



National Institute of Urban Affairs

The Urban Century

Trends and Patterns
of Urbanisation in
Asia and Africa



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The Urban Century

Trends and Patterns of Urbanisation
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Message

We are now in the urban age where more than 56 percent of the world population live in cities and towns. It is projected that by 2050, 6.6 billion people, accounting to 68% of the global population will be residing in urban areas. Among the regions in the global South, Asia and Africa will host around 90 per cent of the additional urban population in the next three decades, which brings them to the centre stage of the global urbanisation trajectory. Further, the demographic weight of these two continents, especially Asia, is expected to have an overwhelming effect on the changing dynamics of planetary urbanisation. Africa currently has few megacities, it is expected to follow the Asian example with the rise in the number and population of large and national cities. Furthermore, Asia and Africa are poised to be the epicentres of urbanisation without a corresponding fast increase in their income levels. Most cities included in the Sustainable, Healthy Learning Cities and Neighbourhood (SHLC) study have experienced continuous and large scale economic development, population growth and land use changes since the turn of the century. In this process, larger cities and national capitals received more migrants and experienced faster economic transformation.

Among Asian countries, India is experiencing the peak of its population momentum, contrary to the declining population trend in China, which brings India to the fore of the urbanisation trajectory with an estimated 876 million people living in urban settlements by 2050. Moreover, some of the most populous cities in the world will appear here. Like many Asian countries, India is also going through a demographically favourable phase and is expected to reach a peak of economically active youth population by 2025. This demands immediate creation of jobs in order to benefit and harness the demographic dividend.

At this critical juncture, evidence-based policy initiatives are of utmost importance. Therefore, this study delves firstly deep into the latest databases to assess the present pattern of urbanisation and then uses projections to understand possible demographic scenario and future drivers of urbanisation in order to capitalize on the benefits of urban development in these two continents. This publication titled “The Urban Century - Trends and Patterns of Urbanisation in Asia and Africa” has rightly termed the current era as ‘Urban Century’. It discusses the urbanisation discourse in the countries of these two continents, and highlights the policy issues guiding the path of urbanisation. ‘The Urban Century’ is indeed a very timely publication for academicians and policymakers to understand the process of urbanisation in Asia and Africa. The report provides a fresh understanding of the regional complexity of urbanisation to its readers.

Ya Ping Wang

Chair in Global City Futures

Director, Centre for Sustainable, Healthy and Learning Cities and Neighbourhoods (SHLC)

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Foreword

Today, 57 per cent of the world's population lives in urban areas, a proportion that is expected to reach 68 per cent in 2050. Projections show that Asia and Africa will be the epicenters of global urbanisation for the coming decades, as close to 90 per cent of the increase in urban population will take place in Asia and Africa. Three countries, India, China and Nigeria, together will account for 35 per cent of the projected world's urban population.

The current trend of urbanisation shows that the Asian trajectory will be very different from that of Africa. Unlike Africa, where high fertility rates are driving urbanisation, Asia's urbanisation is predominantly fueled by rural-urban migration, in-situ urbanisation and expansion of urban areas. Further, whereas Asian urbanisation is characterised by population concentration in megacities, African cities are yet to experience such urban concentration. At this juncture, it is essential to understand such trends, patterns and key drivers of urbanisation in these two continents.

“The Urban Century - Trends and Patterns of Urbanisation in Asia and Africa” is a timely publication for researchers, academicians and policymakers. It tries to understand the macro scenario of urbanisation in Asia and Africa with a special focus on India. It also tries to highlight the regional differences and determining factors behind the process of urbanisation in these regions and the inter-linkages between urbanisation and socio-economic characteristics of countries in Asia and Africa.

This report is the outcome of the research project undertaken by a team of researchers working on “Sustainable, Healthy and Learning Cities and Neighbourhoods” project in NIUA. The findings from this report will ignite a fresh public discourse on how the opportunities offered by urbanisation can be leveraged in the Decade of Action to accelerate growth and shared prosperity to advance the achievement of the SDGs by 2030.

Hitesh Vaidya
Director
National Institute of Urban Affairs

Fact Sheet

ASIA

2020 Urban Population
.....

2.3

Billion

2050 Urban Population
.....

3.5

Billion

Growth Rate of Urban Population (2020-50)
.....

1.3

Percentage

2020 Level of Urbanisation
.....

51.1

Percentage

2050 Level of Urbanisation
.....

66.2

Percentage

2035 Mega Cities (10 million +)
.....

32



AFRICA

2020 Urban
Population

0.5

Billion

2050 Urban
Population

1.5

Billion

Growth Rate of
Urban Population (2020-50)

1.5

Percentage

2020 Level of
Urbanisation

43.5

Percentage

2050 Level of
Urbanisation

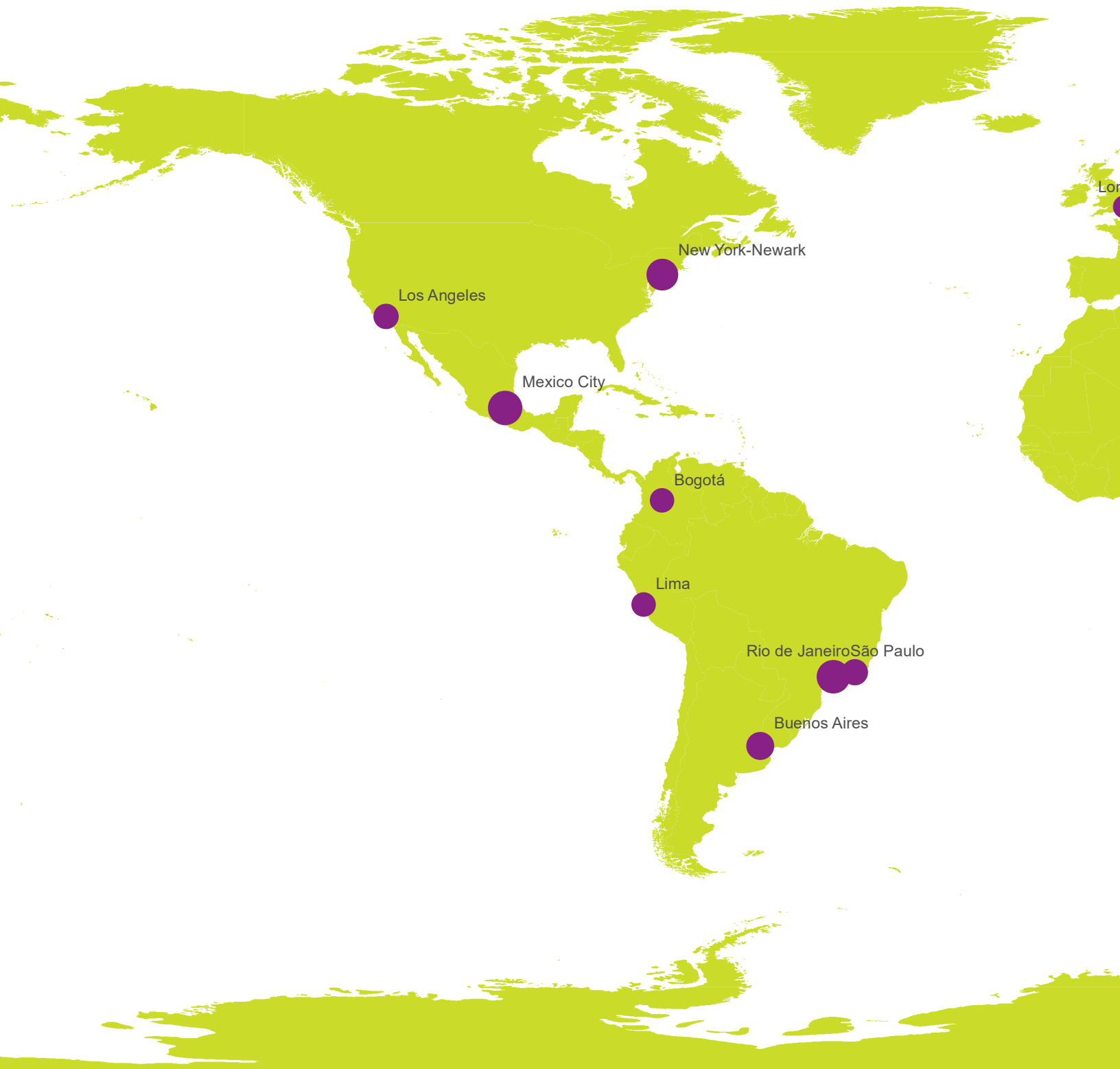
58.9

Percentage

2035 Mega Cities
(10 million +)

5

Megacities by 2035



Source: World Urbanisation Prospects 2018

Team

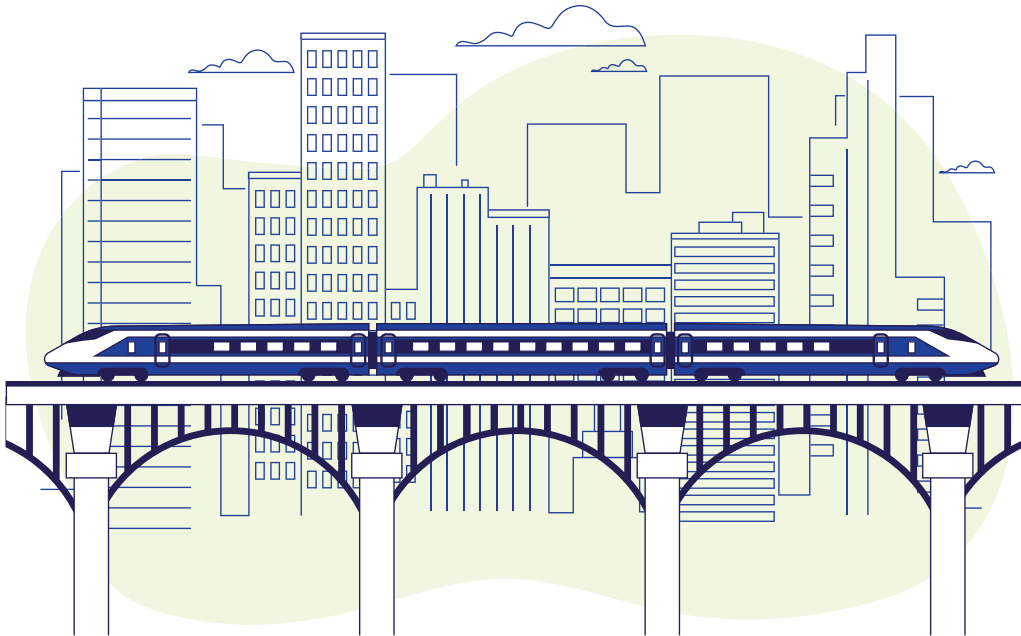
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Executive Summary

The dawn of the twenty-first century marked the world entering the 'urban century', which was accompanied by a southward shift of the mean latitude of urbanisation. In contrast to Europe and North America, which had a long history of urbanisation starting soon after the industrial revolution in the 1800s, countries in the global South started urbanising mainly in the second half of the twentieth century. Among the regions in the global South, Latin America started much earlier and has already become predominantly urban. On the contrary, Asia and Africa are the two least urbanised continents. However, in absolute terms, 2.4 billion people lived in the urban settlements of Asia in 2020, which is estimated to rise to 3.5 billion by 2050. It is projected that they are going to have around 90 per cent of the additional urban population in the next three decades (till 2050), which brings them to the centre stage of the global urbanisation trajectory. Asia alone is projected to contribute an additional 1.1 billion urban population in the next three decades, and Africa is likely to contribute 0.9 billion in the next three decades. Unlike Africa, where high fertility rates is driving urbanisation, Asia's urbanisation is predominantly fueled by rural-urban migration, in-situ urbanisation and expansion of urban areas.

The demographic weight of these two continents, especially Asia, is expected to have an overwhelming effect on the changing dynamics of planetary urbanisation, with Africa continuing to urbanise at a faster pace as compared to Asia. Growth rate of urban population in Africa is projected to be 3.1% and 2.8% in 2030s and 2040s compared to Asia's figures of 1.3% and 0.9%, respectively. Moreover, the two least urbanised regions in these two continents, i.e. Eastern Africa and Southern Asia, are expected to experience the highest urban growth and rural-urban transition in the next three decades.

Although both the continents are expected to play a crucial role in promoting urbanisation in the coming decades, the Asian trajectory will be very different from that of Africa. Whereas Asian urbanisation is characterised by population concentration in megacities, African cities

are yet to experience such urban concentration. Asian urbanisation, which has been top-heavy with population concentration in big cities, will continue to be so even after the slowdown in urban growth in this region. By 2035, six of the ten most populated megacities of the world will be in Asia, and Delhi will be the most populated urban agglomeration with 43.3 million people. The expected sluggish growth of megacities could be attributed to the lack of growth of unskilled or semi-skilled jobs in these cities. Unlike East Asian Tigers, which have reaped the benefits of its demographic dividend, many Asian countries, particularly South Asia, would urbanise without harnessing the economic benefits of their demographic dividend. South Asia is going through a rapid decline in fertility and projects to reach the peak of youth bulge in 2028, before regions like Southeast Asia, West Asia and Central Asia, which indicates the urgency of a balanced regional development policy for this region.

On the other hand, African countries will experience urbanisation associated with persistently high fertility rates, distress-driven rural-urban migration and a lack of economic vibrancy in cities. Africa will continue to have an increasing size of its working-age population (15-64 years) and add 2.1 billion working-age population by the end of this century. Urbanisation in Africa, currently with few megacities, will follow the Asian experience with the rise in the number and population of megacities. However, contrary to the Asian counterparts, most of the new megacities of the continent will be 'places of consumption' in place of 'growth engines'. In short, rapid-paced urbanisation in Africa in the coming decades will be distress-driven.

Furthermore, Asia and Africa are poised to be the epicentres of urbanisation, without a corresponding increase in their income levels. Much of the urban growth will be concentrated in the countries with very low urbanisation and income levels and poor infrastructural base. As overcrowded Asian megacities have crossed the threshold of reaping the benefits of agglomeration economies, Asian countries need to focus on the development of secondary cities to take benefit of their

demographic dividend. On the other hand, African countries need to focus on infrastructure investment and developing high-value-added manufacturing activities to interlink the process of urbanisation with growth.

India is expected to become the most populated country in the world by 2023. However, the country is currently experiencing a slow but steady pace of rural-urban transition. However, it is projected that India's pace of urbanisation will speed up in the coming decades, owing to sectoral diversification resulting in in-situ urbanisation. Also, Indian urbanisation will continue to be top-heavy.

Also, the country is going through a demographically favourable phase with a bulging economically active population. By the year 2025, India will peak its youth bulge. This demands immediate creation of jobs to stop demographic dividend transforming into demographic disaster. Also, the big city bias is going to affect the growth of the secondary cities, which have a high potential for employment generation. To take advantage of India's demographic dividend, India should focus on education and health, skill development, infrastructural development and the creation of a regionally balanced urban system.



Introduction

The dawn of the twenty-first century unfolded with the world entering the 'urban age' with more than half of the global population living in urban areas. It is believed that this century is going to be an 'urban century' as more people will be living in cities compared to rural areas. The period is also marked by a southward shift in the mean latitude of the world's urban population (Mohan, 2006). In fact, the current century will be characterised by Asia and Africa accounting for a mammoth share of the global urban population in the present century. As per the UN population estimates, in 2020 Asia and Africa accounted for around 70 per cent of the global urban population. The figure is estimated to increase to 75 per cent by the middle of the twenty-first century (United Nation Department of Economic and Social Affairs, 2018). In fact, the *World Cities Report* (UN-Habitat, 2020) mentions that 96 per cent of the global urban growth will be in these two continents. The demographic weight of these two continents, especially Asia, is expected to have an overwhelming effect on the changing dynamics of planetary urbanisation, although Africa will continue to urbanise at a faster pace.

Historically, cities have been considered as 'engines of growth' and the process of urbanisation has always been associated with economic growth and job creation. Jacob (1984) in her book *Cities and Wealth of Nations* introduced the concept of 'urbanisation of economies' emphasizing the role of urban density in promoting interaction and economic growth. Henderson (2010) and Duranton (2014) found a strong and positive correlation between urbanisation and GDP growth. On the other hand, Turok (2018) mentioned that the process of urbanisation in the global South has been markedly different from the global North as there is no linear relationship between urbanisation and economic development in the former. Also, the majority of the countries in the global South urbanised at lower levels of economic development (Brockhoff, 2000). Therefore, it is a major challenge for developing countries to reinforce their urban systems as engines of growth as cities of developing countries are

far less specialised than those of the developed countries (Duranton, 2014).

The urbanisation process in the global South has a strong yet different degree of colonial imprint (Beall and Fox, 2009; Myer, 2021). In majority of the cases, the purpose of promoting urbanisation by the imperial forces was to extract resources from the hinterlands, therefore, the investment in development of infrastructure networks was limited to resource rich regions and regional capitals. Also, colonial investments in these countries neglected the development of indigenous industries and thereby overall economic growth. In fact, the legacy continued in the post-colonial period, which further weakened the link between urbanisation and economic development. For example, the majority of the sub-Saharan countries experienced a rapid phase of urbanisation without satisfactory levels of industrialization or development of physical infrastructure that could facilitate sustainable urban development (Beall and Fox, 2009; Pieterse and Hyman, 2014). On the contrary, urbanisation in the countries of East Asia have been driven by new global information and capital flow. Therefore, different histo-geographical context and varying degree of flow of international capital from global North have played an important role in shaping urbanisation in the countries of Asia and Africa (Fox and Goodfellow, 2021) and will continue to influence the urbanisation trajectory in these regions in the future.

India is expected to play a major role in shaping the global urbanisation trajectory and that of the global South in particular, owing to its demographic weight and urbanisation dynamics (Kundu, 2011). In 2020, 483.1 million people lived in urban India, which was second highest after China with 875.1 million people (*World Urbanisation Prospects*, 2018). Also, India is projected to contribute 17.1 per cent of global incremental urban population between 2020 and 2050. During this period, around 400 million additional people will be added to Indian urban centres, accounting to double that of China's figures (216.9 million). It is also estimated that more than



half of the Indian population will be living in urban areas by 2050. However, the large urban centres have been experiencing sluggish population growth (Kundu, 2011; Kundu and Kundu, 2010). Also, the limited spending on infrastructural development in Indian cities have reduced the growth potential further slowing down the process of urbanisation (McKinsey Global Institute, 2010). In fact, a subset of Indian cities were found to be less economically productive considering the population growth (Hasan, Jiyang and Kundu, 2018). Therefore, India's urban growth dynamics should be understood within the broader context of urbanisation trajectory of the global South for a better policy decision for the country's future.

In light of the above, the current report aims to understand the macro scenario of urbanisation in Asia and Africa with

a special focus on India. It also tries to understand the regional differences and determining factors behind the process of urbanisation in this region. The remaining part of the report has been structured into five broad sections. The first part discusses the urbanisation discourse in the countries of these two continents, with a special focus on India. The second part of the report discusses the nature and size-class distribution of urban centres associated with the process of urbanisation in these two continents. The third section tries to understand the inter-linkages between urbanisation and socio-economic characteristics of countries in Asia and Africa. The fourth and last section discusses the policy issues guiding the path of urbanisation in these two continents, with special focus on India.



ドラッグ

つらや

じゅら

右からの車に注意

左からの車に注意

A Macro Overview of Urbanisation Trends: Asia and Africa Becoming New Epicentres of Global Urban Growth

In contrast to Europe and North America, which had a long history of urbanisation starting soon after the industrial revolution in the 1800s, countries in the global South started urbanising mainly in the second half of the twentieth century. Among the regions in the global South, Latin America started urbanizing much earlier and is currently predominantly urban. Also, the countries of this continent are expected to surpass the levels of urbanisation of Europe and North America by 2030 (Mohan and Dasgupta, 2005). On the contrary, Asia and Africa are currently the two least urbanised continents. It is estimated that these two continents will account for 90 per cent of the additional urban population in the next three decades (till 2050), which brings them to the centrestage of the global urbanisation trajectory. In absolute terms, 2.4 billion people lived in urban settlements of Asia in 2020, which is estimated to rise to 3.5 billion by 2050. The continent alone is estimated to contribute an additional 1.1 billion urban population in the next three decades. On the other hand, Africa will account for an additional urban population of roughly 0.9 billion in the next three decades share of urban population. This continent, which accounted for 3.4 per cent of the global urban population in 2020 is estimated to increase to 22 per cent in 2050 (UN DESA, 2018).

Low levels of urbanisation in Asia and Africa with a wide regional variation

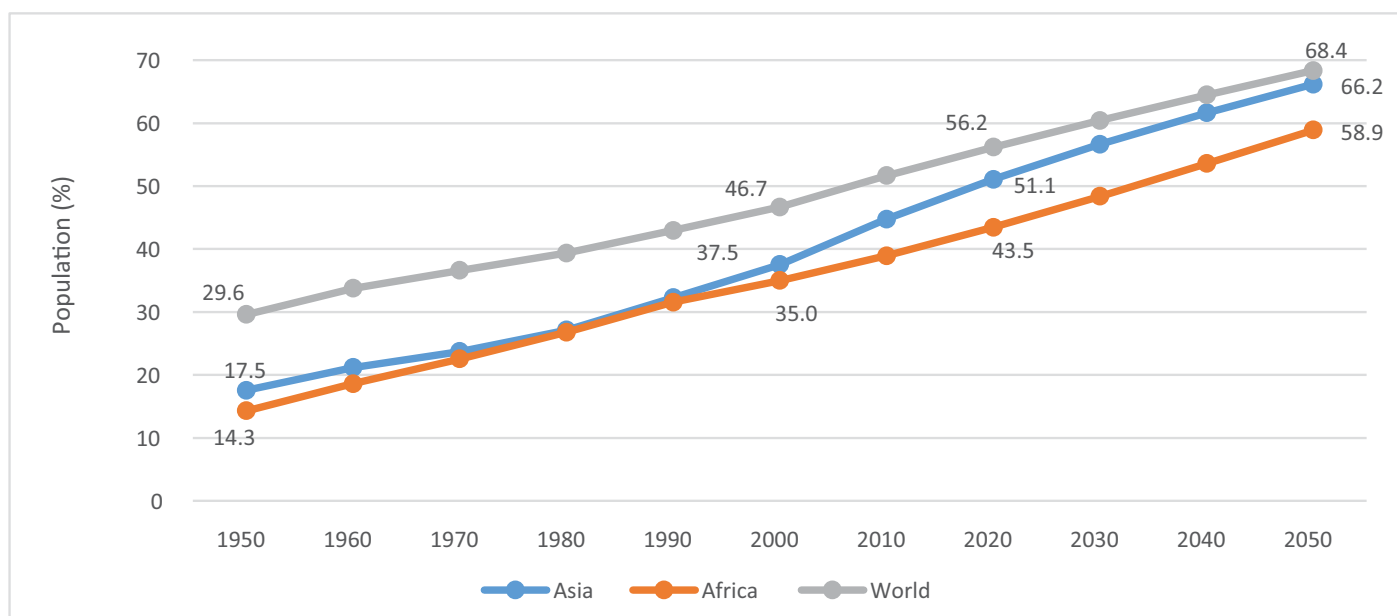
As per estimates provided by *World Urbanisation Prospects* (2018), only 17.5 per cent and 14.3 per cent of the population of Asia and Africa was urban in 1950, much lower compared to the global figure of 29.6 per cent. Fox and Goodfellow (2021) termed these countries as 'late urbanisers' as the majority of the countries in Asia and Africa started urbanising only after the post Second

World War. After a prolonged phase of the high pace of urbanisation, 51.1 per cent of the Asian population and 43.5 per cent of Africa's population became urban in 2020. These figures were, however, much lower compared to the levels of urbanisation in Europe (74.9%), North America (82.6%), Oceania (68.2%), and even Latin America (81.2%) (UN DESA, 2018). As these two continents are expected to go through a high pace of rural-urban transition, levels of urbanisation in Asia and Africa are estimated to be 66.9 per cent and 58.9 per cent respectively by 2050, compared to the global figure of 68.4 per cent (Figure 1).

Besides being a less urbanised region, there is a vast regional disparity in terms of levels of urbanisation within Asia and Africa. Regional disparity is even starker in Africa with Eastern Africa being the least urbanised region in the world with a level of urbanisation of 29 per cent in 2020. On the other hand, Southern Africa had 64.6 per cent people living in urban areas in the same year, mainly due to the presence of South Africa, which has a history of high levels of urbanisation. It is also estimated that by 2050, southern Africa will have a level of urbanisation of 77.2 per cent, followed by central (67%) and northern Africa (64.1%) respectively. Surprisingly, by 2050, there will be several countries with a level of urbanisation above 90 per cent viz. Reunion, Gabon, and Western Sahara¹. Other countries such as Botswana, Algeria, Libya, Djibouti, Sao Tome, and Principe, Angola and Congo are also likely to cross the 80 per cent mark. Most of these countries are low-income and characterised by a primate city-oriented urbanisation. The majority of these cities are developed as spaces of leisure with inflow of foreign investment resulting in stark inequality in housing and service provisions (Turok, 2014).

¹Except for Gabon, both the aforementioned countries have a small population base.

