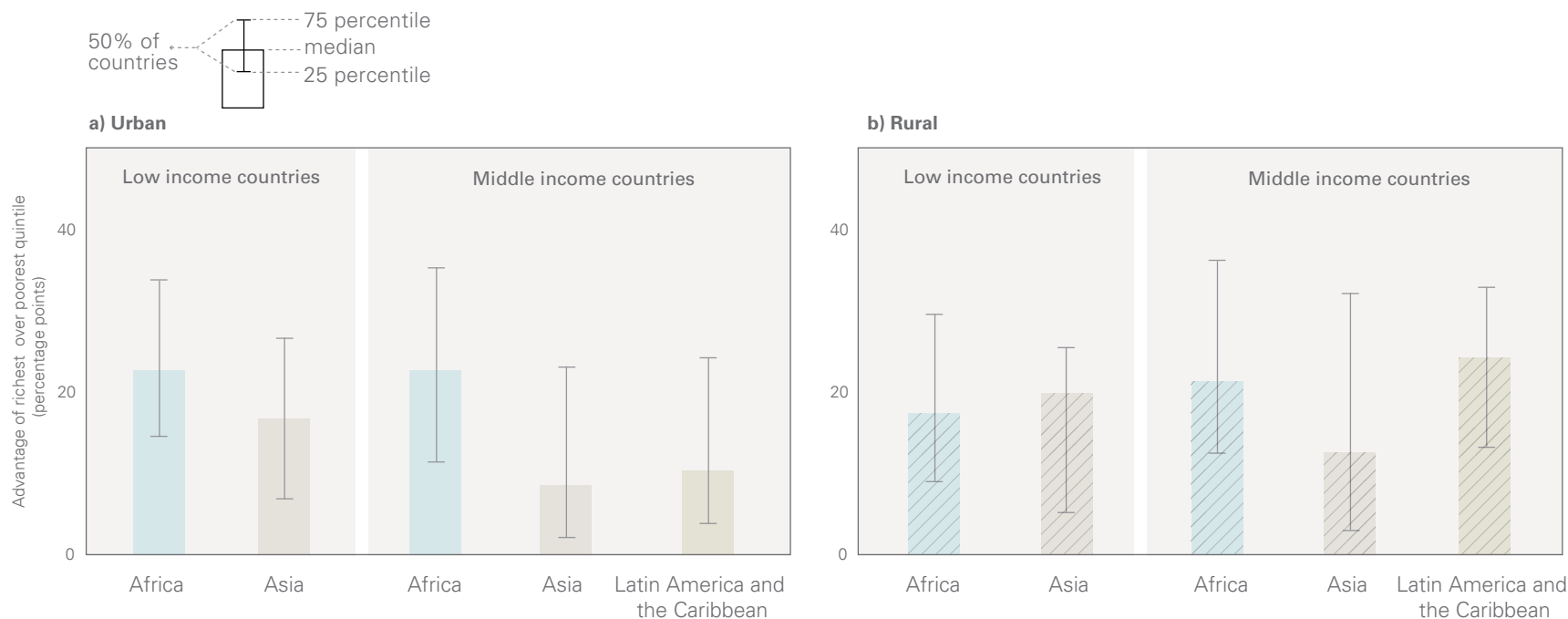
For under-five mortality rate this share of countries is 24 per cent – this amounts to roughly 4.3 million children among the urban poorest who face a higher risk of dying before their fifth birthday than their rural peers.<sup>11</sup> Similarly, the 18 per cent of countries where urban poorest children are less likely to complete their primary education than the poorest children in rural areas translates to around 13.4 million children.<sup>12</sup> In both cases, these numbers refer only to the set of countries studied in this report – the actual global number will be much higher.

Though conventional wisdom holds that the rural poor are worse off than the urban poor, our analysis demonstrates that this is not always true.



## Urban wealth disparity gaps are larger in Africa than in other regions.

**Figure 11:** Magnitude of the wealth disparity gap (advantage richest over poorest quintile) in urban areas (left) and rural areas (right) averaged over eight indicators and across countries and areas by region and national income level (2011-2016)



**Note:** Indicators include: water, sanitation, birth attendant, birth registration, immunization, education, HIV knowledge women, HIV knowledge men. Only four countries are included in the analysis of low-income Asian countries, while the single low-income country in this sample from Latin America and the Caribbean was excluded.

Inequity within urban regions is larger in Africa than in the other regions. African countries make up approximately half of the countries in this study. They also account for 80 per cent of the low-income countries, which, as shown in Figure 6, tend to show larger inequity. But even when comparing countries within the same income group, countries in Africa show larger urban wealth disparities than countries in Asia, Latin America and the Caribbean (see Figure 11a).

