Urbanization, Population, Environment, and Security

A Report of the Comparative Urban Studies Project

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A REPORT OF THE COMPARATIVE URBAN STUDIES PROJECT

"One of the most significant observable global trends with operational implications is increasing global urbanization. The exploding populations of the developing world exacerbate perennial problems such as starvation, poverty, disease and environmental degeneration. Large numbers of rural people will migrate to cities in search of a better life only to find worse conditions. Unable to afford urban dwellings, these migrants will settle in slums and shantytowns on the outskirts, creating a fervent ground for crises, conflict, terrorism, insurgency and other forms of political violence."

— United States Special Operations Forces Posture Statement, 1998[1]

AS THE WORLD WELCOMED its six billionth child on October 12, 1999, it also prepared for a new urban century. In 2000, 41 percent of the world lives in urban areas. By 2005, one-half of the world's population will be urban.[2] Median estimates of the world population from the United Nations and the World Bank predict that by 2050, more than 85 percent will live in developing countries and more than 80 percent will live in cities.[3] If the majority of the world's population lives in cities, urbanization matters. The challenge arising from urbanization is working to ensure that it is a positive factor in global development.

The Comparative Urban Studies Project at the Woodrow Wilson Center began a project in 1997 designed to both identify factors that contribute to making urban areas centers of violence and poverty and propose policy recommendations for improvements and making urban areas more sustainable. Population growth, resource stress, environmental degradation, social fragmentation, communal violence, and international crime were identified by the Center's research group as critical challenges for urban areas throughout the world. The group then concluded that ensuring that cities more effectively meet the needs of their citizens is directly related to the way in which they are governed.

Historically, urbanization has been seen as a critical tool for social development. In general, urban residents have higher rates of literacy, lower rates of fertility, and more economic opportunity. However, an examination of the past fifty years of urban development reveals that rapid and unmanaged growth of the world's cities is accompanied by several externalities. One such externality is the number of urban residents residing in slum conditions. It has been estimated by the United Nations Center for Human Settlements (UNCHS) that 600 million urban dwellers live in life- and health-threatening environments as a result of poor sanitation and housing.[4] Additionally, United Nations calculations show that 10 million people die as an indirect result of inadequate housing, poor sanitation, and unsafe water in densely populated cities.[5]

As urban areas become more prevalent in the twenty-first century, perhaps the biggest change that will occur is the increase in the number and size of smaller secondary cities. Cities with a population over one million have increased from 11 in 1900 to 105 in 1990 and will potentially increase to 248 by the year 2015.[6] Megacities will also reach sizes never before imagined. Statistics from the 1998 World Urbanization Prospects report published by the United Nations show that Tokyo will have a population of more than 28 million people in 2015. Bombay, India, and Lagos, Nigeria, will follow with populations of more than 26 million and 24 million respectively.[7] Mexico City and São Paulo, the largest cities in Latin America, will have populations approximating 20 million.

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As shown by the above data, the sheer rate of urban growth in the next century makes the well-being of cities a critical future challenge. The June 1996 Habitat Conference in Istanbul recognized this challenge when it set urban livability as a goal. However, concern for the "stability" of urban areas extends beyond the humanitarian agenda of achieving "livability." In this borderless global age, what happens in one city may have implications for others. As global and local become seamless, urban realities become ever more important for the security of nations. Although urban areas are the engines of regional economies, they are often characterized by economic and environmental scarcities that contribute to poverty, generate large and destabilizing population movements, increase tension along ethnic, racial, religious, and class lines, and debilitate social, political, and legal institutions—all of which profoundly affect international stability.

Specificity of place has always been an important consideration in developing strategies for insuring peace and security. Until recently, such particularity has more often than not been that of the nation-state's society and culture. The last quarter-century has been a period in which the specificities of the metropolitan region and urban neighborhoods—the quality of urban life—increasingly influence the course of international peace and security. Political ties and the reliance on international trade and travel blur local, regional, national, and international boundaries. In Beirut, bloody neighborhood clashes have helped shape the contours of regional conflict. United Nations forces have been deployed to separate Sarajevo from its mountainous suburbs. The 1994 outbreak of the plague in Surat, India, due to poor urban sanitation was a public health threat with potential global ramifications. Natural disasters in urban areas, as evidenced by the 1999 earthquakes in Turkey and Hurricane Mitch in Central America and the Caribbean, caused crises of international proportions. The U.S. military's experiences in Somalia and Haiti are cases in point of why understanding the local context will help determine the success of international intervention.

In an era when the local is of increasing global importance, defense specialists are forced to ask new questions: What are the indicators of instability? Are there easily recognizable flashpoints? Given that subnational actors are at the center of most emerging conflicts, often mobilizing their resources within cities, the present analytical challenge is to consider twenty-first century urban dynamics and dilemmas within a security rubric with the aim of making clear the causes of potential disruptions to the international order.

Like urbanization (which is different in Africa, Asia, Latin America, Europe, or the United States) security, similarly, has different meanings. At the level of the Department of Defense, security translates into urban tactical planning and military engagement. Since future wars will most likely be in urban areas, the U.S. military has adopted the term "urban security" as a way of assessing the risks posed by urban conditions. Operation Urban Warrior is the United States Marines' response to the threat of urban warfare. Their mission goals are to:

> Using a sea-based, Navy-Marine Corps team, provide humanitarian and disaster relief assistance to a large metropolitan city, including food, water, shelter, and medicine. Successfully conduct an amphibious landing, helicopter assault and mass casualty drill

In the growing debate about urbanization and security, it is clear that urbanization by itself is not the key piece to the security puzzle. Not all urban areas are dangerous; in fact, many are success stories. However, combined with variables such as high population growth rates, high incidences of violence and crime, environmental pollution, decentralization policies lacking adequate resources, and political illegitimacy, urban areas can potentially become explosive.
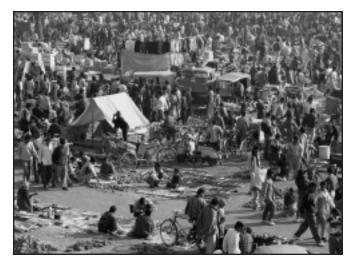
in response to an incident involving chemical or biological weapons, and in coordination with police and fire departments. Conduct a mid-intensity combat operation in an urban environment against a backdrop of civil unrest, and restore order.[8]

Urban researchers, on the other hand, tend to get nervous at the thought of Marines parachuting into local communities. They are more concerned with the loss of "citizen security" that accompanies high rates of crime and violence in societies that increasingly are spatially and politically fragmented. From the point of view of a research associate who works with poor communities in São Paulo, security is defined as a child's ability to leave his/her home to play and be relatively certain of returning unharmed. In other cities plagued by air pollution, poor sanitation, and contaminated water, such as Ahmedabad, India, security means being able to live in a city without becoming ill. For others, security is defined by a safeguard against environmental disasters. Although "urban security" has not yet been adopted as the preferred way to view urban problems, this rubric allows us to discuss the host of variables, each impacting the other, that affect the stability of cities and the well-being of the people who live in them.

In the growing debate about urbanization and security, it is clear that urbanization by itself is not the key piece to the security puzzle. Not all urban areas are dangerous; in fact, many are success stories. However, combined with variables such as high population growth rates, high incidences of violence and crime, environmental pollution, decentralization policies lacking adequate resources, and political illegitimacy, urban areas can potentially become explosive. Studies of urban areas throughout the globe have pointed to the lack of state capacity as a critical factor in the failure of many city administrations to meet the basic needs of their growing urban populations.

Central authorities, for their part, seem all too happy to devolve responsibilities to their local and regional components. According to data collected by the United Nations Development Program (UNDP), sixty-eight nations claimed to have undertaken some form of administrative and/or political decentralization programs by late 1997. [9] Whether it is a more orderly transfer through American-styled "new federalism," or the chaotic casting off of obligations by collapsing governments in Africa and Central Eurasia, there seems to be an almost universal inability or unwillingness on the part of central governments to pay for social welfare programs. A common complaint of mayors and governors, from Brazil to Poland and from India to the United States, is that both

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central governments and local populations expect local government to do more, while neither the national government nor the taxpayer seems willing to put up the funds required to sustain local administrations. Meanwhile, social inequality has been growing within cities for more than two decades, regardless of those communities' overall economic wealth and well-being.

Competition over scarce urban resources means conflict from below, while devolution of responsibilities by national governments to their constituent parts, often not accompanied by resources, means that communities lack the capacity to respond effectively to the mounting challenges. The resulting absence of authority creates fresh opportunities for activities threatening to the international security system as seen in the expansion of organized crime, international drug and arms trafficking, and the rise of urban-based epidemics of previously eradicated diseases.

The way in which urban areas relate to the global order is also significant to how we understand them. Subnational units emerge as international actors, as may be discerned by the growing presence of city, provincial, and state representational offices in the world's political and financial capitals. Less visibly—but arguably of greater significance—social conflict and political instability tied to mass urbanization and its concomitant environmental and social disruptions readily spill across international frontiers. There is evidence that international narcotics dealers and arms traders—as well as their criminal organizations—thrive in the interstices created by ineffectual local governments.

Although the "potentiality" of cities may be overwhelming, how alarmist one should be about our urban future largely depends upon the extent to which governing structures can be created to ameliorate the worst effects of massive growth. City governments need to have the capacity and the political legitimacy to make their cities more livable. Cities must be governed in a manner that allows citizens to participate fully in the decisions that affect their lives. Political mechanisms that encourage community participation in resource allocation and agenda setting have proven to be effective ways of ensuring that the needs of all citizens are recognized. The well-governed community, "the dog that didn't bite," may hold the key to what tips the scale from stable to unstable.

This report is composed of papers, policy briefs, and discussions that outline some of the basic challenges facing the world's cities. Ellen Brennan, chief of Population Policy at the United Nations, cites population growth as a factor contributing to instability. She argues that one of the most striking features of world population growth is that it is a predominantly urban occurrence in developing countries. Brennan outlines the key challenges that accompany this growth.

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Michael Renner, senior researcher at the Worldwatch Institute, identifies environmental stress factors, unemployment, small arms proliferation, and inequality as contributing to the rise of urban violence and crime. Although slowing population growth rates will help reduce the pressure on cities to provide housing, employment, and access to basic necessities like water and sanitation, cities will still continue to grow.

Alan Gilbert, professor of geography at the University College London, tackles the urban security debate. He argues that there is no consistent or meaningful relationship between urbanization and security. Gilbert first assesses current literature on urbanization and security. He then concludes that a city's success or failure to create a secure environment depends upon specific policies employed by the city government rather than on urbanization itself.

Taken together, these three papers and a collection of excerpts from other research, constitute a major contribution to an ongoing discussion about the challenges of urbanization, population growth, environmental degradation, and security.

1. "Shaping of Tomorrow's SOF." United States Special Operations Forces Posture Statement, 1998.

2. Alene Gelbard, Carl Haub, and Mary Kent. "World Population Beyond Six Billion." *Population Bulletin* vol. 54, no. 1 (Washington, DC: Population Reference Bureau, March 1999), p. 17.

3. Donald Kennedy. "Environmental Quality and Regional Conflict." *A Report to the Carnegie Commission on Prevention of Deadly Violence* (Washington, DC: Carnegie Commission on the Prevention of Deadly Violence, December 1998), p. 37.

