Chapter Nine

Urbanization

ACCOMPANYING THE WORLD'S population growth has been the explosion in the size and number of urban areas. As of 2009, approximately 50 percent of the world's population lived in urban areas. While the developing world lags the developed world in the proportion urbanized (44 percent to 75 percent, respectively, and only 27 percent urbanized in the least developed countries; see figure 9.1), the urban population in the developing world is expected to grow rapidly in the coming decades, with upwards of 61 percent of the world's population living in urban areas by 2030.[1] In addition to the proportion of a population that lives in urban areas, we can also speak of the rate of urbanization, or how quickly urbanization is occurring. Based on data from 2000, the rate of urbanization in the developed world was just 0.83 percent, reflecting the already highly urbanized population and the relatively small share living in a rural area. In the developing world, the rate of urbanization was 3.5 percent. Placing urban growth in another perspective, the number of cities in the developing world with populations in excess of one million will jump from 345 in 2000 to 480 by 2015, with the growth of urban areas driven by natural increase,[2] net rural-to-urban migration, and urban reclassification as cities are redefined from smaller units. This chapter explores concepts of urbanization, including its definition, growth and change in urban centers, and how cities can plan for growth. The "Focus" section considers how urban growth can be planned for, and the "Methods, Measures, and Tools" section explores alternate definitions of urbanism.

DEFINING URBAN AND URBANIZATION

Simply speaking, we can define urban as any place that is nonrural, while urbanization is the process that transforms a population from rural to urban. In essence, urbanization represents a fundamental reorganization of human society, moving it away from a rural, agrarian-based society to one based around nonagricultural activities. While this definition of urban is a somewhat facile and fuzzy one, it implies the spatial concentration of a population that is organized around nonagricultural production. What we are really speaking of, however, are places where the population size exceeds some defined threshold and/or density (see this chapter's "Methods, Measures, and Tools" discussion of how urban areas are defined). More specifically, we can think of urbanization as a form of social and political organization. Definitions of what constitutes urban typically also include the notion that urban areas are centers of technological change and innovation and have a spatial concentration of power and economic activity.

A BRIEF HISTORY OF URBANIZATION

Although cities have now existed for thousands of years, the form, function, and characteristics of early cities differ dramatically from our modern cities. The following provides a brief discussion of the evolution of cities.

Early Cities through the Middle Ages

We can trace urbanization back to the emergence of early settlements associated with agriculture. While far from urban as we would define it (and perhaps better defined as "protourban"), early urbanization dates from 3500–3000 BC in the so-called Fertile Crescent of modern-day Iraq and Iran and the valleys of the Tigris and Euphrates rivers, where food surpluses and production allowed settlement in villages and increased population densities. By 2500 BC, cities had appeared in the Indus Valley and China (approximately 1800 BC). By modern standards, these early cities were relatively small, both numerically and proportionately. Ancient Rome, for instance, has been estimated to be home to about 500,000, but other cities, such as Athens, would most likely have been much smaller. In both cases, the majority of people likely lived as subsistence farmers in the countryside.

While a combination of events and processes likely generated city growth in ancient societies, three broad explanations for the emergence of these early urban areas have been put forward. First, *surplus theory* argues that cities arose after agricultural surpluses appeared. Locations that allowed agricultural pro-

duction and irrigation—such as the Indus Valley or the Fertile Crescent—contributed to agricultural surpluses, which in turn freed labor from the land and allowed it to specialize in other tasks, including governance, manufacturing, or religion. These nonagricultural workers grouped together, forming the first cities. Second, *the city as a public good* suggests that urban growth is the outcome of religion or some other government service, such as security, that resulted in people grouping together. Many cities in the ancient world were organized in such a way to express the role of a god (or gods) and to project the image of a controlling religion on daily life. Similarly, cities could develop for security or military purposes, where the security of a population becomes a public good provided by the government. In essence, therefore, cities evolved as fortress and refuges. Third, *the city as center for exchange and trade* defines the emergence of cities as centers of trade. In this case, cities developed first, with rural development occurring later as a consequence of city growth and to feed the city population. Regardless of the actual origin, early cities likely would have relied upon in-migration to sustain their population, as deaths likely exceeded births. They also relied on a large population living outside of the city to feed the city's population and to provide residents with goods. Many of the early cities collapsed due to wars, disease, or the collapse of empires, with their populations returning to their rural roots.

The Medieval City

Early in the medieval period, cities and towns were nearly nonexistent. Instead, early medieval Europe was mainly composed of feudal kingdoms, although a few small towns existed as university centers or served defensive and/or administrative needs. The majority of the population lived in rural areas and engaged in subsistence agricultural production, and cities grew slowly. Emergent trading of food and other basic commodities established towns as merchant capitalist centers, although the proportion of the total urbanized population remained small, as did the towns themselves. Between the fifteenth and seventeenth centuries, merchant capitalism grew and transformed the basic function of cities to one of commerce. Urban development was further spurred by the scientific revolution and the beginnings of colonial exploration, which exploited colonial possessions and transferred riches to European centers, enabling cities that controlled trade to grow the fastest. European exploration and colonization of new lands, including Africa and the Americas, cemented the role of cities as places of commerce, trade, and political power. Ultimately, European colonialism would give rise to further urbanization in the world's peripheral regions, transferring Europe's urban patterns around the globe. These new cities were either associated with existing settlements, such as Delhi and Mexico City, or

in new locations that served the needs of the colonial powers for administration or defensive positions. Such cities included Mumbai, Hong Kong, and Nairobi.