For both low-income countries and middle-income countries, the median urban wealth disparity gap for African countries is approximately 23 percentage points across all indicators. By comparison, the gap in low-income Asian countries is about 17 percent and just half of that, about 9 percent, in middle-income Asian countries. The gap in middle-income Latin American and Caribbean countries is similarly low.





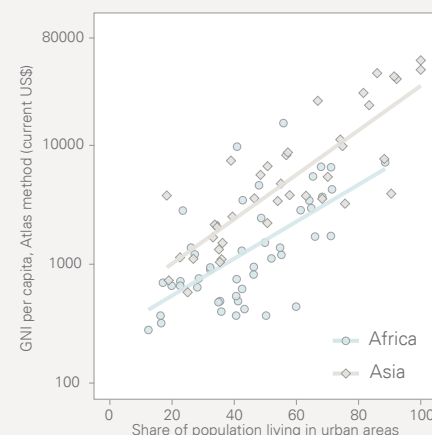
The drastically larger intra-urban wealth disparities in low-income African countries are mostly driven by the water and sanitation indicators, with additional disparities observed in skilled birth attendant and under-five mortality. This is true to a lesser extent in both low- and middle-income countries. Although the results related to low-income countries are based on only four countries in Asia and therefore should be interpreted with caution, the analysis of middle-income countries (with a more equal regional balance) shows a similar pattern: The largest regional differences can be observed for the same indicators as for low-income countries and in addition for education (primary education completion rate) and the HIV/AIDS knowledge indicator. Very few differences between the regions can be seen for immunization and stunting.

Regional differences in intra-rural inequity are less clearly defined (Figure 11b). Over all indicators, the median intra-rural wealth gap in low-income countries is 17 percentage points in Africa and 20 percentage points in Asia. In middle-income countries, it is 21 points in Africa, 13 in Asia, and 24 in Latin America and the Caribbean. While inequities are unusually high in urban African areas, the same is not true of rural African areas.

This suggests that there are specific conditions of Africa's urbanization experience that have made the benefits of cities less accessible to the poor. Compared to other regions in the world, Africa is urbanizing at a lower level of income (see box below). The World Bank identified three characteristics of African cities that constrain economic development and growth: growing density of population in poorer neighbourhoods and dwellings without investments in infrastructure and commercial services; disconnectedness due to lack of transport and other infrastructure that is limiting workers' job opportunities; and high costs for households and firms.

### Africa is urbanizing at a lower income level than any other region.

Urbanization level by gross national income (GNI) per capita for countries in Africa and Asia (2016)



Urbanization in Africa is occurring at a lower level of income than in other regions. In addition, in Sub-Saharan Africa, urbanization has not coincided with economic growth. Between 1970 and 2000 the urbanization level in Sub-Saharan Africa increased from approximately 20 per cent to 30 per cent, while GDP per capita decreased over the same period.<sup>13</sup> While, on average, an African country reaches

an urbanization rate of 50 per cent at an average income level of US\$1,600 per capita (GNI, 2005 prices), an Asian country reaches the same threshold at US\$3,700 per capita. Urbanization without shared economic growth bears the danger of creating a whole class of urban poor deprived of necessary services and security living in slums at the margins of urban centres.<sup>14</sup>



## Urban inequality can take different shapes – from the wealthiest moving ahead to the poorest being the only ones left behind.

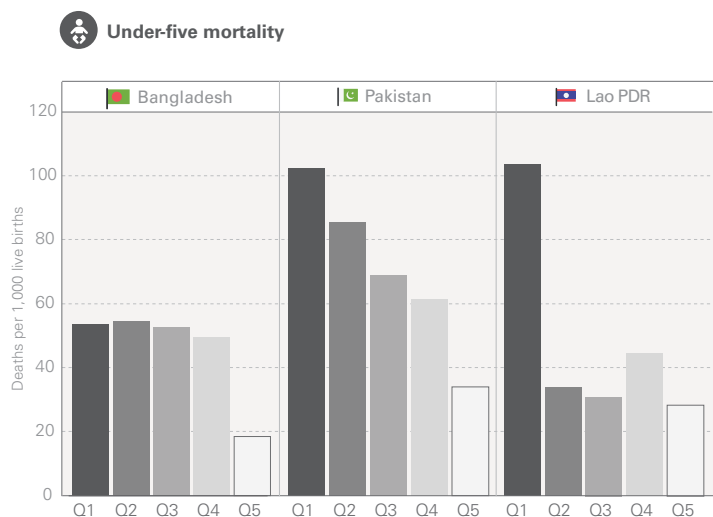
The relationship between household wealth and coverage of services or the well-being of children can take several different forms. The following three stylized patterns are observed for the under-five mortality rate (see Figure 12a, from left to right) but can be observed in all other indicators as well (see Figure 12b for the example of access to at least basic sanitation services):