4. Gelbard, Haub, and Kent, *World Population Beyond Six Billion*, p. 28.

5. Michael Renner. *Environmental and Social Stress Factors, Governance, and Small Arms Availability: The Potential for Conflict in Urban Areas*. Comparative Urban Studies Project Occasional Paper Series, no. 15 (Washington, DC: Woodrow Wilson Center, 1999), p. 20.

6. Richard Stren, "Towards a Research Agenda for the 1990s: An Introduction," pp. 3–15 in *Urban Research in the Developing World, Volume One: Asia,* edited by Richard Stren. (Toronto: Centre for Urban and Community Studies, University of Toronto, 1994).

7. United Nations. *World Urbanization Prospects: The 1996 Revision*. (New York: United Nations Department of Economic and Social Affairs: Population Division, 1998).

8. Operation Urban Warrior Homepage. http://www.defenselink.mil/specials/urbanwarrior

9. Stren, "Towards a Research Agenda for the 1990s," pp. 3–15.

Institutional Weakness, Organized Crime, and the International Arms Trade

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THE CITY OF EKATERINBURG, situated astride the boundary between Europe and Asia in the southern Urals region, is Russia's fifth largest city and is located in the country's second most productive economic region.[1] Ekaterinburg, which long served as one of the Soviet Union's most important military research, development, and production centers, has been a significant urban center almost from the day of its founding in 1723. Renamed Sverdlovsk between 1924 and 1991 in honor of local Bolshevik hero Iakov Sverdlov, the city has become home to 1.4 million people. Standing in the heart of Russia's rust-belt industrial economy, it contains some of Russia's leading ferrous and nonferrous metallurgy centers, electronics factories, chemical refineries, pharmaceutical production facilities, and equipment manufacturing plants for the processing of raw materials.[2]

Ekaterinburg, not surprisingly, has been hit hard by the post-Soviet industrial collapse of Russia throughout the 1990's in which Russian industrial production fell nearly 60 percent. As recently as July 1995, four out of every ten Ekaterinburg employees worked in largely state-controlled industries while a quarter of the city's population attempted to live on continually diminishing state pensions.[3] The preponderance of the population depended on the Russian Federation state budget in one way or another for sustenance, yet the Federation increasingly failed to deliver on its promises.

Soviet-era Sverdlovsk was one of the country's richer and more privileged cities. The population grew accustomed to an availability of goods and services absent elsewhere, especially during the time when the young, energetic, and home-grown Boris Yeltsin served as the local Communist Party chief during the early 1980s. Rallying behind Yeltsin, local reform-minded intellectuals made their city a hotbed of democratic activism during Gorbachev's perestroika era.

The post-Soviet period has been one of considerable upheaval, even though the Bank of Austria ranked Ekaterinburg and the surrounding region fifth in 1995 among Russia's 89 constituent subunits in terms of favorable investment climate.[4] As elsewhere in Russia, an imploding central government abandoned Ekaterinburgers and left them largely to fend for themselves. Faltering local administrators—ambitious in their reach yet limited in their capacities—similarly failed to maintain control over local life. The subsequent vacuum left by state collapse has been filled by organized criminal groups trading, among other goods, the intellectual and industrial production of what was one of the world's leading centers of military research, development, and production but a decade before.

Local strongman, Sverdlovsk Regional Governor Eduard Rossel, emerged as one of the leading advocates of a powerful state sector in Russian economic life.[5] Rossel advocated sustaining state industrial production at a level of approximately one-third of GNP as well as keeping military production as the cornerstone of Russian industry, even if the Central Bank must print more currency to keep tanks and planes rolling off of production lines. Rossel has been one of Russia's leading advocates for the renationalization of large enterprises. He has also been a leading spokesperson for regional interests. Although he continued to support Yeltsin in battles against Communists and nationalists, he later consistently charged that the Federation government shortchanges regions and municipalities.

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Rossel had grounds for complaint. Sverdlovsk remains a "donor region," passing forward more tax revenue than it receives in return from central authorities. Meanwhile, the region and its municipalities, such as Ekaterinburg, are struggling to meet their obligations for social programs. As elsewhere in Russia, wage and pension arrearages have plagued local efforts to jump-start the economy. Workers and researchers, left on their own, increasingly seek sustenance where they can find it. Frequently, organized crime provides the sort of living wages the state and a rudimentary private sector cannot.

By mid-1997, the Russian Ministry of Internal Affairs estimated that 40 percent of all private business in the country, 60 percent of state-owned enterprises, and 50 to 85 percent of all Russian banks were controlled directly or indirectly by organized crime syndicates.[6] The United States Federal Bureau of Investigation simultaneously identified "some 8,000 crime gangs" operating throughout the former Soviet republics, including 200 that operate globally.[7] Two-dozen post-Soviet criminal groups were known to be operating at that time within the United States while many Russian "mafia groups" developed direct working arrangements with U.S., Sicilian, and Colombian crime syndicates. These groups largely survive off the entrails of the Soviet state, selling assets whenever possible. In Ekaterinburg those holdings often include weapons, military technology, and, quite possibly, nuclear secrets and materials.

The threats to the international order posed by Ekaterinburg mobsters are real no matter how traditional one's definition of "international security." Purchasing agents from several "pariah" states are known to have found their way to Ekaterinburg doors. Credible experts on Russian organized crime suspect that local industries are providing those states with weapons and technologies that could prove destabilizing to global consonance. The ability of local organized crime groups to operate effectively is a direct consequence of the deterioration of both national and urban governance structures. Ekaterinburg is one place where urban crisis and international security concern converge with little deceit. There, local and global are one.

1.   Gosudarstvennyi komitet Rossiiskoi Federatsii po statistike, Narodnoe khozaistvo Rossiiskoi Federatsii, 1992. *Statisticheskii ezhegodnik,* p. 87. Moscow: Respublikanskii informatsionno-izdatel'skii tsentr, 1992; "Regional Profile: Sverdlovsk Oblast," *IEWS Russian Regional Report* 2, no. 27 (21 August 1997).

2.   "Regional Profile: Sverdlovsk Oblast"; "Sverdlovsk," *Bol'shaia Sovetskaia entsiklopediia,* vol 23, pp. 39–40. Moscow: Sovetskaia entsiklopediia, 1976.

3.   "Regional Profile: Sverdlovsk Oblast."

4.   Ibid.

5.   Ibid.

6.   William H. Webster, et al., *Russian Organized Crime* (Washington, DC: Center for Strategic and International Studies, 1997), p. 2.

7.   Ibid., pp. 2–3.

International Drug Trafficking: Seeing the Urban Component

Presented by Jorge Chabat at the Woodrow Wilson Center

Jorge Chabat, director, International Relations, Centro de Investigación y Docencia Económicas, Mexico City, Mexico, linked economic crises, ineffective national policies, and failed urban management in Mexico City with the growth of drug cartels there. According to Chabat, urban based drug cartels have grown during the recent decades in Mexico because of several factors: a) the development of a mafia inside the Mexico City Police; b) the failure at the national level of the anti-drugs campaign of the 1970s; c) the chaotic development of Mexico City, that favored other forms of organized crime; and d) the economic crisis of 1982, 1987, 1995, that contributed to the increase of common crimes in the cities.

Drug trafficking is primarily an urban activity: it takes advantage of the concentration of resources and increases in drug consumption. Since cities are the space where organized and common crime meet, governments need to address both dimensions of urban crime. The sheer rate of population growth in Mexico City has placed enormous pressures on the city government. With a population estimated to be about 20 million, it is no wonder that it is difficult for government to manage criminal activity. From 1993 to 1997 alone, crime rates rose 91 percent. Today Mexico City is known for its high rates of homicide, kidnapping, drug trafficking, and organized crime.

Chabat questioned the interdependent variables that cause people to engage in ordinary crime and drug trafficking. He found that people resort to the informal and often illegal economy when there is a lack of legitimate economic opportunity on the local and national levels. Chabat concluded that improving the national and urban economies as well as effectively managing urban growth are critical to reducing ordinary crime and international drug trafficking.

Urbanization, Population, Environment, and Security

Water for Big Cities: Big Problems, Easy Solutions?

THE MAGNITUDE OF THE PROBLEM

In the large urban areas of developing countries, about 30 percent of the population does not have access to safe water, and 50 percent do not have adequate sanitation. That means that over 500 million people do not have safe water, and 850 million people do not have proper sanitation. Now consider that by the year 2020, there will be nearly 2 billion more people in urban areas needing these services. Putting it another way, in the next 20 years water supply coverage will have to more than triple, and sanitation coverage more than quadruple, if everyone in these countries is to be adequately served. To do this, even at a low consumption figure of 100 liters/person/day, cities will require an additional 88 billion cubic meters (BCM)/year—both of water to be supplied and of wastewater to be safely disposed of.

Considering capital costs for supply alone, this would imply investments of US$24 billion each year from now until 2020. These costs, however, are small compared with those for providing conventional wastewater disposal, which would require an additional US$82.5 billion per year. Compared to current levels of spending (around US$20–25 billion/year, of which multilateral lending accounts for around US$1 billion/year), approximately a fourfold increase would be needed.

Examining these rough estimates, one can easily understand the expressions of alarm from professionals in the sector. However, even if funds of this magnitude were available, most of the existing sector institutions in developing countries would not be able to make effective use of them. This is partially because they have almost invariably been modeled on those in industrialized countries, and so they have a top-down, supply-based approach with little if any understanding of or the skills needed to involve the community in ensuring sustainable supply. An equally severe problem is political control of the sector, resulting in institutions that have limited autonomy and so suffer from gross over-staffing, inability to offer competitive employment conditions that would attract and retain competent staff, and lack of authority to set tariffs that recover costs and provide a sound basis for proper operation, maintenance, and system expansion.

THREE EASY REMEDIES

Certainly there are some countries, as well as some cities, where absolute scarcity of water will make life extraordinarily hard unless growth can be curbed and over-exploitation and pollution of water resources halted. But in the great majority of cases there are remedies available that should have been mandated years ago. Although early application would have been ideal, they can still be implemented now, before it is too late. These remedies are: (a) reduce unaccounted-for water (water that is pumped into the system but never produces any revenues for the company), which at present is often at an excessively high level; (b) avoid or discourage wasteful use by imposing higher charges on excessive use, encouraging the use of water-efficient fixtures or industrial

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processes, and, above all, adopting sanitation systems that place minimal demands on water supply; and (c) change intersectoral water allocations, in particular from inefficient, low-value irrigation usage to higher value, higher efficiency urban supply.

REDUCE UNACCOUNTED-FOR WATER

Many cities do not know what happens to more than half of the water that is pumped into their systems. This water disappears through physical leaks, is stolen through illegal connections, and is not recorded because meters are not functioning or are not read, or is not billed because of institutional inefficiency or corruption. The proportions vary, but the result is the same: a system that is hard to manage, in which scarce water is lost and by which the revenue necessary to support proper operation and maintenance is not generated.

The ways to solve this problem are well known and not technically complicated: reduce physical losses to the lowest level economically; meter at least all major consumers (universal metering may have to be a longer-term project); and bill everyone for water supplied, and enforce payment. Why these have not been rigorously applied by "water-short" cities, or insisted upon by multilateral donors, is one of the mysteries of the sector; the current levels of losses would not be tolerated in a commercial operation.