The Industrial Revolution and the Modern Era

Despite the growth of merchant capitalism, cities were still small. For example, the share of England's population that lived in London is thought to have increased by only eight percentage points (from 2 to 10 percent) between 1600 and 1800, yet London was the largest city in Europe in 1800 with a population of just slightly less than one million.[3] It was only with the Industrial Revolution and the growth of the British Empire that London experienced rapid population growth. Other estimates suggest that as recently as 1800, less than 5 percent of the world's population lived in urban areas. This would change quickly as the Industrial Revolution came to dominate and drive settlement patterns, first in Europe and then throughout the world. As economies slowly transformed, with increasing production inside the city, cities started to dominate their hinterlands, strengthening their economic and political position.

Starting in the United Kingdom in the late 1700s, the Industrial Revolution had tremendous implications for human settlement patterns, the outcome of critical changes in methods of production, the reduction of the labor force required for agriculture through mechanization, the implementation of industrial methods, and the expansion of trade. With the Industrial Revolution, agricultural production was increasingly mechanized, meaning that fewer people were required to work the land. Instead, employment opportunities in manufacturing, which were typically located in urban areas, led to the emergence of the first modern cities in England. Industry, and the Industrial Revolution, was largely dependent on cities for transport, labor, and infrastructure, and new opportunities and wages drew migrants into cities. Even with changing production and industrialization, however, cities continued to grow at a relatively slow rate. The majority of the population continued to live in rural areas, and mortality in the new cities remained high, meaning cities were not yet able to sustain their growth through natural increase.

As industrialization spread outward from the United Kingdom, so did the concept of cities. But it was not until the nineteenth century that modern urbanization really took off. Increasing industrialization created demand for labor in urban areas, and declining mortality rates allowed populations to grow quickly. Even in the United States, the process of urbanization was slow until 1820, when just 7 percent of the American population lived in urban areas, before accelerating through the rest of the nineteenth century. Rates of urbanization slowed again during the Depression of the 1930s and World War II before increasing in the 1950s and onward. Worldwide, cities continued to grow as they cemented their economic base as centers of commerce and trade,

enabled by a large supply of labor for growing manufacturing and production. At the same time that their economic power grew, so did their political power, enabling control over larger populations and areas.

The economic and political roles of cities continue today, but in different ways. Early on, cities provided jobs in the new manufacturing industries, and laborers who were no longer needed in rural areas took on these roles. The industrial base of cities in the United Kingdom, including Glasgow, Manchester, Birmingham, and Sheffield, grew as industry required more and more workers. In large part, the concentration of both industry and workers created efficiencies of scale, reducing costs and increasing profits for manufacturing, and the large pool of labor in cities made it easy for employers to find workers.

In today's postindustrial and globalized world, the role and function of cities continues to change and evolve, while they remain centers and magnets for population settlement. In the developing world, cities combine both industrialization and commercial activities. In the developed world, most cities have lost their traditional industrial base and have transitioned to service economies, providing diverse employment opportunities in banking and finance, health care, and the knowledge economy. Increasingly, these cities are also seen as centers of culture and arts and home to the so-called creative class,[4] which has become a rallying point for city growth and promotion. In both the developed and developing world, cities offer consumption and social opportunities that are not available elsewhere, while providing economies of scale and agglomeration economies[5] that support their continued economic development and attract in-migrants. Cities also offer agglomeration economies, resulting from the geographic concentration of economic activities in general or specific industrial economies. These benefits are facilitated by such things as the transfer of knowledge across industries, the sharing of public goods and infrastructure, better labor matching between workers and employees, diversified employment opportunities, and the development of related suppliers and buyers. In short, cities continue to attract and retain people because of their "bright lights."

THE GROWTH OF MODERN CITIES

Modern cities have three main growth mechanisms: natural increase (the excess of births over deaths), net in-migration, and international migration. Throughout much of the history of urban areas, urban populations experienced higher mortality than their rural counterparts, with dense populations and limited sanitation facilitating the spread of diseases such as cholera or the plague, while the excess labor in rural areas meant that cities relied upon in-migration to sustain their population. More recently, death rates have been lower in cities

than in rural areas, owing to the availability of clean water, sanitation, and health care provision. Consequently, urban growth has been fueled by in-migration and large natural increases amongst the urban population, echoing the demographic transition theory, particularly in the developing world, where birth rates remain high.

Like today, in-migrants were drawn to early cities for jobs. As early as 1889, Ravenstein noticed movement out of rural areas and into cities (see also chapters 6 and 7).[6] Movement "up the urban hierarchy" has therefore promoted city growth. Writing in 1885 in regards to the United Kingdom, Ravenstein commented that:

> the great body of our migrants only proceed a short distance. . . . It is the natural outcome of this movement of migration that . . . [t]he inhabitants of the country immediately surrounding a town of rapid growth, flock into it; the gaps thus left in the rural population are filled up by migrants from more remote districts, until the attractive force of one of our rapidly growing cities makes its influence felt, step by step, to the remote corner of the kingdom.[7]

In other words, movement was "stepwise" up the hierarchy into progressively larger centers, promoting the growth of the largest cities.