1. Advantage for the richest only: The under-five mortality rate is similarly high for all wealth quintiles except for the richest.
2. Advantage improves with wealth: The higher the household wealth, the lower the under-five mortality rate.
3. Disadvantage for the poorest only: The under-five mortality rate is low for all quintiles except for the poorest.

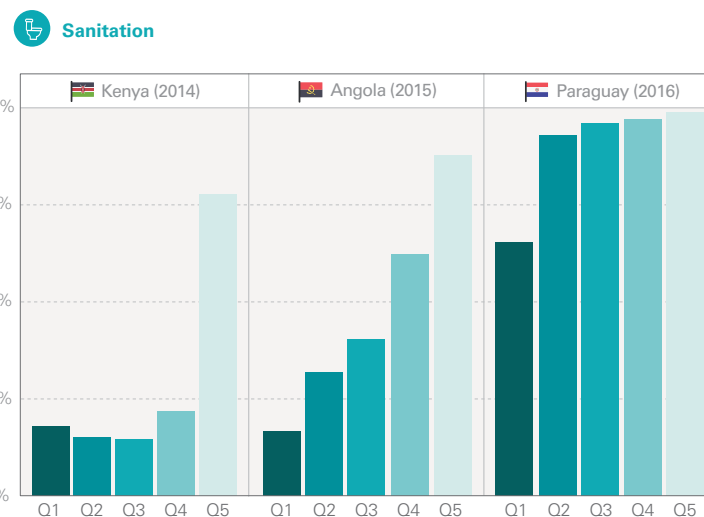
Variations and combinations of these patterns are also possible. In Lao People’s Democratic Republic, for example, a survival disadvantage for the poorest is observed among the urban children only, while in rural areas survival improves gradually with wealth.

Although this report focuses on a comparison of the poorest and richest quintiles of the wealth distribution, an understanding of the entire distribution is important to inform policy. Different distributional patterns suggest different underlying causes behind inequities facing children. They also imply different policy responses such as whether universal or targeted interventions have most merit.

**Figure 12a:** Under-five mortality rate by wealth quintile (from poorest, Q1, to richest, Q5) in urban areas for selected countries (deaths per 1,000 live births)



**Figure 12b:** Access to at least basic sanitation services by wealth quintile (from poorest, Q1, to richest, Q5) in urban areas for selected countries (percentage)



## Maternal education, like household wealth, is an important correlate of child well-being in both urban and rural areas.

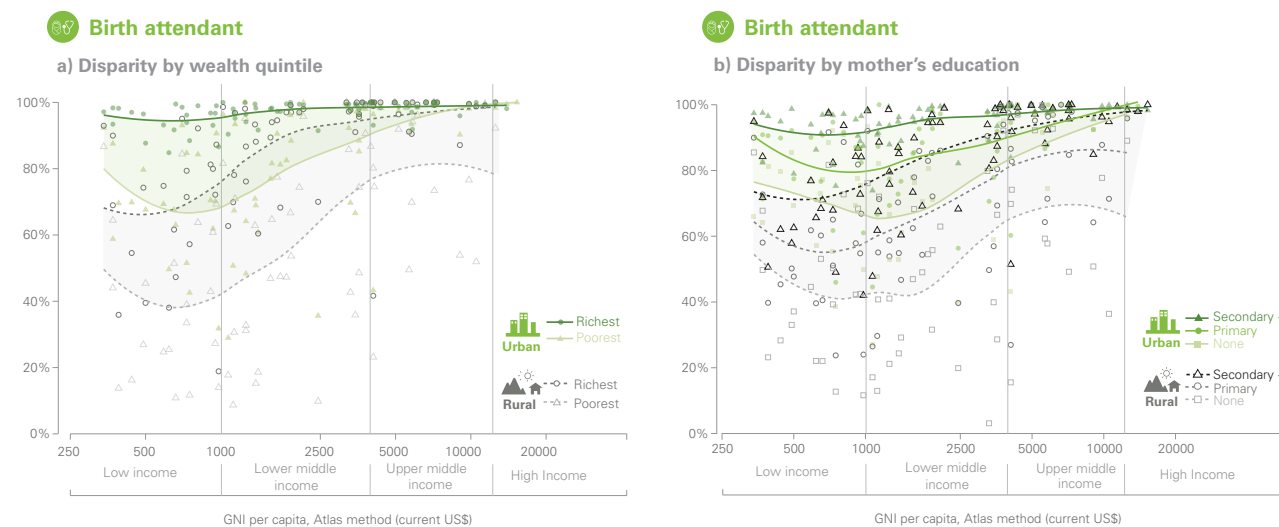
The educational attainment of the mother – or, depending on the indicator, the household head – is another important factor influencing inequality both in urban and rural areas. Children in households where the mother or the household head has more education fare better than children from households with less education. This is true for most countries and for most indicators.