AVOID OR DISCOURAGE WASTEFUL USE

Just as the methods for curtailing unaccounted-for water are well known, so are many of the tools for reducing needless water use. Tariffs should increase with consumption. Although low-income users should be protected by "lifeline" rates, higher consumption should be charged at the marginal cost of developing new supplies (caused by excessive use); this extra cost, two to three times higher than the current cost of supplies, should deter frivolous water use. Water-saving devices should be mandatory, so that all installations and renovations use only such devices. Industrial processes should be made much more water-efficient, either by process redesign or by recycling within the industry itself. Alternative on-site sanitation systems offer the same health benefits as conventional sewerage at a fraction of the cost and require little or no water for operation. Where sewers are needed, simpler, less expensive alternatives to conventional systems can provide the same level of service. Since most "waterborne" diseases have their origin in fecal-oral transmission due to inadequate sanitation, policy endorsement and widespread adoption of these alternative sanitation systems is the single most significant contribution that could be made to water conservation and public health.

CHANGE INTERSECTORAL WATER ALLOCATIONS

Although water use in urban areas may be inefficient, the losses are lower and the cost recovery better than the equivalent use in irrigated agriculture, which may account for 70 to 80 percent of that use. Therefore, if water is to be treated as an economic good, it

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is reasonable to consider reallocating water from irrigation to municipal use. The marginal value of agricultural water use is substantially lower by perhaps a factor of 10, than the willingness of urban households to pay for it. A small increase in the fees charged for irrigation water (or introduction of such fees, in the many cases where water is supplied without charge) should release sufficient water resources to meet anticipated urban deficits.

Of course, this is a politically sensitive issue. This alternative would probably be considered when the institutions responsible for urban water supply have clearly demonstrated (by undertaking the other two steps successfully) that they are using water as efficiently as possible with limited shortfalls. Insistence on water resource allocation would then be justified; after all, water used in food production can in effect be imported (in the form of the food itself, for example, grain), but it is not feasible to import the water needed to sustain a city.

ONE QUESTIONABLE "SOLUTION"

Currently the conventional thinking on the part of the multilateral financing institutions (MFIs) is that municipal water supply should be provided through private sector intervention. There is no doubt that private sector participation has much to offer in terms of better management skills and a more commercial approach. However, this option raises some serious issues: What are the implications of handing over a "natural monopoly" to a commercially-oriented private sector company, especially (as seems to be the case at present) if this company is foreign? Can such a company be expected to ensure affordable service to the urban poor? If it is required to do so under the terms of its agreement with the municipality, does the regulatory capacity exist to enforce such practices? Is the limited number of companies internationally involved in this privatization effort able to provide the services demanded? And, the most fundamental of all, given the required preparation and the relaxation of existing constraints essential to ensure success of the privatization, would the results be as efficient if local sector institutions were to operate under the new commercial rules, with the same degree of external assistance?

WHY EASY SOLUTIONS HAVE NOT BEEN IMPLEMENTED

The following list of reasons why these apparently easy solutions have not been implemented is long and highly dependent on individual circumstances. (1) Commissioning major new source and transmission works is far more politically rewarding than the mundane task of reducing unaccounted-for water. It is also much easier to obtain external funding for new works, and the MFIs have not made unaccounted-for water reduction a precondition of funding for new investments. (2) Water supply has not been treated as a commercial enterprise. Keeping water tariffs low can be presented as controlling inflation or making service affordable to the poor (in reality, it ensures service deficiencies such that the poor never get supplied and have to pay very high rates to vendors). Raising tar-

iffs, on the other hand, can result in riots, especially if it has to be done before service can be improved. (3) Service standards are too often based on inherited inappropriate codes, leading to unaffordable, nonsustainable systems, rather than ones permitting progressive upgrading over time to match people's changed economic circumstances. This is especially so in sanitation. (4) Inadequate community consultation leads to supply-driven rather than demand-driven projects, and hence too poor cost recovery because of failure to determine "effective demand." (5) There is a failure to create effective institutional frameworks, including regulatory capacity, autonomous service providers, and appropriate involvement of the private sector and the user communities. (6) There is no integrated water resources management (which would include the use of "linear" rather than "circular" systems, so as to extract the maximum value from all resources used, and taking a holistic view, treating water and sanitation systems as interdependent).

CONCLUSIONS

Governments (in collaboration with external support agencies, where these are involved) need to determine which of the "easy solutions" are appropriate and then implement them. However, it is abundantly clear that this will not have the desired effect in the absence of political will and an "enabling environment." Government at all levels— national, regional, or state—needs to support the institutions responsible for service delivery by taking the necessary actions to establish such an environment, including: (1) developing an integrated approach to all water resource use, and creating institutions that will be able to resolve intersectoral and interregional conflicts over use; (2) creating a structural and regulatory framework that devolves responsibility for urban environmental service delivery to the lowest level able to provide it, encouraging private sector participation and community participation, and supporting community management of service delivery where the community is able and willing to assume that responsibility; (3) insuring that urban environmental services are sustainable over the long term; (4) exploring ventures with the private sector to reduce the need for publicly funded capital investment programs and to increase institutional competence; and (5) clarifying the relationships between the technology for wastewater and its impact on water demand (including exploring the issue from the ecological perspective of nutrient-cycling).

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Territorial Exclusion of the Poor in São Paulo

Presented by Raquel Rolnik at the Woodrow Wilson Center

"Territorial exclusion" isolates the poor and increases violence and civil unrest in the city. Raquel Rolnik, former public policy scholar at the Wilson Center and professor, Faculty of Architecture and Urbanism, Pontifica Universidade Católica de Campinas, São Paulo, Brazil, focused on the way in which urban planning and regulation have contributed to the creation of divided and isolated communities. In São Paulo, Rolnik found two environments: "a landscape produced by private entrepreneurs and contained within the framework of detailed urban legislation, and another one, three times greater, self-produced by the poor and eternally situated in an illegal zone between the legal and illegal."[1] She found that the poor are relegated to an area without services and few resources or recourses. This spatial isolation of the poor then allows the wealthy to abandon their "stake in the physical wellness" of the poorer neighborhoods.[2]

According to Rolnik's findings, territorial isolation of the poor is a powerful force of social exclusion that makes communities particularly vulnerable and creates an environment ripe for violence and crime. "We have chosen the term 'territorial exclusion' for the obvious purpose of linking it with the concept of social exclusion, rather than poverty or class disparities...Social exclusion, then, is seen as a way to analyze how and why individuals and groups fail to have access to or benefit from the possibilities offered by societies and economies. The notion of exclusion links together both social rights and material deprivations, so it encompasses not only the lack of access to goods and services that underlie poverty and basic needs satisfaction, but also exclusion from security, justice, representation, and citizenship."[3]

Increased crime and violence in excluded areas create a sense of citizen insecurity that further influences urban migration patterns within the city and beyond. Rolnik suggested that attention be paid to reducing territorial exclusion. She advocated using planning as an "arena of negotiation" for all city stakeholders rather than as a mechanism to reinforce and duplicate "territorial exclusion."[4]

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1. Raquel Rolnik. Policy Brief presented at the Woodrow Wilson Center, Washington, DC, 14–15 September 1998, p. 1. Unpublished.

2. Henry Cisneros. "Urban Poverty and Urban Environment," in *The Human Face of the Urban Environment:Proceedings of the Second Annual World Bank Conference on Environmentally Sustainable Development, Environmentally Sustainable Development Proceeding Series No. 6,* edited by Ismail Serageldin, Michael Cohen, K.C. Sivaramakrishnan (Washington, DC: The International Bank for Reconstruction and Development/The World Bank, 1995) p. 8.

3. Rolnik, Raquel. *Territorial Exclusion and Violence: The Case of São Paulo, Brazil.* Comparative Urban Studies Occasional Paper Series, no. 26. (Washington, D.C.: Woodrow Wilson Center, 1999).

4. Rolnik, Unpublished Policy Brief, p. 2.

Cities and Security: Toward a Framework for Assessing Urban Risk

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SECURITY RAMIFICATIONS

Security refers to conditions of stability, order, and predictability. Cities that are secure are generally well integrated within their respective metropolitan regions, both economically and politically. Secure cities are able to implement various regulatory policies and carry out administrative responsibilities. This includes attracting public and private investment (development policies), servicing local populations (allocational policies), and tending to social welfare (redistributive policies). Cities that are less than secure will be impeded from carrying out one or more of these functions. Although cities may vary in their levels of security, they also differ in the degree to which security issues can reverberate throughout the larger body politic.

Catalytic security risks can be defined as likely to have an impact well beyond metropolitan boundaries and entailing disruptions that have a global effect. Catalytic risks occur in cities that have a central economic, technological, or political role. These kinds of cities are usually at the nerve centers of global commerce (London, New York), play a powerful political role (Paris, Brussels), or possess immense symbolic importance (Berlin, Jerusalem, Sarajevo). Because of their inherent importance, these cities can be flashpoints of major disruption whose effects can be contagious.

Degrading security risks are limited to specific geographical areas and generally remain contained within municipal or metropolitan bounds. Cities that experience degrading conditions are either secondary cities or are found within nations whose international influence is minimal. These cities can be important within their surrounding metropolitan areas and serve as manufacturing, service, trading, or political hubs; examples include Liverpool, Marseilles, Manila, and Bogota.

URBAN CONDITIONS

Stable conditions mean that a city can do well by simply tending to routine functions of capital investment (development policies) and physical or social maintenance (allocational and redistributive policies). These cities are attractive to investors because they possess a stable employment base, a large middle class, and a healthy economy. Problem conditions mean that a city is confronted with an impediment to carrying out normal functions. This can entail blockage in pursuing development policies (fiscal crisis, squatter occupations) or in carrying out allocational policies (crime, municipal strikes) or in pursuing redistributive policies (high unemployment or poverty rates, excess of dependent populations). These cities spend time, energy, and resources in trying to overcome a limited though important set of obstacles. Crisis conditions can be defined as manifest threats to the continuance of essential urban functions. These threats can consist of fiscal bankruptcy, popular insurrection, or severe environmental factors (prolonged draughts). These cities must fend off chronic or mounting difficulties and often hover on the brink of collapse. Breakdown conditions refer to circumstances where stability and order have actually collapsed. Although city breakdowns are rare, they have occurred due

to cataclysmic acts of nature (earthquakes, volcanic eruptions) or extended periods of collective violence and war. These cities must devote all their time, energy, and resources to recovery.

Figure 1 combines security risks and urban conditions. In effect, the figure is a taxonomy of cities at risk. Once developed, the taxonomy serves as a guide in assessing relative risks, the likelihood that such risks may spread, and the severity of the disruption.

SECURITY RISK

	Catalytic	Degrading
Breakdown	**Berlin:** end of war chaos, blockade **Beirut:** intermittent civil war **Saigon:** wartime chaos	**Mogadishu:** military intercession, 1992–93 **Bogota:** poverty, crime
Crisis	**Johannesburg:** apartheid, current crime wave, poverty, immigration **New York:** fiscal crisis **Tokyo and Paris:** random acts of terror **Jerusalem:** divided city, 1948–67	**Soweto:** poverty, environmental deterioration **Dar Es Salaam:** rampant poverty, crime, squatter settlements **Detroit:** riots, poverty, crime
Problem	**Cairo:** poverty, environmental deterioration **Rio de Janeiro:** poverty, crime **Bangkok:** fiscal stress, environmental deterioration **Manila:** poverty, environmental deterioration, squatter settlements	**Cleveland:** fiscal stress, poverty **Leipzig:** poverty, immigration **Porto Alegre:** poverty, environmental deterioration, squatter settlements
Stable	**Frankfurt** **Santiago** **Toronto** **San Francisco**	**Edinburgh** **Lyon** **Barcelona** **Montevideo**

INTENSITY OF URBAN CONDITION

FIGURE 1

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RELATIONSHIPS, CUMULATIVE PROBLEMS, AND VULNERABILITY

Rather than being definitive, the examples are intended to stimulate a search for possibilities. Therefore, some observations may be helpful. First, there may not be a necessary relationship between all conditions. Much depends upon the nature of the issues facing a city. This is evident when we compare breakdown conditions, which are the result of war and mass violence, to problem conditions, which are due to social or environmental distress.