Figure 1: Trends in Levels of Urbanisation in Asia, Africa and the World, 1950-2050



Source: United Nations' World Urbanisation Prospect (The 2018 Revision)

Like Africa, Asia too exhibits a wide regional variation in the levels of urbanisation. Among the two highly urbanised regions in Asia, in 2020, Western Asia had a level of urbanisation of 72.3 per cent, followed by Eastern Asia (64.8%). It is estimated that by 2050, both the regions will cross the 80 per cent mark. Two east Asian countries, viz, Japan and the Republic of South Korea were the most urbanised countries with more than 80 per cent of population living in urban areas in 2020. By 2050, China is estimated to join the 80 per cent club which is linked with hyper-development and aggressive form of urban expansion. Likewise, countries of western Asia, except for Yemen, have a level of urbanisation above 55 per cent. By the middle of the present century, all countries except Yemen experience an urbanisation level above 70 per cent, with Kuwait and Qatar reporting a 100 per cent urban population. Six other countries are likely to have more than 90 per cent of their population living in urban areas. In 2020, around 50 per cent of the population in South-Eastern and Central Asia was urban. By 2050, 66 per cent of South-Eastern Asia and 60.5 per cent of Central Asia is estimated to be urban. Among all the regions of Asia, Southern Asia is the least urbanised region with a level of urbanisation of 36.6 per cent in 2020. However, it is expected to reach 53.8 per cent by 2050 (Table 1).

Growth of urban population and rural-urban transition

The post Second World War period noted a shift in the

pace of urbanisation in the developing countries. Since the 1950s, the less developed countries of the world started experiencing much higher urban growth than that of the developed countries² with the trend continuing till 1980s. Since 1990s, there has been a gradual decline in the growth rate of urban population in both the developed and less developed regions, mostly owing to declining urban fertility rates across regions (Kundu and Kundu, 2010).

Importantly, there has been a wide regional variation in terms of temporal trend in the rate of growth of urban population across the countries of the global South. Latin American countries, with a history of rapid urbanisation since the early 20th century, experienced a higher pace of rural-urban transition much earlier with an urban rural growth difference (URGD) above 3 per cent during 1950-80. As the continent became highly urbanised, its pace of urbanisation declined after the 1980s.

Countries of Africa started experiencing a very rapid rate of growth of urban population (more than 4%) since the 1950s, as most countries became independent from imperial rules in the post-Second World War. The high urban growth continued till the 1980s. A persistently high fertility rate, sharp decline in mortality rate along with massive rural-urban migration have been the driving factors behind a constant growth rate of over 3.5 per cent.

²According to the classification provided by the United Nations Department of Economic and Social Affairs

Table 1: Levels of Urbanisation in Different Regions of Africa and Asia, 1950-2050

	1950	2000	2020	2030	2040	2050
World						
Africa	14.3	35.0	43.5	48.4	53.6	58.9
Northern Africa	25.9	48.3	52.5	55.3	59.4	64.1
Eastern Africa	5.7	21.0	29.0	34.5	40.7	47.1
Middle Africa	13.9	39.7	50.6	56.2	61.7	67.0
Southern Africa	37.7	53.8	64.6	69.4	73.6	77.2
Western Africa	9.3	34.5	47.7	53.6	58.9	63.8
Sub-Saharan Africa	11.1	31.4	41.4	47.0	52.5	58.1
Asia	17.5	37.5	51.1	56.7	61.6	66.2
Eastern Asia	17.9	42.0	64.8	72.8	78.0	81.4
Central Asia	32.7	45.7	48.3	50.5	54.9	60.5
Southern Asia	16.0	29.0	36.6	41.7	47.6	53.8
South-Eastern Asia	15.6	37.9	50.0	55.6	61.0	66.0
Western Asia	28.9	63.8	72.3	75.4	78.5	81.4
India	17.0	27.7	34.9	40.1	46.4	52.8

Note: Sub-Saharan Africa constitutes all regions of Africa except northern Africa.
Source: United Nations World Urbanisation Prospects (The 2018 Revision)

Africa registered a high URGD of 3.2 during the 1950s followed by a moderate URGD ranging from 2.3 to 2.4 per cent in the following three decades. It is estimated that Africa is going to experience a URGD of over 2 per cent in the next three decades owing to its persistent high natural growth rate. These trends indicate that Africa is expected to be the epicentre of urbanisation in the next three decades. The newly emerging urban areas need to be planned carefully, as most of it will not be associated with economic development (Turok, 2014).

On the other hand, urban population in Asian countries grew at a rate ranging between 3.4-3.7 per cent during 1950-90, lower than that of Africa's for the same period. In fact, 1980s noted an increase in the urban growth rate as well as URGD because of the economic take off of the 'Asian Tiger Economies' and China (Fox and Goodfellow, 2021). Similar to the African experience, growth of urban population noted a sharp decline since the 1990s. However, the period 2000-2010 noted an increase in URGD, mostly driven by China's rapid urbanisation. The post 2010 period is expected to note a gradual decline in URGD. Unlike Africa where high fertility rates is driving urbanisation, Asia's urbanisation is predominantly fueled by rural-urban migration, sectoral diversification (in-situ urbanization) and expansion of urban areas. These countries are estimated to experience decline in their

fertility rates which will ultimately result in declining growth rate of urban population. Therefore, urban growth will decline and reach 0.9 per cent by the 2040s. In fact, the growth rate of Asia will fall below that of Africa's (2.8%) and even Oceania's (1.1%) (Table 2). Also, a large number of east Asian cities in South Korea, Japan and China are going to experience a shrinking population (Jeon and Kim, 2019). The pace of URGD will continue to decline slowly till 2050.

On the contrary to the experience of developing regions of Asia and Africa, Europe is going to experience a negative growth of population, with a massive depopulation in rural areas in the following three decades, while North America and Latin America (including Caribbean Islands) are going to experience a very low and progressively declining population growth rate both in rural and urban areas. In contrast, Asia and Africa will continue to add to the global urban population due to their high population base and consistent rural-urban transformation. During this period, 90 per cent of the additional urban growth will be in these two continents, reinforcing this region to establish as the epicentre of urbanisation (Table 2).

The urbanisation trajectory is very different in Asia and Africa along with a wide regional variation in the historical path of urbanisation within each of these continents (Myer,

Table 2: Annual Exponential Growth Rate of Urban Population and URGD in Major Regions of the World, 1950-2050

Year	World	More developed regions	Less developed regions	Africa	Asia	Europe	Latin America and Caribbean	Northern America	Oceania
Growth Rate of Urban Population (%)									
1950-60	3.1	2.3	4.2	4.8	3.8	2.0	4.5	2.6	2.9
1960-70	2.8	1.8	3.8	4.4	3.4	1.8	4.1	1.7	2.7
1970-80	2.6	1.2	3.8	4.4	3.5	1.2	3.5	1.0	1.7
1980-90	2.7	0.9	3.9	4.4	3.7	0.7	2.9	1.2	1.5
1990-2000	2.3	0.6	3.1	3.6	3.0	0.2	2.3	1.6	1.1
2000-10	2.3	0.8	2.9	3.6	2.9	0.4	1.7	1.1	1.6
2010-20	2.0	0.5	2.5	3.6	2.3	0.3	1.4	1.0	1.5
2020-30	1.7	0.4	2.0	3.4	1.7	0.3	1.1	0.9	1.3
2030-40	1.4	0.4	1.6	3.1	1.3	0.3	0.8	0.8	1.2
2040-50	1.2	0.3	1.4	2.8	0.9	0.2	0.5	0.6	1.1
Urban Rural Growth Difference (%)									
1950-60	1.9	2.6	2.7	3.2	2.3	2.3	3.3	2.7	1.9
1960-70	1.2	2.5	1.9	2.4	1.5	2.4	3.2	1.9	1.5
1970-80	1.2	1.6	2.1	2.3	1.8	2.0	3.1	0.1	0.4
1980-90	1.5	1.0	2.5	2.3	2.5	1.1	2.8	0.8	-0.3
1990-2000	1.5	1.0	2.2	1.6	2.3	0.5	2.4	2.1	-1.0
2000-10	2.0	1.6	2.5	1.7	3.0	0.9	1.7	1.1	-0.1
2010-20	1.8	1.1	2.2	1.9	2.5	1.0	1.6	1.2	0.1
2020-30	1.8	1.5	2.0	2.0	2.2	1.4	1.7	1.5	0.3
2030-40	1.7	1.9	1.9	2.1	2.1	1.9	1.7	1.9	0.6
2040-50	1.7	2.0	1.9	2.2	2.0	2.1	1.8	1.9	0.9

Source: United Nations's World Urbanisation Prospects (The 2018 Revision).

2021; Fox and Goodfellow, 2021). Regions with lower levels of urbanisation, such as Sub-Saharan Africa, went through a rapid phase of urbanisation. Rapid growth rate of population along with a high rural-urban migration led to very high URGD till 1980s. Within Sub-Saharan region, the less urbanised Western and Eastern Africa sub-regions noted exceptionally high growth as well as URGD during this period. Since the 1980s, Sub-Saharan region, except for Eastern and Central Africa, started experiencing a steady decline in URGD. The slower urbanisation in Sub-Saharan Africa during the 1980s was led by the structural change in the economy and the global oil crisis (Africa Research Institute, 2012). After a steady decline for two decades, the region again started experiencing an increase in growth rate along with URGD in the 2000s. During the 2010s, Western and Eastern Africa noted a high URGD, 2.6 per cent, and 2.4 per cent, respectively. In fact, Eastern Africa is going to continue with the increased pace of

rural-urban transition (URGD) in the next three decades (Table 3). Notably, countries from this region like Uganda (5.8%), Tanzania (5.3%) and Burundi (5.6%) experienced a very rapid growth rate of urban population in the last decade. In fact, Burundi and Uganda will continue to have a rapid growth rate of over 4 per cent in the next three decades. On the other hand, the highly urbanised region of Southern Africa has had the lowest growth rates of urban population since the middle of the last century, and Northern Africa also almost matched the rate of Southern Africa during 2010s. Moreover, by the 2040s, the growth rate of Southern Africa is estimated to reach 1.1 per cent (Table 3).

Similarly, there is a wide regional variation in the urbanisation trajectory in Asia. Until the 1980s, rapid growth of urban population of over 4 per cent was limited to two regions i.e. Western and South-Eastern Asia. In

fact, Western Asia experienced URGD above 3 per cent during the 1980s, mostly led by foreign investments by USA and European countries in these two regions (Kundu and Kundu, 2010). However, Western Asia noted a sharp decline in urban growth as well as URGD since the 1990s, soon after the collapse of the Soviet bloc. The period of the 1990s and later noted a shift in focus of foreign investments from Western Asia to South-Eastern Asia, which helped the region to maintain its pace of urbanisation to some extent. Notably, South-Eastern Asia noted a URGD of around 2 per cent in the last 70 years, which is expected to remain at the same level for the next

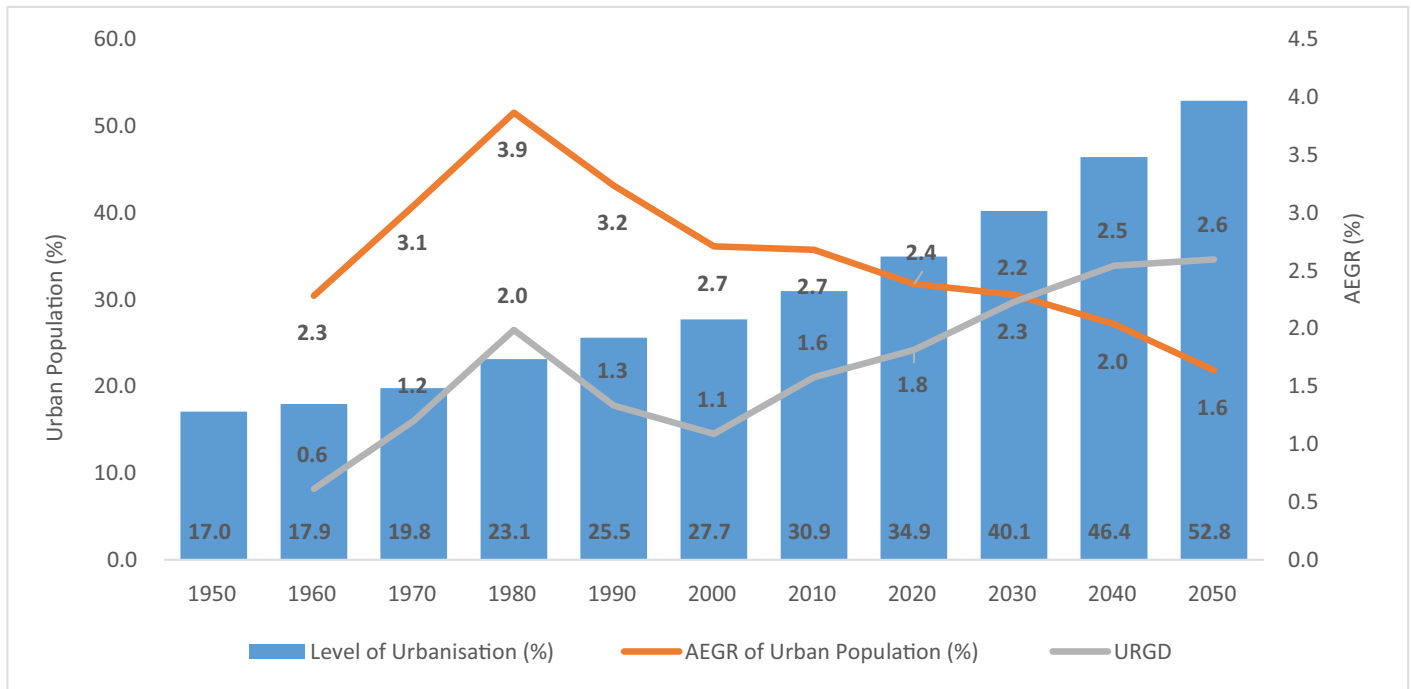
three decades. On the other hand, Eastern Asia noted an increased urban growth rate and URGD since the 1980s, with the success of the 'East Asian Tiger' and liberalisation in China associated with rapid growth of urban population (Myer, 2021). During 2000s, East Asia noted a rapid pace of URGD of 5 per cent (highest among all regions). Much of this increase is attributed to the expansion of city boundaries and conversion of rural settlements into 'urban villages' in China (ibid.). It is also expected that the region will experience a rapid rural-urban transition till the 2030s. However, the rapid decline in the fertility rate and shrinking population base in the region will slow

Table 3: Growth Rate of Urban Population and Urban-Rural Growth Difference in Different Regions of Africa and Asia, 1950-2050

Year	Africa							Asia						
	Africa	Northern Africa	Eastern Africa	Middle Africa	Southern Africa	Western Africa	Sub-Saharan Africa	Asia	Eastern Asia	Central Asia	South-Eastern Asia	Western Asia	Southern Asia	India
	Urban Growth													
1950-60	4.8	4.5	5.3	4.4	3.5	6.4	5.0	3.8	4.2	5.1	4.4	4.8	2.7	2.3
1960-70	4.4	4.3	5.9	4.6	3.1	4.6	4.5	3.4	3.0	4.1	4.2	4.7	3.4	3.1
1970-80	4.4	3.7	6.0	5.1	2.9	5.0	4.8	3.5	2.7	2.7	4.1	4.3	4.2	3.9
1980-90	4.4	3.7	5.1	4.8	3.3	5.2	4.8	3.7	3.6	2.0	4.3	4.3	3.6	3.2
1990-2000	3.6	2.6	4.3	4.5	3.0	4.0	4.0	3.0	3.0	1.1	3.5	2.6	2.9	2.7
2000-10	3.6	2.1	4.3	4.4	2.2	4.4	4.1	2.9	3.1	1.8	2.9	3.0	2.7	2.7
2010-20	3.6	2.2	4.5	4.2	2.2	4.2	4.1	2.3	2.2	1.6	2.3	2.5	2.5	2.4
2020-30	3.4	2.0	4.2	3.9	1.7	3.7	3.7	1.7	1.3	1.5	1.9	1.8	2.3	2.3
2030-40	3.1	2.0	3.9	3.5	1.4	3.3	3.4	1.3	0.5	1.6	1.5	1.5	2.0	2.0
2040-50	2.8	1.8	3.4	3.0	1.1	2.9	3.0	0.9	0.0	1.6	1.1	1.3	1.6	1.6
	URGD													
1950-60	3.2	2.7	3.2	2.8	1.8	5.2	3.4	2.3	3.1	2.7	2.1	3.4	1.0	0.6
1960-70	2.4	2.5	3.5	2.7	0.7	2.9	2.5	1.5	1.2	1.6	1.8	3.5	1.4	1.2
1970-80	2.3	1.8	3.6	3.3	0.4	3.0	2.6	1.8	1.3	1.0	2.2	2.9	2.3	2.0
1980-90	2.3	1.8	2.6	2.8	1.6	3.3	2.6	2.5	3.0	0.0	2.9	3.7	1.6	1.3
1990-2000	1.6	1.0	1.9	2.5	2.0	2.0	1.9	2.3	3.5	0.2	2.8	1.2	1.2	1.1
2000-10	1.7	0.9	1.9	2.2	2.2	2.8	2.1	3.0	5.0	0.9	2.7	2.0	1.6	1.6
2010-20	1.9	0.8	2.4	2.2	2.2	2.6	2.2	2.5	4.3	0.1	2.3	2.0	1.8	1.8
2020-30	2.0	1.2	2.6	2.3	2.2	2.4	2.2	2.2	3.7	0.9	2.2	1.6	2.1	2.2
2030-40	2.1	1.6	2.6	2.3	2.0	2.1	2.2	2.1	2.8	1.8	2.2	1.8	2.4	2.5
2040-50	2.2	2.0	2.6	2.3	2.0	2.1	2.2	2.0	2.1	2.3	2.2	1.8	2.5	2.6

Note: Sub-Saharan Africa constitutes all regions of Africa except northern Africa.
Source: United Nations' World Urbanisation Prospects (The 2018 Revision).

Figure 2: Urbanisation Dynamics in India



Source: United Nations' World Urbanisation Prospects (The 2018 Revision).

down the urbanisation process in the region. Contrarily, Southern Asia is one of the regions with a consistently moderate URGD of below 2 per cent, owing to its huge rural population base. However, this region started experiencing an increase in URGD since the 1990s. However, it is expected to gain momentum of rural-urban transition in the next three decades and URGD will touch 2.5 per cent during the 2040s, the highest in Asia. On the other hand, central Asia historically experienced a very low URGD, owing to its low population base (Table 3).

To summarise, two regions are going to lead the process of urbanisation in the foreseeable future, i.e. Southern Asia, mostly led by India, and countries located in eastern Africa. These two regions are going to experience an increased pace of rural-urban transition during the 2030s and 2040s. Even after a rapid rural-urban transition, Eastern Africa will continue to be the lowest urbanised region globally.

Urbanisation Trajectory in India

India, the largest country in South Asia and the second most populous country in the world, had 483.1 million people living in urban areas in 2020, however, comprising only 34.9 per cent of its total population. Despite its demographic weight, India is still predominantly rural. In

fact, it is estimated that the level of urbanisation in India in 2020 was lowest among the BRICS countries i.e. Brazil (87.1%), China (61.4%), Russian Federation (74.8%) and South Africa (67.4%). Also, India's level of urbanisation is estimated as marginally lower than that of Bangladesh (38.2%) and Pakistan (37.2%) for the same year (UN DESA, 2018). Often the definitional stringency is believed to be a reason behind India's low level of urbanisation (Sridhar, 2020).

Historically, urbanisation in the Indian subcontinent was shaped by the colonial rule, which had resulted in huge regional disparity and over-concentration of population and economic activities in four mega-cities i.e. Calcutta, Bombay, Delhi and Karachi (presently located in Pakistan) (Kundu, 2011). India was at a low level of urbanisation (17 per cent) in 1950, just after independence in 1947, almost at par with the Asian average of 17.3 per cent. Urban growth continued to increase in the following decades as a result of planned development strategies and structural changes initiated in the economy along with set-up of new regional growth centres (ibid.). It can be noted that India's growth rate of urban population reached its peak in the 1970s, mostly owing to the huge influx of refugees of 1971 Bangladesh war. It started to decline since then and continued till 1990-2000. A slight reversal of the pattern

was noticed during 2001-11 because of large scale insitu-urbanisation. This resulted in increase in URGD since the beginning of the millennium.

Notably, India has a slow pace of urbanisation. In fact, India's urban growth rate and URGD has been lower than that of African, especially Sub-Saharan countries, for the entire period. Also, India's URGD has been much lower than that of Asian countries, especially East and South-East Asian countries, during 1980-2020. Notably, the high paced urbanisation in South East Asian countries and China since 1980s was mostly followed by rapid industrialisation of export-oriented products and associated infrastructure development. India also tried to follow the developmental strategies of these countries. However, the slow pace of industrialisation failed to absorb rural labour force and develop the infrastructure base required for urbanisation, which did not percolate beyond a few metropolitan cities. The absence of adequate infrastructural networks connecting cities with their hinterlands was a reason behind the slow pace of urbanisation in the country (Mohan, 2006).

The *WUP, 2018 Revision* estimates an increasing trend of URGD in the following decades for the sub-continent. Urban growth rate is estimated to decline at a steady pace and might reach 1.6 per cent by 2040s; similarly the rural population is expected to decline since 2030s. The differential growth rate of population will result in an increased pace of URGD that might exceed the level of 2.5 per cent from 2030 onwards (UN DESA, 2018). With this increasing pace of urbanisation, it is estimated that India might touch the 50 per cent mark of level of urbanisation by 2046. (Figure 2)

Also, as per the estimations provided by *World Population Prospects, 2019 Revisions* (UN DESA), it is explicit that India is presently going through a favourable demographic scenario with increasing share of working age group population which is expected to reach its peak in 2025. This favourable demographic condition is expected to continue for the next two decades following the youth (20-24 years) bulging in 2025 (UN DESA 2019). Therefore, *India is going to have the benefits of its low dependency ratio during the 2030s and 2040s with an estimated increased rate of URGD during this phase.*



Size-class Distribution of Urban Settlements

Big-city oriented urbanisation and urban primacy

Urbanisation in developing countries is associated with the concentration of population in mega cities. The number of such cities noted a sharp increase with the increased pace of urbanisation in the region in the second half of twentieth century (Bertinelli and Strobl, 2007). These big-cities often have a colonial imprint and have a history of capital accumulation by extraction of

resources during colonial rule (Beall and Fox, 2009; Fox and Goodfellow, 2021; Myer, 2021). For example, Mumbai (erstwhile Bombay), Kolkata (erstwhile Calcutta), and Delhi in India and Karachi in Pakistan grew as regional capitals and were four largest urban agglomerations during independence (Kundu, 2011).

In 1950, globally, there were only two mega-cities with a population of 10 million or more. Interestingly, none of

Box 1

Largest Megacities will be Concentrated in Asia and Africa

In 1950, there was only one Asian city in the top ten list, viz., Tokyo, Japan. Since 2000, nine out of ten largest megacities in the world were located in the global South and seven of them were in Asia and Africa. Cairo from Egypt was the only one in the list from Africa. In 2020, East Asia and South Asia had four of the top ten largest cities each. Notably, in the next one and half decades, it is projected that African megacities will continue to grow at a much faster rate and Kinshasha from Republic of Congo will enter into the top ten list. *Delhi is projected to be the largest mega-city by 2035, replacing Tokyo. Tokyo is estimated to shrink at an annual rate of -0.25% during this period.*

World's Largest Megacities, 2000-2035

Sl. No	2000		2020		2035	
	Urban Agglomeration	Population (Million)	Urban Agglomeration	Population (Million)	Urban Agglomeration	Population (Million)
1	Tokyo, Japan	34.4	Tokyo, Japan	37.4	Delhi, India	43.3
2	Osaka, Japan	18.7	Delhi, India	30.3	Tokyo, Japan	36.0
3	Mexico City, Mexico	18.5	Shanghai, China	27.1	Shanghai, China	34.3
4	New York-Newark, USA	17.8	São Paulo, Brazil	22.0	Dhaka, Bangladesh	31.2
5	São Paulo, Brazil	17.0	Mexico City, Mexico	21.8	Cairo, Egypt	28.5
6	Mumbai, India	16.1	Dhaka, Bangladesh	21.0	Mumbai, India	27.3
7	Delhi, India	15.7	Cairo, Egypt	20.9	Kinshasha, Republic of Congo	26.7
8	Shanghai, China	14.2	Beijing, China	20.5	Mexico City, Mexico	25.4
9	Cairo, Egypt	13.6	Mumbai, India	20.4	Beijing, China	25.4
10	Kolkata, India	13.1	Osaka, Japan	19.2	São Paulo, Brazil	24.5

Source: World Urbanisation Prospects, 2018 Revisions

them was from Asia, Africa or Latin America per se. The second half of the twentieth century noted a rapid increase in the number of mega-cities in these three continents. Eleven of the 16 megacities were located in the global South in 2000, the number increased to 28 in 2020. In fact, 21 out of the 28 megacities in the global South were in Asia and six of the remaining were in Latin America and only three of them were in Africa. Since the mid-1980s, urbanisation in East, South-east and South Asia were guided by the rapid development of mega-cities (Kraas, 2007) and this rapid growth in the number continues till date. A total of 15 such cities are estimated to have been added to Asia between 2000 and 2020. In fact, four of them are from China, and three of them from India. By 2035, global South is estimated to have 41 megacities; 32 in Asia alone and only five in Africa (Table 4 & 5).

In terms of share of population, 12.7 per cent of the global urban population lived in 10-million plus cities in 2020. The population concentration in megacities are noted to be higher in Latin America (17.5%) and Asia (15.2%). Also, it is estimated that there will be an increasing concentration of population in these big cities in the next decade. By 2035, 19.2 per cent of Asia's urban population will live in cities of this size, compared to the global average of 15.5 per cent. Regionally, the share of population living in megacities seems to be higher in Southern Asia (20.9) compared to the Asian average (19.2) (Table 6 & 7). Also, the share of urban population in megacities is expected to increase to 24.7 per cent between 2000 and 2035. Cities like Delhi, Mumbai in India and Dhaka in Bangladesh will grow as

the most populated cities in the world (UN DESA, 2018). In fact, a large share of the future urban population in the next few decades will be concentrated in the megacities of Asia (Kundu and Pandey, 2020).