Zelinsky's hypothesis of mobility transition[8] updates much of Ravenstein's theories of migration and adds new dimensions in line with more recent population mobility. From the perspective of urban growth and change, Zelinsky argues that internal migration patterns will shift according to a country's economic development. Rural-to-urban migration will, for example, be associated with industrialization. Later, as economies and their urban systems develop, migration will shift to be dominated primarily by urban-to-urban migration, with movement up the hierarchy into larger urban centers. Ultimately, in most developed countries, migration will shift to movements down the urban hierarchy and into smaller urban areas or rural areas.

While seemingly exclusive events, there is also much overlap between natural increase, internal migration, and international migration in promoting urban growth. Likewise, immigration directly adds to the population count of some of the largest urban areas, such as New York, Chicago, or Los Angeles. In fact, many of the largest cities in the United States, including New York, Chicago, and Los Angeles, rely almost exclusively on immigration to sustain and grow their populations, as large parts of the population have migrated out of the city toward suburban or peri-urban locations. Immigrants, on the other hand, are attracted to urban areas. Moreover, the presence of ethnic enclaves and communities, particularly in main immigrant-receiving cities such as New York, Los Angeles, or London, reinforce this attraction while aiding the eco-

nomic, social, and cultural integration of new arrivals. Likewise, domestic, internal migration remains an important component of the growth or decline of urban areas. As already noted, historically higher mortality levels in cities meant that they relied upon movement from rural to urban areas to sustain their populations as excess labor moved to cities in search of employment.

The Current State of Urbanization

Perhaps the most significant moment in the history of urbanization occurred in 2008, when it was estimated that half of the world's population lived in urban areas. Considering that less than 30 percent lived in an urban area just fifty years earlier, the growth of the world's urban population in such a short period of time is impressive. Yet, world regions differ greatly in their levels of urbanization, with the following discussion offering broad observations of the state of urbanization between the developed and developing world.

The Developed World

The developed world is essentially fully urbanized, with very low rates of urbanization (0.83 percent). If we were to apply Zelinsky's mobility transition theory, the United States and many other developed countries would have largely passed through it. Long gone are the days of frontier or rural-to-urban movement. Although the developed world is already highly urbanized, urban areas continue to transform and grow, characterized by three broad trends. First, consistent with Zelinsky's mobility hypothesis, *urban-to-urban migration* is the primary force, shifting the population between urban areas, rather than from rural to urban areas, meaning that migration between urban areas is the most significant source of population change.

Second, the 1970s revealed a very different pattern of population movement, with nonmetropolitan areas growing at the expense of metropolitan areas. In essence, the phenomenon of *counterurbanization*—or the decline in growth rates of some of the largest urban centers and increased growth rates of rural, nonmetropolitan areas—runs counter to decades of both rural-to-urban population movements and suburbanization. Shifting employment, amenities, and retirement contributed to this population movement, with counterurbanization first observed in the 1970s and again in the late 1990s. Observed in multiple developed countries, it led some to speculate that this was a new, postmodern dimension of the mobility transition.