Second, it is fairly safe to suggest that an accumulation of difficulties exacerbates urban conditions. To take the most extreme position, poverty alone is not likely to bring about crisis or breakdown. Yet poverty coupled to environmental degradation, social polarization, and ethnic or national conflict will increase the severity of a city's condition.

Third, as we go up the vertical dimension we see an increase in severity, though this does not imply that policy interventions should begin at that point nor should we infer that degrading risks should not be given full attention. It may very well be that cities with degrading risks can transfer problems to cities with catalytic risks. This was all too evident in the United States during the late 1960s, when riots in Newark and Detroit spread to New York and Washington, D.C.

Finally, the figure does not presume to answer critical questions about urban condition and risk, so much as attempt to organize problems for examination. Some important questions are: How do cities move between categories? In what ways does the accumulation of stress make cities more vulnerable? What is the relationship between different stress factors (poverty and environmental degradation)? Are some types of stress more critical than others? Should we assign priorities to combating different types of stress?

PULLING IT TOGETHER

The sketch offers the potential for developing a theory of urban security that might help us integrate valuable case studies and link them to a set of interrelated propositions. Ideally, we should be able to make sense of various stress factors (migration, water shortage, environmental degradation, poverty, social polarization) within the broader context of security. Such an approach would help sharpen the discourse on these issues.

Secondary Cities and Challenges for Health

Presented by May Yacoob at the Woodrow Wilson Center

May Yacoob, senior social science and environmental health specialist at the Research Triangle Institute, discussed the growing international importance of secondary cities and the challenges to environmental health. Using case studies of three cities in Western Africa, she explained that, in developing countries, the majority of urban residents live in cities with less than 200,000 people. Acting as the "nexus between rural and urban areas," such secondary cities will provide the greatest future challenge and opportunity as they continue to grow and multiply exponentially.[1] Statistics from 1950–80 suggest that while the population of Sub-Saharan Africa doubled, its urban population increased fivefold.[2]

As small cities emerge, there is growing pressure on infrastructure. Reduced capacities of the state and local government in Western Africa often make it difficult to provide for the basic needs of expanding urban communities. Secondary cities without adequate infrastructure may become breeding grounds for infectious diseases that are easily transported from one region to another. According to Yacoob,

"[t]he nature of secondary cities in Sub-Saharan Africa (SSA) and their growth and the lack of services has also meant that diseases, such as HIV/AIDS, are frequently going unmonitored, misdiagnosed, and misreported. Other diseases, once assumed under control, such as cholera, yellow fever, and tuberculosis, have become a part of the epidemiological 'scenery' and are not widely reported. The human consequences from these new and reemerging diseases have been severe. Ill-equipped communities are struggling under the burden. Children-headed households are an increasingly familiar phenomenon in low-resource communities. And the public sector has done little to deal with such high-risk groups."[3]

Yacoob has worked using community-based approaches to address disease prevention and control in West African secondary cities where diarrheal diseases and HIV/AIDS are major causes of death. Although international donor agencies are actively addressing these problems, Yacoob warned that providing infrastructure is not a "silver-bullet." Infrastructure alone does not change the behavior that contributes to the spread of diseases. Yacoob likened urban development in the Third World to "building a house from the roof down," since community networks are already established, but are often not used efficiently.[4] "Donor agencies and nongovernmental organizations (NGOs) can strengthen community and local government's ability to analyze and prioritize disease causal factors and then provide the necessary support to address them," Yacoob recommended.[5] The community-based approach to urban health provision develops institutional capacity to change local behavior and reduce disease prevalence at its source.

1. May Yacoob, Comparative Urban Studies Occasional Paper Series, no. 21. (Washington, DC: Woodrow Wilson Center, 1999).
2. Ibid.
3. Ibid.
4. Comments by May Yacoob at the meeting on Urbanization, Population, the Environment, and Security held at the Woodrow Wilson Center, Washington, DC, 14–15 September 1998.
5. UNAIDS and World Bank. *HIV and Human Development: The Devastating Impact of AIDS,* from the meeting titled "The Demographic Impact of HIV/AIDS," Washington, DC, 1998.

Urban Environmental Management: Ahmedabad, India

Presented by Dinesh Mehta at the Woodrow Wilson Center

Urbanization is a product of development; however, unregulated urbanization is frequently accompanied by growing poverty, inadequate infrastructure, and deteriorating environment. Rather than fear "the inevitable," we need to learn to mitigate the negative aspects of urbanization. Dinesh Mehta, regional advisor, Urban Management Programme for Asia, United Nations Development Programme/United Nations Centre for Human Settlements (UNDP/UNCHS), New Delhi, India, examined the case of Ahmedabad, India, where changes in urban management have allowed the city to address the growing environmental health needs of its citizens.

Located in western India, Ahmedabad is the seventh largest city in India with a population of 3.31 million in 1991. It is a major industrial and financial center of India, and has educational and research institutions of national and international repute. The case of Ahmedabad is typical of cities in the developing world; the city is faced with a combination of rapid population growth, decline in the traditional industrial base (textiles), poor civic services, deteriorating environmental conditions, growing slum population, increased informal sector employment, and growing violence.

In Ahmedabad, 25 percent of the population resides in slums where they lack basic services such as water, sanitation, and roads. As with many cities in developing countries, the initial investment necessary to improve the urban environmental conditions was not available from the local government. In order to provide services, cities like Ahmedabad depend upon assistance from external donors or national and provincial governments. In the absence of such assistance, Mehta cautioned, environmental conditions continue to deteriorate.

In 1993, the city of Ahmedabad was in dire financial straits with a deficit of Rs.350 million (US$10.5 million). However, with the technical support of USAID, Ahmedabad became the first city in Asia to raise Rs.1000 million (US$30 million) in municipal bonds from the domestic market without any sovereign guarantee. Public-private partnerships have been instrumental in street and slum improvement, as well as programs to green and clean the city. Additionally, air and water quality has improved while the city's economy and the older walled part of the city have been resuscitated.

Mehta outlined the process by which the previously debt-ridden city earned fame for its innovative urban management program. Strict law enforcement ended corruption and improved tax and revenue collection. Increased city revenues, more efficient government staff, and innovative leadership of the chief executive officer allowed for changes to occur in the urban management system and were the key factors for citizen participation in improving environmental conditions in Ahmedabad. The process of involving citizens restored the legitimacy of the local government that was previously perceived as corrupt. Mehta suggested that the experience of community participation in Ahmedabad's urban management, although unique, may offer some valuable lessons for other cities.

Migration, Urbanization, and Social Adjustment

MIGRATION IS THE DEMOGRAPHIC PROCESS that links rural to urban areas, generating or spurring the growth of cities. The resultant urbanization is linked to a variety of policy issues spanning demographic, economic, and environmental concerns. Growing cities are often seen as the agents of environmental degradation. Urbanization can place stress on the land through sprawl; coincident industrial development may threaten air and water quality. In the eyes of many observers, rapid urbanization is also linked to problems of unemployment and the social adaptation of migrants to their new urban setting. Cities advertise society's inequalities in income, housing, and other social resources, whether these problems are new or just newly manifest in urban settings.

Although most of the migration conventionally linked to these urban issues was seen as following a conventional pattern, some issues have been raised about the nature of contemporary migratory behavior, particularly the processes of population redistribution and its implications. Contemporary research sketches the contours of this migratory behavior and the social adjustment that accompanies it. New research is beginning to shed light on the rate of migrant adaptation, on the connection between origin and destination communities through remittances, and the demographic structure and dynamics of refugee movements.

THE NEW MIGRATION?

There is an evolving pattern of migratory behavior and composition that warrants the reconsideration of our prevailing models. The first round of migration models presumed that movement—permanent movement—was induced by prevailing wage differentials and economic opportunities. Thus the transatlantic migration from Old to New World was observed as part of permanent population redistribution within and across generations. This is evident in the emptying of the countryside in the nineteenth century that made London, Paris, and New York into huge urban agglomerations.

The conventional push-pull model was eventually replaced by a subtler one that took into account the inefficiencies of markets in many developing settings. Rather than producing adjustment and equilibrium, migration spurred the growth of the informal sector as persons of rural origin settled, at least temporarily, for wages and employment opportunities below hoped-for formal sector offerings. New thinking about migration in high-income settings also shifted and began to take into account more of the nonpecuniary determinants of migration: climate; social composition of origin and destination; access to amenities. Such thinking made it possible to understand certain paradoxes such as the movement away from some of the economic regions with the highest hourly wages (the U.S. manufacturing belt) and toward other, lower wage but more amenity-rich locales.

During much of this time, policy-making often held a series of assumptions about the process of migration and urban growth. A common observation was that urbanization was rapid and driven by rural-urban migration. The perception was that migrants had a difficult time adjusting in the urban area and were often unemployed or underemployed.

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Percolating through the time periods as well was an old demographic adage about the composition of the migrant stream: that it was predominantly unmarried young males. Concurrently, rapid urban growth fueled concern about denigration of the surrounding physical environment.

These models, trends, and to some degree social realities were consequential for policy. Rural-urban migration was seen as a problem. Urbanization was seen as too rapid, and efforts were considered to slow it or shift the balance of growth to other areas. Notable, for instance, was China's policy of encouraging development in mid-size cities during the 1980s. Growth pole or satellite town developments were other responses. Of course, an alternative line of thinking evolved, arguing that the public sector was the cause of some of the urban ills, with its disproportionate investment in (selective) cities and resultant urban bias.

The adequacy of our stock of knowledge and our set of models to understand population movement and redistribution today, especially in contemporary developing economies, requires some rethinking. Two major changes have come to many systems of population distribution in the last decade or two: (1) the revolution in technology of transportation and communication and (2) the restructuring of national economies to allow more market activity. Both of these changes have received considerable attention elsewhere, but it is worth tracing through how they reshape the nature and composition of migratory flows.

The changes in the technology of communication and transportation have made it easier for migrants to stay in touch with their origin communities. This is more than maintaining simple social ties. The tightness and stability of these connections can reinforce the implicit contracts that generate sharing of resources across locations. Most notably these are remittances. Despite the high level of interest in remittances, it remains to be clearly documented that these technological developments help maintain a continuous flow. There are related influences. The technologies of communication help impart knowledge of job market opportunities within and across national borders.

The "new migration" includes circulation. Migrants oscillate between origin and destination. Circulatory migration patterns, often timed with the agricultural season, have been identified in various parts of the world. In West Africa, Thailand, and Mexico, for instance, individuals remain in the origin region from planting through harvest season and then depart for the cities (or to the United States for Mexicans) during the off-season. Limited evidence suggests that the movements are repeated, but not necessarily every season. Landing a "good" job in one year may lead to a longer stay in the destination. This is just another way of managing the informal-formal sector issue.