Like 10 million-plus cities, cities with 5-10 million people noted an increase both in terms of number and its share of population. In 2020, out of 51 cities of this size worldwide, 36 of them were located in Asia and Africa. In fact, there has been an addition of 14 cities between 2000 and 2020 in Asia and Africa. In terms of its population share, 7.6 per cent of the global urban population lived in these cities in 2020. The corresponding figures for Asia and Africa were 6.3 per cent and 9.1 per cent respectively. It is also expected that there will be 54 such cities in Asia and Africa by 2035, with 18 new additions to this class between 2020 and 2035. In fact, 13 of the new cities will be in Africa and majority in sub-Saharan Africa, especially in the western coast and will house 13.5 per cent of the African urban population by 2035 (Table 4). In the absence of intermediate and regional cities, these cities will rapidly grow to accommodate migration from rural areas (Brockerhoff, 2000). Majority of these cities are capital cities and have grown rapidly as places of accumulation of national wealth generated through export of natural resources.

On the other hand, 22.8 per cent and 22.0 per cent of the urban population in Asia and Africa lived in medium-sized cities with a population of 1 to 5 million in 2020. However, the population share of these cities will remain constant

Table 4: Distribution of Cities with 300,000 population and More Across Different Regions of the World, 2000-2035

	10 million or more			5 to 10 million			1 to 5 million			500 000 to 1 million			300 000 to 500 000		
	2000	2020	2035	2000	2020	2035	2000	2020	2035	2000	2020	2035	2000	2020	2035
World	16	34	48	30	51	73	325	494	639	396	626	757	524	729	846
More developed regions	5	6	7	7	14	16	96	105	115	122	151	162	183	194	201
Less developed regions	11	28	41	23	37	57	229	389	524	274	475	595	341	535	645
Africa	1	3	5	2	6	19	37	59	93	35	75	128	48	92	121
Asia	8	21	32	20	30	35	152	269	352	191	348	415	267	378	432
Europe	1	2	3	3	4	3	49	53	56	78	89	96	115	114	116
Latin America and the Caribbean	4	6	6	3	3	5	44	65	83	53	58	56	48	83	109
Northern America	2	2	2	2	8	9	37	42	51	39	55	58	41	54	63
Oceania	0	0	0	0	0	2	6	6	4	0	1	4	5	8	5

Note: World Urbanisation Prospects provides figures up to 2035.

Source: United Nations' World Urbanisation Prospects (The 2018 Revisions). Source: United Nations' World Urbanisation Prospects (The 2018 Revisions).

in the next one and half decades. Notably, the population share of such cities is going to decline for Africa, as a large number of cities will graduate to join the 5-10 million club. These medium-sized cities in Africa will absorb a mammoth share of the future urban population of the continent (Kundu and Pandey, 2020).

Urban Primacy: Urban primacy is a unique characteristic

of many African and Asian countries, which is an outcome of colonial legacy. Lack of balanced regional development and concentration of opportunities in the large cities is responsible for urban primacy. Sub-Saharan African countries are dominated by single urban centres (Parnell and Pieterse, 2014). The dominant share of capitals among large and fast growing cities is an African specificity (Behrens and Bala, 2013). In 2020, Kigali and Cairo were

Table 5: Distribution of Cities with 300,000 population and More Across Different Regions of Asia and Africa, 2000-2035

Regions	10 million or more			5 to 10 million			1 to 5 million			500 000 to 1 million			300 000 to 500 000		
	2000	2020	2035	2000	2020	2035	2000	2020	2035	2000	2020	2035	2000	2020	2035
WORLD	16	34	48	30	51	73	325	494	639	396	626	757	524	729	846
AFRICA	1	3	5	2	6	19	37	59	93	35	75	128	48	92	121
Eastern Africa	0	0	1	0	1	5	9	14	17	3	13	40	13	21	38
Middle Africa	0	1	2	1	1	2	6	10	22	5	16	15	6	13	14
Northern Africa	1	1	1	0	2	2	7	8	12	7	14	21	14	21	25
Southern Africa	0	0	0	0	1	2	5	5	6	5	7	8	2	3	5
Western Africa	0	1	1	1	1	8	10	22	36	15	25	44	13	34	39
ASIA	8	21	32	20	30	35	152	269	352	191	348	415	267	378	432
Eastern Asia	4	8	13	9	18	21	72	134	175	104	188	195	146	171	178
Central Asia	0	0	0	0	0	0	2	5	7	3	5	5	8	9	16
Southern Asia	4	9	12	6	5	7	44	72	89	45	74	119	61	106	125
South-Eastern Asia	0	3	5	3	4	3	16	27	38	19	40	53	27	53	68
Western Asia	0	1	2	2	3	4	18	31	43	20	41	43	25	39	45

Source: United Nations' World Urbanisation Prospects (The 2018 Revisions).

Table 6: City-Size Distribution of Urban Population Across Different Regions of the World, 2000-2035

	10 million or more			5 to 10 million			1 to 5 million			500 000 to 1 million			300 000 to 500 000			Fewer than 300 000		
	2000	2020	2035	2000	2020	2035	2000	2020	2035	2000	2020	2035	2000	2020	2035	2000	2020	2035
World	8.6	12.7	15.5	7.5	8.0	8.9	21.8	22.3	22.7	9.4	9.9	9.5	7.0	6.4	5.9	45.8	40.8	37.5
More developed regions	10.5	11.1	11.6	5.6	9.2	10.1	21.5	20.6	21.0	9.3	10.1	10.2	7.8	7.4	7.1	45.4	41.6	40.0
Less developed regions	7.7	13.2	16.4	8.3	7.6	8.6	22.0	22.8	23.2	9.4	9.8	9.3	6.6	6.1	5.6	46.0	40.6	36.9
Africa	4.8	8.4	11.1	4.7	6.3	13.1	23.9	22.0	18.9	8.2	8.9	9.3	6.5	6.2	4.8	51.9	48.1	42.7
Asia	9.5	15.2	19.2	10.4	9.1	8.0	20.6	21.8	23.1	9.3	10.1	9.8	7.3	6.1	5.6	42.9	37.7	34.2
Europe	1.9	4.2	6.1	4.3	4.8	3.2	16.3	16.0	16.6	10.0	10.5	10.8	8.4	7.8	7.5	59.2	56.7	55.7
Latin America and the Caribbean	14.9	17.5	17.2	4.9	3.3	5.1	21.9	25.3	27.4	9.3	7.8	6.0	4.6	5.9	6.8	44.4	40.2	37.5
Northern America	12.0	10.3	9.9	5.4	16.6	18.2	34.4	29.6	31.4	11.0	12.6	11.7	6.0	6.8	6.9	31.1	24.1	21.8
Oceania	0.0	0.0	0.0	0.0	0.0	34.3	58.1	59.8	25.0	0.0	2.4	7.2	8.5	10.7	5.9	33.4	27.1	27.6

Source: United Nations' World Urbanisation Prospects (The 2018 Revisions).

7: City-Size Distribution of Urban Population Across Different Regions of Asia and Africa, 2000-2035

Regions	10 million or more			5 to 10 million			1 to 5 million			500 000 to 1 million			300 000 to 500 000			Fewer than 300 000		
	2000	2020	2035	2000	2020	2035	2000	2020	2035	2000	2020	2035	2000	2020	2035	2000	2020	2035
WORLD	8.6	12.7	15.5	7.5	8.0	8.9	21.8	22.3	22.7	9.4	9.9	9.5	7.0	6.4	5.9	45.8	40.8	37.5
AFRICA	4.8	8.4	11.1	4.7	6.3	13.1	23.9	22.0	18.9	8.2	8.9	9.3	6.5	6.2	4.8	51.9	48.1	42.7
Eastern Africa	0.0	0.0	5.4	0.0	5.1	14.5	25.7	23.6	13.7	3.4	6.9	11.5	9.4	6.3	6.0	61.4	58.1	48.9
Middle Africa	0.0	15.8	25.7	16.1	9.2	7.9	23.0	23.7	26.6	7.8	12.0	6.9	6.4	5.9	3.4	46.7	33.4	29.5
Northern Africa	16.3	16.2	16.4	0.0	8.6	9.6	19.9	11.9	14.0	5.6	7.5	8.4	6.5	6.2	5.6	51.6	49.6	46.1
Southern Africa	0.0	0.0	0.0	0.0	13.2	23.9	42.2	35.5	28.4	11.9	11.1	10.3	2.7	3.0	3.2	43.2	37.2	34.2
Western Africa	0.0	7.5	7.4	8.9	2.7	14.7	20.9	23.9	20.1	13.1	9.4	9.0	6.0	6.9	4.6	51.1	49.6	44.2
ASIA	9.5	15.2	19.2	10.4	9.1	8.0	20.6	21.8	23.1	9.3	10.1	9.8	7.3	6.1	5.6	42.9	37.7	34.2
Eastern Asia	12.2	14.8	18.7	10.5	12.2	11.7	23.2	24.2	26.6	11.2	12.2	11.2	8.7	6.1	5.5	34.2	30.5	26.2
South-Eastern Asia	0.0	10.5	15.5	12.4	8.3	4.7	17.5	14.5	16.6	6.0	8.1	8.2	5.4	6.0	6.1	58.7	52.5	49.0
Central Asia	0.0	0.0	0.0	0.0	0.0	0.0	13.0	21.5	27.3	7.3	9.5	6.7	11.7	9.0	13.1	68.0	60.1	53.0
Southern Asia	13.1	20.9	24.7	9.6	5.1	4.6	16.8	19.3	19.1	7.5	6.9	8.4	5.7	5.8	4.9	47.3	42.0	38.3
Western Asia	0.0	7.5	10.9	11.8	9.6	9.9	27.2	29.6	31.6	11.2	13.7	11.6	8.1	7.0	6.7	41.7	32.7	29.3

Source: United Nations' World Urbanisation Prospects (The 2018 Revisions).

Figure 3: Urban Agglomerations with More than 300,000

Figure 3a: 2000

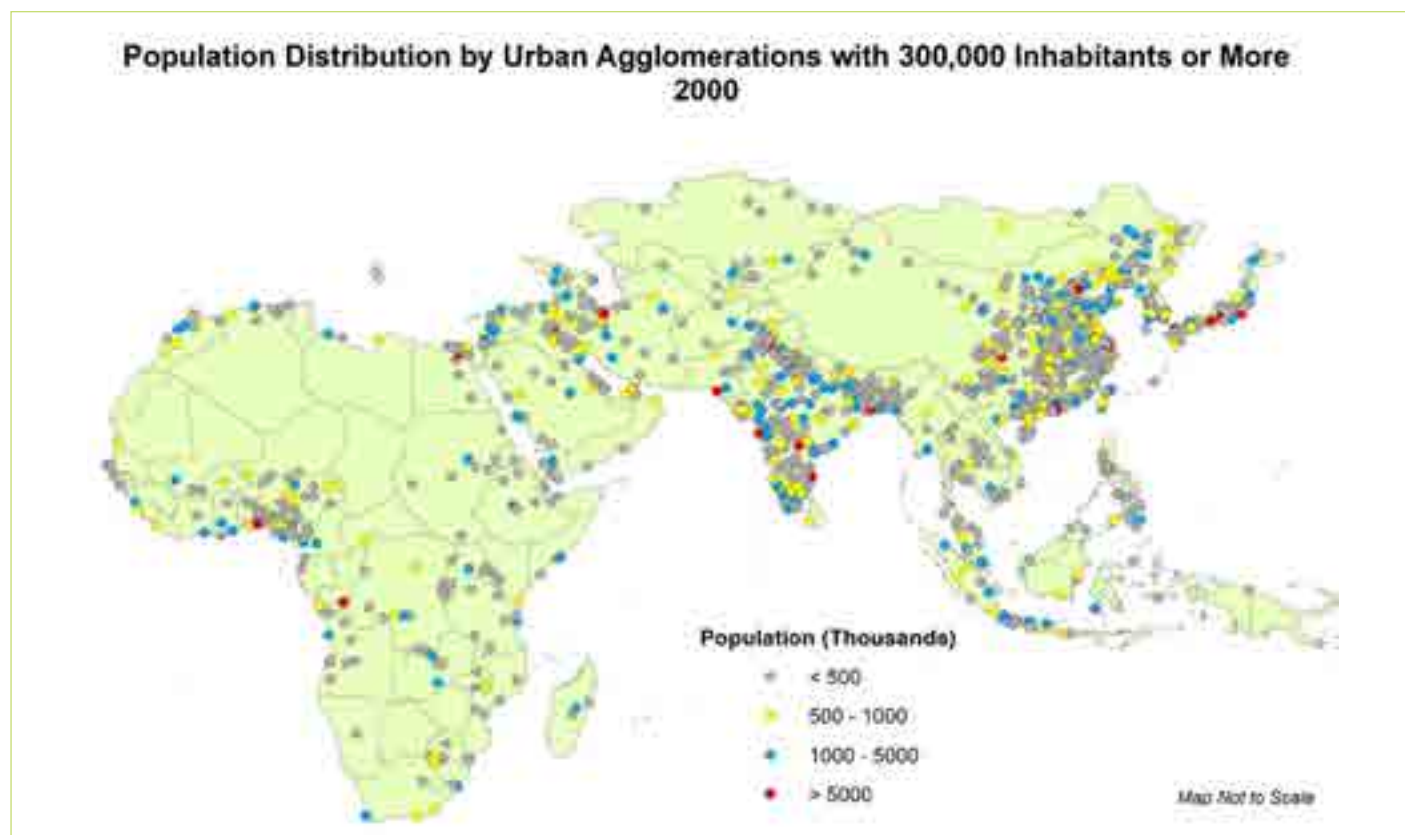


Figure 3b: 2020

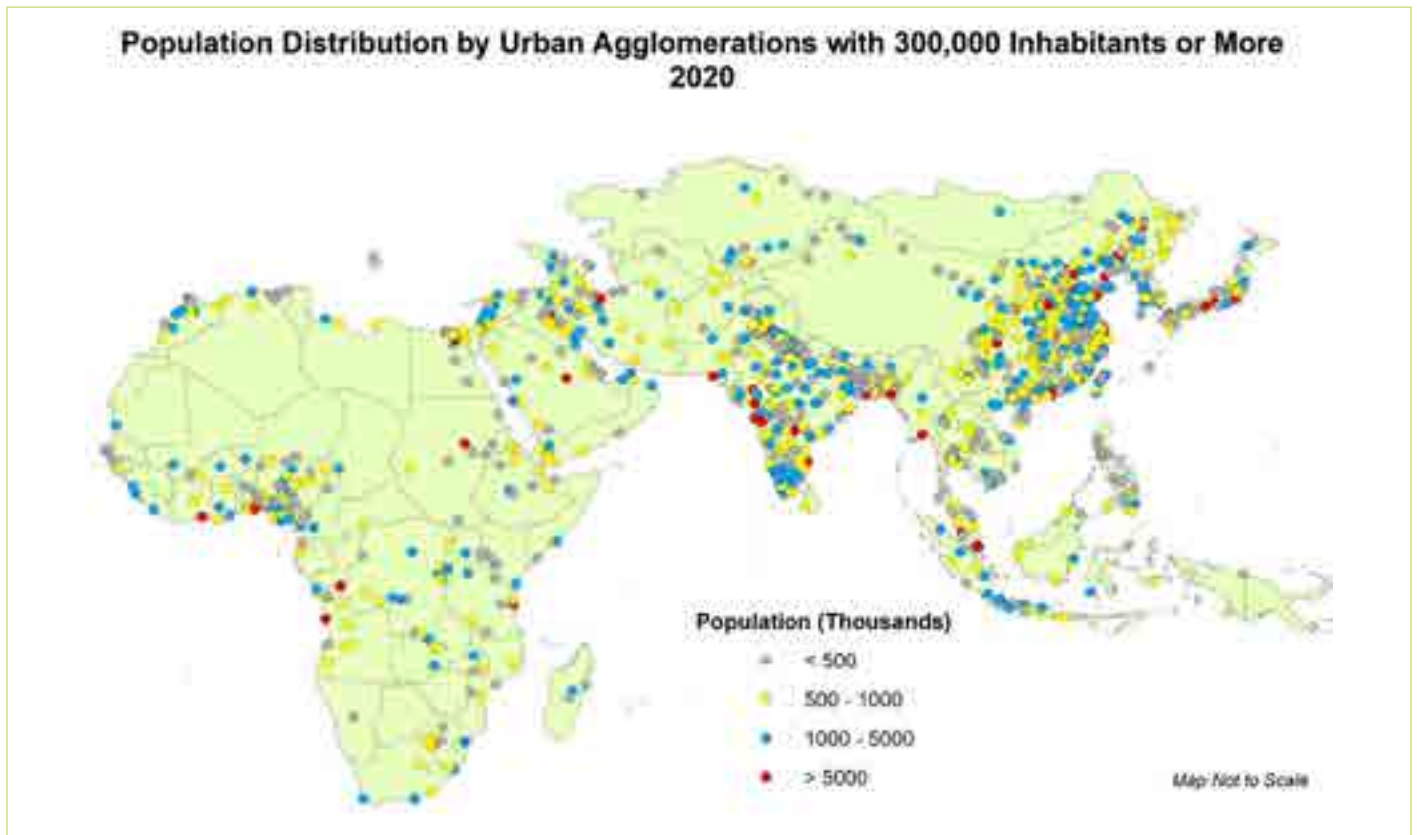
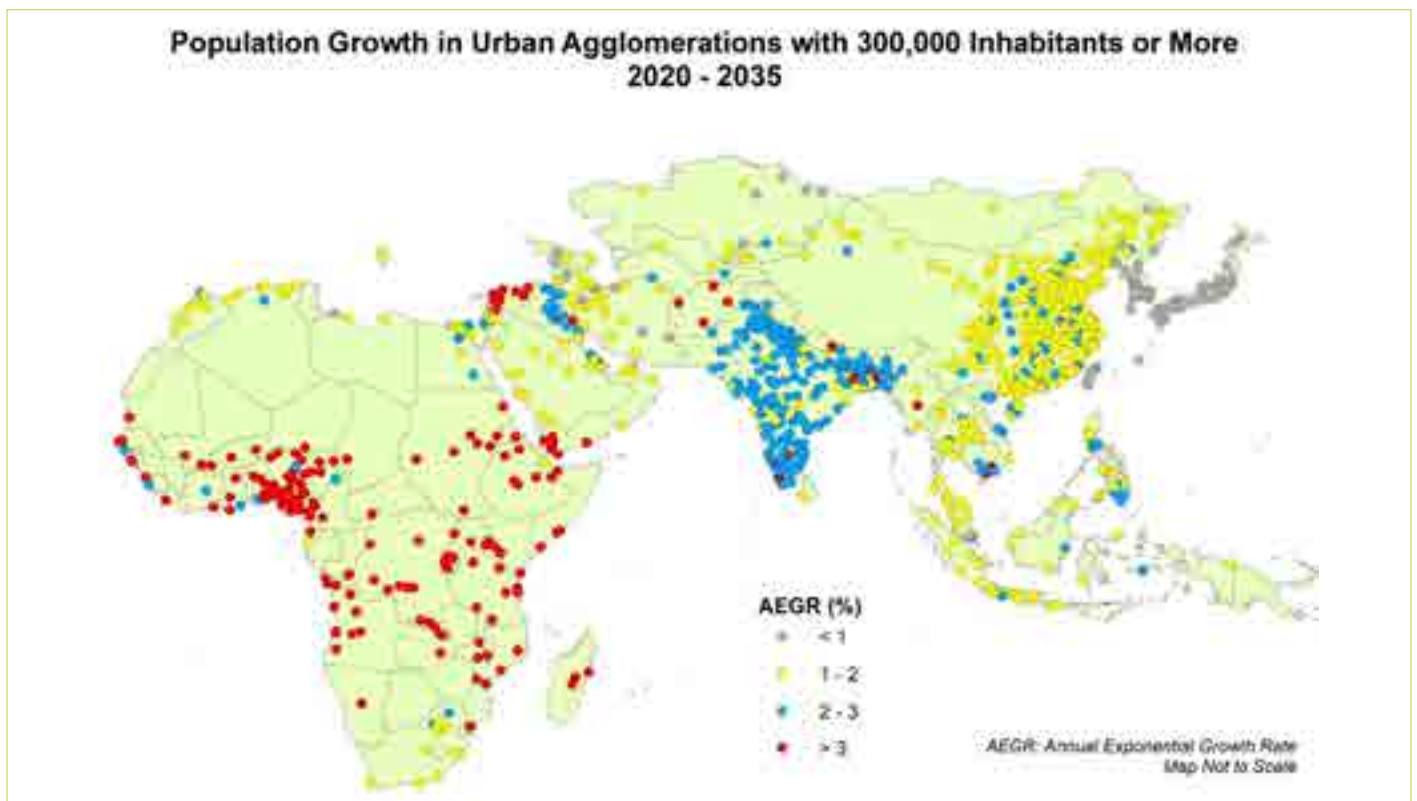


Figure 3c: 2035



Source: United Nations' World Urbanisation Prospects (2018 Revisions)

Figure 4: Population Growth in Urban Agglomerations with 300,000 Inhabitants or More

Figure 4a: 2000-2020

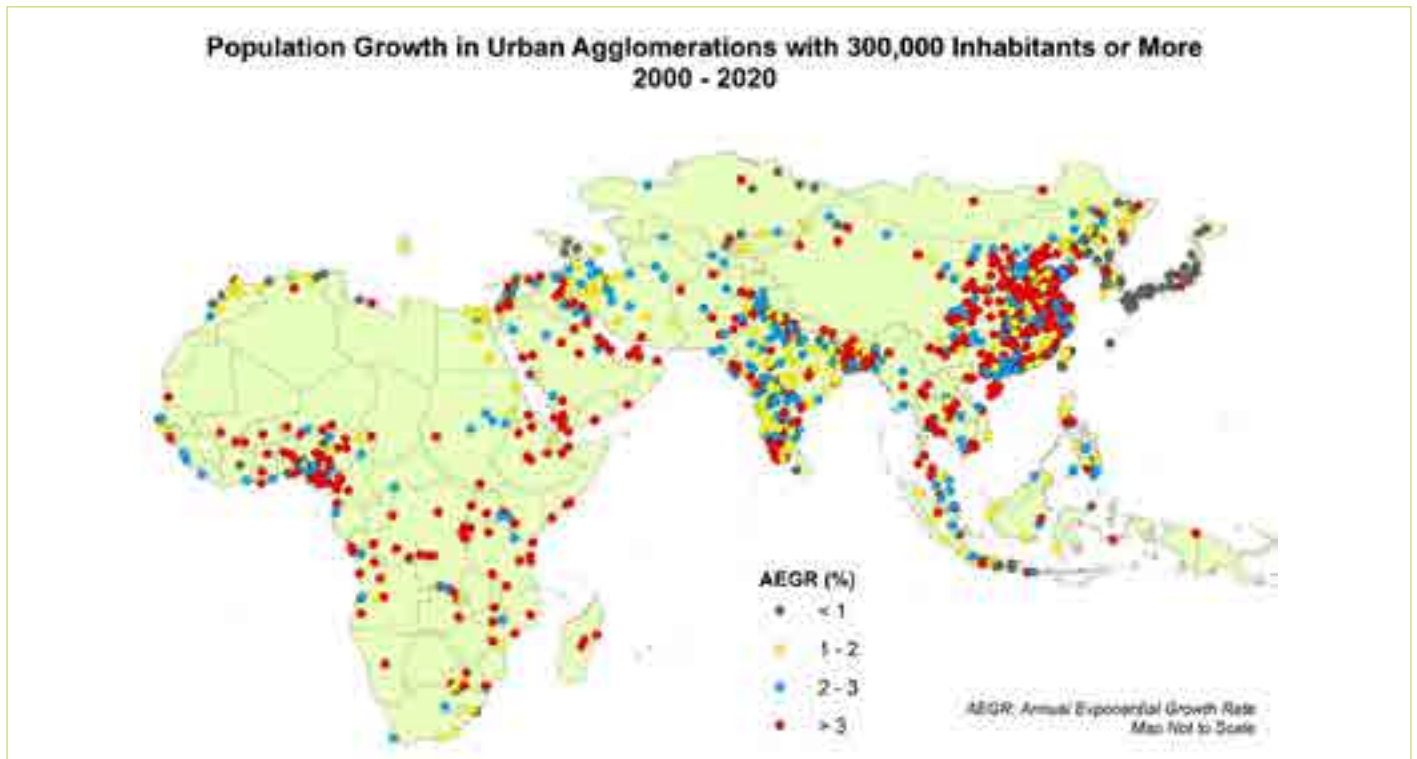
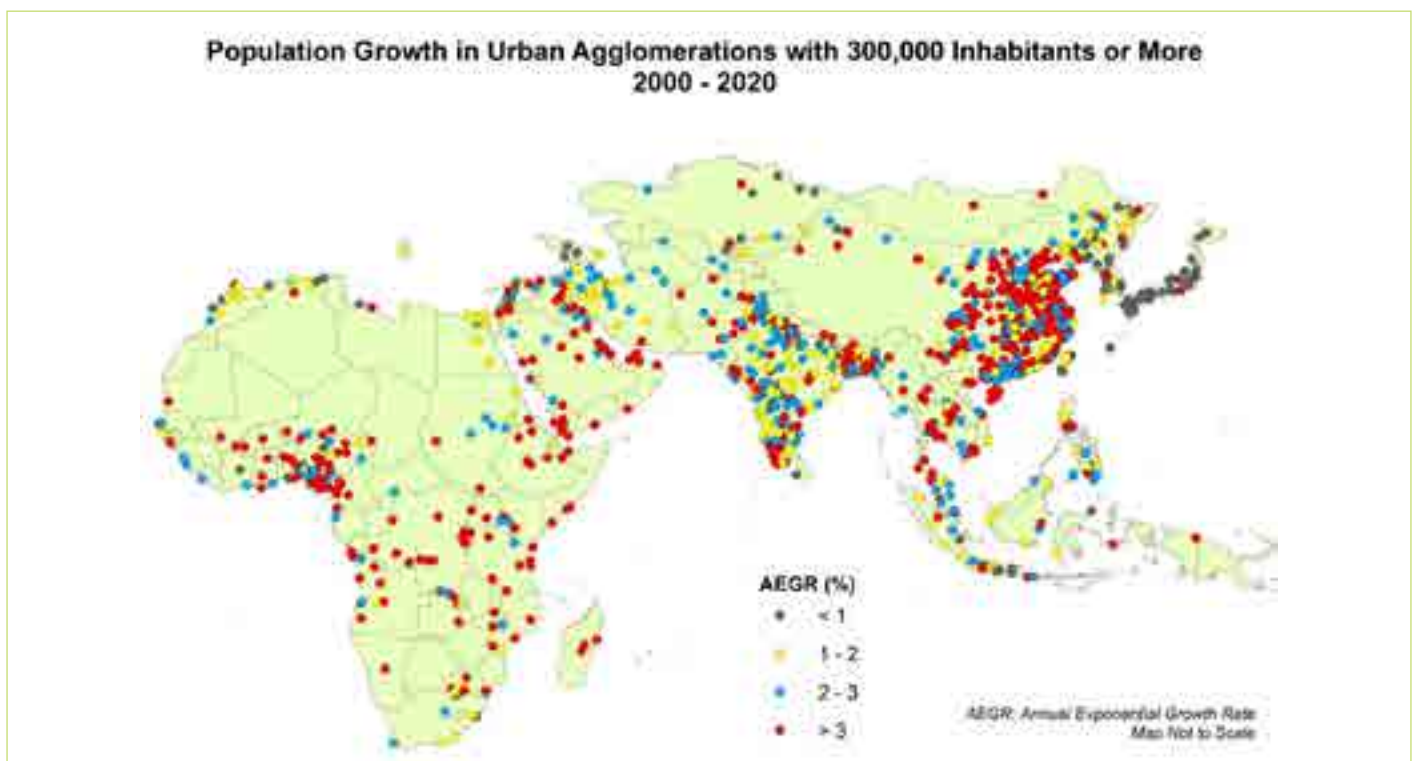


Figure 4b: 2020-2035



Source: United Nations' World Urbanisation Prospects (2018 Revisions)

estimated to house around half of Rwanda's and Egypt's urban population (UN DESA, 2018). Similarly, the less densely populated Central Asian countries and West and South-East Asian countries also show signs of urban primacy. For example, Kuala Lumpur, Yangon and Bangkok are estimated to house a third of the urban population of Malaysia, Myanmar and Thailand respectively (ibid.). Among south Asian countries, Dhaka is the primate city of Bangladesh housing more than 40 per cent of urban residents of Bangladesh and the city receives 300000 to 400000 migrants every year (Roy et al. 2019). Therefore, it is of utmost importance to support the growth of the smaller cities and towns for a balanced development of the region.

