MEGACITIES

by Kris Robbetts

THE 20TH CENTURY saw the highest rates of urbanisation in human history. Last year it was announced that for the first time ever, more people are living in cities than in the countryside. A key product of this unprecedented urban growth is the megacity, originally found in North America and Western Europe but now a defining characteristic of many countries in the developing world. This unit looks at the rise of megacities and considers some of the issues and concerns raised by these important and increasingly precarious places.

Figure 1: **An urban skyline**

Definition and context

In 1800, only 3% of the global population lived in cities. By 1950 that figure had risen to 30% and by 2007 over half the world's population lived in urban areas. The trend is set not only to continue but to accelerate. Around a million people a week currently arrive in cities and it is expected that 60% of the global population will be urban by 2030. A combination of prolonged economic growth, high birth rates and persistent rural–urban migration on an ever-increasing scale explains how and why there are now nearly 450 city regions worldwide with more than 1 million residents, and at least 25 with in excess of 10 million inhabitants – these are what the

	1900		2007	
1	London	6.5 million	Tokyo	36.2 million
2	New York	4.2 million	New York	26.7 million
3	Paris	3.3 million	Mexico City	19.1 million
4	Berlin	2.7 million	Karachi	18.6 million
5	Chicago	1.7 million	Mumbai	18.1 million
6	Vienna	1.7 million	Delhi	18.05 million
7	Tokyo	1.5 million	São Paulo	17.9 million
8	St Petersburg	1.4 million	Shanghai	17.6 million
9	Manchester	1.4 million	Los Angeles	17.5 million
10	Philadelphia	1.4 million	Beijing	17.2 million

Figure 2: **The world's 10 largest cities, 1900 and 2007**
Source: Four Thousand Years of Urban Growth: An Historical Census, Tertius Chandler

United Nations (UN) calls 'megacities'.

The megacity first appeared in what is now called the developed world, and until relatively recently such places were rare and unusual. In 1950, only New York could claim megacity status and by 1975 there were still only three cities that had managed to break the 10 million inhabitants barrier. By 2015, there could be as many as 60 megacities and, if the predictions are right, by 2030 4.9 billion people will be urban, most of them living not in Europe or America where large-scale urbanisation began, but in Asia and Africa. Even now the fastest-growing megacities are in developing economies, notably India, Pakistan and China. At the same time, population growth in 'mature' megacities such as Tokyo is slowing down, suggesting that they may soon reach their peak size and begin to decline. According to the UN, almost all of the world population growth predicted between now and 2030 will be absorbed by the urban areas of developing countries (Figure 2).

While Figure 2 suggests that the relative size and population of megacities is clear and easily measurable, in reality it is very difficult to define their limits. Disagreement about the populations of these cities is common because estimates depend on exactly what is included. Consider Tokyo: the population of the city of Tokyo is approximately 8 million but the Greater Tokyo area is home to around 12 million people. The much quoted figure of 36 million people is only reached by considering the Tokyo Metropolitan Area as a whole, which includes the cities of Yokohama, Kawasaki and Chiba.

Growth

Both national and international migration are key in explaining the relentless growth of the new generation of megacities as the demand for labour continues to pull people from the countryside and into urban centres. In developing economies where megacity growth is greatest, it is the combination of high birth rates with strong rural–urban migration that sustains the unprecedented levels of urban growth.
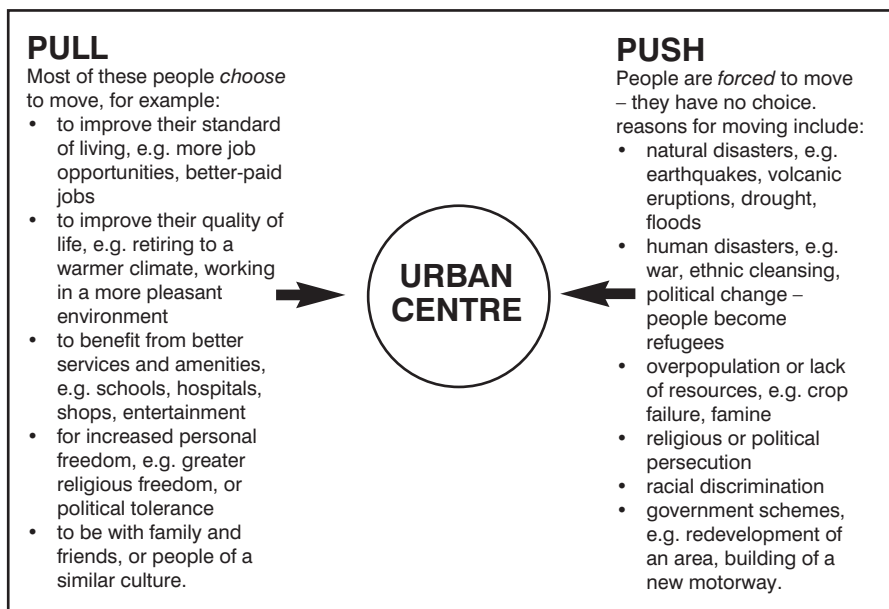
PULL