It may be the case also that the ability to store earnings (in banks) and move funds geographically is contributing to the new migration. One marker of economic development is the improvement in financial infrastructures. If one can move money across international borders, then the ease with which one can be a new migrant and remain a connected member of the origin community and household rises. Although there have been efforts to account for the value of international flows of remittances, there is little under-

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standing of whether improvements in financial infrastructure help generate and support migration in the first place.

Data coming from various field sites suggest that the conventional demographic profile of the rural-urban migrant may be shifting as well. Migrants are still young. Although many are male and single, there seems to be an increasing fraction of migrants who are female and a larger pool of family migrants. The work on Mexican migration to the United States finds substantial fractions of females in the migratory flow, fractions that increase with time. Work in Ghana challenges the notion that migrants are detached from families in the destination. What we need to know more about is the timing of the movements of family members. It is probably the case that frontier or first-wave migration is predominantly young single males, but how exactly the stream is altered after that is not well known.

The second major impetus for the new migration is economic restructuring. Many countries have reoriented their economies in the direction of more free market activity. It would be ridiculous to argue that this trend is universal or that the movement is to an unfettered marketplace. Nevertheless, in several important ways the shift is on, and population distribution is a manifest component of this shift. The most notable case is China. Where once all residence was controlled by registration permit (or hukou), the years since market reform have enabled individuals to relocate to areas of economic opportunity. This has created a huge pool of persons, a "floating population" in the tens of millions, living apart from their place of formal registration. Although often referred to as "temporary" migrants, the length of residence away from home may now approach several years. Considerable controversy swirled about the motivations of these temporary migrants (including the claim that women were moving to avoid the structures of the one-child family planning policy), but the migration seems to be economically driven.

This kind of movement, a migration problem, in the wake of the relaxation of strictures on economic activity and housing, has been seen in other settings as well. Vietnam is now going through a process similar to that experienced by China. Although residence registration was never as strictly controlled as in China, the economic restructuring (Doi Moi) has generated internal migration. In Ethiopia, the fall of the Derg and its more authoritarian and socialist ways ushered in a period of economic relaxation. This loosening not only lets people move to new locations (often back to older villages they were forced to abandon), but also generates differential economic growth by region, producing labor force opportunities to which workers respond.

Even in economies without a history of government restrictions on residence and movement, there have been patterns of population movement that are similar in many respects. The undocumented movement of the Mexican-origin population to the United States and parallel movement of former colonial populations to high-income economies of Europe have created similar floating populations, each with its own stamp for the particular migratory flow and condition of reception in the host society. Again, "temporary" migration is sometimes sustained by circulation, at some risk of being caught. Additionally, temporary or guest-worker migration, in fact, is rarely temporary. Circulation may be substituting for return.

The evidence from Ghana indicates that the country's pursuit of structural adjustment has resulted in substantial shifts in regional activity, even as the overall growth of economic activity outpaces other sub-Saharan African nations. In the age-old way this induced movement directed differentially to some urban areas.

MIGRATION'S CONSEQUENCES

Migration from rural to urban areas generates a series of concerns, including worries about environmental stress and social adaptation of the migrants themselves. Since migration feeds urbanization, and since urban growth is associated with industrial development (pollution) and land consumption, migration is often held culpable in environmental degradation. Although the link is there, it is not clear how strong that link is.

Direct public policies regarding environmental conditions, the underlying infrastructure for transportation, and the national level of income may have much more to say about the amount of insult visited upon the environment than the number of rural-urban migrations per se. As income rises, so does consumption of consumer goods, transportation, and land. These all can lead to more pollution and sprawl in any country. But as the level of income rises so does the demand for a cleaner local environment, lending an element of feedback to all of this.

There is another demographic component of the comparison. It is useful to remember that a large fraction, maybe nearly half, of urban growth is generated just by natural increase of the urban population. Thus, stemming urbanward migration will not stem urban growth. This reminds us that in the absence of migration, but in the presence of positive population growth rates, there is more "population pressure" in both urban and rural areas. Migration may be more implicated than its true demographic contribution would warrant. The increasingly intensive use of rural and quasi-rural areas can lead to soil erosion, deforestation, and the like. This might lead to a call for stronger emphasis on fertility reduction measures, but the demographic community seems somewhat agnostic about the empirical connection between population growth and environmental conditions.

The other major area of concern in urbanward migration is that of the absorption of migrants into the host community. Migrants have always generated apprehension about their ability to mix into the receiving society. Migrants are seen as adapting slowly or not at all. Empirical evidence runs counter to this.

In many studies of immigrant adaptation in the United States, the first generation exhibits substantial differences from the native population along socioeconomic lines: income, education, language ability, and so on. By the second generation, however, differences are narrowed considerably. Even without adjusting for background characteristics, the second generation gap is modest compared to the first generation gap. But when one does adjust for the (usually lower) level of resources for members of the second generation, the gap narrows even more.

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In a parallel vein, we find a process of occupational adaptation that differentiates the first generation more than the second. Market adjustment in China generated a huge flow of persons, both officially recognized or documented and "temporary" or undocumented. Despite the observation of migrants on streetcorners and under bridges (latter-day hiring halls), the evidence again is that migrants are driven by economic considerations. The claim was made in China that female migrants to the city were motivated by a desire to avoid the family planning policies enforced in their origin community. In fact, such rural-urban migrants were found to have birth rates no higher than urban natives of the same educational level and age. Here again, migrants were not out of line with expectation; they had come for jobs and merged into the urban fabric.

CONCLUDING POLICY CONSIDERATIONS

There are several policy implications of this redistribution. First, migration accounts for roughly half of urban growth in most developing country cities. Most demographic analyses confirm that overall urban growth rates are closely tied to national population growth rates. Declining fertility rates overall will help reduce urban population pressure. High-income economies experience the mirror-image effect. Most of these nations have very low rates of natural increase. Consequently international migration contributes a substantial fraction of total year-to-year national population growth. The lesson is that it is important to have the comparative framework clear when making assertions about the impact of migration.

A second implication is the broad-base phenomenon of informal migration. Undocumented, circular, and temporary migration is now a worldwide phenomenon. It exists as internal migration in some restructuring economies (such as in China) but also appears as international migrant flows in other settings (such as Mexican-origin migration to the United States). It is useful for policy-makers to think about the parallels in these movements, rather than concentrate only on the differences.

Finally, migratory realities must be recognized. It is time for policy-makers to respond to migration rather than try to control migration. This is the case for internal migration and displacements. The opening of markets within and between countries will produce further internal and international redistribution. For voluntary movement, this recommendation means that efforts should go into helping migrants adjust. Attempts might be made to improve access to information about health care, get migrant children into health and educational facilities, and provide language assistance as appropriate. For forced migrants the story is somewhat different. Here the migrants are outside their original location, often in a bounded settlement or camp. The policy need here is to realize that these refugee movements are often not temporary. This means a whole set of long-term services such as health, family planning, and productive work must be provided. For people displaced within national borders, sometimes without the assistance of international agencies, the relocation can be permanent.

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Participatory Budgeting: The Case of Porto Alegre, Brazil

Presented by Pedro Jacobi at the Woodrow Wilson Center

The mechanism of "participatory budgeting" was implemented in the city of Porto Alegre as a new resource allocation practice. According to research by Pedro Jacobi at the University of São Paulo, participatory budgeting is an effective tool in the democratization of the city's management; in helping to break old patterns of clientelist relations, it promotes decentralization of municipal decision-making and increases public control over the city's investment policies.

According to Jacobi, the process of participatory budgeting consists of three important steps. First, the city's administration formulates the investment priorities and informally discusses them with the city's districts. Second, priorities are legitimized by the Regional Budget Forum, the formal meeting of the city's district representatives. Finally, the investment plan is implemented under the control of the Forum's representatives and civic associations. The increase in municipal revenues, the raised level of animation of public discussion, and the decline of old-style clientelistic associations in Porto Alegre reflect the success of this new approach in urban management.

Formulating Public Policies to Deal With Natural Disasters

DEALING WITH NATURAL DISASTERS has been part of the history and culture of Central America and the entire Caribbean basin since time out of mind. One of the classic volumes on the culture and history of the region, by the anthropologist Eric Wolf, uses the metaphor of natural upheaval in his title, *Sons of the Shaking Earth*. As Wolf makes plain, living where the earth shakes does something to you. It shapes your perspective: it tends to make people fatalistic, it leads them to expect the worst, and it gives everyone a powerful sense of impermanence. On the other hand, it gives you a healthy respect for nature and for natural phenomena. When not shaking, the earth in most of the region is remarkably fertile—it gives in abundance to those who work on it.

Of course, on occasion, the earth withholds its harvest, as it did in the Peten—today an area that covers the northeast of Guatemala, portions of Honduras, Belize and the South of Mexico—a thousand years ago, leading the residents of many magnificent urban agglomerations to leave their majestic cities and migrate to highland areas further south and west. While we are not yet certain what drove the lowland maya from their homes, it is certainly something that fits into the category of natural disaster.

Today, when we talk about natural disasters in Central America, we are thinking first and foremost about Hurricane Mitch, the storm that laid almost the entire isthmus to waste at the end of October of 1998. This tropical storm has left a lasting impression in the region and elsewhere because the devastation it caused was so widespread—it had a major impact on at least four countries, Costa Rica, Guatemala, Honduras, and Nicaragua—and so indelible. Even today, more than a year later, Honduras and Nicaragua have not come close to repairing the damage done by the storm to their national infrastructure nor have they managed to repair the lives of the tens of thousands of people who were left homeless by the storm or who lost their life's work.

The dramatic impact of this storm has added an entirely new category to the area of development assistance: natural disaster relief. For the most part, before Mitch, natural disaster relief was a subject for the NGO donor community. Organizations like the Red Cross, various church relief agencies, and European relief agencies were sadly practiced in responding to requests for help from people around the world who were victims of the latest disaster. Today, it is a subject for the United States Agency for International Development, the World Bank, the Inter-American Development Bank, and the United States Department of Defense. Curiously, the agency whose responsibility it is to coordinate the response to natural disasters within the United States, the Federal Emergency Management Agency (FEMA), has played a minor role to date in handling natural disasters in other countries.

The policy dilemma, and the reason behind this conference, is what should governments in the region do, individually and collectively, by themselves and in collaboration with the donor community, to mitigate the suffering from natural disaster and, to the degree possible, limit or even avoid the destructive force of such disasters. Because the donor community cannot act without the active cooperation and collaboration of local governments, NGOs and local communities themselves, it was the objective of the Wilson Center in organizing this conference with USAID to bring together as many of the stake-

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holders in the region as possible to talk about this problem. We also wanted to make sure that we had the benefit of those in the region who were already studying these issues. The result was a set of speakers who represented the best work being done throughout the region on natural disaster relief, those from elsewhere in the Caribbean who had had experience in dealing with similar disasters, those who worked with NGOs, and those who worked with various policy and social sectors whose participation would be critical in any strategy of response that might emerge from our discussions.

We invited representatives of community groups (especially indigenous groups that are often underrepresented in official policy circles), NGOs which worked in the community (including a wide range of NGOs representing church groups or European aid organizations), and representatives of the international financial institutions (whose loans are instrumental in any effort to rebuild following a disaster).

In the discussions that followed the formal presentations, several points were made that should be emphasized. These points are important because they represent the concerns of the local stakeholders, and because local concern can be suggestive to donor or official agencies, indicating fruitful approaches to public policy making. The priorities of the people on the ground are not always the same as those of the donor community, sometimes because of the way in which donor agencies are organized, and sometimes because of communication gaps between them and local groups, sometimes because there are legitimate differences in perspective between local groups and official agencies that may have a national or even an international perspective that suggests a different approach to the problem.