Medium and small sized urban centres

The majority of Africa's population live in cities with less than 500,000 people. In 2020, 54.3 per cent of Africa's urban population lived in such small cities, compared to the global figure of 47.2 per cent (Table 6). Africa's urbanisation is still dominated by small-sized urban centres. Many of these are mining cities or towns that proliferated in different parts of Sub-Saharan Africa. Bryceson and MacKinnon (2012) have referred to this phenomenon as 'mineralised urbanisation'. However, only 43.8 per cent of Asia's urban population was located in small towns in 2020. However, the share of population living in small towns is expected to decline and by 2035, 47.6 per cent of Africa's and 39.8 per cent of Asia's will be living in these cities. In addition, 10 per cent of urban population in Asia and Africa lived in medium sized cities with a population of 500,000 to 1 million in 2020 (Table 6). Importantly, these secondary cities of developing countries have great potential to promote economic vibrancy and balanced regional development in the region.

Spatial clusters of urban agglomerations

The United Nations population estimation provides population data for urban agglomerations with a population over 300,000¹ from 1950 to 2035. In 2000, majority of the million-plus cities were mostly concentrated in parts of India and China. Within China, these cities were concentrated in the Pearl River Delta Region. Also, million plus cities in Africa were mostly concentrated in the mineral-rich western coastal regions. Lagos and Kinshasa, the two largest cities with a population of 1-5 million in Africa, were located in the region (Figure 3a).

Between 2000 and 2020, a large number of cities with at

¹this covers only cities which have passed this mark by 2018

least one million people emerged in the Pearl River delta of China, and the southern and western parts of India. With new phases of mining-based urbanisation in post-2000, Africa noted the growth of a large number of cities with a population of more than a million. There were two megacities (10 million population) Lagos and Kinshasa, and two metropolitan cities (1-5 million population), i.e., Luanda and Abidjan on the oil-rich western coast. Also, there were a large number of cities with 1-5 million population concentrated in Nigeria along the west coast. On the other hand, Dar-Es-Salaam in Tanzania was the largest city on the eastern coast with a population of 6.7 million. In Africa, many inland cities grew and crossed the 1 million mark. Many of these have emerged as mining centres (Figure 3b).

By 2035, it is projected that the Pearl River delta will see a large number of cities with a population of 5 million and above. Similarly, there will be a large number of million-plus cities in India, mainly concentrated in the middle-Ganga plain and south-western India. In Africa, the western coast of the continent will note the emergence of a large number of million-plus cities. Most of these will be concentrated on the west coast of Nigeria, Ghana and Côte d'Ivoire. Lagos will be the ninth-largest city in the world with a population of 24.4 million. Another cluster will develop in the Congo basin and Angola. Kinshasa will be the seventh-largest city globally with a population of 26.6 million. In the eastern region, Dar-Es-Salaam of Tanzania will be the largest city along with a million-plus city like Nairobi. Also, a large number of inland cities that have emerged as capital cities, regional centres, or mining centres will cross the million-plus mark (Figure 3c).

Generally, the urban agglomerations of Africa have grown at much faster rates than those of Asia. Most of the cities located on the western and eastern coasts have grown at a rate of more than 3 per cent between 2000-20. In Asia, the cities of Afghanistan and the industrial cities of Qatar grew at a rate of more than 3 per cent. Doha of Qatar recorded a growth rate of 12.1 per cent. On the other end of the spectrum, the growth rate of cities in eastern Asia has been slower during this period. Eleven cities in Japan noted a negative growth rate of population during 2000-20. It is projected that African cities will grow at a much faster rate in the period 2020-35 compared to those located in Asia. Within Asia, the growth rate of urban agglomerations will be higher in India, while the urban agglomerations located in China and South-East Asia will

grow at a rate varying between 1-2 per cent. On the other hand, cities with negative growth rates will be located in Japan. The cities of South Korea and Taiwan will grow at a rate close to zero (Figures 4a and 4b).

Top-heavy urbanisation in developing countries: A special reference to India

India's urbanisation has been top heavy in nature. The number of large-size cities (Class I with a population above 100,000) increased from 107 in 1961 to 468 in 2011 with a corresponding increase in the share of population from 51.9 per cent in 1961 to 70.2 per cent in 2011 (HUDCO-HSMI-NIUA, 2017). The increasing concentration of population in the large cities is not only because of their higher growth rate, but because of rapid increase in their number owing to the graduation of smaller and medium towns into Class I cities over the period (Kundu, 2011).

A further disaggregation indicates that population concentration has been more in the million-plus cities. The number of million-plus cities increased from 7 to 12 between 1961 and 1981. The number increased very sharply from 12 to 52 between 1981 and 2011. It is noted that 12 new metropolitan cities were added to the list during 1980s and 1990s each. The number increased even sharply from 35 to 52 between 2001 and 2011 with the addition of 15 new metropolitan cities. Based on a projection of all the Class I cities using the growth rate of 2001-11 period, it is estimated that 17, 16, and 20 cities would be added to the million-plus list during 2011-21, 2021-31 and 2031-41 period, respectively. India is likely to have 69, 85 and 105 metropolitan cities in 2021, 2031 and 2041 respectively. Also, the majority of the newly added million-plus cities would be in the category of 1-5 million, mostly due to graduation of non-metropolitan class I cities into metropolitan category. India's urban

population is increasingly becoming more top-heavy in nature and the trend will increase in the coming decades.

The reduced rate of in-migration has been the primary cause behind their sluggish growth (Kundu, 2011; Kundu and Kundu, 2010; Kundu and Saraswati, 2012). Despite their sluggish growth, million-plus cities accounted for 45.9 per cent of the Indian urban population in 2020. It is also projected that the share of urban population in India living in million-plus cities will be 48.8 per cent by 2035 and Delhi (43 million) will be the most populated urban agglomeration in the world in the same year (UN DESA, 2018).

Another 27.9 per cent of urban population lived in 416 cities with a population more than 100,000 but below 1 million in 2011. Cities of this size also noted a decline in the growth rate during 2001-11 compared to its previous decades. Notably, 29.8 per cent of urban population lived in towns below 100,000 people in 2011 (HUDCO-HSMI-NIUA, 2017).

India is also experiencing the growth of the small urban centres, owing to rural-urban transformation. Population Census of India (2011), noted mushrooming of 2530 new Census Towns². It is noted that the mushrooming of these towns attributed to 29 per cent of growth of urban population between 2001 and 2011 (Mukhopadhyay and Pradhan, 2012; Pradhan, 2013 and Pradhan, 2017). Also, a large share of these small urban centres are happening outside the shadow of large cities. This 'insitu urbanisation' is a process related to transformation of rural settlements into urban areas because of the rise in the non-farm activities in rural areas (Pradhan 2017; Zerah and Denis, 2017).

²Census of India identifies rural settlements as urban ones that have three characteristics i.e. 1) a population threshold of 5000, 2) population density of 400 persons per sq. km and 3) three-fourth of the male main working population engaged in non-agricultural activities. These settlements are generally rural in terms of administration. On the contrary to statutory towns, which have already been legislated as urban, these Census Towns are mainly rural by governance.



Urbanisation and Economic Development: Implications in terms of Regional Disparity, Poverty and Socio-Economic Deprivation in Asia and Africa

Urbanisation in the global South is believed to play a lesser role in economic development compared to that experienced by developed countries. The rapid pace of urbanisation in the region is thought to be much faster than the economic capacity of the respective countries. Moreover, rapid urbanisation in Asia and Africa leads to the creation of spatial and interpersonal inequalities, both noted in the case of Asia (Kundu and Kundu, 2010) and Africa (Turok, 2014a). In fact, rapid urbanisation in these two continents (except for highly industrialised East Asian countries), mostly driven by stagnation of rural economy and exodus from rural areas, ultimately led to the spilling of rural poverty to urban areas. The *World Cities Report 2020* by UN-Habitat mentioned that the cities in the global South are characterised by social and economic informality, wide socio-economic inequality, lack of planned development, and unbalanced size-class distribution. A large section of the population living in cities in this region live in informal settlements, lacking access to basic amenities such as safe drinking water and improved sanitation facilities, which is the new normal for these countries (Myer, 2021). Africa is often considered as an exceptional case (Parnell and Pieterse, 2014) because of its chronic urban poverty that is visible through its high share of population living in slums and informal settlements. Davis (2006) described African cities as basket cases with little hope for improvement. Similarly, Asian urbanisation in the post-liberalisation period is expected to be associated with rural distress in place of economic growth and prosperity (Kundu and Kundu, 2010). Against this theoretical debate, the present section attempts to understand the linkages between urbanisation and economic development in Asia and Africa based on empirical analysis of internationally comparable datasets.

Urbanisation and economic development

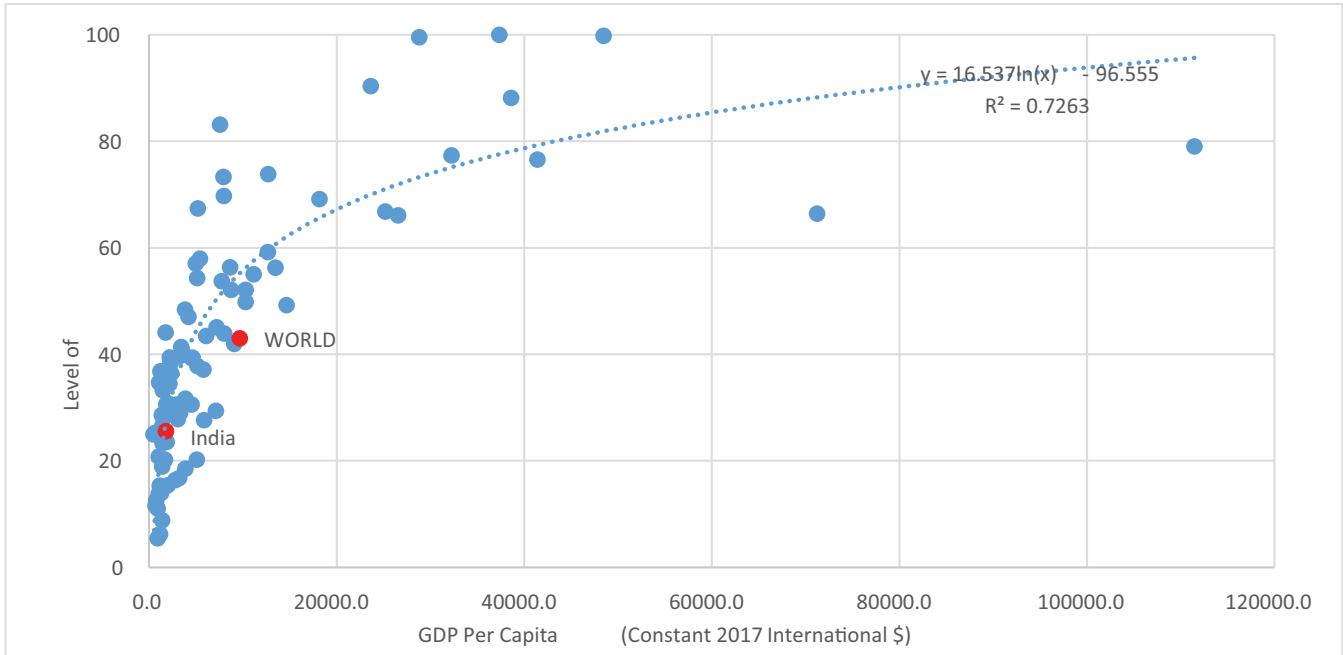
A country-level data analysis seeking inter-linkage between the level of urbanisation and per capita GDP indicates that urbanisation for the countries of Asia and Africa is positively associated with economic development (measured by GDP per capita income at constant prices) in these two continents. The declining value of R^2 between 1990 and 2018 indicates that the process of urbanisation in these countries is becoming less aligned with the economic development of the region in the post-liberalisation period (Figure 5 a-d).

A further regional disaggregation indicates that only a few city-states, mainly located in Eastern Asia, have very high levels of income, viz. Singapore, Hong Kong, Macao SAR. Most of these city-states have developed as points of global foreign investment and nodes of global capital flow. Besides these city-states, Western Asian countries have very high levels of income along with very high levels of urbanisation as this oil-rich region received a huge foreign investment for infrastructure development during the 1970s that resulted in its rapid urbanisation (Kundu and Kundu, 2010). The rest of the countries, mostly located in Southern and Central Asia and Sub-Saharan Africa are being urbanised without a significant rise in their per capita GDP. However, studies indicated that few Sub-Saharan countries like Botswana, Ghana and Nigeria, that experienced both urbanisation and economic growth since the 1960s appear to have reaped the urbanisation dividend (Cartwright et al. 2018).

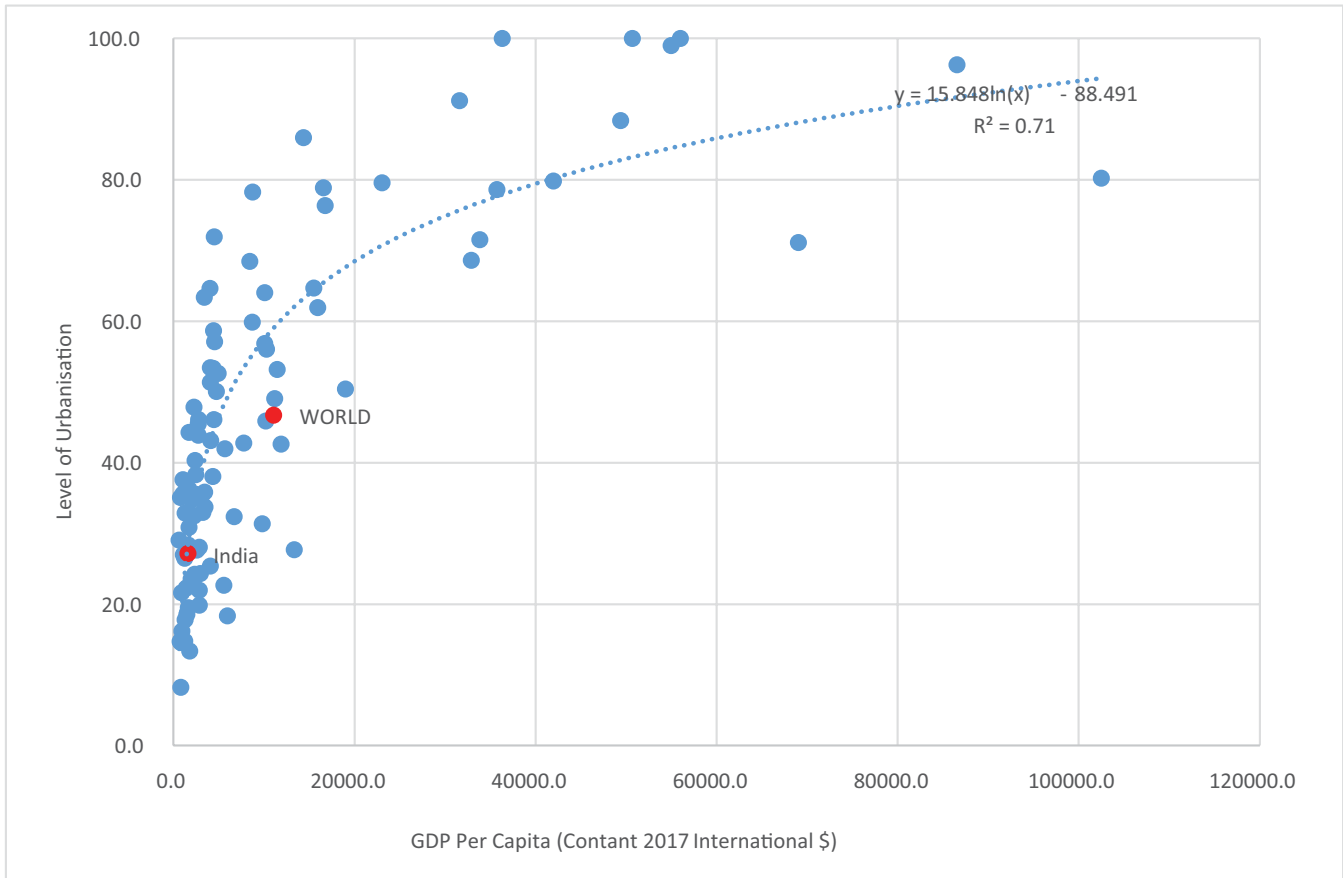
India belonged to the lower-income category with a level of urbanisation. Also, India is under-urbanised considering its level of income. On the contrary, India's neighbouring country China could successfully increase its level of

Figure 5: Level of Urbanisation and Per Capita GDP of Countries of Africa and Asia, 1990 and 2018

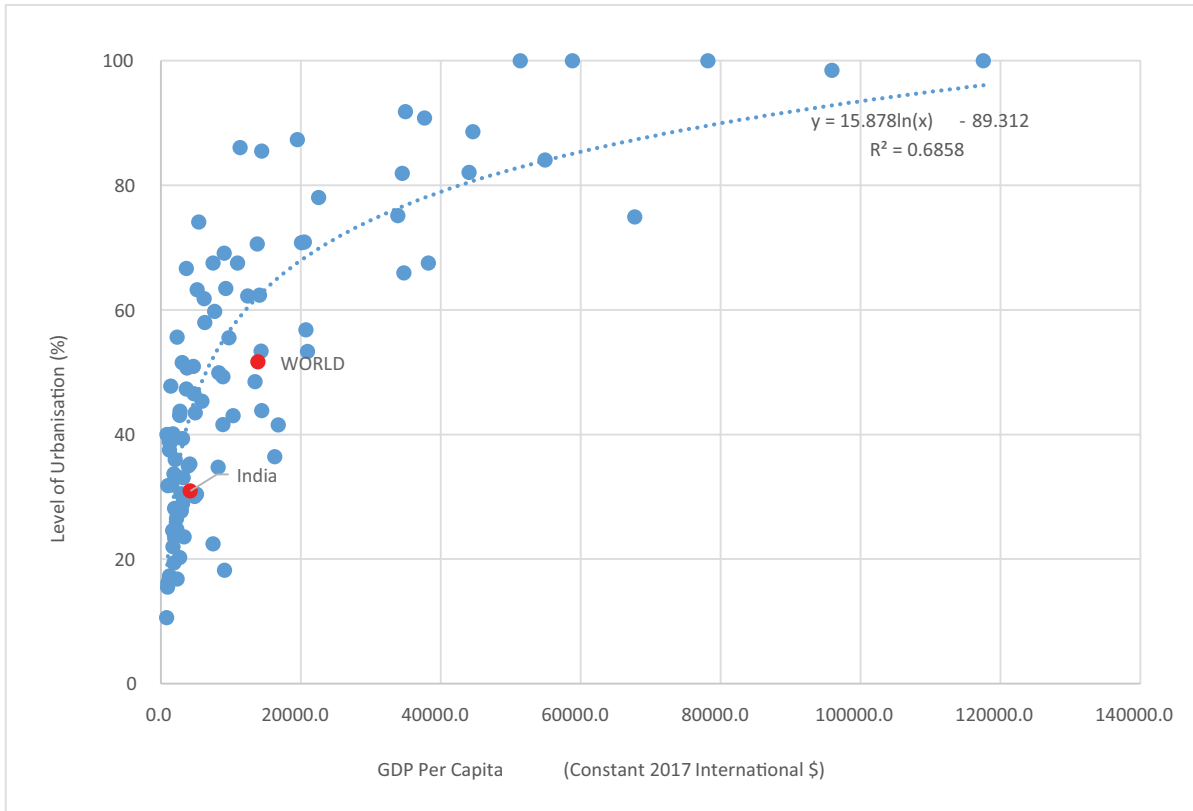
5a. 1990



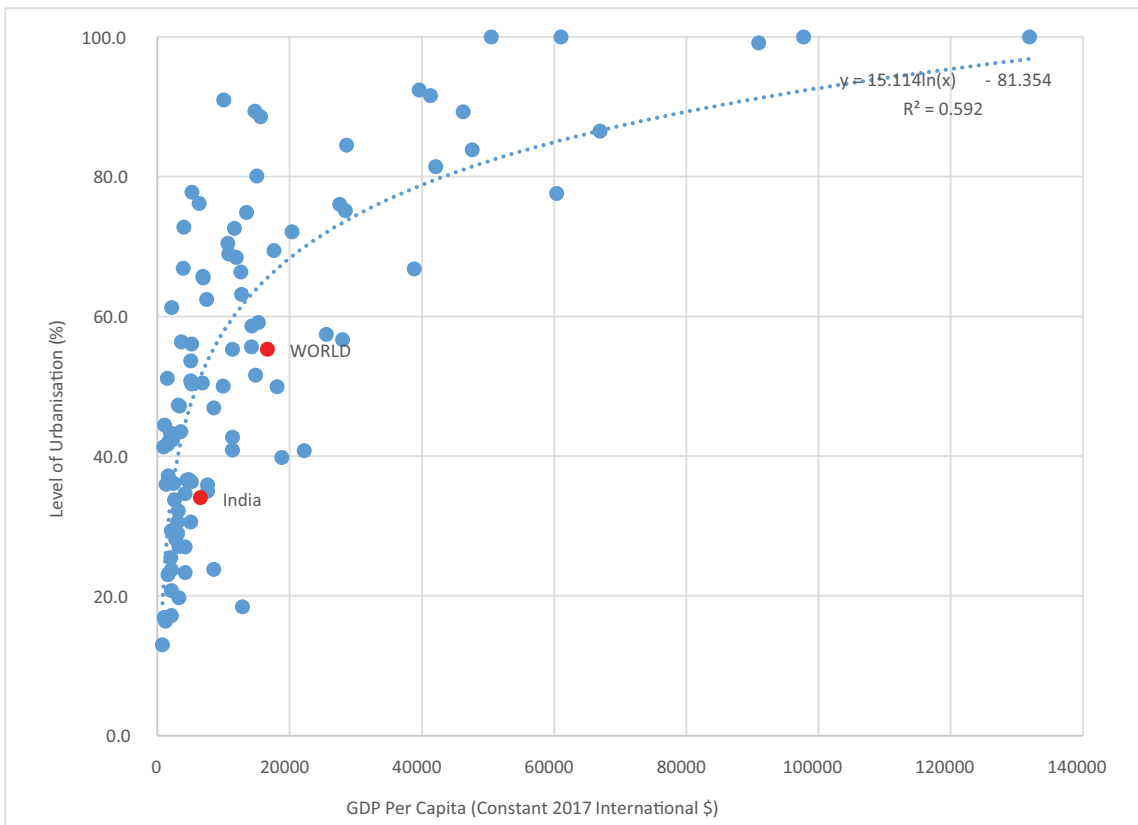
5b. 2000



5c. 2010



5d. 2018



Source: United Nations' World Urbanisation Prospects (The 2018 Revision); World Bank Data (2020).

urbanisation, significantly associated with a rise in per capita GDP (Figure 5 a-d). Probably China is the only country in the global South that has benefitted to a great extent from its urban transition (Turok, 2014b).