Most of these people *choose* to move, for example:

- to improve their standard of living, e.g. more job opportunities, better-paid jobs
- to improve their quality of life, e.g. retiring to a warmer climate, working in a more pleasant environment
- to benefit from better services and amenities, e.g. schools, hospitals, shops, entertainment
- for increased personal freedom, e.g. greater religious freedom, or political tolerance
- to be with family and friends, or people of a similar culture.

URBAN CENTRE

PUSH

People are *forced* to move – they have no choice. reasons for moving include:

- natural disasters, e.g. earthquakes, volcanic eruptions, drought, floods
- human disasters, e.g. war, ethnic cleansing, political change – people become refugees
- overpopulation or lack of resources, e.g. crop failure, famine
- religious or political persecution
- racial discrimination
- government schemes, e.g. redevelopment of an area, building of a new motorway.

Figure 3: **How push–pull factors contribute to migration and urban growth**

Unemployment, low standards of living, poor housing and a lack of educational facilities all **push** more people than ever from rural areas, and the promise of economic opportunity and an improved quality of life **pulls** them to cities (Figure 3). Nowhere is this potent combination of push and pull factors more apparent than in China, which is experiencing the highest levels of rural–urban movement ever recorded.

Significance

Of course, arguably, the push and pull factors described above have been driving the growth of cities for centuries. The difference now is that megacities are more than just large cities. Many megacities are primate cities – that is, they contain a disproportionately large percentage of the national population. More significantly, the extraordinary size of megacities as hotspots of production, consumption and waste generation means they also have global economic, social and environmental importance.

Wealth and poverty

Cities can be centres of enormous wealth – nearly one-fifth of the world's Gross Domestic Product (GDP) is generated in the 10 most economically important cities.

Tokyo alone produces a GDP equivalent to 75% of Germany's GDP – and Germany has the third largest economy in the world. But most megacities are sites of extreme poverty and infrastructural overload, as demonstrated by the rapid rise of urban slums. It is ironic that the relentless growth of megacities is caused mainly by the ongoing migration of the rural poor into urban areas, lured by the prospect of improved opportunities and a better life. Around 1 billion people already live in slums worldwide, a figure that could double in the next 20 years.

The population of Jakarta in Indonesia swells by an estimated 200,000 people per year, putting immense strain on the city's infrastructure and resources. Demand for housing far outstrips supply, leading to the uncontrolled sprawl of makeshift dwellings on increasingly marginal sites. Infectious disease is commonplace. Only 1 in 5 people has access to clean drinking water, and the depletion of the city's groundwater is causing widespread subsidence, damaging buildings and leaving many homes more prone to flooding. Similar problems are found in other rapidly growing cities, including Lagos in Nigeria, Cairo in Egypt and Mumbai in India.

Environmental degradation and risk

Unsurprisingly, many megacities are now considered to be sites of global risk, and have become prominent in the international sustainable development debate. The ecological footprints of megacities are already vast and the quantity of resources required for energy, industry and infrastructure continues to grow.

Perhaps inevitably, the worst levels of pollution anywhere are found in megacities. Every one of the 20 largest cities on Earth has at least one pollutant at a concentration that exceeds the World Health Organisation's (WHO) recommended limit. The primary cause is growth in the use of automobiles (Figure 4). In Shanghai, for example, cars and trucks are already choking the city and the number of vehicles is expected to quadruple by 2020. The result is air quality so poor that it represents a serious health risk. In the developing world alone, the WHO estimates that air pollution kills approximately 130,000 urban dwellers a year.

One of the many megacities now taking the issue of air pollution seriously is Delhi, in India. Public transport is popular with millions of people who are dependent on buses, minibuses and three-wheel vehicles which have historically run on diesel, one of the most significant sources of particulate matter. Since the mid-1990s, low-sulphur diesel has been used and since 2001 the Supreme Court of India has decreed that all public transport be powered by compressed natural gas (CNG) in an attempt to protect the local population from the harmful effects of pollution. A recent study indicates that the results have been mixed. While certain pollutants such as sulphur dioxide and carbon monoxide have decreased, others such as nitrogen oxide may have actually increased, and benzene, toluene and xylene

Figure 4: **Urban congestion**

(BTX) have showed no significant change. Even so, CNG introduction projects have now been implemented in Tehran, Los Angeles, Bangkok and Beijing among others.