Third, most developed countries experienced some degree of *decentralization*, or the movement of people and jobs away from central cities toward suburbs and peri-urban areas, or those areas at the urban-rural fringe. Attributed to numerous social, political, and economic factors, including racial tensions,
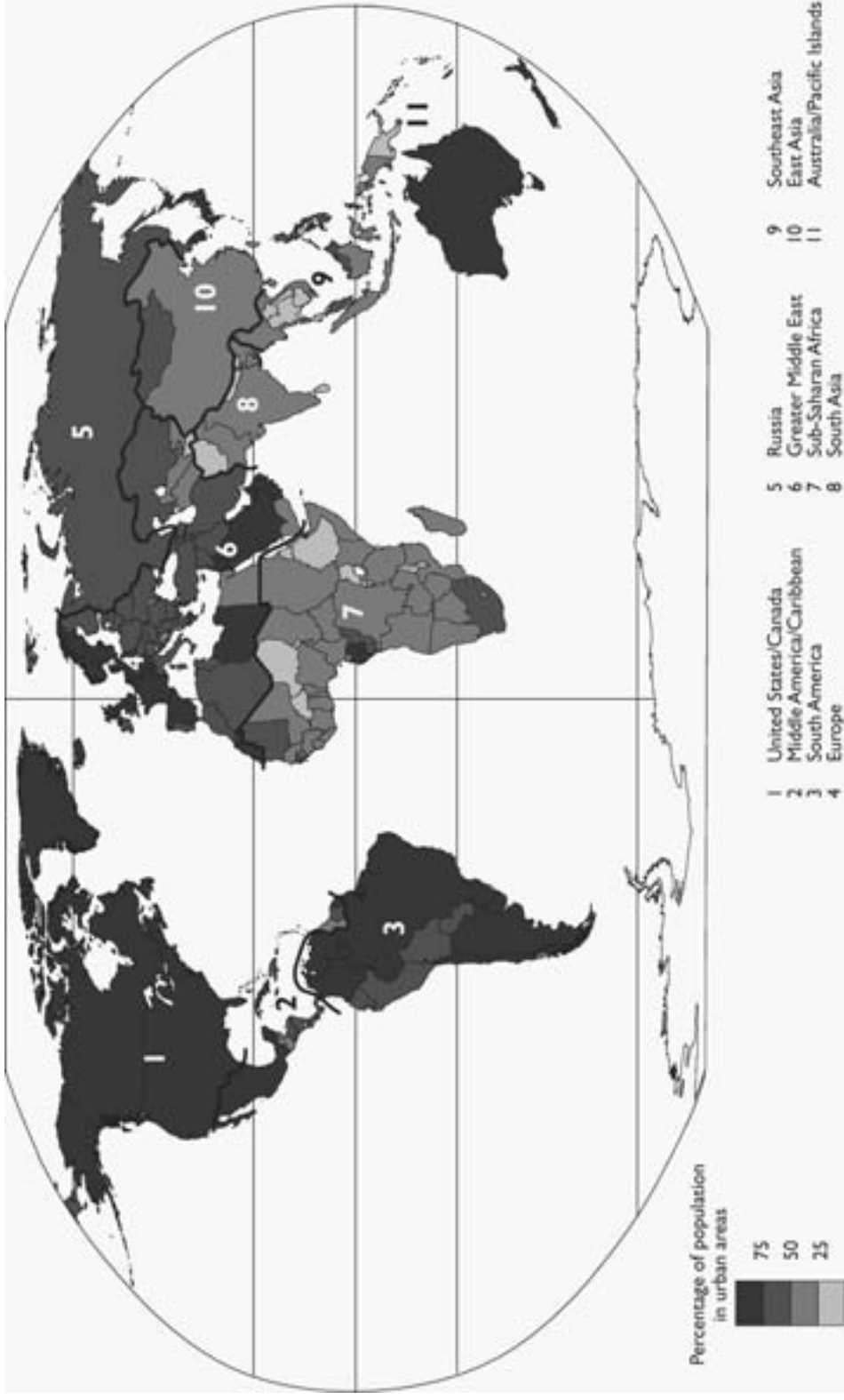
Figure 9.1 World Urbanization by Country, 2005. *Source:* Brunn et al., 2008, *Cities of the World*, figure 1.3. Reproduced with permission.

better education and recreational facilities, improved highways (accessibility), and lower home costs, decentralization has made most cities less dense but more spread out. While low gas prices and long-distance commuting have enabled decentralization, the new reality of higher gas prices may alter location choices, with residential patterns returning to greater population densities and closer to employment locations.

The Developing World

While the proportion of the population living in urban areas in the developing world is much less than in the developed world, the process of urbanization is rapidly reshaping urban areas' appearance. As in the developed world, urbanization trends in the developing world can be summarized by four main points. First, urban areas in the developing world will see *continued rapid growth*. The large and rapidly growing populations of many developing countries mean that there is large potential for continued urban growth, both in terms of people moving into cities (in-migration) as well as natural growth (the excess of births over deaths) of cities.

Second, *population concentration* will continue, with the population of developing countries increasingly concentrated in large cities of one million or more residents. At the same time, megacities of ten million or more will become increasingly important and numerous as migrants are attracted to these large cities in search of employment and opportunities.

Third, the developed world will be home to a *diversity of urban areas*. That is, urbanization and urban change in the developing world defies broad generalizations. In more developed regions and in Latin America and the Caribbean, over 70 percent of the population is urban, whereas in Africa and Asia, less than 40 percent of the population is urban. India, for example, which has some of the world's largest cities, is still just 29 percent urbanized, and China's pace of urbanization is rapid as it moves toward a market economy. With approximately 30 percent of its population living in urban areas in 1985, China's urban growth has been spectacular. Although constrained for years by its Hukou system, which restricted internal migration in China (see chapter 10), China's rate of urbanization has skyrocketed, with 46 percent living in urban areas by 2009. Recognizing the urban demand, China has also moved to establish over two hundred new cities. Elsewhere in Asia, in countries including Bangladesh, India, and Pakistan, cities are faced with almost unparalleled challenges. In India, for example, the population is approximately 70 percent rural, yet by 2030 the urban population of India is expected to exceed 600 million (India is currently home to a population over one billion). Although these countries are less urbanized than some African countries (India, for example, is only 29 percent urbanized, and Bangladesh was 25 percent urbanized in 2009), they

already contain many of the world's largest urban agglomerations. Many African cities lack investment, and countries are dominated by a large "primate" city, or a city that is disproportionately larger than other cities within the urban hierarchy, rather than a network of cities.

Fourth, characterized by poor infrastructure and faced with an influx of people from rural areas, urbanization in much of the developing world has led to unplanned settlements and squatter settlements, growing regional inequities, insufficient urban infrastructure, poor health, and the degradation of resources. Rapid urbanization has often meant that governments have not been able to provide adequate or basic health care or infrastructure such as clean water, and mortality rates are frequently far worse in poor urban as compared to rural areas.[9] In one study in Bangladesh, for example, infant death rates varied from 95 to 152 per 1,000 in urban areas, higher than both middle-class urban areas (32 per 1,000) and rural Bangladesh.[10] Continued in-migration from rural areas and increasing population density may push mortality and morbidity higher in urban areas.