Exploring the pathway between urbanisation, demographic transition and economic development

The intersections between the three processes of urbanisation, demographic transition and economic development are complex. It is generally accepted that both economic growth and demographic transition create the need for urban centres with better living, educational and employment opportunities and promote the expansion of modern industries and an increase in the urban population. However, the reverse pathway i.e., how urbanisation affects demographic transition and economic development is still being debated. Although policies promoting sustainable urban development with the view of boosting economic development have been adopted in several countries, there is empirical evidence that negates the effect of urbanisation on economic development. More recently, researchers believe that the pathways through which urbanisation interplays with the population structure and characteristics and fuels economic growth is highly varied and contextual in nature (Dyson, 2011; World Bank, 2021).

Particularly, Africa and Asia are the two major global regions that are in constant flux currently with

demographic, health and economic transition in rapid progress. The biggest practical challenge for these two regions will be to understand how their rapidly burgeoning young urban population can help to raise the quality of life and increase well-being without compromising the long term ecosystems on which a country can sustain itself.

Demographic Transition in Africa and major African regions

African experience

The working age population is estimated to increase in Africa by 2.1 billion by the end of the century, i.e., it is projected to rise from 54 percent in 2010 to peak at about 65 percent in 2090 (Figure 6). As the cohort entering in the economically active age-groups is larger than the dependent age cohorts (children and elderly), the country has a window of opportunity to accelerate their economic growth by providing a conducive labour market environment so that the increased supply of human capital can be optimally utilised. Therefore, identifying the period of “youth bulge” will provide vital timeframes for formulating policies and programs that can support the advantage provided by the transition in age-structure and propel economic development. For the purpose of this study, the youth bulge has been defined as a larger share of those aged 20-24 (age-group where entry into the labour market occurs) as compared to the younger age-groups.

According to the projections made till the year 2100 on

Figure 6. Demographic Dividend and Youth Bulge in Africa, 2000-2100



Note: The projections population for Africa was estimated in SPECTRUM v 6.1 using the DEMPROJ module.
Source: World Population Prospects, 2019 revision, UN Population Division

the basis of *World Population Prospects 2019*, the African region is set to experience the youth bulge much later compared to other regions of the world. Specifically, the bulge in the working age population starts to appear only by 2090 and peaks around the year 2106 (Figure 6). The delay in the onset of demographic window of opportunity is mainly due to three reasons (1) Africa started with much lower base compared to other regions of the world (2) the stalling or reversal observed in the fertility transition in many African nations around 2000s has slowed down the pace of demographic transition, and (3) Due to the sustained and large population base at both the ends, the peak projected to begin around the year 2090-2100 is not observed to be very distinct i.e. the “youth bulge” is not very significant (Drummond, Thakoor & Yu, 2014).

However, the progress of demographic transition in regions within Africa is not homogenous. In the next section, we discuss the variations in the age structure and their salient features that can influence the extent of benefits that these regions can reap from the demographic window of opportunity in Sub-Saharan Africa (SSA) (Figure 8).

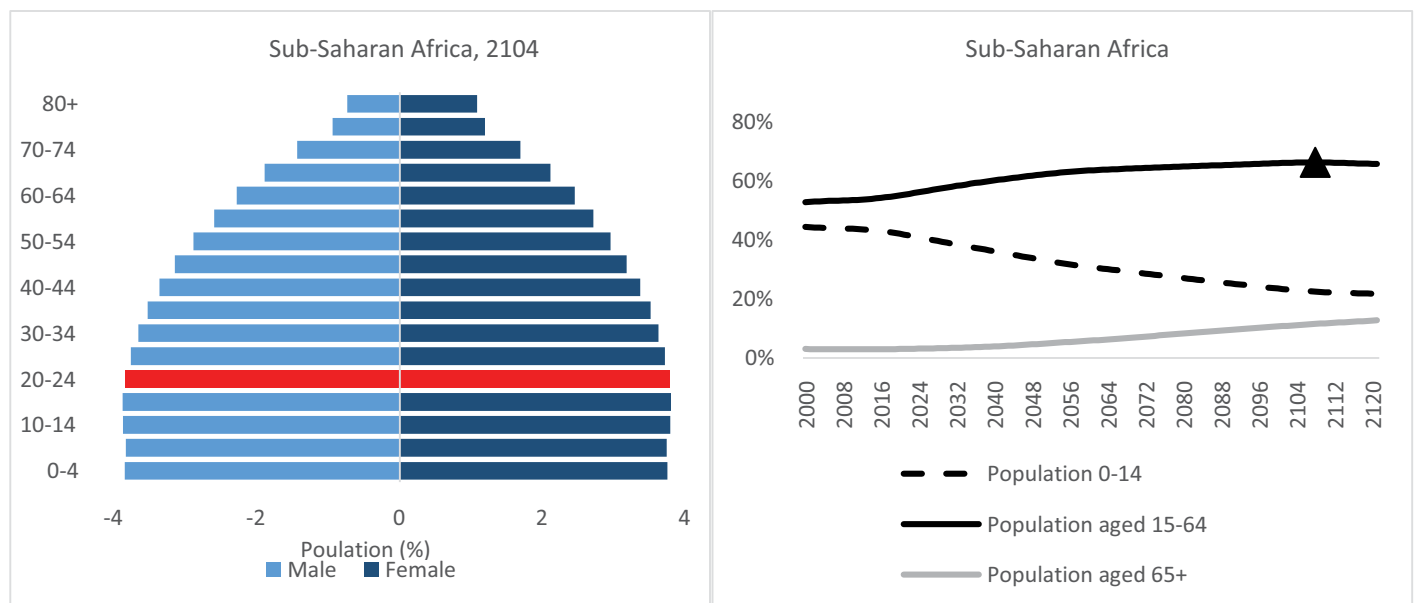
Sub-Saharan Africa

The region of Sub-Saharan Africa currently has the highest population growth rate than any other global region. The

region’s population is estimated to double by 2050, i.e., from 1.06 billion in 2019 to 2.11 billion in 2050 and 3.78 billion by 2100 (UN DESA, 2019). Given the mammoth share and impact that the population in Sub-Saharan Africa will hold globally in future, it becomes imperative to study the future trajectories of its population and its characteristics. Historically, Sub-Saharan Africa is associated with low levels of health, education, housing and other factors (Drummond, Thakoor & Yu, 2014; Cleland, 2012; Cleland & Machiyama, 2017), raising concerns regarding its future economic prospects. In contemporary times too, Sub-Saharan Africa shows one of the slowest decline in fertility which is evident as the share of its young dependents only started to decline around the year 2015. It is predicted to fall from 43.7 per cent in 2010 to 33.1 per cent by 2050 and further to 21.7 per cent by 2100. Conversely, the share of the working age-group (15-64 years) is projected to rise from 53.45 per cent to 65.6 per cent in the same period (Figure 7). The peak is predicted to occur only after 2090. Therefore, Sub-Saharan Africa has enough time to lay the foundations of an economic structure which is conducive to get the maximum benefits by this large share of the working-age population.

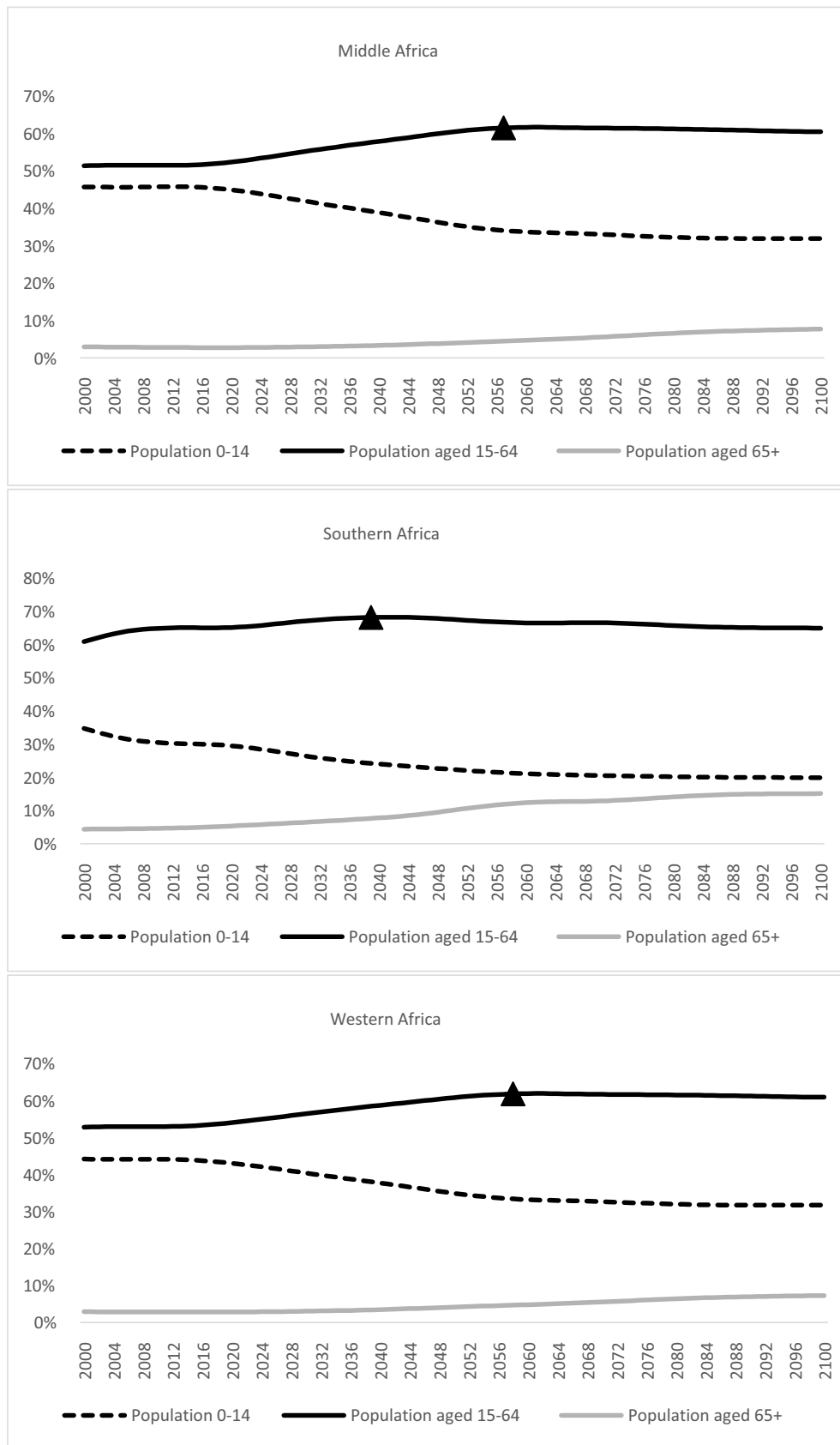
The change in the age structure of Sub-Saharan Africa is unique in its nature as the fertility has not declined as steadily as its European and Asian counterparts (Gage,

Figure 7. Demographic Dividend and Youth Bulge in Sub-Saharan Africa



Note: The projections population for Sub-Saharan Africa was estimated in SPECTRUM v 6.1 using the DEMPROJ module.
Source: World Population Prospects, 2019 revision, UN Population Division

Figure 8: Demographic Dividend in Major Regions of Sub-Saharan Africa



Note: The projections population for each region in Africa was estimated in SPECTRUM v 6.1 using the DEMPROJ module.
 Source: World Population Prospects, 2019 revision, UN Population Division

2018). The majority of the progress that happened in Latin American and Asian countries is attributed to the rapid pace of demographic transition which resulted in a particularly high demographic dividend. The pace of the demographic transition and the magnitude of the consequent dividend was determined mainly by rapid decline in their fertility levels. For Sub-Saharan Africa, although the TFR is predicted to be reduced by more than half by 2100, i.e., from 5.4 in 2005-10 to 2.1 in 2100 as per the medium-variant projections by the UN Population Division, the decline is still not as steep as other global regions.

Moreover, Sub-Saharan Africa's urban population is set to grow at about 3.5 percent for the next two decades and will reach to about 56 per cent of its total population by 2050 (UN DESA, 2018). This growing concentration of young and skilled population is expected to attract foreign capital investments and create opportunities for income generation and economic progress. Contrary to the expectation, job creation in Sub-Saharan Africa has not occurred at pace with the growth in share of youth population or its absolute number, leading to high rates of unemployment among youth. As per the projected figures by ILO, unemployment rates among urban youth (15-24 years) in sub-Saharan Africa was 22 per cent in 2020. Also, the unemployment rates have increased between 2010 and 2020 (Table 8). The misalignment of skills is also one of the factors that has perpetrated the youth in Sub-Saharan Africa (Siba, 2019). Therefore, any future possibility of accelerating the demographic transition and reaping optimal dividends from a young and skilled human capital can be achieved only through investing primarily in sectors such as family planning, education, health and urbanisation (Bloom et al. 2014). Countering this entails investing in their health, education, access to technology, opportunities and capital in order to fight youth unemployment.

The Asian experience

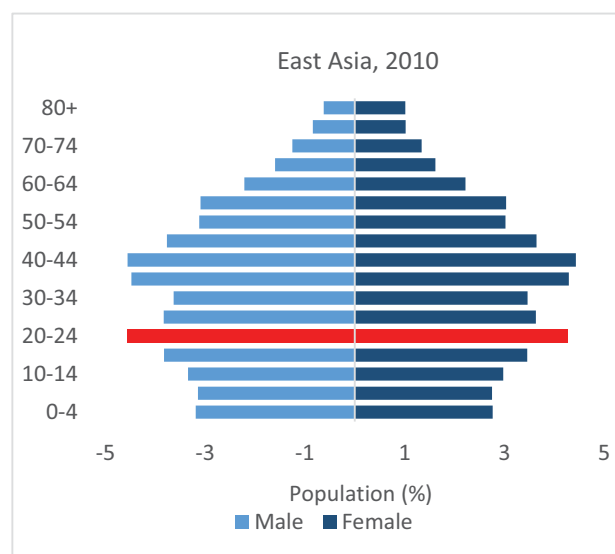
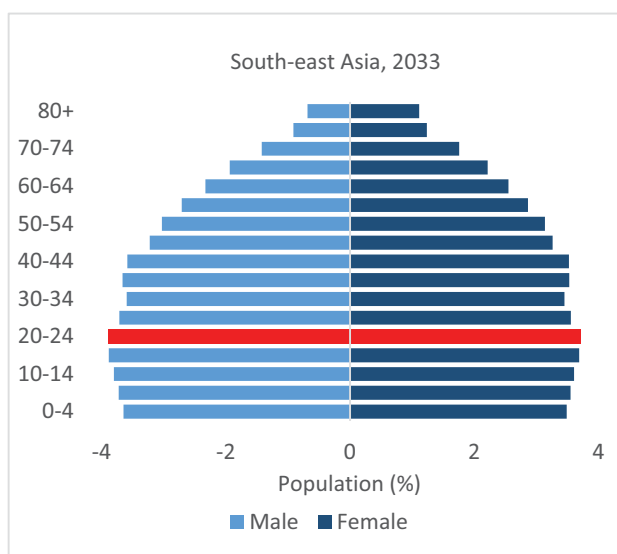
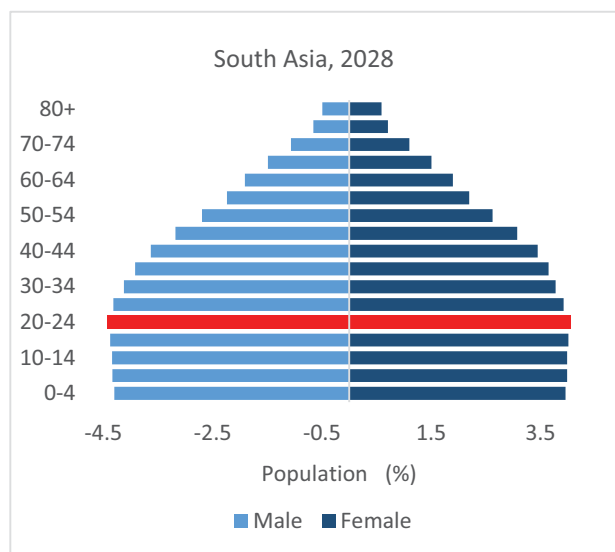
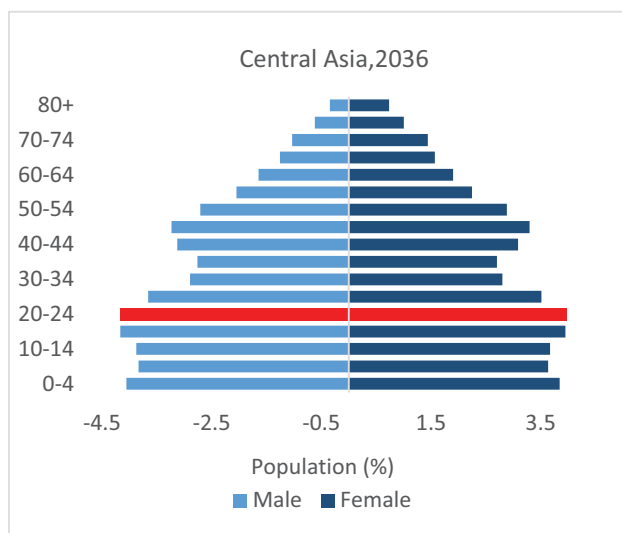
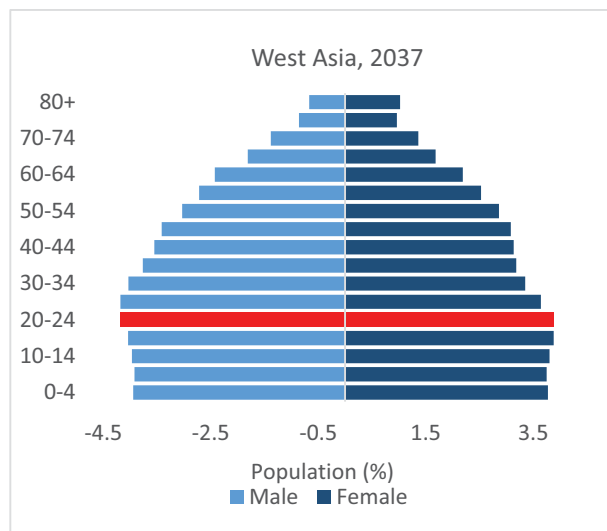
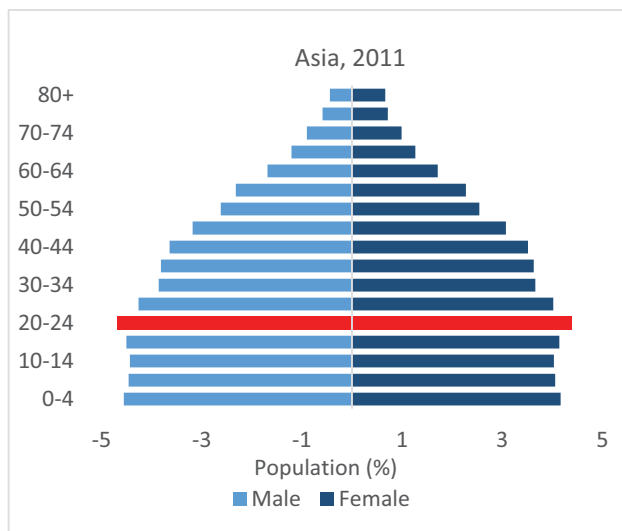
Asia as a continent is characterised by wide inter-regional and inter-country variations. On one hand, there are countries like South Korea, Japan and Singapore that have an increasingly ageing population as they attained their Demographic Dividend phase in late 1990s and reaped huge economic benefits till the early years of 21st century (Mason & Kinugasa, 2008). On the other hand, there are countries like India and Indonesia who are at the beginning of their Demographic Dividend phase and with expanding workforce the ratio of workers to dependents is in favour of a huge supply of human capital. Also, there

are countries like Philippines, Pakistan and Afghanistan where the fertility rate is still high and with the workforce supporting a growing population at both ends of the age spectrum, any demographic dividend remains elusive.

Among the major regions in Asia, the demographic transition in South Asia mainly due to the presence of populous countries like India is expected to have the most significant effect in determining the future trajectory of both economic development and demographic transition at the global level (Naveentham & Dharmalingam, 2012). One of the main characteristics of the demographic transition in South Asia is the pace of decline in fertility. The decline in fertility in South Asia began over 40 years ago, falling from a rate of around six children per woman in the late 1960s to reach three at the beginning of the millennium. The TFR has fallen below the replacement level of 2.1 in Bangladesh, Bhutan, Nepal and the Maldives, and is close to the replacement level in India, Iran and Sri Lanka (UN DESA, 2019). The youth bulge in South Asia is also predicted to appear by the year 2028 (Figure 9) and its benefits can be reaped till 2050, after which the benefit of the Demographic Dividend phase will start to diminish.

Another, unique feature of the South Asian demographic transition is the large share of ageing population co-existing with the working-age population (Gubhaju, 2013; Donahue, Martinez & Adofina, 2017; Ogawa, Mansor, Lee, Abrigo & Aris, 2021). South Asia's 60-plus population has increased four-fold, from 28 million in 1950 to 125 million in 2010. Percentage wise, this age cohort number is projected to increase from 7.3 per cent of the total population to reach 10.5 per cent in 2025, and 19.1 per cent in 2050. On the contrary, South-East Asia is believed to achieve its youth bulge in 2033, much later compared to South Asia mainly due to falling infant mortality and the rapid decline in fertility (Bloom, Canning & Rosenberg, 2011; Bhakta & Gubhaju, 2013). However, this has also led to a rapidly ageing situation in the South Asian countries. The population of Southeast Asia is relatively young and therefore has enough time to formulate and implement policies that immediately address the challenges of transitioning from a demographic dividend to a demographic tax. Also, a close look into the labour market condition reveals that South-East Asian countries could take advantage of its demographic resource. ILO estimates also indicate that unemployment rates among urban youth seems to be among the lowest in the region among all the Asian regions and has declined over the period (Table 8). However, the declining labour force

Figure 9: Youth Bulge in Asia and its Major Regions



Note: The projections population for each region in Asia was estimated in SPECTRUM v 6.1 using the DEMPROJ module.
 Source: World Population Prospects, 2019 Revision

participation rates and the increasing unemployment rates among urban youth indicates how urbanisation in this region is not associated with expansion of the labour market in parity with expansion of job seekers. In 2020, unemployment rates among urban youth was 23.9 per

cent, which was much higher than the Asian average of 16.2 per cent and global average of 19.0 per cent. In fact, it was at par with the African average of 23.8 per cent (Table 8).

Table 8: Labour Force Participation Rate and Unemployment Rate among Youth (15-24 years) in Different Regions of Asia and Africa

	Labour Force Participation Rate ¹				Unemployment Rate ²			
	2010		2020		2010		2020	
	National	Urban	National	Urban	National	Urban	National	Urban
World	46.1	41.9	38.6	36.9	13.1	16.7	15.2	19.0
Africa	46.6	35.8	42.2	32.7	11.4	22.6	12.5	23.8
Northern Africa	32.3	28.3	22.6	19.4	24.1	30.7	29.3	37.6
Sub-Saharan Africa	50.1	38.1	45.9	35.9	9.4	20.6	11.0	22.0
Central Africa	46.3	34.1	42.1	32.1	10.6	25.8	11.7	25.7
Eastern Africa	64.6	51.6	58.4	46.9	6.7	17.5	7.5	17.5
Southern Africa	27.8	34.1	22.4	24.4	49.0	49.0	56.1	55.1
Western Africa	39.6	30.8	36.4	30.1	8.4	13.6	12.9	20.4
Asia	46.3	40.9	36.2	35.5	12.0	14.2	14.6	16.2
Eastern Asia	55.9	46.6	47.0	42.1	9.7	11.7	11.3	13.1
South-Eastern Asia	50.0	44.0	44.1	40.9	9.6	14.5	10.0	13.4
Southern Asia	37.4	31.1	27.3	25.0	15.6	19.2	20.1	23.9
Central Asia	41.6	42.1	34.4	32.7	11.6	13.7	12.9	15.9
Western Asia	38.1	37.9	39.2	38.1	19.9	22.1	23.0	25.3

Indian experience

In the global scenario, India has always had a unique position due to its large population base and the unique nature of its social and demographic transitions. Recent empirical literature suggests that while the Demographic Dividend phase will offer a window of opportunity for accelerated growth and development, it will also be accompanied by various challenges owing to the unique nature of India's demographic transition (James & Goli, 2016). For instance, the substantial decline in infant mortality in India is mostly attributed to complementary progress in modern health care in India, unlike its western counterparts where mortality decline was a result of advancement of medical technology as well as a considerable socio-economic progress (Jain & Visaria, 1988; Goyal, 1994). Following

the decline in mortality levels, the fertility levels in India started to decline in the 1960s and their pace of decline accelerated during the 1980s. According to NFHS-5, the TFR for India stands at 2 children per woman, i.e., below the replacement fertility level. Given the still pervasive illiteracy and poverty in India, a decline from 6 children per woman during the 1970s to below replacement in a span of 50 years marks a significant demographic achievement. This remarkable decline in fertility was mainly due to the concerted policy and programmatic thrust towards family planning and mother and child health. Therefore, given the fast-paced and unconventional characteristics of the demographic transition in India, it may be hypothesized that along with the advantages of a large population base and a fast demographic transition, India also needs to be

¹Labour Force is comprised of those who are actively engaged in work and those who are actively seeking for employment within a reference period. The percentage share of population who are in Labour Force is defined as Labour Force Participation Rate

²Unemployment Rate is defined as the percentage share of those who are actively seeking for employment out of total Labour Force within a reference period.