Conclusion

Megacities represent the cutting edge of global urbanisation trends. They are products of unprecedented levels of urban–rural migration, perpetually pushing the limits of how large human settlements can become. As sites of unparalleled technological and economic innovation and growth, megacities are already national and international centres of political, economic and technological importance. They are also sites of extreme poverty, risk and environmental strain. The challenge for those who plan, build and live in these cities is to overcome the immense environmental burden they already pose and to engineer sustainable sites capable of supporting more and more people who are desperate to find a better life.

Series 20 Autumn issue Unit 399 *Megacities* © 2008 Nelson Thornes

This page may be photocopied for use within the purchasing institution only.

GeoActive Online

Page 3 of 4

Activities

1 What is a *megacity*? Has this definition ever changed? Why?

2 Refer to Figure 2. Describe and explain the change in the distribution of the world's largest cities between 1900 and 2007.

3 Study Figure 5.
(a) Compare and contrast population growth in Tokyo and Mumbai between:
(i) 1950 and 2005
(ii) 2005 and 2030.
(b) Mexico City is now the second most populous city in the world.
(i) What was the population of Mexico City in 1955?
(ii) By how many times will its population have grown by 2025?
(c) (i) Which city grew most quickly between 1950 and 2005?
(ii) Which city has grown the least since 1955?
(iii) Which city is predicted to grow most quickly during the next 20 years?

4 Using the terms **push factors** and **pull factors,** explain why rural–urban migration continues to fuel the growth of megacities in the developing world.

5 Summarise the main reasons why megacities have national and international significance.

6 Why is it so difficult to measure the size and rate of growth of megacities?

7 Using the United Nations website (www.un.org.com) find and summarise two recent news stories involving urbanisation and megacities.

8 (a) Use the internet to research the 'Megacities Initiative'.
(b) Use the internet to research Lagos and Tokyo. Explore the key differences between these two megacities.

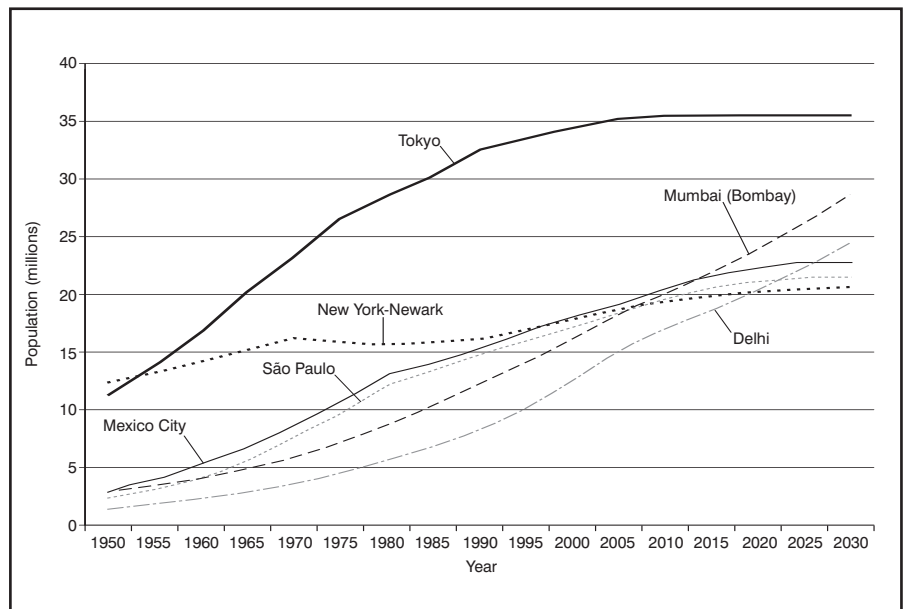9 China will account for a large proportion of global urban

Figure 5: **Population growth of the six most populous megacities, 2005**
Source: United Nations, 2005

population growth during the next two decades. Use the following websites to find out more about urbanisation in China and the challenges it poses:

- Asian Times
  www.atimes.com/atimes

- Planet Ark
  www.planetark.com

- International Institute for Applied Systems Analysis
  www.iiasa.ac.at/Research/LUC/ChinaFood/data/urban/urban_5.htm

- China Daily
  www.chinadaily.com

10 Insurance companies have spent a huge amount of money researching megacities and commenting on the management of risk in rapidly growing urban areas. Using the following websites, summarise the main risks associated with megacities.

- www.munichre.com

- http://w1.siemens.com/en/megacities.htm