Household wealth, educational attainment and residence are correlated. Both wealthier households and those with a highly educated mother are more likely to be located in urban areas.

Figure 13 compares urban and rural disparity by household wealth and by maternal education for the indicator of skilled birth attendance. The disparity patterns look very similar: women with secondary or higher education have shares of birth attended by skilled personnel at levels comparable to women from the highest wealth quintile. The same pattern exists between women with no education and women from the poorest quintile.

A similar pattern can be observed for most other indicators, with the exception of the sanitation indicator, where the relationship is less distinct and households in the wealthiest urban quintile exhibit a substantially higher coverage than households in the highest education category. This may be in part a result of the use of sanitation measures in the construction of the wealth index, as discussed further in the Annex.

**Figure 13:** Comparing disparity by wealth and disparity by mother's education for the indicator 'Coverage of skilled attendant at birth' by gross national income (GNI) per capita across countries and areas (2011-2016).



### Almost no urban wealth disparity gaps by gender

In addition to wealth and education, the gender of the child is another potential disparity dimension. Overall, gender gaps were virtually non-existent or very small in the indicators analysed. (Data disaggregated by gender of individual household members is not available for water and sanitation indicators and has only very limited meaning for skilled birth attendance since the sex of the child is in many cases unknown before birth). Stunting and under-five mortality are notable exceptions to this trend with the data revealing higher rates for boys than girls in most countries. However, these particular gaps are expected even in the absence of any gender-based discrimination or preference and are based on innate biological differences that make boys more susceptible to disease, stunting and premature death.

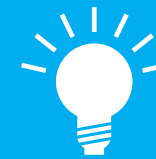








# IMPLICATIONS, RISKS AND OPPORTUNITIES





The key points highlighted in this review of urban and rural disparities for children have important implications for global efforts to foster equitable and sustainable urban development for children in the 21st century.

**The urban setting has to become an integral part of programming**

**for children.** Since the urban advantage breaks down when we look beyond averages and control for wealth, programming for child survival and development must pay greater attention to the realities of urbanization for children. With rapid urbanization, cities need to account for projected populations in their plans. They must also consider unconventional, innovative, urban-specific means to reach marginalized children in informal settlements, migrants, refugees and children living on the streets. With increasing numbers of children living in urban contexts, it is no longer sufficient to focus solely on rural-based initiatives, as this may mean many disadvantaged children will miss out. Rising mobility, and in particular rural-urban migration, fuels fast urban growth and creates a rapidly evolving urban environment. The urban share of poverty is on the rise. This is particularly true in Sub-Saharan Africa, which is urbanizing at lower economic levels than other regions have done in the past. A refocus on programming for the poorest and most marginalized urban children and young people is urgently required. This in turn will require greater disaggregation in collecting evidence and planning for development.

**Capacities of an inclusive urban planning must be further developed on all levels of government – national, regional and local.**

City governments, in particular, have to plan and budget in a way that is responsive to the realization of the rights of all children. Many urban children are facing deprivations as acute as their impoverished rural counterparts, and are equally lacking equitable access to quality essential services. Marginalized urban children and young people, often living in informal settlements, are excluded from the superior urban infrastructure that benefits more affluent children and families. Planning, governing and budgeting cities taking these huge disparities between neighbourhoods into account will be critical to address these inequities. Although disadvantaged neighbourhoods are easily identifiable in many cities, they are under-represented in data systems that drive research and policy,<sup>15</sup> which results in local governments having inadequate information about those neighbourhoods. City averages or even urban averages are of very limited use for planning policy interventions since they mask the existing huge variability within cities.<sup>16</sup>

**The development of urban systems has to accelerate to keep pace with the ongoing rapid urbanization.**

Children are affected by inadequate access to services in terms of health care, education, child protection, food and water supply, sanitation and waste management. Both basic infrastructure and public services have too often failed to keep pace with rapid population growth. The population in informal settlements often is not counted for planning purposes, thereby increasing the load on existing services. Proper mechanisms are usually not in place to regulate the private sector, which plays a major role in service delivery in urban areas. Extension and outreach services are not as developed in urban areas as in rural areas. All these issues are compounded by the ambiguity in accountabilities for service delivery in urban areas between the decentralized structures of sector ministries and city governments.