Megapolitan Cities

Megapolitan cities reflect the growth or merging of different cities into one large city or network of cities, such that divisions between urban areas are seamless. In the United States, this is characterized by the Boston–New York–Philadelphia–Baltimore–Washington urban area (the so-called BosNYWash region). Other megapolitan areas include the Midwest's Chicago–Gary–Milwaukee area, Southern California's Los Angeles–San Diego area, and northern California's San Francisco–San Jose–Sacramento region.[11] As of 2003, megapolitan areas in the United States represented more than two-thirds of total US population—nearly 200 million people—but contained less than a fifth of the land area in the lower forty-eight states.[12] Although the use of the megapolitan term, at least in the US case, does not fit with any urban definitions currently used by the US Census Bureau (see discussion in chapter 8's "Methods, Measures, and Tools"), these megapolitan areas cover a vast but integrated area connected by transportation networks, commuting flows, and some shared history.

Beyond the geographic reality that these cities are proximate to each other, the megapolitan concept realizes that

> modern cities are better reviewed not in isolation, as centers of a restricted area only, but rather as parts of "city-systems," as participants in urban networks revolving in widening orbits.[13]

Therefore, it is increasingly argued that the economic role of one city extends far beyond its metropolitan boundaries, extending to potentially influence world
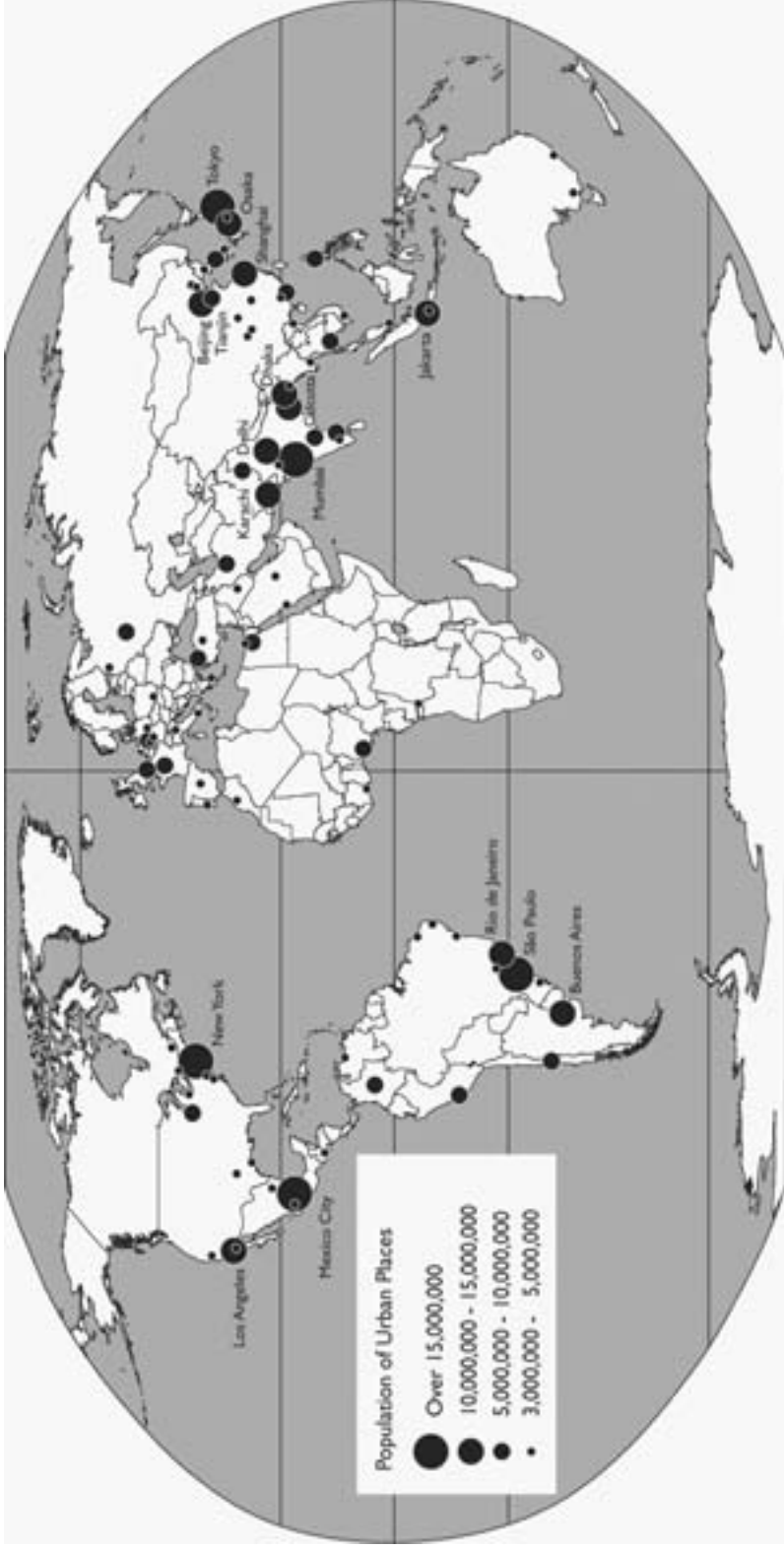
Figure 9.2 Major Cities of the World, 2005. *Source:* Brunn et al., 2008, *Cities of the World*, figure 1.1. Reproduced with permission.

affairs. Few would argue, for example, that the New York region does not influence the world economy, given its core financial sector, a realization that was particularly dramatic in the financial meltdown and credit crisis of 2008.

