

# Sustainable cities

Mastering the challenges and opportunities  
of rapid urbanisation

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## Introduction

**T**he rush to the city is more evident than ever before. Just half a century ago, only one-third of people lived in urban areas; now it is over half, and by 2050, the United Nations (UN) expects worldwide urbanisation to reach 70%. Given that both rapid urbanisation and strong population growth are concentrated in poorer countries, the UN estimates that cities in emerging markets will see their populations more than double to 5.2 billion by 2050, from 2.5 billion in 2009.

Rural populations are moving to the city to seek improvements to their quality of life—most notably through better economic opportunities. Cities generate around 80% of world gross domestic product (GDP), and accordingly attract the bulk of investment and create the lion's share of new jobs. Yet, whilst the wave of urbanisation is strongest in developing countries, it is cities in these countries that appear least prepared to respond to this rapid urban growth.

"As billions more people want access to the same things that the middle class today has access to, there is no other way to do it apart from thinking about how we define and manage urban sustainability," says Molly Webb, head of smart technologies at The Climate Group, a non-governmental organisation based in London. Far from being a luxury for small, wealthy cities, urban sustainability is a vital part of managing rapid city growth in poorer countries. Indeed, cities in developing countries have the opportunity not only to *work*, but to *work better* than cities in developed countries.

### **The potential of fast-growing cities**

Nowhere are the opportunities for better growth clearer than in municipal infrastructure, which must scale up to meet demand. Shirish Sankhe, director at McKinsey & Company in Mumbai, estimates that much of the basic infrastructure of Indian cities remains to be built—but sees this as an opportunity to get it right. "The opportunity when you build such infrastructure is to put a lot of urban sustainability principles right in the design itself," he says. Moreover, cities in developing countries have a chance to steal a march on cities in developed markets as they roll out new infrastructure. They can simply leapfrog over old solutions that were developed during the industrial and post-industrial eras, directly into 21st-century solutions.

In developed economies, by contrast, cities have grown over the past centuries, making improved efficiency an altogether different challenge for policymakers—characterised by legacy infrastructure, long-term operating agreements, and a plethora of vested interests. Meanwhile, cities in developing markets have the chance to grow their populations in the coming decades whilst keeping growth in

resource consumption in check. “Urban sustainability in emerging markets is still very much a growth agenda,” comments Molly Webb of The Climate Group. “But it’s a better, more efficient growth than we’ve seen in developed markets.”

Furthermore, sustainable urbanisation has the potential to unlock significant long-term economic growth, according to Joan Clos, executive director of the Nairobi-based United Nations Human Settlements Programme (UN-HABITAT). “The urbanisation process is one of the most efficient ways to increase the productivity of the economy,” he says. “Every economy that has gone through a process of increased productivity has always been through urbanisation.” A similar point is made by Om Prakash Mathur, Distinguished Professor of urban economics at the National Institute of Urban Affairs in New Delhi, who describes urban population growth as “an immense opportunity for India to move forward.”

Already, cities are playing central roles in emerging countries’ economic growth, as ongoing population shifts from countryside to city enrich the urban pool of human capital that is one of the principal enablers of the shift to a knowledge economy. McKinsey estimates that India’s urban centres will generate almost 70% of the country’s GDP by 2030, up from around 58% in 2008. More often than not, urbanisation goes hand in hand with changes in the structure of national economies, as production shifts from rural agriculture and manufacturing to urban knowledge-based services. As cities in developing economies become engines of growth for those economies, they must perforce become more competitive to ensure national growth.

## The challenges of sustainable cities

**D**espite the growing significance of cities in emerging markets, and despite the apparent opportunities inherent in sustainable urbanisation, city policymakers in developing countries face significant challenges to implement and finance the necessary changes. But experts agree that by identifying and tackling these challenges, it is possible for policymakers to turn cities around in the space of just a decade. While no two cities are the same, many urban centres in developing economies do share common characteristics, and do face common challenges.

One widespread challenge in fast-growing cities of the developing world is archaic urban governance structures. Steffen Lehmann, UNESCO chair in sustainable urban development for Asia and the Pacific and director of the Sustainable Design and Behaviour Research Centre at the University of South Australia, points out that urbanisation “requires excellent processes, and very, very good leadership that understands the value of long-term strategies in the short term.” Yet in Latin America, for example, city mayors commonly have three or four year terms, and cannot be re-elected—meaning there is little continuity in the city leadership. Short stays in office are also an issue in India, according to a 2010 report from McKinsey, *India’s urban awakening: Building inclusive cities, sustaining economic growth*.

A further obstacle for many cities is financing infrastructure such as new or expanded transportation, energy and water systems. McKinsey estimates, for example, that India needs to invest US\$1.2 trillion in its cities in the coming 20 years—equivalent to \$134 per capita per year, compared to the \$17 spent today. And whilst, in many countries, urbanisation goes hand in hand with strong economic growth that draws investment, this is not the case everywhere. Daniel Hoornweg, lead urban advisor in the World Bank’s Central Urban Advisory Unit says: “There’s a lot of attention [among businesses] to the cities of China, Brazil, India, and Vietnam, and that makes sense, because that’s where their markets are growing probably quickest.” By contrast, he points out, “the larger cities of Sub-Saharan Africa don’t yet have the wealth that seems to attract the business community.”