**Solutions have to be found for the lack of financial resources needed to improve urban systems and to increase equity within urban areas.**

Limited fiscal resources, limited financial management capacity and unpredictable transfers from the national governments are major challenges related to public service delivery by city governments. There is an increasing trend to implement fiscal decentralization programmes, but in practice national governments are delegating spending responsibilities and keeping control of taxing powers. More emphasis should be placed on fixing responsibility for the different levels of government in providing public goods and services, transfer of funds to local governments as per their accountability, own source revenue generation and strengthening local public financial management.

**Better data and better use of existing data are needed to understand the true dimension of urban inequity.**


This report highlights the large disparities within urban areas in terms of the 10 indicators studied and the dire situation of the urban poor in many countries. In reality, the situation is invariably even worse than what is presented here. The urban disparities are almost certainly underestimated since the most vulnerable populations are under-represented in surveys and censuses.<sup>17</sup> This under-representation refers in particular to residents of informal settlements who tend to be undercounted due to

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practical or political reasons.<sup>18</sup> Disaggregated urban data often are limited. A lack of adequate, high quality, timely data poses great challenges to fully understanding the true dimension of urban inequity. In addition to efforts to collect better urban data, special efforts also are needed to sufficiently use and share existing data.



# CONCLUSION







As we enter the era of the Sustainable Development Goals (SDGs), this report shows the importance of investing in urban areas, metropolitan cities and smaller towns. SDG 11 is explicitly devoted to the urban topic, defined as making ‘cities and human settlements inclusive, safe, resilient and sustainable.’ Most of the SDGs are directly or indirectly linked to an urban perspective.<sup>19</sup> Unless the focus on cities and other urban areas is strengthened, many of the goals will not be achievable, be it ending poverty (SDG 1), ending hunger (SDG 2), ensuring healthy lives and promoting well-being for all at all ages (SDG3) or ensuring availability and sustainable management of water and sanitation for all (SDG 6), to name just a few. SDG 10, reducing inequality within and among countries, is of particular importance here. As this report shows, inequality is ubiquitous both in rural and urban areas. But inequality in cities has its own dynamics that for too long have been left unexplored.<sup>20</sup> Urban inequality is a direct consequence of a fast-growing urban population combined with a lack of planning and investments in housing and other physical infrastructure.

The purpose of this report is not to answer all of the policy issues its analysis raises, but rather to spark further discussion on how to address inequalities within urban areas and cities to which this report gives witness. The details to overcome this situation may differ between sectors, and country- and even city-specific characteristics may add an additional layer of complexity. Nevertheless, one implication is clear: all stakeholders and actors at all levels – from the local to the global, from civil society to the public and private sectors – need to pool their resources and energies to create urban environments that reduce inequalities and increase the well-being of all children in our increasingly urban world.



## ANNEX

### Surveys analysed in this report

The analysis is based on 80 surveys (Demographic and Health Survey, DHS, and Multiple Indicator Cluster Surveys, MICS) from 77 countries conducted between 2011 and 2016. These 77 countries represent 51 per cent of the global population (2018).

For each country, the latest survey in this period was used. Three countries with indicator-specific data quality issues had a second, error-free survey available in the same period (2011-2016). In these cases, the older survey was used for analysis of that specific indicator only (Dominican Republic, Kyrgyzstan, Nigeria).<sup>21</sup>

Of the 77 countries in the sample, 31 per cent are low income countries (14 per cent globally), 40 per cent are lower middle income countries (24 per cent globally), 27 per cent are upper middle income countries (26 per cent globally) and 3 per cent are high income countries (36 per cent globally).