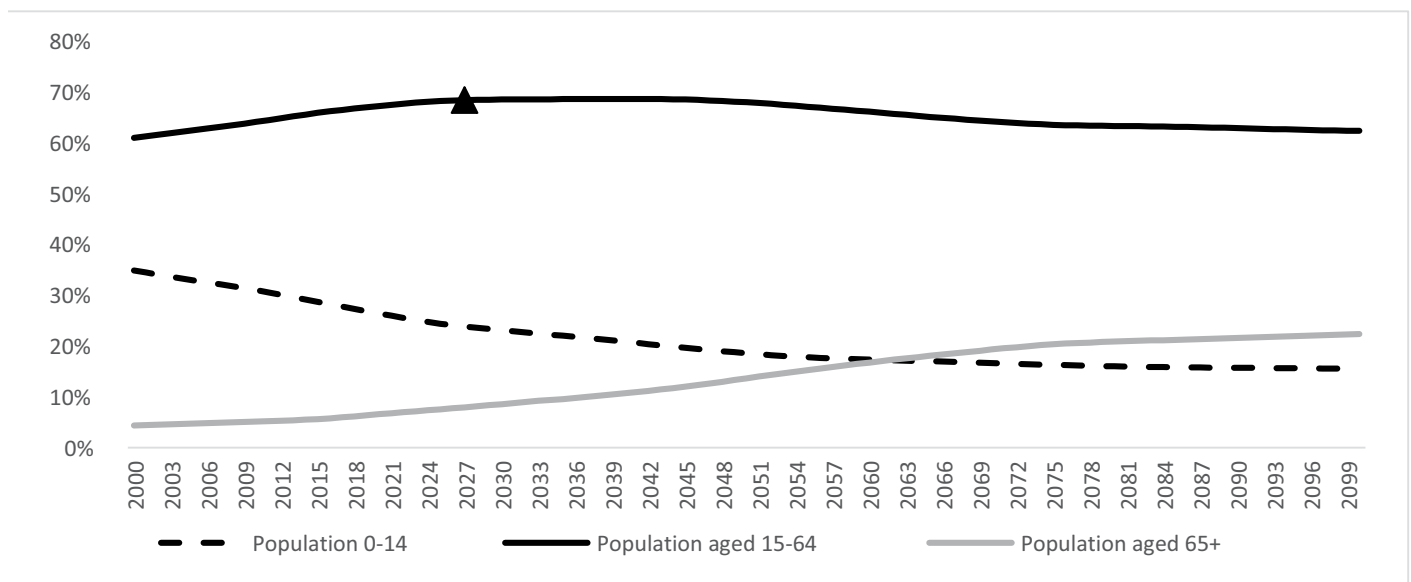
prepared for the accompanying challenges.

Currently, India is at a very advantageous position from a demographic perspective as its working-age population is set to be at its highest share in the next decade (Bhattacharya & Haldar, 2015; James, 2008; Ghosh, Chandrashekhar & Roychowdhury, 2006). According to Population Census of India (2011), India's population was enumerated at 1.21 billion and the ratio of working age population grew from 55 percent in 1991 to 60 per cent in 2011 while child population declined from 37 to 30 per cent, and the old age population grew moderately from 6.8 per cent to 8.6 per cent during the same period. The working age population is projected to be at its peak by 2025 (Figure 11), with the share of population aged 15-64 at about 68.3 per cent. The youth bulge, i.e the share of the age group 20-24 years will be about 4.5-5% between 2025-30 (highlighted in red). This implies that in this time period, India will have a huge bulk of human capital in need of employment. Since, this event is poised to happen in the near future, therefore it is imperative to formulate policies that underscore the fact that increased labour supply will increase the production of goods and services on one hand and declining child dependency ratio will boost savings and investments on the other.

From the policy perspective, the most immediate need is the absorption of the increased supply of human capital in the labour force, i.e., creating employment opportunities

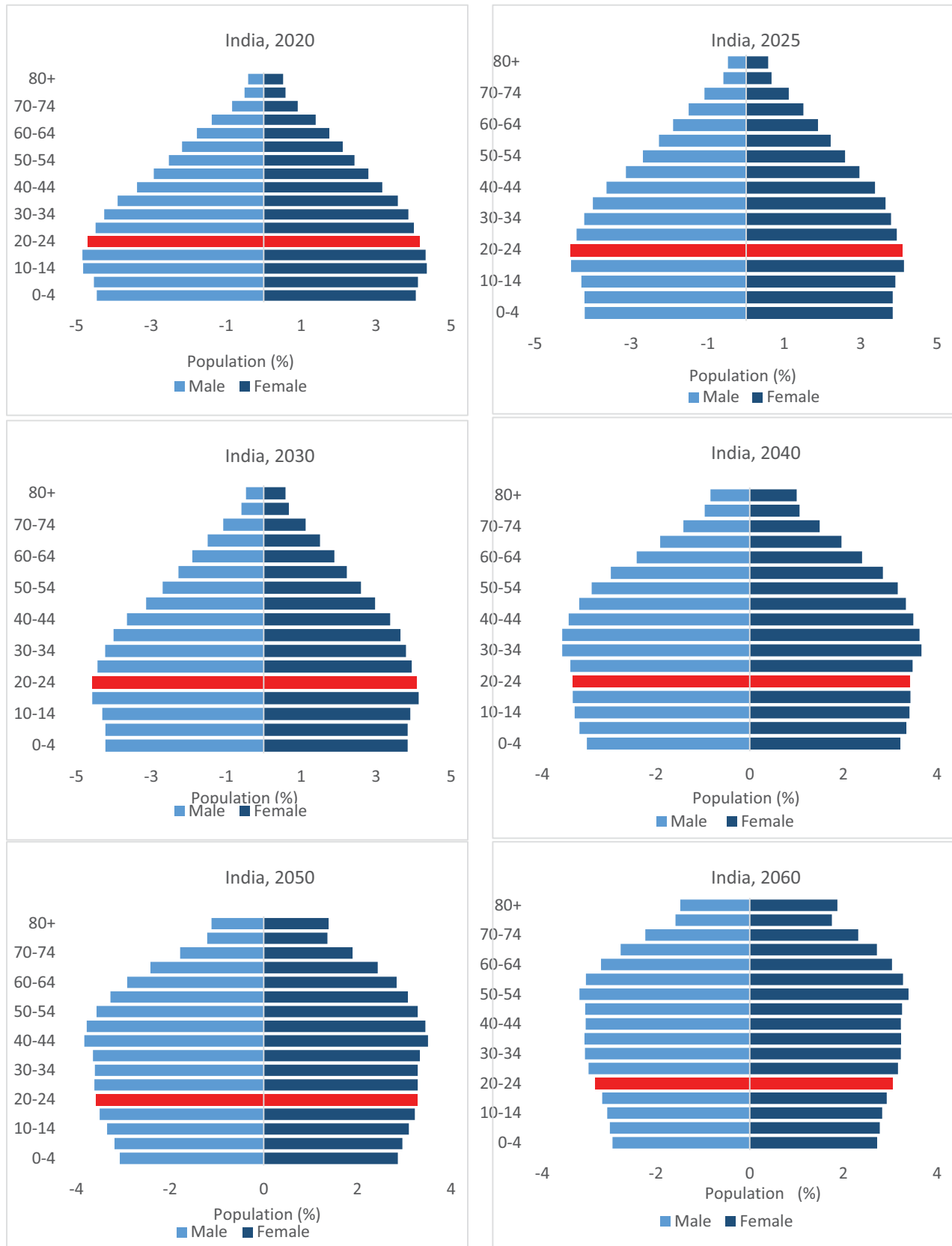
for the youth. In general, the urban labour market in India is increasingly unable to absorb increasing job seekers, which is evident from the rising unemployment rates. Findings from the NSS 'Employment and Unemployment' rounds and Periodic Labour Force Survey indicate that labour force participation has declined from 78.4 per cent to 74.2 per cent among urban men and from 21.0 per cent to 19.8 per cent among urban women of 15-59 age-group between 2011-12 and 2017-18. Also, unemployment rates among urban men has increased from 3.1 per cent to 7.3 per cent and from 5.5 per cent to 11.3 per cent among urban women during the same period. In fact, the unemployment among youth (15-29 years) is much higher compared to other economically active age groups and also exhibited a sharp increase to 20.6 per cent in 2017-18, compared to around 9.2 per cent in 2011-12. Therefore, the existing and the upcoming bulk of labour force needs to be absorbed in gainful employment, in order to leverage the demographic dividend. One way to accomplish this would be by utilizing the currently under-explored sections of the still expanding workforce in India such as women and workers engaged in informal work (Desai, 2010; Haridass & Sarwal, 2022). Secondly, due to India's uncharacteristic demographic transition which was not backed by socio-economic transition, a majority of India's workforce is currently low-skilled. Also, the current labour market is unable to absorb even the highly educated young job seekers. It is noted that the unemployment rate among youth (15-29 years) with

Figure 10: Share of Broad Age-groups in India, 2000-2100



Note: The projections population for India was estimated in SPECTRUM v 6.1 using the DEMPROJ module
Source: World Population Prospects, 2019 revision, UN Population Division

Figure 11: Age-sex Pyramid and Youth Bulge in India, 2020-2060



Note: The projections population for India was estimated in SPECTRUM v 6.1 using the DEMPROJ module.
 Source: World Population Prospects, 2019 revision, UN Population Division

higher education have increased from 18.5 per cent to 32.5 per cent between 2011-12 and 2017-18. The current education policies, although increasingly focused on increasing the literacy levels, fail to focus on increasing economically productive skills among adults required in a rapidly globalizing job market.

In addition to employment opportunities, it has been predicted that cities will serve as the engines of growth if India is to reap its demographic dividend like its East Asia counterparts (World Bank, 2015). Evidence suggests that cities could generate up to 70 percent of the new job opportunities by 2030, contribute up to 70 percent of India's GDP and increase the per capita income by nearly four times (Sankhe et al., 2010). Thus, if urbanisation is managed efficiently, India can multiply its dividends provided by the demographic window of opportunity.

Moreover, as the bulge of the young working age population moves towards the older age cohorts, the increase in the working age population will be followed by an increase in the share of population aged 65 and more. Future predictions anticipate an increase from 5.5 per cent in 2011 to approximately 13.6 per cent by 2050 and to a staggering 22.3 per cent by 2100 (Figure 10). The age-sex pyramid for India also reveals a drastic widening of the older age groups and a significant shrinking observed at the base of the population by 2050 (Figure 11). In fact, our analysis predicts that by 2060, the share of the older population would exceed the share of children in India (Figure 10). This particular demographic phenomenon, also known as population aging and the associated growth in the size of elderly populations, have a number of troubling policy implications. In India especially, the healthcare infrastructure and the social welfare support for the elderly is weak. Diverting resources that are earmarked for other sectors to meet the needs of the elderly will put a strain on the already resource-constrained settings prevalent in India.

In the long term, India needs to focus on issues accompanying population aging. Along with ensuring the social, economic and health related well-being of the burgeoning older population, India also needs to sustain the economic growth that it may experience in its Demographic Dividend phase. Some demographers have speculated that India will “get old before it becomes rich” which basically refers to the already unprecedented large burden of the aging population while the economy is still progressing (Walker, Mukherji & Gupta, 2011). In other words, while some countries such as Korea experienced

a demographically advantageous window of 35-40 years and for western countries it was even longer, India is predicted to experience a short window of demographic bonus due to its accelerated pace of fertility decline. Learning from the experience of China, which is poised to prematurely develop into an aging society, future policies in India should incorporate the principles of independence, dignity, care, participation, and self-fulfillment of the elderly (Sahu, 2018). Measures such as promoting healthy and active ageing, revising and increasing the coverage of social security plans for the elderly, developing spaces that are elderly and disabled friendly and increasing the scope of the existing health system to include geriatric issues will go a long way in creating an age-friendly environment.

Inter-Linkages between Urbanisation and Economic Development: A Correlation Analysis of Asian and African Countries

This section attempts to understand the inter-linkages between indicators of urbanisation and economic development with those related to poverty, access to civic amenities, and socio-economic conditions for the Asian and African countries. As the dynamics of urbanisation and path of economic development for Asian and African countries have been very different, separate correlation coefficient matrices for Asian and African countries have been analysed here. Also, we have tried to understand how these inter-linkages have changed over the period with separate correlation coefficient matrices for two time periods i.e. 2000 and 2020. This will give insights into the socio-economic dynamics of urbanisation in these two continents soon after economic liberalisation and two decades after that. A list of 26 indicators for the period 2000 and 30 indicators for the period 2020 for 50 Asian and 54 African countries has been collected from World Urbanisation Prospects 2018 by UN DESA, World Development Indicators by the World Bank, and ILOSTAT by International Labour Organisation. These indicators include URGD, level of urbanisation, the growth rate of urban population, various demographic indicators, access to civic amenities, the sectoral performance of economy, unemployment rate, poverty, availability of foreign investment, the share of export, and CO₂ footprint (see Table 9 for detailed list).

Asia

The correlation coefficients of the matrix for the period 2000 for Asian countries indicate that the URGD of 1970-90 is significantly and positively correlated with that of the 1990s. However, the URGD of the 1990s has a positive but statistically insignificant correlation with the level of

Table 9: List of Indicators to Examine Interlinkages Between Urbanisation and Socio-economic Development

	Matrix 2000		Matrix 2020	
	Variable Name	Year	Variable Name	Year
Urban Rural Growth Difference (URGD)	X1	1970-90	X1	1990-2010
URGD	X2	1990-2000	X2	2010-20
URGD	X3	2000-10	X3	2020-30
Level of urbanisation (%)	X4	2000	X4	2020
AEGR of urban population (%)	X5	1990-2000	X5	2010-20
AEGR of urban population (%)			X6	2020-30
Share of urban population in million -plus cities/UA (%)	X6	2000	X7	2020
Share of urban population in million -plus cities/UA (%)			X8	2035
Population density urban (persons/sq. km)	X7	2000	X9	2010
Total fertility Rate	X8	2000-05	X10	2015-20
Sex ratio at birth	X9	2000-05	X11	2015-20
Under-5 mortality rate	X10	2000-05	X12	2015-20
Share of population in age group 15-65 years (%)	X11	2000	X13	2020
Urban population (%) with access to basic drinking water	X12	2000	X14	2017
Urban population (%) with access to basic sanitation	X13	2000	X15	2017
Urban population (%) with access to electricity	X14	2000	X16	2019
Share of population using clean fuel and technology for cooking (%)	X15	2000	X17	2016
Share of urban population living in slum (%)			X18	2018
Average annual growth of GDP	X16	1990-2000	X19	2000-10
Average annual growth of GDP			X20	2010-18
GDP per capita (Constant price at 2017 International \$)	X17	2000	X21	2018
Industry, value added (% GDP)	X18	2000	X22	2018
Services, value added (% GDP)	X19	2000	X23	2018
Average annual growth rate in industry value added	X20	1990-2000	X24	2000-18
Average annual growth rate in services value added	X21	1990-2000	X25	2000-18
Unemployment to total labour force among 15+ years population (%)	X22	2000	X26	2019
Population below international poverty line (1.9 US\$) (%)	X23	Available between 1995-2005	X27	Latest after 2010
Foreign Direct Investment (FDI) net inflow (%)	X24	2000	X28	2018
Export of goods and services (% GDP)	X25	2000	X29	2018
CO2 emissions (metric ton per capita)	X26	2000	X30	2016

urbanisation in 2000 (Table A1). The coefficient values from the 2020 matrix (Table A2) indicate that the URGDs for the subsequent decades after 1990 have become more significantly and positively correlated with each other and this will continue to be so during 2020-30. Table A2 also

indicates that the URGD in post-liberalisation decades has a weak correlation with the level of urbanisation in 2020. More importantly, the projected URGD for the period 2020-30 has a very weak correlation with the level of urbanisation in 2020. Both the correlation matrices

indicate that the highly urbanised countries have been out of the urbanisation story and the pattern will continue in the coming decade. Notably, countries with lower levels of urbanisation i.e. Bangladesh, Bhutan, Nepal, Cambodia, India, Laos and the Syrian Arab Republic are estimated to record a higher URGD during the 2020s. However, the higher URGD of China, Jordan, Oman and Qatar will be an exception. In fact, urbanisation in the countries of western Asia will be majorly driven by political instability. The positive and strong correlation between URGD and AEGR of the urban population for 1990-2000, 2010-20 and 2020-30 indicates that the differential demographic growth (between urban and rural) will be diminishing over the period (Table A1 and A2). However, the statistically significant positive correlation between demographic indicators like TFR with urban growth during these periods indicates that urban growth has been driven by natural growth and will continue to be so as Asian big cities will discourage migration of poor people from rural areas (Kundu, 2009). However, migration, in terms of circular oscillation of people between rural and urban areas, will continue to play a major role in changing urban demography. Due to its temporary nature, the majority of this phenomenon remains uncaptured statistically. The positive correlation between the level of urbanisation and the share of population living in megacities indicates that the concentration of urban population in big cities will continue during 2020-30. However, the negative and significant correlation between urban growth for the period 2010-20 and 2020-30 and the share of urban population living in million-plus cities indicates that much of the urban growth in Asian countries will take place away from the big cities as these cities are facing sluggish growth (Table A2). The urban growth that takes place in secondary cities also raises a policy concern as most of these cities have poor conditions of housing, basic amenities and infrastructure.

Access to improved sources of drinking water, sanitation, clean fuel and technology tends to be higher in countries with a higher level of urbanisation in both the periods 2000 and 2020. However, the correlation coefficient values have weakened over this time. Also, the negative correlation between these indicators with urban growth in the 1990s indicate that the structural adjustment of the economy has resulted in higher urban growth in many smaller countries that could not invest in urban infrastructure. The negative correlation of the indicators related to civic amenities and the growth rate of urban population during 2020-30 is also a concern as most of the urban growth will take place in countries with lower

levels of civic amenities (Tables A1 and A2). Therefore, the increased pace of urbanisation in these countries will put greater pressure on already poor infrastructure.

The economic indicators such as per capita GDP, value-added in services as a share of GDP, foreign investments, and export of goods and services are significantly and positively correlated with the level of urbanisation in both the period 2000 and 2020. However, the weak correlation coefficient values between urban growth for the periods 2010-20 and 2020-30 and per capita GDP, value-added industry and services as a share of GDP, foreign investment, and export of goods and services during 2000 as well as 2020 indicate that countries with a low urban base and small economy have experienced higher urban growth. Also, the urban growth rates during the 2010s and 2020s are positively correlated with the share of population below the international poverty line indicating that urban growth in Asia in the last decade has been distress driven, which it will continue to be so (Table A2).

Africa

The correlation coefficient matrix of Africa 2000 (Table A3) indicates that the URGD of pre-liberalisation decades, i.e. 1970-90 has a weak correlation with the URGD of 1990-2000. On the contrary, the URGDs of the decades subsequent to 1990-2000 are more significantly and positively correlated with each other (Table A4). This indicates the structural shift in urbanisation dynamics in the post-liberalisation period with that of the pre-liberalisation decades and is likely to continue in each following decade (Table A4). The positive and statistically significant correlation between URGD in the post-1990s period with the level of urbanisation of 2020 indicates that countries with a higher level of urbanisation have experienced a higher pace of urbanisation, which is markedly different from Asian countries. This is because many small countries in Africa with a high share of urban population have experienced faster rural-urban transition because of their stagnant rural economy. However, the correlation coefficient value between URGD for 2020-30 and the level of urbanisation in 2020 is less significant but positive, and indicates that few of the countries such as Tanzania, Uganda and Burundi with a low level of urbanisation will experience a higher URGD.

The negative yet statistically insignificant correlation between the level of urbanisation and the share of population living in million-plus cities indicates that urbanisation in Africa is not dominated by megacities unlike Asia. However, a positive correlation between



the share of urban population living in million-plus cities with urban growth during 2010-20 indicates that much of the urban growth in African countries will be big-city oriented (Table A4). It is estimated that there will be five megacities (ten-million plus cities) in Africa by 2035 and two of them will be among the top ten largest cities in the world. It is believed that the urban 'fantasy projects' of African big cities (Watson, 2014) will be attracting more migrant population from rural areas in the coming decade. The significant positive correlation between TFR and urban growth rates during 2010-20 indicate that the demographic factor continues to play a primary role in Africa's high urban growth and the trend will continue.

It is noted that African countries with higher levels of urbanisation have a higher share of the urban population with access to improved sanitation facilities and clean cooking fuel. However, the correlation coefficients have become more significant over the last two decades. The correlation coefficients have been weak between the level of urbanisation and access to improved drinking water and electricity (Tables A3 and A4). These are two

major infrastructural backlogs in African countries. This negative and significant correlation between urban growth and access to civic amenities indicates that rapidly growing African countries have not been able to manage the infrastructural gap and much of the newly added urban population will be excluded from these basic amenities.

It is noted that the level of urbanisation is significantly and positively correlated with economic indicators (per capita GDP, share of net value-added in industry, foreign investment, and export of goods and services) in the last two decades. However, the negative correlation between urban growth during 2010-20 and per capita GDP, value-added in services, and export of goods and services, and on the other hand the positive correlation between urban growth during 2010-20 and share of population living below international poverty level reconfirms the theory of urbanisation of poverty in the case of African countries. It is noted that the projected urban growth for the period 2020-30 also follows the above-mentioned pattern. Moreover, the level of urbanisation is positively correlated with unemployment rate both



in 2000 and 2020, indicating the challenges of African cities in generating mass scale employment. Turok (2014) mentioned that with the stagnant formal economy, African cities are unable to absorb their youth in stable and formal employment, resulting in a very high unemployment rate (also similar trend is seen in Table 6). Poor investment in the infrastructure of African cities and over-reliance on non-tradable goods have restricted their economic prosperity (Lall et al. 2017).

It is noted that urbanisation has had strong and positive impacts on the environment in both Asian and African countries in the last two decades. The correlation coefficients between the level of urbanisation and per capita emission of CO₂ have been positive and statistically significant for both these continents (Table A1-A4). Therefore, sustainable urban development and ecological conservation are the need of the hour for Asia and Africa.

The pattern of correlation matrices for Asian and African countries indicates some fundamental differences in the dynamics of urbanisation in these two continents. First, African urban growth is mostly driven by export of natural resources and industrialisation of intermediaries and less value-added products. Therefore, mostly African urbanisation is less associated with economic growth (Turok 2014). On the other hand, urbanisation in Asia has

been manufacture driven since the 1980s (referring to the experience of East Asian Tigers) and gradually shifted to service sectors in the post-liberalisation period (Table A1). Second, a strong and positive correlation between the share of population living in million-plus cities and the level of urbanisation in Asia indicates the prevalence of big-city-oriented urbanisation in the continent. On the contrary, urbanisation, as well as urban growth in Africa, is in the small and medium-sized cities as very few cities have crossed the ten-million threshold. Third, African countries with a higher level of urbanisation also had a higher level of unemployment which indicates that African cities have been unable to generate substantial employment compared to their youth bulge. Also, the demographic transition in these two countries indicates the rapid transition in the age-structure in Asian countries may lead to some regions (mainly South Asia) becoming urbanised without reaping the benefits of its Demographic Dividend. On the other hand, African countries will continue with their high fertility rates and may reach their Demographic Dividend phase at the end of the present century. However, the broad base of young population, rapid population growth and rural-urban migration of the working age population will increase pressure on the weak labour market of its cities.

Policies Affecting Urbanisation in Asia and Africa

The linkages between urbanisation and economic development in countries of Asia and Africa have been non-linear and shaped by the policy environment that enabled infrastructure development required to boost growth (Turok and McGranahan, 2013; 2019). This section discusses how different policy discourses have shaped urbanisation and its associated socio-economic development in different parts of Asia and Africa, with a special reference to India. Although the policy concerns in Asia and Africa are very different, this report intends to understand some of the most pressing issues across the continents. Specifically, it has attempted to understand the changing policy perspectives in the post-liberalisation era, which has given importance to market-oriented policies and rapid increase in mega-cities and other big urban centres. This section also discusses how urbanisation in the global South is considered as a challenge, rather than opportunity, which has given rise to policy focus on (1) rural development countering rural-urban migration and (2) promoting secondary cities and balanced regional development. The empirical findings of the study indicate urgent urban policies in this region with regards to (1) employment generation and economic development and (2) investing in physical infrastructure and basic services.