Megacities

Despite the fact that 50 percent of the world's population lives in an urban area, most are living in small towns or villages, and just 37 percent reside in cities of at least one million people. Although home to a relatively small proportion of the world's population (8 percent), the number of *megacities*, or cities with populations in excess of ten million, has grown from eight in 1985 to twenty in 2008, with the number projected to grow to at least twenty-two by 2015. The largest cities in the world are growing rapidly in size, and increasingly, many are found in the developing world (table 9.1). Indeed, in 1950 the three largest cities were in developed countries, with New York being the largest city in the world with a population of about twelve million. London and Tokyo were close behind, and Paris, Moscow, and Chicago were also in the top ten. By 2005, both Tokyo (35.2 million) and New York–Newark (18.7 million) remained in the list of top ten cities, but the remaining top ten megacities were located in the developing world. Three of these ten-million-plus cities are in India: Delhi, Kolkata (Calcutta), and Mumbai (see figure 9.2). The growth of these megacities is related to the same reasons and processes we saw with urbanization, including their economic attraction or the prospects of jobs and employment. Additionally, a rapidly expanding population base, driven by in-

Table 9.1.   The Ten Largest Urban Agglomerations: 1950 and 2015

1950		2015	
Agglomeration	Population (millions)	Agglomeration	Population (millions)
New York–Newark, USA	12.338	Tokyo, Japan	35.494
Tokyo, Japan	11.275	Mumbai, India	21.869
London, UK	8.361	Mexico City, Mexico	21.568
Shanghai, China	6.066	São Paulo, Brazil	20.535
Paris, France	5.424	New York–Newark, USA	19.876
Moscow, Russian Fed.	5.356	Delhi, India	18.604
Buenos Aires, Argentina	5.098	Shanghai, China	17.225
Chicago	4.999	Kolkata, India	16.980
Kolkata, India	4.513	Dhaka, Bangladesh	16.842
Beijing, China	4.331	Jakarta, Indonesia	16.822

Source: *United Nations World Urbanization Prospects: The 2005 Revision.*

migration from rural areas and smaller settlements, along with higher rates of natural increase, ensures their growth.

While there is, as of yet, no apparent limit to the size of cities before they produce more negative externalities and costs than benefits, and we can point to the ability of cities such as New York, London, or Tokyo to function, these cities are in the developed world. The majority of the new megacities will be in the developing world, and it is unknown whether the cities themselves or the states will be able to provide sufficient infrastructure and employment opportunities for the burgeoning urban population. More likely, the new megacities will be characterized by high levels of poverty, poor living conditions, inequality, poor health, and few employment opportunities.

IMPLICATIONS OF URBAN GROWTH

In the developing world, urban migrants are typically from rural areas, driven by the large gap in the standard of living along with poor rural conditions caused by environmental degradation and a skewed distribution of resources favoring the elite. With rural-to-urban migration fueling much of the growth of urban areas in the developing world, governments may not be able to cope with rapid population growth and the provision of services, including health care and education,[14] irrespective of the size of the city. Conflict is a possible outcome. For example, with poverty remaining one of the most pressing issues in urban areas, migration could breed economic frustration given insufficient employment opportunities and unfulfilled expectations. Perhaps as many as 42 percent (if not more) of the world's urban population can currently be classified as living below the poverty level, with urban poverty increasing in much of the developing world. In 1970, for example, urban areas contained just 36 percent of Latin America's poor. By 1990, the proportion had jumped to 60 percent. By 2025, the World Bank estimates that the majority of the world's population will be living in poverty.[15] Migrants may also have problems adjusting to urban areas. Seeking entry into groups for support and friendship in their new surroundings, they could easily be recruited into groups that espouse violence. Since many of the migrants are young men, generating a much larger demand for education and jobs, they are easily mobilized for political ends.

CONCLUSION

With the urban population expected to grow dramatically in the coming decades, the implications associated with the growth of large urban areas are enormous. Problems, including poverty, pollution, crime, class tensions, and

transportation, will be on a scale never before seen. The situation is frequently worse in cities that have been strained by rapid population growth, little investment, and government ineptitude.[16] Infrastructure systems, such as water, roads, or electricity, have decayed as governments have been unable to keep up with the demand posed by continued in-migration from rural areas and smaller centers. The magnitude of urban growth in the developing world has generated an intense and ongoing debate about whether the developing world can accommodate the anticipated growth of cities and whether there is a potential for conflict in areas with few resources and slow economic growth.[17] Optimists claim good governance, proper management, and investment can overcome population constraints, although these are often missing in the developing world. Others are more concerned. Higher mortality, low standards of living, the poor living environment, depletion of resources, and increasing poverty and inequality are symptomatic of urban problems, all of which could weaken the state.