### List of surveys included in the analysis (sorted by country code):

Code	Country or area	Survey*	Year	Code	Country or area	Survey	Year
AFG	Afghanistan	DHS	2015	GIN	Guinea	DHS	2012
AGO	Angola	DHS	2015	GMB	Gambia	DHS	2013
ARM	Armenia	DHS	2015	GNB	Guinea-Bissau	MICS	2014
BEN	Benin	MICS	2014	GTM	Guatemala	DHS	2014
BGD	Bangladesh	DHS	2014	GUY	Guyana	MICS	2014
BIH	Bosnia and Herzegovina	MICS	2011	HND	Honduras	DHS	2011
BLR	Belarus	MICS	2012	HTI	Haiti	DHS	2012
BRB	Barbados	MICS	2012	IDN	Indonesia	DHS	2012
CIV	Cote d'Ivoire	DHS	2011	IND	India	DHS	2015
CMR	Cameroon	MICS	2014	JOR	Jordan	DHS	2012
COD	Democratic Republic of the Congo	DHS	2013	KAZ	Kazakhstan	MICS	2015
COG	Congo	DHS	2011	KEN	Kenya	DHS	2014
COL	Colombia	DHS	2015	KGZ	Kyrgyzstan	DHS	2012
COM	Comoros	DHS	2012			MICS	2014
DOM	Dominican Republic	DHS	2013	KHM	Cambodia	DHS	2014
DZA	Algeria	MICS	2012	LAO	Lao People's Democratic Republic	MICS	2011
EGY	Egypt	DHS	2014	LBR	Liberia	DHS	2013
ETH	Ethiopia	DHS	2016	LCA	Saint Lucia	MICS	2012
GAB	Gabon	DHS	2012	LSO	Lesotho	DHS	2014
GHA	Ghana	DHS	2014	MDA	Republic of Moldova	MICS	2012
				MEX	Mexico	MICS	2015
				MLI	Mali	DHS	2012

\*DHS: Demographic and Health Survey; MICS: Multiple Indicator Cluster Surveys





Code	Country or area	Survey	Year
MNE	Montenegro	MICS	2013
MNG	Mongolia	MICS	2013
MWI	Malawi	DHS	2015
NAM	Namibia	DHS	2013
NER	Niger	DHS	2012
NGA	Nigeria	DHS MICS	2013 2016
NPL	Nepal	DHS	2016
PAK	Pakistan	DHS	2012
PAN	Panama	MICS	2013
PER	Peru	DHS	2012
PHL	Philippines	DHS	2013
PRY	Paraguay	MICS	2016
PSE	State of Palestine	MICS	2014
RWA	Rwanda	DHS	2014
SDN	Sudan	MICS	2014
SEN	Senegal	DHS	2016
SLE	Sierra Leone	DHS	2013
SLV	El Salvador	MICS	2014
SRB	Serbia	MICS	2014

Code	Country or area	Survey	Year
STP	Sao Tome and Principe	MICS	2014
SWZ	Eswatini	MICS	2014
TCD	Chad	DHS	2014
TGO	Togo	DHS	2013
THA	Thailand	MICS	2012
TJK	Tajikistan	DHS	2012
TKM	Turkmenistan	MICS	2015
TUN	Tunisia	MICS	2011
TUR	Turkey	DHS	2013
TZA	United Republic of Tanzania	DHS	2015
UKR	Ukraine	MICS	2012
URY	Uruguay	MICS	2012
VNM	Viet Nam	MICS	2014
XKX	Kosovo <sup>22</sup>	MICS	2013
YEM	Yemen	DHS	2013
ZMB	Zambia	DHS	2013
ZWE	Zimbabwe	DHS	2015




### Indicators analyzed in this report

Ten indicators were selected to analyse disparity in urban and rural areas. The following list shows the selected indicators ordered in an approximate life-course sequence with underlying health-related indicators at the beginning and outcome indicators at the end. Each survey could not provide data for each indicator, either because the respective questions were not part of the questionnaire or because indicators selectively had to be excluded because of quality or sample size issues.<sup>23</sup> For each indicator, the number of countries with valid values for urban and rural levels is noted in parenthesis, along with the percentage of low income countries (LIC) among them.

#### Household indicators (with basic health relevance):

-  Use of basic drinking water services (73 countries, 28 per cent LIC)
-  Use of basic sanitation services (74 countries, 28 per cent LIC)



#### Health and rights service indicators (for newborns):

-  Skilled births attendant rate (77 countries, 27 per cent LIC)
-  Birth registration rate (74 countries, 28 per cent LIC)
-  DTP3 Immunization rate (71 countries, 30 per cent LIC)

#### Education and knowledge indicators:

-  Primary education completion rate (77 countries, 27 per cent LIC)
-  Comprehensive knowledge about HIV/AIDS among young women aged 15-24 years (73 countries, 20 per cent LIC)
-  Comprehensive knowledge about HIV/AIDS among young men aged 15-24 years (52 countries, 38 per cent LIC)

#### Outcome indicators:

-  Stunting prevalence among children under 5 years of age (64 countries, 30 per cent LIC)
-  Under-five mortality rate (56 countries, 34 per cent LIC)

### Measuring wealth

For the purpose of exploring the disparity within populations, this report compares population groups based on their urban or rural residence and within each residence type by their wealth status. The wealth status is based on the wealth index, which is a composite measure of a household's cumulative living standard. It is constructed using information on the household's ownership of assets and access to various household services. These include ownership of a mobile phone, ownership of cattle, dwelling roof material, electricity, and the type of water and sanitation facilities.