Neo-liberal policy framework and megacity oriented urbanisation

Empirical findings of the study suggest that urbanisation in Asia in the post-liberalisation period has been driven by big cities. Although the number of megacities is estimated to increase in the region, urban growth in the coming decades will be less associated with the cities of this size. The sluggish growth rates of the megacities are found to be related to their exclusionary nature stipulating from the negative policy perspective on migration, and increased the unaffordability of land and basic amenities for the rural poor (Kundu, 2009). Also, the post-liberalisation era has attracted major policy focus to big cities with

big-scale private sector investment-based infrastructure projects. This has led to elite capturing of urbanisation in this continent and 'sanitisation' of micro-environments related to slum eviction (Kundu and Kundu, 2010).

Like other Asian countries, the neo-liberal period in India noted a shift in policy focus towards big cities. For example, India's first flagship programme, the Jawaharlal Nehru National Urban Renewal Mission (JNNURM) launched in 2005 was a major policy shift with an increased focus on 65 big cities with greater involvement of private investors in infrastructure development projects. In this process, the small and medium sized cities received a small share of the allocated funds (Kundu, 2020). Following JNNURM, the Smart City Mission launched in 2015 also focused on 100 large cities. The coverage of the Atal Mission for Rejuvenation and Urban Transformation (AMRUT) mission was large, as it focused on infrastructure development of 500 cities with more than 100,000 people. This big city oriented policy environment is expected to further increase the population concentration in the big cities in the coming decades.

Although African urbanisation is less associated with mega-cities, future urban growth is expected to be more aligned with these cities. It is noted that many megacities like Lagos, Luanda and Kinshasa have become the centres of global capital investments (Grant, 2015). In the post 2000s, Africa has experienced an economic resurgence and the governments have prioritised large-scale investments to transform the African big cities into 'world class' cities following the footprints of Dubai, Shanghai and Singapore (Watson, 2014). A large number of big projects have been planned to build satellite towns around big cities like Luanda, Lagos, Kigali, Nairobi and Dar-Es-Salaam with a focus on creating self-contained townships for emerging African elites (Watson, 2014). In reality, African big cities have grown haphazardly with rapid migration from rural areas. With rising inequality in

these big cities, a large section of the poor residents lives in informal settlements and lack access to basic services (Cartwright et al. 2018). Lall et al. (2017) mentioned Africa's large cities as 'crowded, disconnected and costly' and needing more policy focus from the government so that they can become spaces of growth. In reality, the government's priority in these 'fantasy projects' as termed by Watson (2014) neglects the day-to-day needs of a large section of people living below the poverty line, cramped into informal settlements, and lacking access to basic services (Grant, 2015). In this way, Africa is following the Asian path with unaffordable infrastructure for the poor in the big cities.

The neo-liberal policy focus on the big cities have increased regional disparity and disparity across different size-class urban settlements. As a result, the secondary cities in South Asia and Sub-Saharan Africa are noted to have poor infrastructure. In fact, many Asian and African countries consider urbanisation as a challenge and formulate policies to counter rural-urban migration.

Rural development and rural-urban migration

As many countries of Asia and Africa with large population bases are urbanising at a fast rate, urbanisation is often considered as a challenge rather than opportunity. As rural-urban migration is an important factor to urban growth and is believed to be associated with the spillover of rural poverty to urban areas (Tacoli et al. 2015). Therefore, a policy focus is given to rural development as a measure to counter rural-urban migration, especially to already overcrowded big cities. Policies to curb rural-urban migration are particularly noted in many Asian countries during the pre-liberalisation period. Asian countries like China and Taiwan have a population registration system called 'hokou'¹ in place to regulate rural-urban migration to cities (Kundu, 2009). On the contrary to this, countries like India and Bangladesh have focused on promoting rural development as a measure to curb rural-urban migration. For example, rural development schemes in India like the Mahatma Gandhi National Rural Employment Guarantee Act (MNREGA) which guarantees 100 days of employment to all rural households to curb the rural-urban migration (Kundu and Kundu, 2010). Bangladesh has also taken various rural development policies related to economic stabilisation, strengthening rural livelihood opportunities, and focusing on betterment of physical and social infrastructure in rural areas to reduce rural-urban

migration (Roy et al. 2018). It is noted that three-fourths of the countries in Africa have policies in place to control rural-urban migration.

Promoting growth of secondary cities

Promotion of growth of secondary cities is the need of the hour where Asian megacities are already overcrowded and the small and medium-sized cities have better growth potential. Therefore, urban policies directing the growth of second-order cities are the need of the hour for Asian countries. Many countries have shifted their focus to the growth of secondary cities as big cities show signs of overcrowding and environmental deterioration. For example, Bangladesh, which faces problems related to overcrowding in its primate city Dhaka, put more focus on polycentric decentralisation development of smaller cities and secondary growth centres in their Five Year Plan 2015-2000 (Roy et al. 2018). On the contrary, India has limited policy focus on development of secondary cities or regional growth centres. India's policy focus on creation of new regional growth centres was limited to the early decades of independence. Also, granting the urban status to the Census identified small towns is noted to be slower than expected (Pradhan, 2017), which may further slowdown the pace of urbanisation in the country.

A large share of Africa's urban population also lives in small and medium-sized cities. The majority of African countries have given little attention to the growth of secondary cities. For example, the National Urbanisation Policy 2015 of Rwanda has focused on the development of six secondary cities. Also, high density and better-serviced settlements from each district have been reclassified into urban to promote urbanisation in the country (University of Rwanda, 2018).

Development of physical and social infrastructure

It has been noted that investment in infrastructure has a strong positive impact on the process of urbanisation in a country (Turok and McGraham, 2013; 2019). In this context, East Asian countries can be an example for the world. It is seen that urbanising countries in East Asia viz. China, Japan and the Republic of Korea have stepped up capital investment during their periods of rapid urbanisation started in the 1980s. Between 1980 and 2011, China's capital investment in infrastructure and housing rose from 35 per cent of GDP to 48 per cent, while the urban share of its population rose from 18 per cent

¹'Hokou' is a population registration system which provides an environment that is discriminatory to rural persons in urban areas without an 'urban hokou'



to 52 per cent between 1978 and 2012. In East Asia as a whole, capital investment remained above 40 per cent of GDP at the end of this period (Lall et al. 2017). In contrast, India had much lower capital investment in infrastructure compared to China (Turok and McGranahan, 2019). In 2019, the initiation of the National Infrastructure Pipeline (2019-25) was one of the important steps towards increased investment in infrastructure in India.

On the other hand, the infrastructure gap related to water, basic sanitation, road network, electricity and quality housing was a major setback for African countries (Pieterse and Hyman, 2014; Lall et al. 2017). Lall et al. (2017) mentioned that the crowding and inefficiency of African cities are primarily due to a lack of capital investment. In the past four decades, the share of capital investment in African countries has been around 20 per cent of GDP, half the level of East Asian countries. In 2013 the Infrastructure Consortium for Africa estimated that infrastructure funding consisted of 47 per cent loans, 30 per cent grants, 20 per cent export credit guarantees (including oil-backed grants), 1 per cent equity, and 1 per cent guarantees and insurance. It is noted that 53.1per

cent of all infrastructure came from external sources with more than a third (36%) coming from Asia (\$13.4 billion in total), with Chinese institutions accounting for 85 per cent of Asian finance (The Infrastructure Consortium for Africa, 2014). Out of the total investment, transport and energy had the maximum share, followed by water. However, lack of availability of domestic investment may slow down service delivery, especially to the urban poor. Therefore, African countries should focus on investment in civic infrastructure and housing with a public-private partnership to ensure the inclusive development of the cities.

Employment generation and economic development

It is seen that most of the countries in Asia and Africa have been urbanised at a much lower income level compared to the experience of developed countries. In addition, the rapid pace of urbanisation has put more pressure on the already weak economic conditions of these cities. The demographic transition indicates that both these continents have a wide base of young and economically active population and are experiencing a demographically favourable condition. Therefore, to take advantage of

the growing economically active population, the labour market and economy of cities of Asia and Africa should be strengthened through creation of more job opportunities. Although open unemployment is low in Asia, informal employment is very high in urban areas. In addition, unemployment rates are increasing, especially among educated and youth, in many Asian countries including India. This is indicating that urban centres of India are unable to absorb the additional labour force. Therefore, countries like India have to unlock many new growth markets in their cities, including infrastructure, transportation, healthcare, education, and recreation. Currently, although urban India has attracted investment on the back of strong growth, its cities are still failing to deliver even a basic standard of living for their residents after years of chronic underinvestment (Tumbe, 2016; Sankhe, Vittal & Mohan, 2011). Unless it steps up investment in its cities, India could well lose the productivity dividend of urban living. On the other hand, most of the African countries have

very high unemployment rates as the cities are unable to create job opportunities for their rapidly growing youth. Lall et al. (2017) mentioned how African cities lack economic potential as most of the urban economy is less associated with high-value added manufacturing, but more associated with consumption led growth. Therefore, national policies should focus on employment generation through the strengthening of the industrial base which will be a mass-employment generator.

Like other parts of the world, cities of Asia and Africa are going to face challenges related to changing global climate. Because of their demographic weights, persisting poverty, widespread inequality, and poor infrastructural conditions, cities of this region are going to bear the maximum impact of the changing climatic conditions.

Globally, the 2030 Agenda for Sustainable Development (Sustainable Development Goals) agreed in September



2015, Sendai Framework for Disaster Risk Reduction 2015-30 and Paris Agreement (December 2015) have set the frameworks to mitigate the challenges related to the climate change crisis. In addition, New Urban Agenda (2016) also commits its signatories to building resilient and responsive cities that foster climate change, mitigation and adaptation. As signatories, many countries have started framing their agendas to build resilience to climate change. However, the haphazard planning of the cities, and lack of coherence at different levels of governance reduce the efficiency of the policies and their implementation.

Conclusion

Empirical evidence in this report reconfirms that Asia and Africa are going to be the epicentres of global urbanisation for the coming decades. With its enormous demographic weight, Asia will be the centre of additional urban population and rapidly increasing number of

megacities. However, small and medium-sized cities lacking the required infrastructure are likely to become growth centres in Asia as megacities in this region have already crossed the upper limit of their carrying capacity. Asian countries need to focus on strengthening the economic base and infrastructure of secondary cities. In addition to sluggish growth of megacities, many Asian countries are going through rapid demographic transition and demographic dividend phase. Countries in South Asia and South-East Asia will be reaching this phase in the next one and half decades. Therefore, these countries, especially South Asia, should focus on generation of stable employment opportunities through creating a balanced network of regionally balanced and economically vibrant cities of medium and small sizes to reap the benefit of its Demographic Dividend.

Much of the urban growth in Africa will take place in less developed countries, especially in sub-Saharan Africa.



African countries have experienced a higher pace of urbanisation driven by demographic factors, such as very high fertility rate. Although currently Africa has a handful of megacities, much of the future urban growth in Africa will be concentrated in the big cities, which are increasingly becoming spaces of consumption. However, African urbanisation is weakly associated with economic growth. Also, African cities face many challenges in providing quality housing, civic amenities and infrastructure to their residents in urban areas. Thus, poorly equipped cities fail to attract global capital investment for becoming growth centres. Without the economic vibrancy of these cities, they cannot absorb their rapidly growing population in quality employment. Also, high rates of unemployment and persistence of poverty is an inherent characteristic of African urbanisation. Therefore, policy focus in African countries should be on economic development and employment generation. Empirical evidence also suggests that countries with a higher level of urbanisation will

continue to experience a higher pace of urbanisation, which will further increase the existing regional disparity, neglecting the inland and resource-scarce countries.

Most importantly, urbanisation in Asia and Africa are also going to face the adverse impacts of changing climatic conditions. Therefore, a sustainable development agenda should be prioritised in these continents.



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Annexures

Table A1: Correlation Coefficients Matrix of Select Indicators, Asia for the Year 2000

	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	X11	X12	X13
X1	1	0.55***	0.12	0.49***	0.01	0.33*	0.53	-0.22	-0.03	-0.35*	0.27	0.19	0.04
X2	0.55**	1	0.61***	0.13	0.51***	0	-0.18	0.03	-0.21	-0.09	0.11	-0.01	-0.21
X3	0.12	0.61***	1	0.19	0.45**	-0.2	-0.29	0	-0.16	-0.2	0.27	0.08	-0.09
X4	0.49**	0.13	0.19	1	-0.27	0.30*	0.28	-0.40**	-0.04	-0.76***	0.60***	0.47**	0.61***
X5	0.01	0.51**	0.45**	-0.27	1	-0.21	-0.11	0.51***	-0.33*	0.32*	-0.44***	-0.34*	-0.44**
X6	0.33*	0	-0.2	0.3*	-0.21	1	0.05	-0.19	0.34*	-0.16	0.27	0	-0.01
X7	0.53**	-0.18	-0.29	0.28	-0.11	0.05	1	-0.35*	-0.01	-0.16	0.26	0.18	0
X8	-0.22	0.03	0	-0.4**	0.51***	-0.19	-0.35*	1	-0.27	0.65***	-0.83***	-0.64***	-0.42**
X9	-0.03	-0.21	-0.16	-0.04	-0.33*	0.34*	-0.01	-0.27	1	0	0.2	0.21	0
X10	-0.35**	-0.09	-0.2	-0.76***	0.32*	-0.16	-0.16	0.65***	0	1	-0.72***	-0.71***	-0.71**
X11	0.27	0.11	0.27	0.6***	-0.44***	0.27	0.26	-0.83***	0.2	-0.72***	1	0.52***	0.38*
X12	0.19	-0.01	0.08	0.47**	-0.34*	0	0.18	-0.64***	0.21	-0.71***	0.52***	1	0.54***
X13	0.04	-0.21	-0.09	0.61***	-0.44**	-0.01	0	-0.42**	0	-0.71***	0.38*	0.54***	1
X14	0.14	-0.08	0.08	0.51***	-0.37*	-0.12	0.04	-0.33*	0.14	-0.54***	0.37*	0.51**	0.74***
X15	0.18	0.04	0.17	0.82***	-0.21	0.17	-0.29	-0.34*	0.05	-0.7***	0.45**	0.49**	0.74***
X16	0.3*	0.53**	0.37*	0.15	0.56***	0.15	-0.06	0.17	-0.23	-0.2	0.03	-0.01	-0.12
X17	0.26	0.25	0.61***	0.71***	0.05	0.02	0.15	-0.26	-0.2	-0.62***	0.64***	0.44**	0.50**
X18	-0.19	0	0.19	0.12	0.1	-0.06	-0.3	0.1	0.09	-0.21	-0.01	0.1	0.12
X19	0.58***	0.02	0.1	0.56***	-0.19	0.35	0.47**	-0.4**	-0.03	-0.53***	0.49***	0.47**	0.36*
X20	0.26	0.37*	0.38*	-0.07	0.53***	0.27	0.15	0.25	-0.1	-0.04	-0.13	-0.04	-0.27
X21	0.38**	0.62***	0.34*	0	0.48**	0.26	0.25	-0.08	0.09	-0.18	0.13	0.05	-0.21
X22	-0.21	-0.45***	-0.41**	0.03	-0.25	0	0	0.16	0.16	0.09	-0.3*	-0.01	0.33*
X23	-0.3	0.09	-0.07	-0.58***	0.12	-0.29	0.41	0.11	0.05	0.63***	-0.21	-0.28	-0.47**
X24	0.48***	-0.23	-0.16	0.36*	-0.16	0.43**	0.2	-0.33*	0.16	-0.29	0.32	0.22	0.32
X25	0.37**	0.01	0.14	0.45**	-0.05	0.18	0.39**	-0.3	-0.07	-0.44**	0.43**	0.27	0.38*
X26	0.06	0.34*	0.68***	0.58***	-0.03	-0.11	-0.13	-0.14	-0.17	-0.44**	0.51***	0.42**	0.55***

Table A1: Correlation Coefficients Matrix of Select Indicators, Asia for the Year 2000 (Continued)

	X14	X15	X16	X17	X18	X19	X20	X21	X22	X23	X24	X25	X26
X1	0.14	0.18	0.30*	0.26	-0.19	0.58***	0.26	0.38*	-0.21	-0.3	0.48***	0.37**	0.06
X2	-0.08	0.04	0.53***	0.25	0	0.02	0.37*	0.62***	-0.45***	0.09	-0.23	0.01	0.34*
X3	0.08	0.17	0.37*	0.61	0.19	0.1	0.38*	0.34*	-0.41**	-0.07	-0.16	0.14	0.68***
X4	0.51***	0.82***	0.15	0.71	0.12	0.56***	-0.07	0	0.03	-0.58***	0.36*	0.45**	0.58***
X5	-0.37*	-0.21	0.56***	0.05	0.1	-0.19	0.53***	0.48**	-0.25	0.12	-0.16	-0.05	-0.03
X6	-0.12	0.17	0.15	0.02	-0.06	0.35*	0.27	0.26	0	-0.29	0.43**	0.18	-0.11
X7	0.04	-0.29	-0.06	0.15	-0.3	0.47**	0.15	0.25	0	0.41	0.2	0.39*	-0.13
X8	-0.33*	-0.34*	0.17	-0.26	0.1	-0.40**	0.25	-0.08	0.16	0.11	-0.33*	-0.3	-0.14
X9	0.14	0.05	-0.23	-0.2	0.09	-0.03	-0.1	0.09	0.16	0.05	0.16	-0.07	-0.17
X10	-0.54***	-0.70***	-0.2	-0.62	-0.21	-0.53***	-0.04	-0.18	0.09	0.63***	-0.29	-0.44**	-0.44**
X11	0.37*	0.45**	0.03	0.64	-0.01	0.49***	-0.13	0.13	-0.30*	-0.21	0.32*	0.43**	0.51***
X12	0.51**	0.49**	-0.01	0.44	0.1	0.47**	-0.04	0.05	-0.01	-0.28	0.22	0.27	0.42**
X13	0.74***	0.74***	-0.12	0.5	0.12	0.36*	-0.27	-0.21	0.33*	-0.47**	0.32	0.38*	0.55***
X14	1	0.60***	-0.02	0.32	0.25	0.22	-0.50**	-0.28	0.27	-0.28	0.14	0.22	0.27
X15	0.60***	1	0.03	0.63***	0.46**	0.27	-0.17	-0.18	0.23	-0.50**	0.33*	0.42*	0.54***
X16	-0.02	0.03	1	0.18	0.18	0.07	0.79***	0.76***	-0.46***	-0.15	0.02	0.05	0.14
X17	0.32**	0.63***	0.18	1	0.27	0.34	0.01	-0.01	-0.29*	-0.57***	0.14	0.50***	0.85***
X18	0.25	0.46**	0.18	0.27	1	-0.61***	0.39*	-0.16	0.1	-0.2	-0.23	0.22	0.35*
X19	0.22	0.27	0.07	0.34*	-0.61***	1	-0.22	0.28	-0.06	-0.63***	0.50***	0.16	0.15
X20	-0.50**	-0.17	0.79***	0.01	0.39	-0.22	1	0.73***	-0.42**	-0.13	0	0.11	-0.11
X21	-0.28	-0.18	0.76***	-0.01	-0.16	0.28	0.73***	1	-0.53***	-0.32	0.15	-0.03	-0.16
X22	0.27	0.23	-0.46***	-0.29*	0.1	-0.06	-0.42**	-0.53***	1	-0.15	0.05	-0.07	-0.30*
X23	-0.28	-0.50**	-0.15	-0.57***	-0.2	-0.63***	-0.13	-0.32	-0.15	1	-0.32	-0.19	-0.27
X24	0.14	0.33*	0.02	0.14	-0.23	0.50***	0	0.15	0.05	-0.32	1	0.56***	-0.01
X25	0.22	0.42**	0.05	0.50***	0.22	0.16	0.11	-0.03	-0.07	-0.19	0.56***	1	0.28
X26	0.27	0.54***	0.14	0.85***	0.35*	0.15	-0.11	-0.16	-0.3*	-0.27	-0.01	0.28	1

Table A2: Correlation Coefficients Matrix of Selected Indicators, Asia for the Year 2020

	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10
X1	1	0.70***	0.59***	0.26	0.34*	-0.04	-0.07	-0.13	-0.1	-0.28*
X2	0.70***	1	0.92***	0.24	0.70***	0.06	-0.1	-0.13	-0.07	-0.08
X3	0.59***	0.92***	1	0.08	0.61***	0.26	-0.09	-0.08	-0.08	-0.02
X4	0.26	0.24	0.08	1	-0.06	-0.60***	0.33*	0.28*	0.23	-0.43**
X5	0.34**	0.70***	0.61***	-0.06	1	0.36**	-0.30*	-0.28*	-0.1	0.40**
X6	-0.04	0.06	0.26	-0.60***	0.36	1	-0.32*	-0.21	-0.1	0.64***
X7	-0.07	-0.1	-0.09	0.33*	-0.30*	-0.32*	1	0.96***	-0.06	-0.23
X8	-0.13	-0.13	-0.08	0.28*	-0.28*	-0.21	0.96***	1	-0.08	-0.1
X9	-0.1	-0.07	-0.08	0.23	-0.1	-0.1	-0.06	-0.08	1	-0.32*
X10	-0.28*	-0.08	-0.02	-0.43***	0.40**	0.64***	-0.23	-0.1	-0.32*	1
X11	-0.1	-0.09	-0.09	0.01	-0.18	-0.08	0.05	0.06	0.13	0.09
X12	-0.12	-0.09	-0.01	-0.68***	0.31*	0.63***	-0.22	-0.13	-0.15	0.69***
X13	0.31*	0.38**	0.34**	0.47***	0.1	-0.34*	0.03	-0.09	0.17	-0.70***
X14	-0.19	-0.16	-0.22	0.41**	-0.41**	-0.46**	0.13	0.03	0.18	-0.35**
X15	-0.16	0	-0.03	0.48**	-0.2	-0.40*	-0.01	0.02	-0.1	-0.23
X16	0.12	0.09	0.09	0.07	0.13	0.07	0.1	0.11	-0.11	0.06
X17	-0.01	0.01	-0.06	0.71***	-0.14	-0.41**	0.18	0.21	-0.28	-0.28
X18	-0.07	-0.19	-0.15	-0.28	0.26	0.24	-0.08	0	0.22	0.39*
X19	0.05	0.15	0.18	-0.17	0.11	0.06	-0.16	-0.18	0.38*	-0.01
X20	0.03	0.04	0.1	-0.28*	0	0.21	-0.1	-0.1	0.23	-0.01
X21	0.33*	0.22	0.15	0.73***	-0.11	-0.40**	0.15	0.09	0.62***	-0.55***
X22	0.25	0.38**	0.38**	0.22	0.28	0.04	0.01	0.01	-0.42**	-0.05
X23	-0.11	-0.15	-0.22	0.42**	-0.29*	-0.44**	0.15	0.09	0.52**	-0.31*
X24	-0.03	0.04	0.06	-0.45**	0.11	0.14	-0.12	-0.08	-0.28	0.13
X25	-0.16	0.01	0.11	-0.34*	0.07	0.25	-0.26	-0.17	0.23	0.17
X26	-0.23	-0.14	-0.2	0.05	-0.05	0.03	-0.07	0.01	-0.2	0.39**
X27	0.07	0.14	0.26	-0.54**	0.39*	0.58***	-0.23	-0.17	0.15	0.34*
X28	0.06	0.17	0.19	0.13	-0.01	-0.08	0.46***	0.45**	0.24	-0.08
X29	-0.03	0.11	0.09	0.43**	-0.13	-0.24	0.41**	0.36*	0.36*	-0.49***
X30	0.33*	0.33*	0.27	0.62***	0.2	-0.27	0.05	0	-0.16	-0.28*

Table A2: Correlation Coefficients Matrix of Select Indicators, Asia for the Year 2020 (Continued)

	X11	X12	X13	X14	X15	X16	X17	X18	X19	X20
X1	-0.1	-0.12	0.31*	-0.19	-0.16	0.12	-0.01	-0.07	0.05	0.03
X2	-0.09	-0.09	0.38**	-0.16	0	0.09	0.01	-0.19	0.15	0.04
X3	-0.09	-0.01	0.34*	-0.22	-0.03	0.09	-0.06	-0.15	0.18	0.1
X4	0.01	-0.68***	0.47***	0.41**	0.48**	0.07	0.71***	-0.28	-0.17	-0.28*
X5	-0.18	0.31*	0.1	-0.41**	-0.2	0.13	-0.14	0.26	0.11	0
X6	-0.08	0.63***	-0.34*	-0.46**	-0.40**	0.07	-0.41**	0.24	0.06	0.21
X7	0.05	-0.22	0.03	0.13	-0.01	0.1	0.18	-0.08	-0.16	-0.1
X8	0.06	-0.13	-0.09	0.03	0.02	0.11	0.21	0	-0.18	-0.1
X9	0.13	-0.15	0.17	0.18	-0.1	-0.11	-0.28	0.22	0.38*	0.23
X10	0.09	0.69***	-0.70***	-0.35*	-0.23	0.06	-0.28	0.39*	-0.01	-0.01
X11	1	-0.03	-0.36**	0.03	0.37*	-0.06	0.13	-0.15	-0.21	-0.26
X12	-0.03	1	-0.54***	-0.52***	-0.57***	-0.06	-0.60***	0.53**	0.21	0.14
X13	-0.36**	-0.54***	1	0.29	0.22	-0.04	0.33*	-0.39*	0.17	0.05
X14	0.03	-0.52***	0.29	1	0.35*	0.15	0.35*	-0.51**	0.11	0.43**
X15	0.37*	-0.57***	0.22	0.35*	1	0.06	0.66***	-0.53**	-0.12	-0.16
X16	-0.06	-0.06	-0.04	0.15	0.06	1	0.35*	-0.49**	-0.09	0.16
X17	0.13	-0.60***	0.33*	0.35*	0.66***	0.35*	1	-0.39*	-0.18	-0.36*
X18	-0.15	0.53**	-0.39*	-0.51**	-0.53**	-0.49**	-0.39*	1	0.2	-0.21
X19	-0.21	0.21	0.17	0.11	-0.12	-0.09	-0.18	0.2	1	0.39*
X20	-0.26	0.14	0.05	0.43**	-0.16	0.16	-0.36*	-0.21	0.39**	1
X21	-0.1	-0.57***	0.62***	0.41**	0.41**	0.22	0.58***	-0.43*	0.05	-0.19
X22	-0.41**	-0.14	0.42**	-0.13	0.1	0.04	0.35*	-0.21	0.09	-0.11
X23	0.25	-0.42**	0.06	0.54***	0.15	0.33*	0.15	-0.13	-0.17	0.02
X24	-0.36*	0.43**	-0.07	0.13	-0.1	-0.11	-0.37*	0	0.52***	0.65***
X25	-0.28	0.39**	-0.05	0.21	-0.06	0.04	-0.16	-0.01	0.54***	0.64***
X26	0.32*	0.07	-0.43**	-0.03	0.18	0.1	0.28	-0.13	-0.16	-0.25
X27	0.06	0.63***	-0.28	-0.52**	-0.55**	-0.39*	-0.60***	0.36	-0.04	-0.12
X28	-0.01	-0.1	0.07	0.14	0.09	0.11	-0.13	-0.1	0.03	0.25
X29	0.02	-0.48**	0.47**	0.41*	0.38*	0.2	0.41**	-0.32	0.04	-0.07
X30	-0.44**	-0.42**	0.67***	0.27	0.39*	0.15	0.53***	-0.35	0.03	-0.14