FOCUS: PLANNING FOR GROWTH

The growth of urban areas has often meant the construction of new infrastructure on the peripheries of cities (urban sprawl). While expensive in its own way, with sprawl straining the resources of cities and taxpayers alike, this has also meant the abandonment of older, inner-city areas. Sprawl, for instance, increases the need to drive while decreasing open space. Sprawl also means that tax money subsidizes new developments through the provision of water and sewer lines, schools, and police and fire protection, costs which are not fully offset by the taxes paid by the new users. Consequently, the continued growth of urban areas, and particularly large urban areas or megapolitan areas in the developed world, has increased the recognition of the need for planning to deal with the adverse effects of population growth, including urban sprawl, traffic gridlock, and the loss of agricultural areas.

Recent discussions of how best to plan urban growth in North America are frequently presented as "smart growth" policies.[1] With the intention of creating sustainable communities, smart growth aims to preserve open space while allowing for population growth through better transportation and increased population density by making efficient use of land and resources. Smart growth policies include ten planning principles, such as increased walkability, mixed-income communities, mixed land uses (i.e., residential and commercial), and compact neighborhoods. Emphasizing infill development and increased population, smart growth is, in part, meant to recreate the self-contained neighborhood of pre–World War II towns and cities, where the downtown, housing, schools, and employment are within walking distance. But it is also far more than just a modern spin on our image of small-town life, recognizing that community building happens on different scales. At the regional scale, smart

growth addresses the issues of urban expansion, public transportation, farmland preservation, and environmental protection. At the local, neighborhood scale, smart growth addresses the issues of livability, community character, transportation, and housing choices.

In short, smart growth aims to reduce urban sprawl, manage growth, create livable communities, promote economic growth, and protect the environment. While there can be little argument over the need for "smart growth" (as opposed to the potential opposite), there is clearly a range of policy options and ultimately outcomes that result from these guiding principles. That is, developers, planners, politicians, and government agencies are able to interpret the principles as they see fit or select only components of the smart growth agenda. Nonetheless, the principles have also been widely implemented and have gained increased attention, with the following discussion outlining two examples.

URBAN GROWTH BOUNDARIES: PORTLAND, OREGON

Urban growth boundaries (UGBs) represent one way of delimiting where an urban area stops and a rural area starts. The primary reason for UGBs is to reduce sprawl and to conserve farmland and open space, both of which are achieved by limiting development to a specific region. Cities that have adopted UGBs include Seattle, Washington; Boulder, Colorado; Lancaster County, Pennsylvania; and Minneapolis/St. Paul, Minnesota. Portland, Oregon, is perhaps the best-known example of UGBs, and is frequently cited for its success in controlling urban sprawl through the implementation of UGBs in the early 1970s through the use of a mix of redevelopment, transportation, and land-

use policies. As early as 1973,[2] the Oregon legislature adopted land-use planning laws, requiring each city and county in the state to have a long-range plan addressing population growth, with perhaps the most significant component being the identification of UGBs. While boundaries were not meant to be static, their expansion was based on need. Planning documents also called for the protection of natural resources.

Like the rest of the state, the city of Portland needed to identify its urban growth boundary, a process that involved Washington, Multnomah, and Clackamas counties, twenty-four cities, and more than sixty special service districts. At the same time, it needed to provide for future population and industrial growth. Once defined, the boundary protected rural areas from population sprawl. Inside the urban growth boundary, land is used for housing, business, roads, parks, and other urban needs or systems. Urban development within the growth boundary has effectively resulted in the more efficient use of urban land through housing infill (i.e., developing vacant lots), increased density (i.e., increasing the housing density on a given lot), redevelopment of the downtown core, and increased public transportation.

GREENBELTS: SOUTHERN ONTARIO'S GREATER GOLDEN HORSESHOE AREA

With a population expected to exceed twelve million by 2031 and as an economically important region, the Ontario provincial government recognized the need for "big picture" planning for the Greater Golden Horseshoe (GGH). The GGH represents an area that includes the Toronto metropolitan area, stretching west through Hamilton to Niagara Falls, east to include Oshawa, and north toward the city of Barrie.

The need for planning was recognized in the related Greenbelt Plan and Places to Grow legislative pieces (Government of Ontario, 2005, 2006).[3,4]

The greenbelt legislation created an agriculturally protected area around Toronto, while providing for a diverse range of economic and social activities associated with rural communities, agriculture, tourism, recreation, and resource uses. The greenbelt also protected environmentally sensitive areas in the province. Concurrently, Places to Grow provided a strategy to "maximize benefits of growth," allowing communities to grow in a "complete" way by offering a mix of places to live, work, shop, and play. The plans identify where urbanization should and should *not* occur by directing growth to existing urban areas through intensification and by providing permanent protection to portions of the agricultural land encircling Toronto. Development was redirected from the urban edge to existing urban areas, with new suburbs required to be built at densities that could support and create complete "live/work" areas. Finally, through focusing of growth within existing urban areas, the legislation facilitated increased use of public transit over the private car.