It should be noted that this index introduces some endogeneity into our analysis of access to water and sanitation facilities by wealth quintile. Because wealth is in part a function of access to water and sanitation facilities, the poorest are definitionally less likely to have access than the richest.<sup>24</sup> Nevertheless, it is considered a best practice to use a wealth index that includes water and sanitation measures when analysing water and sanitation in conjunction with other indicators, as we do in this report.

Members of households are ranked according to this index and sorted into five equal-size groups (quintiles). For most analyses in this report, this sorting is done separately for urban and rural households and compares the bottom quintile (the poorest) with the top quintile (the richest).

### Absolute versus relative inequality

Inequality can be measured in absolute and relative terms. This report mostly uses the former. Absolute inequality measures the difference between the more advantaged group (the urban population or the richest quintile) and the more disadvantaged group (the rural population or the poorest quintile). For most indicators, this difference is measured in percentage points since the indicators measure the share of the population affected. On under-five mortality, however, we maintain the unit of the indicator (births per 1,000 live births). Relative inequality is given as the ratio of the indicator value for the two groups. The measure of absolute inequality gives information about the amount of effort needed to close the gap whereas the measure of relative inequality is more a measure of fairness and as such has a moral component.<sup>25</sup> For instance, a 5 percentage point difference results in a large

relative gap when the levels are 2 per cent and 5 per cent, but only a small gap when the levels are 92 per cent and 97 per cent. But in both cases, the same amount of investment or effort may be needed to increase the service coverage by 5 percentage points.

### Limitations

This study has some limitation related to concepts and statistical power. The terms 'urban' and 'rural' are used as defined by the countries. There are significant differences between countries as to the size of an area defined as 'urban,' ranging from a population threshold of 200 (in Denmark and Sweden) to 30,000 (Mali) or even 50,000 (Japan). Most countries using a population criteria use a threshold of between 2,000 and 5,000.<sup>26</sup> The data do not allow for different treatment of informal settlements and regular settlements.

Indicator values in this report are given as observed. Since surveys are usually designed to be representative at the national level or larger administrative levels and at the urban-rural level, the analyses can reach the limit of the statistical power for most indicators when comparing quintiles within urban and rural populations. In particular, small measured differences may not be statistically significant, meaning that the sample is too small and the outcome too variable to give us confidence that the measured differences reflect true differences in the populations. Thus, caution should be exercised when interpreting the results. However, the broad patterns in this analysis that hold over a large number of countries and indicators are likely reliable despite the possible imprecision of the point estimates.