The first point to make is that governments and international agencies are organized along sectoral lines (including housing, health, transportation) so that policy inevitably follows the same lines. That means that the kind of coordination unanimously sought by the stakeholders is very difficult to achieve. If coordination in disaster response is so important, it would make sense to create something like national FEMAs in the region and, even, to think in terms of a regional FEMA. The virtues of FEMA, in addition to its role of coordination among other agencies, are that it does not have its own resources, relying instead on the resources of standing (sectoral) agencies, and its sole job is to plan how to respond to the emergencies created by natural disasters. While the lack of budgetary heft is not often considered a virtue, in this case it is because a permanently endowed agency, with staff, budget, and fixed responsibilities would not be able to plan for emergencies. It would soon be pressed into service to use its staff and other resources to deal with ongoing problems. One conclusion reached during discussion was that it would be useful to create a regional FEMA organization

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that would not be threatening to the turf of any existing organization, either at the national or the regional levels, so that it might be set up without causing too much of a political stir.

The second most prevalent demand by stakeholders at the conference was that resources should be set aside to deal with natural disasters. While the demand is understandable, it is virtually out of the question. If it is politically difficult to store resources against the likelihood a future disaster in the most developed countries of the world, it is almost impossible to expect that developing countries, where financial resources are scarce to begin with, would be able to afford the luxury of putting money away for a rainy day.

There are also structural problems in the distribution of aid funds. It is not easy to link local initiatives with government policies, even when both sides have the best will in the world. By their nature, local initiatives are unique and specific, while governments tend to deal with macro level issues better than micro level. That doesn't mean governments should not continue to work at improving their efficiency in the distribution of public resources. It simply means that such linkages are always difficult. In the case of Hurricane Mitch, although it sounds ironic to state it, the existence of democratic governments throughout the region actually made the problem worse. Under democracies, there are many demands articulated that could not be made during authoritarian regimes. Yet, in the absence of administrative reforms, there are not necessarily new channels for communicating the legitimate demands of constituencies in democratic societies. The challenge for relatively new democratic regimes, especially in periods of relative resource scarcity, is that they must maximize their efficiency in public administration and they must concentrate their efforts on communicating effectively with their constituents. Accountability, at any resource level, is critical to the success of democratic governance.

Finally, there are structural problems in the relationships among the international donor community on the one hand, and national governments and local groups on the other. To some extent, international agencies are constrained by their formal ties to national governments. It is not easy for them to deal directly with individuals or with NGOs. While the World Bank and the Inter-American Development Bank are making significant efforts to ease this problem, the fact remains that the international donor community cannot force a national government to behave responsibly or to take money they don't want. Lending directly to cities, to NGOs, or to indigenous groups is a step in the right direction. Also, the use of conditionalities to push governments to exert the political will necessary to combat poverty or inequality, or to end legal discrimination against ethnic minorities, can be helpful.

There are a number of things government agencies or the donor community could do right now that would mitigate the suffering resulting from natural disasters. To begin, we need to know what is being done at the local level. We do not have an accurate, complete picture of who or what organizations are working with what local groups in what sort of problems. Second, it would take very little money to clarify the legal rights of the poor and of the indigenous communities within the nations of the region, a step which is indispensable to distributing any aid in the aftermath of a natural disaster.

The community activists were in agreement that the most important action by governments, aside from being more efficient and better coordinated in their responses to disasters, would be to provide credit for low-cost housing. And, this is what the IDB is working on. Local governments and local organizations need the resources to gain access to this housing, considered by most to be the first line of defense against natural disasters and the first priority in reconstruction.

Ultimately, mitigating the suffering caused by natural disasters requires political will and respect for local communities, including communities of the indigenous peoples of the region, on the part of the governments in the region. The long-term policy objectives of those concerned with disaster relief must focus on better communication between national authorities and local groups so that any effort at mitigation responds to the needs of the people most affected by the disasters, the most vulnerable sectors of the population. At the regional level, the donor community must act to help the nations of the region create some mechanism that will plan how cooperation or coordination can be maximized in responding to the next disaster. It does not have to be a big bureaucracy. It does not have to be granted huge amounts of resources. Yet some agency or institution to improve coordination in the mitigation of suffering is vital. There is no question as to whether the next disaster will strike; only when.

Population, Urbanization, Environment, and Security
A Summary of the Issues

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EXECUTIVE SUMMARY

One of the most striking features of world population growth is the rising predominance of the developing world. Currently, 81 million persons are added annually to the world's population—95 percent of them in developing countries. The second striking feature is related to urban growth. Although the growth of world urban population has been slower than projected twenty years ago, it has nevertheless been unprecedented. In 1950, less than 30 percent of the world's population were urban dwellers. Between 1995 and 2030, the world's urban population is projected to double—from 2.6 to 5.1 billion, by which time three-fifths of the world's population will be living in urban areas (United Nations 1998b). As in the case of total population, there will be a significant redistribution of world urban population between the developed and the developing regions. Currently, 59 million new urban dwellers are added annually—89 percent in developing countries. By 2025–2030, 76 million will be added annually—98 percent in developing countries.

To understand the critical linkages between urbanization, public health and habitat, the environment, population growth, and international security, this article highlights the trends in urban growth, particularly in the developing world, and their potential to affect the international community. Issues addressed include migration to the urban centers, the immediate environmental and health impacts of urban pollution on developing country cities, and the link between crime and security.

ABOUT THE AUTHOR

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Ellen Brennan has been elected to the National Academy of Science's Committee on Population. During 1998 she participated in the planning meeting for the Panel on Urban Dynamics under the auspices of the Committee on Population, as well as in the International Working Group on Urbanization, Population, Environment, and Security at the Woodrow Wilson Center. She participated in a small working group convened by the Chief Economist at the World Bank to elicit ideas for the 2000 World Development Report, as well as presented a background paper at one of the Urban Dialogues (on the Urban Environment) organized by the Urban Partnership at the World Bank. She also presented a paper at the plenary session of the Ninth National Conference of the Australian Population Association (October 1998). She served as a member of the substantive secretariat at the International Conference on Population and Development (Cairo, 1994), participating in the drafting of the Programme of Action. At the International Conference on Population (Mexico, D.F., 1984), she assisted in the drafting of recommendations.

Dr. Brennan is a Phi Beta Kappa graduate of Smith College, holds an M.A. and a Ph.D. from Columbia University, and was a Population Council Fellow in 1973–1974. She is a member of the Board of Directors and currently serves as Chair of the Forum for World Affairs, based in Stamford, Connecticut.

IN THE LATTER HALF of the twentieth century, megacities have been on the rise and future projections for the twenty-first century show an increase in population growth in developing countries' urban centers, with potential catastrophic effects at the international level. To understand the critical linkages between urbanization, public health and habitat, the environment, population growth, and international security, this article highlights the trends in urban growth, particularly in the developing world, and their potential to affect the international community. Issues addressed include migration to the urban centers, the immediate environmental and health impacts of urban pollution on developing country cities, and the link between crime and security.

According to the United Nations Population Division, the world passed the historical six billion mark in October 1999. Recently, the United Nations issued long-range projections to 2150. According to the medium-fertility ("most likely") scenario, world population will stabilize at slightly under 11 billion persons around 2200.[1]

One of the most striking features of world population growth is the rising predominance of the developing world. Currently, 81 million persons are added annually to the world's population—95 percent of them in developing countries. According to the United Nations' long-range projections, the population of Africa will nearly quadruple—from 700 million persons in 1995 to 2.8 billion in 2150. Significant growth is also projected for Asia. China is projected to grow from 1.2 to 1.6 billion inhabitants. India, increasing from 900 million to 1.7 billion, will surpass China to become the world's largest country. The rest of Asia is projected to grow from 1.3 to 2.8 billion. Latin America is projected to increase from 477 to 916 million, whereas Northern America (Canada and the United States combined) will increase from 297 to 414 million. Europe is the only major geographical area whose population is projected to decline—from 728 million in 1995 to 595 million in 2150 (United Nations 1998a).

The second striking feature is related to urban growth. Although the growth of world urban population has been slower than projected twenty years ago, it has nevertheless been unprecedented. In 1950, less than 30 percent of the world's population were urban dwellers. In a few years, roughly around 2006, a crossroads will be reached in human history when half of the world's population will be residing in urban areas. Between 1995 and 2030, the world's urban population is projected to double—from 2.6 to 5.1 billion, by which time three-fifths of the world's population will be living in urban areas (United Nations 1998b).

As in the case of total population, there will be a significant redistribution of world urban population between the developed and the developing regions. Between 1950 and 1975, 32 million new urban dwellers were added annually worldwide—about two-thirds in the developing countries. Currently, 59 million new urban dwellers are added annually— 89 percent in developing countries. By 2025–2030, 76 million will be added annually— 98 percent in developing countries.

Opinions expressed in this publication are those of the author and do not represent an official position of the United Nations.

A Report of the Comparative Urban Studies Project

Looking at the regional breakdown, Africa has the lowest level of urbanization and the fastest urban growth. Currently, a little more than one third of Africans are urban dwellers; by 2030, the proportion will be a little more than half. The problem facing much of Africa is that such rapid rates of urban growth make it exceedingly difficult to provide services. The urban growth rate for Africa as a whole currently is around 4.4 percent. East Africa is growing at 5.6 percent per annum and West Africa at 5.1 percent, with individual countries growing at even higher rates. Projections show that the growth rate for Africa as a whole will stay above four percent through 2005 and above three percent until 2020–2025.

The region of Latin America and the Caribbean is the most urbanized in the developing world. Between 1995 and 2030, 249 million people will be added to the urban population of this region, bringing the percentage of people living in cities to 83 percent. Asia has a level of urbanization similar to that of Africa—a little more than one third in 1995. Asia as a whole, however, will have to absorb huge population increments—a total of 1.5 billion new urban inhabitants by 2030. South Asia faces particularly daunting prospects, with India having to absorb as many as 385 million new urban inhabitants between 1995 and 2030, Pakistan 113 million, and Bangladesh 55 million (United Nations 1998b).

A central characteristic of current world urbanization trends is that megacities—cities with populations of ten million or more—are becoming larger and more numerous, accounting for an increasing proportion of urban dwellers. At the same time, more than half of the world's population continues to live in cities with fewer than 500,000 inhabitants. Currently, there are 14 cities in the world with over ten million inhabitants, ten in developing countries. By 2015, there will be 26 cities with over ten million inhabitants—22 in developing countries (18 in Asia, four in Latin America, two in Africa) (Table 1). These megacities will shelter 418 million inhabitants (10.6 percent of world urban population). By 2015, there will be 38 cities of five to ten million inhabitants, representing 6.7 percent of world urban population. There will be 463 cities (three-quarters in developing countries) of one to five million inhabitants—representing nearly a quarter (23.6 percent) of world urban population. Between 1950 and 1995, it is interesting to note that the percentage of population worldwide residing in the 407 cities of 500,000 to one million inhabitants, remained nearly constant—at around 9 percent, both in developing and developed countries. The same is true for cities with fewer than 500,000 inhabitants. Although they have remained relatively stable with regards to population growth, secondary cities are nevertheless critical. Around half of the urban population in both the developing and developed world live in cities of fewer than 500,000 inhabitants (United Nations 1998b).