The very pace of urbanisation presents a particular challenge for policymakers. “I think the biggest challenge is just the rate at which people are moving in,” says Mr Hoornweg. “Many of these cities are running like mad just to stay in place.” India is a prime example. The urban population grew 32% in the past decade, to some 377m, according to 2011 census data; but the government expects another 42% growth in population over the next 15 years. Such rapid expansion raises the prospect of city administrators reacting with short-term, tactical measures, rather than responding with long-term strategic direction, argues Steve Lewis, CEO of Living PlanIT, a developer of sustainable city technologies. “How do you do this with enough pace to satisfy that urban shift, but at the same time

not get caught in highly tactical decisions that you have to live with for the life of that city?" he asks.

A further long-term challenge is adopting a truly holistic approach to sustainable urbanisation, which paves the way for a growth in the city population without a commensurate increase in resource consumption or in tensions associated with growing ethnic, linguistic or religious diversity. New planned cities built from scratch, such as Masdar City in Abu Dhabi, and Songdo International Business District in South Korea, are in a strong position to combine growth with sustainability; yet most urbanisation will continue to occur in existing cities (see box, *The contribution of new eco-cities*). Getting that right, says Professor Lehmann, "is an interdisciplinary job, which needs to include the economists, sociologists, landscape architects, people that have a very wide understanding, and to engage in holistic system thinking, on holistic integrated approaches."

In practical terms, a holistic approach begins with the city plan—which in turn gives rise to frameworks for the built environment, for transportation networks, and for energy consumption. But sustainable urban growth must also include measures to tackle urban poverty and social exclusion and to deal with growing diversity. "We have to look after how best to manage interactions to avoid conflict and to support the innovation and creativity that comes out of better opportunities for contact," says Steven Vertovec, director of the Max Planck Institute for the Study of Religious and Ethnic Diversity, based in Göttingen, Germany. Currently, around three-quarters of India's urban citizens earn an average of US\$1.80 a day, according to McKinsey. Social inclusion measures could include providing access to low-cost housing to curtail the spread of slums—which currently house between 20-40% of India's urban population.

### The contribution of new eco-cities

The number of greenfield sustainable cities—cities built from scratch with the aim of maximising efficiency of urban infrastructure systems and ensuring sustainability—is on the rise. Among the most prominent examples are Masdar City in Abu Dhabi and Songdo International Business District in South Korea. What do these new eco-cities contribute to the drive toward sustainable cities?

Daniel Hoornweg, lead urban advisor in the World Bank's Central Urban Advisory Unit, says that "from the point of view of being able to handle an additional two billion urban residents in the next twenty years, new cities are not likely to be a big part of the answer." Shirish Sankhe, director at McKinsey & Company in Mumbai, echoes this point: "Seventy to eighty percent of India's

urbanisation will happen in existing urban centres," he says. "There will be some urbanisation that will happen in completely greenfield type of cities, but it will be much less common."

Instead, the contribution of greenfield cities may lie in fostering innovation, developing expertise, piloting technologies, and providing lessons. "The intellectual investment in some of the eco-cities is extraordinary," says Uwe Brandes, senior vice president, Initiatives at the Washington-based Urban Land Institute. "Songdo and Masdar certainly are extraordinary laboratories of innovation."

Indeed, Alan Frost, director of Masdar City, emphasises the city's efforts to improve continuously: "For me, it's about starting the experiment," he says. "It's about Masdar being a living lab, being prepared to continue to test and improve, together with our partners—and to continue tweaking, so every time we put something in, we learn from that building, and then we hopefully improve that for the next phase."

## Steps towards sustainable urbanisation

Tackling the challenges of rapid urbanisation in emerging economies is by no means straightforward. Yet, for policymakers, many of the tools necessary to pursue sustainable urbanisation are within reach. “The solutions to many of these issues are known; it’s not a question of some kind of fancy new technology,” says Robert Neuwirth, author of *Shadow Cities: A Billion Squatters, a New Urban World*. “It is just that we don’t have the willpower or the structures in place to be able to implement them.” Among the most widespread tools is sharing of best practices among cities (see box, *City-to-city learning*).

What, then, can cities do to manage rapid urban growth? The first step is to ensure professional city management and sound governance structures. This includes electing mayors to run cities in a transparent and accountable way, rather than appointing bureaucrats; and the establishment of specialised, flexible agencies to deliver services—a good example is the Bombay Electric Supply

### City-to-city learning

Many practical steps that smooth the process of rapid urbanisation are already in use in successful cities across the world. Indeed, Tim Campbell, chairman of the Washington-based non-governmental Urban Age Institute, and author of *Beyond Smart Cities: How Cities Network, Learn and Innovate*, says: “The biggest opportunity is to make use of what we already know from among the 1,000 large cities on the planet, in other words, to capitalise on the knowledge base of other cities.”