## END NOTES

- <sup>1</sup> See more information on SDGs on United Nations, ‘Sustainable Development Knowledge Platform’, <<https://sustainabledevelopment.un.org/sdgs>>
- <sup>2</sup> The ‘New Urban Agenda’ was presented at the UN-HABITAT III Conference held in Quito, Ecuador, in October 2016, see also <<http://habitat3.org/the-new-urban-agenda/>>
- <sup>3</sup> See United Nations Conference on Housing and Sustainable Urban Development (Habitat III), <<http://habitat3.org>>
- <sup>4</sup> United Nations, Department of Economic and Social Affairs, *World Economic and Social Survey 2013*, E/2013/50/Rev. 1, ST/ESA/344, United Nations, New York, 2013, p. 65
- <sup>5</sup> For example, Save the Children, *State of the World’s Mothers 2015 – The urban disadvantage*, Save the Children, Fairfield, 2015, p. 27: in 19 of 40 analysed countries the intra-urban gap in U5MR had widened recently
- <sup>6</sup> All numbers based on United Nations, Department of Economic and Social Affairs, Population Division, *World Urbanization Prospects: The 2018 Revision*, Online Edition, if not otherwise noted.
- <sup>7</sup> Angel et al., *Atlas of Urban Expansion—2016 Edition*, Volume 1: Areas and Densities, New York University, 2016.
- <sup>8</sup> United Nations Human Settlements Programme (UN-Habitat), *World Cities Report 2016*, UN-Habitat, Nairobi, 2016, p. 203.
- <sup>9</sup> Note that this analysis is based on cross-sectional data and not on time series data. Other factors than development – such as regional biases – may influence the interpretation: for example, low-income countries in this sample are mostly composed from countries in Sub-Saharan Africa while the majority of the upper-middle income countries are from Latin America and the Caribbean and Asia.
- <sup>10</sup> This analysis cannot completely control for differences in wealth between urban and rural populations because there is significant variation in wealth even within a single quintile. It is likely that the poorer individuals in the national middle wealth quintile tend to be rural, while the richer ones tend to be urban. Nevertheless, this analysis comes as close as the data permits to comparing individuals with the same level of wealth.
- <sup>11</sup> Estimated number of children is based on 20 per cent of the urban population in the age group 0 to 4 (2018) in the respective countries showing higher under-five mortality rates for the urban poorest compared to the rural poorest. The urban population by age is extrapolated using: United Nations, Department of Economic and Social Affairs, Population Division (2014). *Urban and Rural Population by Age and Sex, 1980-2015*; United Nations, Department of Economic and Social Affairs, Population Division (2018). *World Urbanization Prospects: The 2018 Revision*, Online Edition; and United Nations, Department of Economic and Social Affairs, Population Division (2017). *World Population Prospects: The 2017 Revision*, DVD Edition.
- <sup>12</sup> Estimated number of children is based on 20 per cent of the urban population in the age group 0 to 17 (2018) in the respective countries showing lower primary education completion rate for the urban poorest compared to the rural poorest. For the estimation of the urban population by age see the previous footnote.
- <sup>13</sup> United Nations, Department of Economic and Social Affairs, *World Economic and Social Survey 2013*, E/2013/50/Rev. 1, ST/ESA/344, United Nations, New York, 2013, p. 60.
- <sup>14</sup> Dudwick, Nora et al., *From Farm to Firm Rural - Urban transition in developing countries*, World Bank Group, Washington D.C., 2011.
- <sup>15</sup> Lilford, Richard et al., *Improving the health and welfare of people who live in slums*, *Lancet*, vol. 389, 2017, pp. 559–570.
- <sup>16</sup> World Health Organization, *Hidden Cities - unmasking and overcoming health inequities in urban settings*, 2010, The WHO Centre for Health Development, Kobe, 2010, p. xiii
- <sup>17</sup> World Health Organization, *Global report on urban health - equitable, healthier cities for sustainable development*, WHO Geneva, 2016, p. 34
- <sup>18</sup> Lucci, Paula et al., *Are We Underestimating Urban Poverty*, Overseas Development Institute, London, 2016.
- <sup>19</sup> Cities Alliance, *Sustainable Development Goals and Habitat III: Opportunities for a successful New Urban*, Discussion paper No. 3, Cities Alliance, Brussels, 2015.
- <sup>20</sup> Save the Children, *State of the World’s Mothers 2015 – The urban disadvantage*, Save the Children, Fairfield, 2015, p. 5.
- <sup>21</sup> Dominican Republic (analysis based on MICS, 2014 except for “stunting”: DHS, 2013); Kyrgyzstan (MICS, 2014 except for “HIV knowledge men”: DHS, 2012); Nigeria (analysis based on MICS, 2016 except for “under-5 mortality”: DHS, 2013)
- <sup>22</sup> All references to Kosovo are made in the context of UN Security Council Resolution 1244 (1999)
- <sup>23</sup> Following the methodology applied by both DHS and MICS we defined a small sample size as all groups (e.g. urban, poorest quintile) with less than 25 cases (unweighted population). This threshold was used for all indicators except for under-five mortality where the threshold was defined as 250 (applied to the number of exposure). Surveys were excluded for specific indicators based on specific quality issues (for example internal inconsistencies, lack of national representativeness, indicator levels incompatible with other sources).
- <sup>24</sup> One study found that, when using an alternative wealth index that isn’t based on water or sanitation measures, the gap in water and sanitation coverage between the poorest and richest quintile is always narrower than it is using the usual wealth index. See further discussion in Martel, Pierre (2016), “Review of options for reporting water, sanitation and hygiene coverage by wealth quintile,” MICS Methodological Papers, No. 4, Data and Analytics Section, Division of Data, Research and Policy, UNICEF New York.
- <sup>25</sup> See also: Harper, Sam Et Al., *Implicit Value Judgments in the Measurement of Health Inequalities*, *Milbank Quarterly*, vol. 88, no. 1, 2010, pp. 4–29
- <sup>26</sup> United Nations, Department of Economic and Social Affairs, Population Division (2018). *World Urbanization Prospects: The 2018 Revision*, Online Edition.









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