The emergence of megacities is a modern phenomenon, occurring over the last half century. In 1950, only New York had a population of ten million or more. In addition to the increase in their number, megacities are becoming considerably larger. The minimum population size for a city to make the list of the world's 15 largest urban agglomerations was 3.3 million in 1950. By 1995, a population of 9.9 million was required as the threshold. Projections for the year 2000 showed Dhaka, with 11 million inhabitants, as the fifteenth largest urban agglomeration; by 2015, Los Angeles, with 14.2 million, is expected to be fifteenth on the list (United Nations 1998b).

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Urban agglomeration and Country	POPULATION (thousands)			GROWTH RATE	
	1975	1995	2015	1975–1995	1995–2015
Less developed regions					
Beijing, China	8545	11299	15572	1.4	1.6
Bombay, India	6856	15138	26218	4.0	2.8
Buenos Aires, Argentina	9144	11802	13856	1.3	0.8
Cairo, Egypt	6079	9690	14418	2.4	2.0
Calcutta, India	7888	11923	17305	2.1	1.9
Delhi, India	4426	9948	16860	4.1	2.7
Dhaka, Bangladesh	1925	8545	19486	7.7	4.2
Hangzhou, China	1097	4207	11407	7.0	5.1
Hyderabad, India	2086	5477	10489	4.9	3.3
Istanbul, Turkey	3601	7911	12328	4.0	2.2
Jakarta, Indonesia	4814	8621	13923	3.0	2.4
Karachi, Pakistan	3983	9733	19377	4.6	3.5
Lagos, Nigeria	3300	10287	24640	5.8	4.5
Lahore, Pakistan	2399	5012	10047	3.8	3.5
Metro Manila, Philippines	5000	9286	14657	3.1	2.3
Mexico City, Mexico	11236	16562	19180	2.0	0.7
Rio de Janeiro, Brazil	7854	10181	11860	1.3	0.8
São Paulo, Brazil	10047	16533	20320	2.5	1.0
Seoul, Republic of Korea	6808	11609	12980	2.7	0.6
Shanghai, China	11443	13584	17969	0.9	1.4
Tehran, Iran (Islamic Rep. Of)	4274	6836	10309	2.4	2.1
Tianjin, China	6160	9415	13530	2.1	1.8
More developed regions					
Los Angeles, USA	8926	12410	14217	1.7	0.7
New York, USA	15880	16332	17602	0.1	0.4
Osaka, Japan	9844	10609	10609	0.4	0.0
Tokyo, Japan	19771	26959	28887	1.6	0.3

Table 1 —Source: World Urbanization Prospects, United Nations 1998b.

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Whereas the average annual rate of population growth was one percent or less for megacities in the developed world during 1970–1990, megacities in developing countries have exhibited significantly higher rates of population growth, as well as a larger range of rates, than those in developed countries. Some megacities are continuing to grow very rapidly. Dhaka, for example, grew by 7.6 percent per annum between 1970 and 1990, implying a doubling time of only nine years, while Lagos grew by 6.7 percent, implying a doubling time of a little more than ten years (United Nations 1995a).

Contrary to the alarmist predictions about "exploding cities," the growth of most of the world's megacities has been slowing down, in some instances quite dramatically. Mexico City is a case in point. Whereas projections prepared by the United Nations and the World Bank in the 1970s forecast a population for Mexico City in the range of 27–30 million in the year 2000, Mexico City's population in 1995 was 16.6 million-projected to reach 18.1 million in the year 2000 and 19.2 million in 2015 (United Nations 1998b). One explanation for the decline in megacity growth rates appears to be a deceleration in rates of national population growth. According to Chen and Heligman (1994), a simple regression indicates that the national population growth rate explains 47 percent of the variation in megacity growth rates in developing countries. Of course, the fact that India's six megacities grew at rates of between 2 and 4.5 percent per annum during 1970–1990 indicates that other forces must surely be involved. Still, the relationship between megacity and national population growth rates is quite remarkable, given that megacities generally comprise only a very small proportion of their national populations (Chen and Heligman, 1994).

It is difficult to generalize about the factors behind the slowdown in the growth of many of the world's megacities, as numerous complex factors are involved. Again, Mexico City provides an example. In addition to voluntary emigration after the 1985 earthquake, factors making Mexico City less attractive have included rising housing prices, the increasing cost of living, and quality of life considerations (Brambila Paz 1998). Indeed, one third of a sample of Mexico City residents interviewed in a migration survey conducted in 1987 (CONAPO, Encuesta Nacional de Migración en Areas Urbanas) indicated that they expected to move away from the city in the future; more than 75 percent of the residents sampled referred to problems related to metropolitan life, such as delinquency, stress, and air pollution. Of even greater importance is the fact that more dynamic growth has occurred elsewhere. Indeed, the rapid economic growth of Mexico's border states—which accounted for 62 percent of national job growth from 1985 to 1990 and "without which national economic growth would have been anemic" (Richardson 1993b) is a major explanation for Mexico City's relative decline.

For purposes of analysis, the remainder of this article will focus on environmental and security issues in the world's megacities. This focus is not to ignore the fact that cities further down the urban hierarchy often have equally or even more severe service deficits and environmental problems with relatively fewer resources available to tackle the problems. Instead it is done to narrow and simplify the analysis

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REGIONAL OVERVIEW

There is a great diversity of experience among the world's megacities. Broad differences in patterns of megacity growth persist among the major geographical regions. In Latin America, 78 percent of the population lived in urban areas in 1995 (a proportion comparable to that of the developed countries). The rate of population growth of most major cities in the region peaked during the 1960s, when fertility levels were still relatively high and governments in the region were pursuing policies of import—substituting industrialization that drew large numbers of migrants to the cities.

In recent years, a dramatic and unanticipated slowdown in the growth of megacities in the Latin American region surprised even local observers. Whereas a process of intra-metropolitan employment dispersal has been taking place for a number of years in such cities as Buenos Aires, São Paulo, and Mexico City, the scale has increased greatly. Manufacturing plants have been moving much greater distances and often beyond metropolitan boundaries within a 200km radius from the central core of São Paulo for example (Gilbert 1993). In addition, profound changes have taken place over the past decade in Buenos Aires, Mexico City, Rio de Janeiro, São Paulo, and other large Latin American cities as a result of economic recession and structural adjustment programs.

Despite its relatively low level of urbanization (34.6 percent in 1995), Asia accounts for 46 percent of world urban population. Amounting to 1.2 billion persons, this number is higher than the current urban population of the developed world (Chen, Valente and Zlotnick 1998). In the future, a majority of the world's megacities will be located in Asia. Indeed, in 2015 Asia will be home to 18 megacities, increasing its share from 50 percent in 1995 to 69 percent (United Nations 1998b). Many megacities in Asia have experienced dramatic economic growth in recent years. Seoul, with a gross domestic product (GDP) of $93 billion in 1990—the twelfth highest in the world (Prud'homme 1994)—is rapidly moving away from "developing" country status. Until the Asian economic crisis in 1998, Bangkok and Jakarta had booming economies. In the Southeast Asian countries as a whole, urbanization has been penetrating deep into the countryside, resulting in extended and dispersed mega-urban regions encompassing hinterlands as far as 100 km from the central core (McGee 1995).

In recent years, China's megacities have been growing at very rapid rates, although this growth is partly due to reclassification. Goldstein (1993) cautions that the meaning of "urban" in China is now far different from the generally accepted meaning of that term. The use of official urban and migration statistics to measure levels of and changes in urbanization can be seriously misleading. Moreover, the experience of China's megacities has been fairly unique. Urban migration over the past several decades has been closely related to political swings, economic changes, and related policy shifts.

The megacities of the Indian subcontinent (e.g. Bangalore, Bombay, Calcutta, Delhi, Hyderabad, and Madras in India; Karachi and Lahore in Pakistan; and Dhaka in Bangladesh) have followed a different pattern. More similar to the African experience, urban growth is fueled less by economic dynamism than by rural poverty and continuing

high fertility. Many megacities on the subcontinent have fairly stagnant economies, yet they will have to absorb huge population increments over the next several decades. Bombay, where at least half the population does not have access to adequate shelter, is projected to have a population of 26.2 million in 2015. Karachi, a city experiencing continuing political unrest, is projected to have a population of 19.4 million inhabitants. Dhaka, one of the poorest cities in the world where the average annual income for slum dwellers currently is around US $150, is projected to have a population of 19.5 million in 2015 (United Nations 1998b).

Fueled by continuing out-migration from impoverished rural areas and by very high natural increase, despite years of sustained recession, cities in Africa are growing very rapidly. At nearly twice the world average, this growth puts incredible pressure on already strained economies. Whereas much of the academic literature stresses the strong link between economic development and urbanization, the relationship between the two is much weaker in Africa than elsewhere in the developing world. Many countries in the region experienced negative rates of Gross National Product (GNP) growth in the last two decades, whereas others grew very slowly. Yet almost all countries in the region exhibited high urban growth rates, including those with negative GNP growth. The two megacities in sub-Saharan Africa, Lagos and Kinshasa, are among the world's poorest yet most rapidly growing megacities and are expected to continue to grow at a similar pace over the next two decades.

PATTERNS OF INTRAMETROPOLITAN POPULATION GROWTH

Just as there are widely divergent patterns of economic development and urban growth among the major geographical regions, there are striking demographic differentials within megacities. Aggregate rates of population growth for the megacities may be quite misleading. Megacities are spatially very extensive, with sizes ranging from the traditional core city of 100–200 sq. km to regions of 2,000–10,000 sq. km and more (Hamer 1994).

Population growth in large cities usually does not increase the population density of high-density areas, but promotes densification of less developed areas and expansion at the urban fringe. In particular, population densities in the central core frequently decline as households are displaced by the expansion of other activities. As Ingram (1998) notes, this finding is very robust in both industrial and developing countries and has been observed in cities as diverse as Bangkok, Bogotá, Mexico City, Shanghai, and Tokyo. Whereas the traditional urban cores of many megacities are experiencing very slow or negative population growth, areas on the periphery typically are experiencing rapid growth. For example, the city of São Paulo grew by one percent per annum during 1980–1991. The central core as well as the interior and intermediate rings lost population (at rates of -1.3, -0.9 and -0.4 percent per annum, respectively). The exterior ring grew by only 0.4 percent per annum while the periphery expanded by 3 percent (Rolnik, Kowarik, and Somekh 1990).

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In many megacities, periurban areas have grown or are continuing to grow at staggering rates, making it impossible to provide services. In São Paulo, for example, the growth of the peripheral ring was nearly 13 percent per annum during 1960–1970, declining to 7.4 percent during 1970–1980 and to 3.8 percent during 1980–1987. It is not uncommon for peripheral areas of megacities to be growing by rates of 10–20 percent per annum. However, because of the rapidity of growth in these newly developing areas, sometimes as a result of sudden land invasions, the magnitude of this growth is unrecorded.

Such rapid population growth in periurban areas has serious implications for infrastructure provision and land markets. A major reason why local administrations in many developing country cities have not coped successfully with urban population growth is that they simply do not know what is going on in their local land markets. Most megacities lack sufficient, accurate, and current data on patterns of land conversion, infrastructure deployment, and land subdivision patterns. Frequently, urban maps are 20 to 30 years old and lack any description of entire sections of cities, and particularly of the burgeoning periurban areas (Dowall 1995). Clearly, the typical ten-year census interval is a problem in the analysis of megacities, as the metropolitan population might easily grow by more than 2 million within a five-year period (Richardson 1993a).