How, then, can cities learn from each other? Here, Dr Campbell makes seven recommendations:

- **Make learning part of the mission of governance.** Make somebody responsible for keeping track of the lessons and objectives of the city, managing an internal web site for learning, and keeping an archive.
- **Carry out self-diagnosis once learning is established.** Cities will need to take stock of how their learning initiatives are progressing in terms of finding, processing and internalising knowledge.
- **Choose and develop a learning style.** Cities should choose a style—technical, corporate, or informal, for example—and commit to a degree of activity—intense, or less intense.
- **Organise a learning programme.** Cities learn from each other, so they should visit other cities. The programme should pick places or events—city visits, twinning events, and conferences—to fit the strategy.
- **Find cities that match.** Make use of global and regional organisations, for example Metropolis, Local Governments for Sustainability (ICLEI), CITYNET, United Cities and Local Governments (UCLG) and WHO Healthy Cities.
- **Institutionalise knowledge.** Document lessons, case studies, and survey data; follow up with seminars and conferences back home; and invite outside guests to participate in these events.
- **Work on social capital.** Include political, civic, business, university, and neighbourhoods in the learning process. Building social capital may require outside help or long-term support.

& Transport Undertaking (BEST Undertaking), Mumbai's bus and electricity agency. Fast-growing cities might look to the example provided by the Indian city of Ahmedabad, which, according to Tim Campbell, chairman of the Washington-based non-governmental Urban Age Institute, "has been very progressive in a lot of areas in the last twenty years, such as in land-use controls, in public services, in administrative processes, and in computerisation and modernisation of bureaucracy". McKinsey's Dr Sankhe points to the example of Mumbai, which recently finished a 2030 concept plan, as well as a detailed transportation plan. Whereas urban planning expertise remains in short supply in many Indian cities, in this case says Dr Sankhe, "someone has thought through how to make the next \$20 billion of investment".

Beyond strengthening city governance, emerging countries need to set the tone for improved urban management by establishing national standards. "It's important that the country creates national urban policies," argues Dr Clos of UN-HABITAT. "If the state doesn't have an urban policy, it's very difficult for the modern city." Change can be initiated "with a stroke of a pen, by requiring that urban plans have to be done in this manner, and these are the elements that you have to take into account, and then you have to prepare long-term city plans that take a holistic view of the requirement for different services from affordable housing to transportation to water," comments Dr Sankhe.

In addition, cities should consider where they can expand geographically in future. "The way to put order in the urbanisation process is to plan for a city extension," says Dr Clos, who as mayor of Barcelona was responsible for much of its revival. Similarly, planners of new cities are building long-term flexibility into the built environment and infrastructure. "We don't know how people will live and how they'll interact ten or fifteen years from now," says Mr Lewis of Living PlanIT, who points out that, with the right decisions today, city administrators will be able to "make the city do things it was not specifically designed to do."

Finally, urban experts advise regular measurement and reporting of city performance data. "Data is emerging as a really important theme of well-managed cities the world over," says Mr Hoornweg of the World Bank. "Belo Horizonte and São Paulo in Brazil are among the best in terms of measuring where they are and where they're going." Both cities are members of the Global City Indicators Facility, a city owned and managed programme that provides indicators structured around 22 city services and quality of life themes. (The programme includes two Indian member cities, Mumbai and Naihati.) "You can feel how a city's doing based on how open it is with its data, and how able it is and willing it is to monitor its progress," says Mr Hoornweg.

Ultimately, urban sustainability is about forward planning, proactive implementation and broad co-operation. If the world's fastest-growing cities get these factors right, urbanisation will be an opportunity to combine growing prosperity with sustainability. But if they don't, dysfunctional cities will increasingly expose the social and environmental limits to growth.

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## GENEVA

Boulevard des Tranchees 16  
1206 Geneva  
Switzerland  
Tel: +41 22 566 24 70  
E-mail: [geneva@eiu.com](mailto:geneva@eiu.com)

## LONDON

25 St James's Street  
London, SW1A 1HG  
United Kingdom  
Tel: +44 20 7830 7000  
E-mail: [london@eiu.com](mailto:london@eiu.com)

## FRANKFURT

Bockenheimer Landstrasse 51-53  
60325 Frankfurt am Main  
Germany  
Tel: +49 69 7171 880  
E-mail: [frankfurt@eiu.com](mailto:frankfurt@eiu.com)

## PARIS

6 rue Paul Baudry  
Paris, 75008  
France  
Tel: +33 1 5393 6600  
E-mail: [paris@eiu.com](mailto:paris@eiu.com)

## DUBAI

PO Box 450056  
Office No 1301A  
Thuraya Tower 2  
Dubai Media City  
United Arab Emirates  
Tel: +971 4 433 4202  
E-mail: [dubai@eiu.com](mailto:dubai@eiu.com)