IMPLICATIONS

While the need for planning to overcome issues of population growth and urban sprawl is straightforward, the reality of implementation is far different. Not surprisingly, smart growth seems to mean different things to different people, meaning there is often disagreement between various interest groups as to what it comprises. On the one hand, public agencies, including numerous municipal jurisdictions and local government agencies such as education districts, park and recreation districts, water districts, and other agencies, each represent their own interests. On the other hand, private groups, including land developers, construction, and the real estate industry, represent another set of needs and issues, meaning that bringing these diverse groups together and reaching a consensus on planning issues is difficult and time-consuming.

Both the Portland, Oregon, and Ontario examples include elements of smart growth policies. Regardless of whether smart growth policies, defined urban growth boundaries, or the provision of greenbelt space or other planning tools are used, there are both positive and negative implications. Urban growth boundaries and greenbelt policies have, for example, increased population density (or are designed to increase density) and created mixed-use or mixed-income housing, arguably creating more friendly and vibrant communities. This is perhaps most apparent in city centers, where older, rundown centers have been revitalized as centers for housing, shopping, and business. Reductions in automobile dependence, pollution, and traffic levels have also been attributed to their introduction, particularly when public transit is promoted as a viable alternative.

On the other hand, the success of these policies in curbing urban sprawl is difficult to measure because it is not known what a city would have looked like without it—how would the city of Portland of today differ if UGBs had not been created? In many cases, development simply "leapfrogs" the boundary or greenbelt, increasing development pressure on communities outside of the greenbelt or UGB and creating urban sprawl beyond the boundaries. In Ontario, developers were already looking at locations beyond the greenbelt for new housing development even before the greenbelt leg-

islation had been passed. In Portland, research concludes that the UGB has not slowed the pace of suburbanization or reduced automobile use.[5] In addition, significant urban development has occurred in neighboring counties, suggesting that Portland's UGB has simply diverted growth outside of Portland itself. Detractors have also voiced concern with the increased population density while noting the inflation of housing prices inside the UGB, given that land is essentially rationed and the housing supply is limited as population densities increase. Low-income households may be doubly disadvantaged, resulting in increased rental costs or increased commuting costs as they are priced out of the local housing market.[6]

METHODS, MEASURES, AND TOOLS: DEFINING "URBAN" ACROSS COUNTRIES

While the concept of an urban area is relatively straightforward, its definition is not, with different governments using different definitions of what constitutes "urban."[1] Definitions range from population centers of one hundred or more dwellings, to only the population living in national and provincial capitals, to statistical definitions based on minimum population thresholds and/or population densities. In Australia, urban areas are defined as population clusters of one thousand or more people and with a density of two hundred or more persons per square kilometer. In Italy, urban areas are defined as having populations in excess of ten thousand, while other European countries define urbanized areas on the basis of urban-type land use. Statistics Canada defines urban areas (UA) as population concentrations of one thousand people with a density of at least four hundred persons per square kilometer based on past census counts. All territory outside of a UA is considered rural. Statistics Canada also distinguishes urban areas based on population size. For example, census areas (CAs) are urban areas where the population count of the urban core is at least ten thousand. In addition, census metropolitan areas (CMAs) are those urban areas consisting of one or more adjacent municipalities situated around a major urban core. A CMA must have a total population of at least one hundred thousand, of which fifty thousand or more live in the urban core, and CMAs include cities such as Toronto, Vancouver, and Calgary. At the time of the 2006 census, Statistics Canada recognized twenty-seven CMAs. In less developed countries, various combinations of land use and population density are applied, as well as requirements that a majority of the population is not engaged in agriculture and/or fishing.

For the 2000 census, the US Census Bureau defined an urban area as the population located within an urbanized area (UA) or an urban cluster (UC), where UA and UC boundaries are defined to encompass densely settled territory, which consists of:[2]

- core census block groups or blocks that have a population density of at least one thousand people per square mile and
- surrounding census blocks that have an overall density of at least five hundred people per square mile.

It further distinguished urban areas based on population size between metropolitan and micropolitan statistical areas (metro and micro areas), which are geographic entities used for statistical reporting. A metro area contains a core urban area of fifty thousand or more population, and a micro area contains an urban core of at least ten thousand (but less than fifty thousand) population. Each metro or micro area consists of one or more counties and includes the counties containing the core urban area as well as any adjacent counties that have a high degree of social and economic integration (as measured by commuting to work) with the urban core.

Beyond distinctions of urban and rural, the US Census Bureau recognizes that American development patterns vary by spatial scale, and has thus created a scale of cities. Defined by the Office of Management and Budget (OMB), the term core-based statistical area (CBSA) refers to both metropolitan and micropolitan statistical areas. Metropolitan statistical areas must have at least one urbanized area of fifty thousand or more inhabitants. Micropolitan areas must have at least one urban cluster with a population between ten thousand and fifty thousand. In both cases, the largest city is designated the "principal city."

The various ways to define an urban area raises two important points. First, the various definitions make comparisons of urbanization levels across countries difficult. Consequently, the Population Reference Bureau uses the percentage of the total population living in areas defined as urban by that country in its annual *World Population Data Sheet* in order to provide comparability. Second, the different urban definitions highlight the fact that urbanization is a relative phenomenon: in countries that are sparsely settled or have small populations, the threshold for defining an urban area is typically smaller, while densely populated countries use alternate definitions.