Table A2: Correlation Coefficients Matrix of Selected Indicators, Asia for the Year 2020 (Continued)

	X21	X22	X23	X24	X25	X26	X27	X28	X29	X30
X1	0.33*	0.25	-0.11	-0.03	-0.16	-0.23	0.07	0.06	-0.03	0.33*
X2	0.22	0.38*	-0.15	0.04	0.01	-0.14	0.14	0.17	0.11	0.33*
X3	0.15	0.38*	-0.22	0.06	0.11	-0.2	0.26	0.19	0.09	0.27
X4	0.73***	0.22	0.42**	-0.45**	-0.34*	0.05	-0.54**	0.13	0.43**	0.62***
X5	-0.11	0.28	-0.29*	0.11	0.07	-0.05	0.39*	-0.01	-0.13	0.2
X6	-0.40**	0.04	-0.44**	0.14	0.25	0.03	0.58***	-0.08	-0.24	-0.27
X7	0.15	0.01	0.15	-0.12	-0.26	-0.07	-0.23	0.46***	0.41**	0.05
X8	0.09	0.01	0.09	-0.08	-0.17	0.01	-0.17	0.45**	0.36*	0
X9	0.62***	-0.42**	0.52**	-0.28	0.23	-0.2	0.15	0.24	0.36*	-0.16
X10	-0.55***	-0.05	-0.31*	0.13	0.17	0.39**	0.34*	-0.08	-0.49***	-0.28*
X11	-0.1	-0.41**	0.25	-0.36*	-0.28	0.32*	0.06	-0.01	0.02	-0.44**
X12	-0.57***	-0.14	-0.42**	0.43**	0.39	0.07	0.63***	-0.1	-0.48**	-0.42**
X13	0.62***	0.42**	0.06	-0.07	-0.05	-0.43**	-0.28	0.07	0.47**	0.67***
X14	0.41**	-0.13	0.54***	0.13	0.21	-0.03	-0.52**	0.14	0.41*	0.27
X15	0.41**	0.1	0.15	-0.1	-0.06	0.18	-0.55**	0.09	0.38*	0.39*
X16	0.22	0.04	0.33*	-0.11	0.04	0.1	-0.39*	0.11	0.2	0.15
X17	0.58***	0.35*	0.15	-0.37*	-0.16	0.28	-0.60***	-0.13	0.41**	0.53***
X18	-0.43*	-0.21	-0.13	0	-0.01	-0.13	0.36	-0.1	-0.32	-0.35
X19	0.05	0.09	-0.17	0.52***	0.54***	-0.16	-0.04	0.03	0.04	0.03
X20	-0.19	-0.11	0.02	0.65***	0.64***	-0.25	-0.12	0.25	-0.07	-0.14
X21	1	0.1	0.45**	-0.46**	-0.2	-0.27	-0.42*	0.16	0.59***	0.59***
X22	0.1	1	-0.65***	0.05	-0.04	-0.19	-0.2	-0.11	-0.05	0.64***
X23	0.45**	-0.65***	1	-0.35*	-0.2	-0.02	-0.28	0.15	0.32*	-0.06
X24	-0.46**	0.05	-0.35*	1	0.77***	-0.17	0	0.23	-0.18	-0.1
X25	-0.2	-0.04	-0.2	0.77***	1	-0.16	0.05	0.12	-0.14	-0.08
X26	-0.27	-0.19	-0.02	-0.17	-0.16	1	-0.09	-0.18	-0.23	-0.27
X27	-0.42*	-0.2	-0.28	0	0.05	-0.09	1	0	-0.44*	-0.41*
X28	0.16	-0.11	0.15	0.23	0.12	-0.18	0	1	0.54***	-0.08
X29	0.59***	-0.05	0.32*	-0.18	-0.14	-0.23	-0.44*	0.54***	1	0.21
X30	0.59***	0.64***	-0.06	-0.1	-0.08	-0.27	-0.41*	-0.08	0.21	1



Table A3: Correlation Coefficients Matrix of Selected Indicators, for the Year Africa 2000

	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	X11	X12	X13
X1	1	0.23	0.45***	0.40**	0.15	-0.33**	0.11	-0.12	-0.12	-0.06	0.08	-0.15	-0.12
X2	0.23	1	0.52***	0.07	0.76***	-0.17	0.09	-0.05	-0.34**	-0.1	-0.03	-0.17	0.08
X3	0.45***	0.52***	1	0.36**	0.18	-0.15	0.22	-0.08	-0.07	-0.14	0.15	-0.35**	-0.25
X4	0.40***	0.07	0.36**	1	-0.30*	-0.03	-0.02	-0.62***	0.21	-0.55***	0.66***	0.26	0.40**
X5	0.15	0.76***	0.18	-0.30*	1	-0.05	0.2	0.34**	-0.44***	0.2	-0.42***	-0.35**	-0.15
X6	-0.33**	-0.17	-0.15	-0.03	-0.05	1	0.17	0.09	0.05	0.05	-0.04	-0.04	-0.02
X7	0.11	0.09	0.22	-0.02	0.2	0.17	1	0.59***	-0.21	0.53***	-0.42**	-0.63***	-0.18
X8	-0.12	-0.05	-0.08	-0.62***	0.34**	0.09	0.59***	1	-0.29*	0.84***	-0.90***	-0.64***	-0.67***
X9	-0.12	-0.34**	-0.07	0.21	-0.44***	0.05	-0.21	-0.29	1	-0.31*	0.38**	0.30*	0.32*
X10	-0.06	-0.1	-0.14	-0.55***	0.2	0.05	0.53***	0.84***	-0.31*	1	-0.72***	-0.54***	-0.55***
X11	0.08	-0.03	0.15	0.66***	-0.42***	-0.04	-0.42**	-0.90***	0.38**	-0.72***	1	0.51***	0.67***
X12	-0.15	-0.17	-0.35**	0.26	-0.35**	-0.04	-0.63***	-0.64***	0.30*	-0.54***	0.51***	1	0.52***
X13	-0.12	0.08	-0.25	0.40**	-0.15	-0.02	-0.18	-0.67***	0.32*	-0.55***	0.67***	0.52***	1
X14	-0.19	-0.16	-0.08	0.56***	-0.44**	0.2	-0.34	-0.65***	0.53***	-0.72***	0.62***	0.56***	0.57***
X15	-0.06	-0.02	-0.09	0.58***	-0.35**	0.03	-0.33*	-0.83***	0.43***	-0.75***	0.82***	0.56***	0.80***
X16	-0.02	0.29*	0.29*	0.08	0.30*	-0.24	-0.02	-0.11	0.06	-0.14	0.13	-0.1	0.24
X17	0.12	0.03	0.18	0.69***	-0.27	-0.14	-0.32*	-0.67***	0.27	-0.62***	0.70***	0.44**	0.55***
X18	0.23	0.25	0.27	0.57***	-0.01	0.16	0.23	-0.31*	-0.01	-0.12	0.29*	0.12	0.22
X19	-0.2	0.06	-0.27	0	0.03	0.05	-0.50**	-0.39**	-0.04	-0.47***	0.25	0.42**	0.39**
X20	-0.01	0.17	0.07	-0.05	0.06	-0.26	-0.22	-0.23	0.15	-0.21	0.13	-0.03	0
X21	0.24	0.04	0.1	0.05	0	-0.34*	-0.22	-0.36*	-0.01	-0.41**	0.2	0	0.22
X22	-0.03	0.06	0.08	0.41**	-0.21	-0.02	-0.31*	-0.64***	0.1	-0.49***	0.54***	0.32*	0.36**
X23	-0.04	0.13	0.01	-0.68***	0.43**	-0.06	0.19	0.71***	-0.45**	0.69***	-0.65***	-0.59***	-0.59***
X24	0	0.21	0.35**	0.07	0.14	-0.26	0.29	0.04	-0.16	0.05	-0.01	-0.25	0.1
X25	0.16	0.02	0.07	0.56***	-0.21	0.03	0.1	-0.44**	0.03	-0.27	0.44**	0.25	0.22
X26	0.02	-0.07	-0.01	0.55***	-0.32*	0.03	-0.36*	-0.65***	0.31*	-0.56***	0.70***	0.49***	0.50***

Table A3: Correlation Coefficients Matrix of Selected Indicators, Africa for the Year 2000 (Continued)

	X14	X15	X16	X17	X18	X19	X20	X21	X22	X23	X24	X25	X26
X1	-0.19	-0.06	-0.02	0.12	0.23	-0.2	-0.01	0.24	-0.03	-0.04	0	0.16	0.02
X2	-0.16	-0.02	0.29*	0.03	0.25	0.06	0.17	0.04	0.06	0.13	0.21	0.02	-0.07
X3	-0.08	-0.09	0.29*	0.18	0.27	-0.27	0.07	0.1	0.08	0.01	0.35**	0.07	-0.01
X4	0.56***	0.58***	0.08	0.69***	0.57***	0	-0.05	0.05	0.41**	-0.68***	0.07	0.56***	0.55***
X5	-0.44**	-0.35**	0.30*	-0.27	-0.01	0.03	0.06	0	-0.21	0.43**	0.14	-0.21	-0.32
X6	0.2	0.03	-0.24	-0.14	0.16	0.05	-0.26	-0.34*	-0.02	-0.06	-0.26	0.03	0.03
X7	-0.34	-0.33*	-0.02	-0.32*	0.23	-0.50**	-0.22	-0.22	-0.31*	0.19	0.29	0.1	-0.36*
X8	-0.65***	-0.83***	-0.11	-0.67***	-0.31*	-0.39**	-0.23	-0.36*	-0.64***	0.71***	0.04	-0.44**	-0.65***
X9	0.53***	0.43***	0.06	0.27*	-0.01	-0.04	0.15	-0.01	0.1	-0.45**	-0.16	0.03	0.31*
X10	-0.72***	-0.75***	-0.14	-0.62***	-0.12	-0.47***	-0.21	-0.41**	-0.49***	0.69***	0.05	-0.27	-0.56***
X11	0.62***	0.82***	0.13	0.70***	0.29*	0.25	0.13	0.2	0.54***	-0.65***	-0.01	0.44**	0.70***
X12	0.56***	0.56***	-0.1	0.44**	0.12	0.42**	-0.03	0	0.32*	-0.59***	-0.25	0.25	0.49***
X13	0.57***	0.80***	0.24	0.55***	0.22	0.39**	0	0.22	0.36**	-0.59***	0.1	0.22	0.50***
X14	1	0.69***	0.13	0.61***	0.34*	0.23	0.06	0.02	0.27	-0.74***	0.02	0.56***	0.53***
X15	0.69***	1	0.14	0.70***	0.41**	0.28	0.12	0.26	0.50***	-0.74***	0.16	0.47***	0.66***
X16	0.13	0.14	1	0.26	-0.30*	0.49***	0.54***	0.76***	-0.01	-0.17	0.63***	-0.13	0.03
X17	0.61***	0.70***	0.26	1	0.49***	0.15	0.14	0.15	0.53***	-0.66***	0.22	0.60***	0.83***
X18	0.34*	0.41**	-0.30*	0.49***	1	-0.31*	0.01	-0.13	0.52***	-0.35*	0.08	0.75**	0.31
X19	0.23	0.28	0.49***	0.15	-0.31*	1	-0.04	0.36*	0.15	-0.18	0.02	-0.15	0.24
X20	0.06	0.12	0.54***	0.14	0.01	-0.04	1	0.56***	0.14	-0.02	0.35*	0.05	0.08
X21	0.02	0.26	0.76***	0.15	-0.13	0.36*	0.56***	1	0.07	-0.23	0.4	0.08	0.09
X22	0.27	0.50***	-0.01	0.53***	0.52***	0.15	0.14	0.07	1	-0.43**	0.01	0.49***	0.57***
X23	-0.74***	-0.74***	-0.17	-0.66***	-0.35*	-0.18	-0.02	-0.23	-0.43**	1	-0.05	-0.42**	-0.43**
X24	0.02	0.16	0.63***	0.22	0.08	0.02	0.35*	0.40**	0.01	-0.05	1	0.30*	-0.03
X25	0.56***	0.47***	-0.13	0.60***	0.75***	-0.15	0.05	0.08	0.49***	-0.42**	0.30*	1	0.35*
X26	0.53***	0.66***	0.03	0.83***	0.31*	0.24	0.08	0.09	0.57***	-0.43**	-0.03	0.35*	1

Table A4: Correlation Coefficients Matrix of Selected Indicators, Africa for the Year 2020

	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10
X1	1	0.80***	0.76***	0.37**	0.12	-0.05	-0.22	-0.17	0.27	-0.06
X2	0.80***	1	0.97***	0.44***	0.16	-0.02	-0.12	-0.09	0.23	-0.03
X3	0.76***	0.97***	1	0.31*	0.27*	0.13	-0.04	0.02	0.18	0.08
X4	0.37**	0.44***	0.31*	1	-0.37**	-0.60***	-0.23	-0.19	0.05	-0.45***
X5	0.12	0.16	0.27*	-0.37**	1	0.92***	0.32*	0.33*	0.46**	0.78***
X6	-0.05	-0.02	0.13	-0.60***	0.92***	1	0.37**	0.41**	0.43**	0.87***
X7	-0.22	-0.12	-0.04	-0.23	0.32*	0.37**	1	0.89***	0.14	0.36**
X8	-0.17	-0.09	0.02	-0.19	0.33*	0.41**	0.89***	1	0.26	0.43***
X9	0.27	0.23	0.18	0.05	0.46**	0.43**	0.14	0.26	1	0.58***
X10	-0.06	-0.03	0.08	-0.45***	0.78***	0.87***	0.36**	0.43***	0.58***	1
X11	-0.2	-0.07	-0.08	0.12	-0.17	-0.2	0.07	0.11	-0.23	-0.1
X12	-0.19	-0.1	0	-0.39**	0.57***	0.66***	0.19	0.26*	0.56***	0.77***
X13	0.06	0.04	-0.09	0.55***	-0.75***	-0.88***	-0.35**	-0.43***	-0.46**	-0.94***
X14	-0.07	-0.03	-0.17	0.28*	-0.52***	-0.61***	-0.13	-0.18	-0.55***	-0.63***
X15	0.06	-0.11	-0.28*	0.48***	-0.57***	-0.68***	-0.21	-0.22	-0.07	-0.56***
X16	0.18	0.07	-0.1	0.39**	-0.34*	-0.53***	-0.07	-0.17	-0.35**	-0.54***
X17	0.02	-0.05	-0.23	0.52***	-0.63***	-0.80***	-0.15	-0.17	-0.35**	-0.74***
X18	-0.13	0.04	0.13	-0.24	0.26	0.43**	-0.23	-0.14	0.27	0.48***
X19	0.35*	0.19	0.12	0.01	0.32*	0.22	-0.02	-0.08	0.50***	0.21
X20	-0.11	-0.06	-0.04	-0.05	-0.02	0.01	0.23	0.2	-0.12	-0.04
X21	0.11	0.07	-0.16	0.52***	-0.49***	-0.68***	-0.40**	-0.38**	-0.2	-0.60***
X22	0.41**	0.33*	0.2	0.42**	0.15	-0.05	0.08	0.17	0.34*	0.02
X23	-0.06	-0.08	-0.2	0.3*	-0.49**	-0.56***	-0.37**	-0.42**	-0.21	-0.59***
X24	-0.27	-0.11	-0.05	-0.11	0.14	0.16	0.24	0.11	0.28	0.12
X25	0.03	0.1	0.1	-0.01	0.23	0.18	0.18	0.13	0.42**	0.11
X26	0.1	0.16	0.04	0.44***	-0.39**	-0.55***	-0.31*	-0.27*	-0.24	-0.51***
X27	0.01	0.01	0.17	-0.53***	0.56***	0.72***	0.24	0.32*	0.46**	0.65***
X28	-0.09	0	-0.04	0.15	-0.1	-0.13	0.19	0.13	-0.15	-0.07
X29	-0.02	-0.05	-0.19	0.54***	-0.38**	-0.50***	-0.25	-0.25	0.01	-0.40**
X30	0.03	0.01	-0.15	0.53***	-0.52***	-0.67***	-0.16	-0.15	-0.28	-0.61***

Table A4: Correlation coefficients matrix of selected indicators, Africa for the Year 2020 (Continued)

	X11	X12	X13	X14	X15	X16	X17	X18	X19	X20
X1	-0.2	-0.19	0.06	-0.07	0.06	0.18	0.02	-0.13	0.35**	-0.11
X2	-0.07	-0.1	0.04	-0.03	-0.11	0.07	-0.05	0.04	0.19	-0.06
X3	-0.08	0	-0.09	-0.17	-0.28*	-0.1	-0.23	0.13	0.12	-0.04
X4	0.12	-0.39**	0.55***	0.28*	0.48***	0.39**	0.52***	-0.24	0.01	-0.05
X5	-0.17	0.57***	-0.75***	-0.52***	-0.57***	-0.34*	-0.63***	0.26	0.32*	-0.02
X6	-0.2	0.66***	-0.88***	-0.61***	-0.68***	-0.53***	-0.80***	0.43**	0.22	0.01
X7	0.07	0.19	-0.35**	-0.13	-0.21	-0.07	-0.15	-0.23	-0.02	0.23
X8	0.11	0.26*	-0.43***	-0.18	-0.22	-0.17	-0.17	-0.14	-0.08	0.2
X9	-0.23	0.56***	-0.46**	-0.55***	-0.07	-0.35*	-0.35*	0.27	0.50***	-0.12
X10	-0.1	0.77***	-0.94***	-0.63***	-0.56***	-0.54***	-0.74	0.48***	0.21	-0.04
X11	1	-0.17	0.16	0.35*	0.29*	0.28*	0.30*	-0.27	-0.14	0.06
X12	-0.17	1	-0.69***	-0.67***	-0.51***	-0.62***	-0.68***	0.62***	0.22	-0.26
X13	0.16	-0.69***	1	0.58***	0.64***	0.54***	0.77***	-0.44**	-0.06	-0.05
X14	0.35*	-0.67***	0.58***	1	0.54***	0.66***	0.62***	-0.68***	-0.41**	0.22
X15	0.29*	-0.51***	0.64***	0.54***	1	0.50***	0.82***	-0.46**	0.05	-0.21
X16	0.28*	-0.62***	0.54***	0.66***	0.50***	1	0.58***	-0.65***	-0.06	0.37**
X17	0.30*	-0.68***	0.77***	0.62***	0.82***	0.58***	1	-0.62***	-0.1	-0.15
X18	-0.27	0.62***	-0.44**	-0.68***	-0.46**	-0.65***	-0.62***	1	0.2	-0.26
X19	-0.14	0.22	-0.06	-0.41**	0.05	-0.06	-0.1	0.2	1	-0.25
X20	0.06	-0.26	-0.05	0.22	-0.21	0.37**	-0.15	-0.26	-0.25	1
X21	0.19	-0.52***	0.69***	0.43**	0.65***	0.51***	0.73***	-0.35*	0.1	-0.2
X22	-0.03	-0.04	0.03	0.05	0.16	0.18	0.30*	-0.28	0.3*	-0.22
X23	0.05	-0.58***	0.56***	0.51***	0.43**	0.29*	0.38**	-0.33*	-0.24	0.03
X24	-0.05	0.09	-0.11	-0.28*	-0.35*	-0.1	-0.36**	0.11	0.17	0.48***
X25	0.15	0.03	-0.09	-0.22	-0.14	0.01	-0.22	0.12	0.38**	0.32*
X26	0.02	-0.33*	0.51***	0.43**	0.44**	0.27*	0.59***	-0.21	-0.09	-0.28*
X27	-0.40**	0.58***	-0.71***	-0.56***	-0.64***	-0.67***	-0.77***	0.53***	0.11	-0.14
X28	0.05	-0.15	0.11	0.02	-0.11	-0.03	0.08	0.1	-0.05	0.2
X29	-0.01	-0.27	0.52***	0.09	0.26	0.1	0.25	-0.01	0.09	0.04
X30	0.25	-0.52***	0.70***	0.47***	0.61***	0.43**	0.75***	-0.40**	0.05	-0.13

Table A4: Correlation coefficients matrix of selected indicators, Africa for the Year 2020 (Continued)

	X21	X22	X23	X24	X25	X26	X27	X28	X29	X30
X1	0.11	0.41**	-0.06	-0.27	0.03	0.1	0.01	-0.09	-0.02	0.03
X2	0.07	0.33*	-0.08	-0.11	0.1	0.16	0.01	0	-0.05	0.01
X3	-0.16	0.2	-0.2	-0.05	0.1	0.04	0.17	-0.04	-0.19	-0.15
X4	0.52***	0.42**	0.30*	-0.11	-0.01	0.44***	-0.53***	0.15	0.54***	0.53***
X5	-0.49***	0.15	-0.49***	0.14	0.23	-0.39**	0.56***	-0.1	-0.38**	-0.52***
X6	-0.68***	-0.05	-0.56***	0.16	0.18	-0.55***	0.72***	-0.13	-0.50***	-0.67***
X7	-0.40**	0.08	-0.37**	0.24	0.18	-0.31*	0.24	0.19	-0.25	-0.16
X8	-0.38**	0.17	-0.42**	0.11	0.13	-0.27	0.32*	0.13	-0.25	-0.15
X9	-0.2	0.34*	-0.21	0.28	0.42**	-0.24	0.46**	-0.15	0.01	-0.28
X10	-0.60*	0.02	-0.59***	0.12	0.11	-0.51***	0.65***	-0.07	-0.40***	-0.61***
X11	0.19	-0.03	0.05	-0.05	0.15	0.02	-0.40**	0.05	-0.01	0.25
X12	-0.52***	-0.04	-0.58***	0.09	0.03	-0.33*	0.58***	-0.15	-0.27	-0.52***
X13	0.69***	0.03	0.56***	-0.11	-0.09	0.51***	-0.71***	0.11	0.52***	0.70***
X14	0.43**	0.05	0.51***	-0.28*	-0.22	0.43**	-0.56***	0.02	0.09	0.47***
X15	0.65***	0.16	0.43**	-0.35*	-0.14	0.44**	-0.64***	-0.11	0.26	0.61***
X16	0.51***	0.18	0.29*	-0.1	0.01	0.27	-0.67***	-0.03	0.1	0.43**
X17	0.73***	0.30*	0.38**	-0.36**	-0.22	0.59***	-0.77***	0.08	0.25	0.75***
X18	-0.35*	-0.28	-0.33*	0.11	0.12	-0.21	0.53***	0.1	-0.01	-0.40**
X19	0.1	0.30*	-0.24	0.17	0.38**	-0.09	0.11	-0.05	0.09	0.05
X20	-0.2	-0.22	0.03	0.48***	0.32	-0.28*	-0.14	0.2	0.04	-0.13
X21	1	0.30*	0.42**	-0.38**	-0.08	0.52***	-0.63***	0.14	0.39**	0.81***
X22	0.3	1	-0.09	-0.3*	0.08	0.27	-0.11	0.15	0.24	0.27
X23	0.42**	-0.09	1	-0.13	-0.11	0.35*	-0.36*	0.04	0.47***	0.38**
X24	-0.38**	-0.30*	-0.13	1	0.61***	-0.31*	0.1	-0.03	0.1	-0.34*
X25	-0.08	0.08	-0.11	0.61***	1	-0.28*	0.05	0.06	-0.07	-0.15
X26	0.52***	0.27	0.35*	-0.31*	-0.28*	1	-0.47***	0.02	0.32*	0.61***
X27	-0.63***	-0.11	-0.36*	0.1	0.05	-0.47***	1	-0.12	-0.27	-0.55***
X28	0.14	0.15	0.04	-0.03	0.06	0.02	-0.12	1	0.40**	0.05
X29	0.39**	0.24	0.47*	0.1	-0.07	0.32*	-0.27	0.40**	1	0.32*
X30	0.81***	0.27	0.38**	-0.34*	-0.15	0.61***	-0.55***	0.05	0.32*	1







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