THE COMPONENTS OF MEGACITY GROWTH

Even if all in-migration to the megacities were somehow to cease, cities will have to absorb huge population increments as a result of natural increase. This point is often lost in the popular literature. In many megacities, natural increase is and will continue to be the most important factor explaining population growth. At the world level, net migration from rural to urban areas accounts for less than half of the population growth of cities. Around 60 percent of urban growth is due to the excess of urban fertility over urban mortality.

A study of the components of urban growth prepared by the United Nations Population Division found that, whereas internal migration and reclassification was the source of 64 percent of urban growth in developing Asia during the 1980s (around 50 percent if China is excluded), it accounted for only 25 percent of urban growth in Africa and 34 percent in Latin America (Chen, Valente and Zlotnick 1998). These findings have important implications for policymakers and planners. In regions characterized by economic stagnation, where rates of rural out-migration have declined over the past decade, such as Africa and Latin America, the contribution of natural increase has been strengthened. Consequently, if the growth of urban areas is to be significantly reduced, more emphasis needs to be given to the reduction of fertility.

Interestingly, for all of the theorizing about the linkages between urbanization and fertility decline over the past several decades, detailed work in this area has been quite sketchy. Using Demographic and Health Survey (DHS) data collected between 1987 and 1993 in 14 African countries, recent research on fertility behavior in African cities has

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found that high levels of female in-migration have reduced total fertility rates in African cities by about one birth per woman (Brockerhoff 1996). This influence of migration on fertility appears consistent throughout sub-Saharan Africa, suggesting that migration to cities may be promoting national fertility transitions in Africa. This situation is all the more ironic since most African governments currently are quite serious about reducing aggregate rates of population growth. Yet they are quite insistent on curbing the growth of metropolitan areas, mainly by retaining population in the countryside.

In a sense, the richness of this research highlights how little has been known up to now about the complex factors involved in recent urban fertility behavior in developing countries. Factors such as the volume and permanence of migration, the effects of age structure, spousal separation, exposure to modern ideas, and the changing opportunity costs of childbearing remain understudied. Despite the widespread acknowledgment 20 years ago that family planning was one of the most cost effective means of reducing urban growth, virtually no work has been done on family planning use and needs among the urban poor. Indeed, from a policy perspective, the limited knowledge of the linkages between rural-urban migration and, in particular, contraceptive behavior has hampered the efforts of policymakers and program workers to design and implement effective family planning programs which might have a significant impact on reducing urban growth (Brockerhoff 1996).

ATTEMPTS TO CONTROL MEGACITY GROWTH

While a considerable knowledge gap remains regarding the complexity and future implications of demographic change in the world's megacities, there is a generally accepted body of ideas in the policy arena for controlling megacity growth. For example, the anti-urban bias finally appears to have dissipated. It is now widely acknowledged that cities are, in general, productive places that make more than a proportionate contribution to economic growth. In retrospect, it is perhaps astonishing that the antiurban bias of planners, some scholars, and government officials has continued for so long despite apparent grounds for discrediting it. For years, planners made futile attempts to "contain" urban growth on the assumption that rural to urban migration could be stopped or slowed down and that people could be relocated from the existing urban areas. These views no longer are accepted widely, except perhaps in Africa.

Early attempts to "contain" megacity growth ranged from the "closed city" policies of Jakarta (1970) and Manila (1960s), which were notorious failures, to China's household registration system. It was long assumed that direct controls on residential mobility had little chance of success, except perhaps in a collectivist society such as China; even this turned out not to be the case. Despite decades of restrictions, China's "floating population" in its largest cities now numbers in the millions.

A number of developing countries have devoted considerable efforts to devising strategies to reduce metropolitan growth, primarily by fostering the growth of secondary cities and promoting regional development. Mexico is a prime example. Since the early

1970s, Mexico has had one elaborate plan after another—typically a new one in each six-year presidential term of office. It is generally acknowledged, however, that these plans have had minimal impact on influencing Mexico's patterns of spatial distribution (Brambila Paz 1998).

The great paradox is that profound changes have occurred in patterns of spatial distribution in Mexico and in other developing countries, yet regional policy is considered to have contributed very little to it. Indeed, as Gilbert (1993) notes, deconcentration has occurred in practice when regional planning has been at its weakest, with few governments in heavily indebted developing countries having any funds to invest in infrastructure in the poorer regions, or to offer incentives to industrialists to locate to the periphery.

It is now widely acknowledged that it is counterproductive to talk about how to "control" the growth of megacities, whether through coercive measures or channeling growth to secondary cities. Moreover, despite the rhetoric which still abounds, megacity size per se is not a critical policy variable. Since the 1980s, there has been a remarkable shift of research attention from the demography of cities to the polity of cities, with particular focus on issues of urban management and, in the 1990s, urban governance (Stren 1995). With respect to management, a virtual consensus has emerged among urban scholars that the costs and benefits of cities are not merely a product of population size (hence growth), but are primarily a consequence of the commitment and capabilities of municipal governments to implement policies that improve population welfare. The assumption that good management overcomes population constraints of cities would appear tenable based on recent history. Many cities of the world, for instance those of recent origin in sub-Saharan Africa, are too big relative to their managerial capacities. Yet some of these "oversized" cities are quite small, e.g., in the range of 100,000 to 200,000 inhabitants (Brockerhoff and Brennan 1998). Similarly, many megacities—Tokyo is cited most often—are seemingly well-managed and, therefore, not too large.

ENVIRONMENTAL ISSUES

Megacities throughout the developing world are experiencing tremendous environmental stress. Quantification of the extent of pollution in specific megacities is difficult, because monitoring stations are rare or non-existent. Nevertheless, it is widely recognized that environmental degradation in many of the world's megacities is becoming worse. Given this fact, it is ironic that the greatest attention—even at international fora such as UNCED (the United Nations Conference on Environment and Development, Rio de Janeiro, 1992)—has been paid to issues of managing the "global commons" rather than to the critical "brown issues," such as polluted air, filthy water, and inadequate sanitation that affect hundreds of millions of the world's urban inhabitants. It is even more ironic that this distortion is sometimes reproduced within developing countries. Some national environmental groups have become active in saving endangered species, but pay little attention to the acute public health hazards and problems of environmental pollution facing their own citizens (Hardoy and Satterthwaite 1989).

The sheer magnitude of population growth is an important variable affecting urban environmental problems because it directly affects the spatial concentration of people, industry, commerce, vehicles, energy consumption, water use, waste generation, and other environmental stresses (Bartone, Bernstein, and Leitmann 1992). The environmental impact of city size is generally considered negative. The larger the city, it is assumed, the greater the per capita environmental costs or damages. However, as Prud'homme (1994) cautions, a number of caveats are in order. Since what ultimately counts is not so much pollution discharged, but rather pollution discharged minus pollution eliminated, it is important to note that for a number of pollutants (e.g. solid waste, water pollution), there are economies of scale in pollution abatement. Also, large cities are generally resource-saving relative to smaller cities; they are usually denser; they lend themselves better to public transportation usage and include a larger share of apartment buildings, hence they consume less land and less energy per capita. Finally, because transportation flows increase with population dispersion, environmental damages associated with transportation presumably could be reduced by increased concentration in a few large cities. As Prud'homme concludes, the relationships between city size, or city size distributions, on the one hand, and environmental damages, on the other hand, are numerous, complex, and very poorly known (1994).

There is not necessarily a strong direct linkage between the rate of urban growth and environmental problems. As noted, over the past several decades, the growth rates of many of the world's megacities have slowed considerably. Yet urban environmental problems clearly have worsened. One central problem is that economic development exacerbates many environmental problems (e.g. solid waste, automotive pollution) because the quantity of urban wastes generated per capita also tends to increase steadily with increased per capita income. Overall, the relationships between urbanization and environmental degradation are very complex, involving interactions with the natural and the built environment, as well as various economic, political, and social factors. The regional ecosystem in which a megacity is located, for example, is often a critical determinant of the severity of environmental conditions as well as the complexity of potential intervention strategies (Bartone, Bernstein and Leitmann 1992).

Contamination of water supplies in megacities of the developing world comes from many sources: discharge of untreated industrial wastes into watercourses; leaching of liquids from industrial or municipal waste dumps into surface or ground water; inadequate treatment of municipal sewage; and hazardous and toxic materials flushed into watercourses during storms because of poor solid waste management. Most developing countries do not have the resources either to detect many modern chemicals or to establish facilities or sites to treat hazardous wastes (Kalbermatten and Middleton 1991). However, the impact of fecal contamination of water resources is one of the most crucial water quality issues. In highly industrialized countries, the transition from traditional to modern types of environmental pollution took place over one hundred years or more. The developing countries are faced increasingly with situations where more advanced pollution issues appear before control over traditional pollution sources has been successful-

ly achieved (Bartone 1989). In effect, residents of the developing world's megacities have the worst of both the traditional and modern world, with a wide spectrum of pollution problems, ranging from human excreta to hazardous manmade chemicals.

Most rivers and canals in developing country megacities are literally large open sewers, with the organic wastes from industries, drains, sewers, and urban runoff rapidly depleting the dissolved oxygen. In many Asian cities, rivers flow into the cities already laden with nutrients (nitrogen and phosphorus), pathogens, sediment, and pesticide residues from the watershed. In flowing through the city, water becomes increasingly polluted with sewage, industrial effluents, and in some cases solid waste. In Delhi, for example, the coliform count (mostly from fecal contamination) is 7,500 per 100 ml when the Yamuna River enters Delhi, and a stunning 24 million per 100 ml when the Yamuna leaves the city. That stretch of the Yamuna also receives about 20 million liters of industrial effluents, including 500,000 liters of DDT wastes per day (Hardoy, Mitlin, and Satterthwaite 1992).

Sanitation is a major problem affecting water quality. As cities become more densely populated, the per-household volumes of wastewater exceed the infiltration capacity of local soils and require greater drainage capacity and the introduction of sewer systems. Most municipally provided sanitation systems are based on conventional sewer systems. Coverage is generally poor, with the proportion of the metropolitan population served by piped sewerage being less than 20 percent in Dhaka, Karachi, and Manila, 30 percent in Delhi, 40 percent in Jakarta, and 45 percent in Calcutta (Brennan 1993). Sewers are generally in poor condition, and sewage treatment plants discharge effluent that are little better than raw sewage. Because sanitation is a service that depends for its effectiveness on a high level of consistent and reliable coverage, providing service only to a select minority, or service that is intermittent, does not produce the anticipated public health and environmental benefits (Kalbermatten and Middleton 1991).

Megacities are being inundated in their own wastes as a result of inadequate waste management policies and practices. Uncontrolled, unsegregated dumping of municipal solid waste, hazardous/industrial wastes, and clinical/medical wastes at the same sites in periurban areas and near squatter settlements increases the risk of injury and exposure to other health hazards. In most megacities in developing countries, solid waste management costs consume from 20 to 50 percent of local government expenditures (Cointreau-Levine 1994). Only 50 to 70 percent of urban residents receive services, however, and most disposal is by unsafe open dumping.

Throughout the developing world, the problem of air pollution arises from the fact that emissions from vehicles, industrial boilers, and domestic heating sources exceed the capacity of cities' natural ventilation systems to disperse and dilute these emissions to nonharmful exposure levels (Bartone 1989). Of the major sources of air pollution in the world's megacities, sulfur dioxide comes chiefly from emissions from oil burned in power generation and industrial plants; suspended particulate matter comes mainly from domestic fires, power, and industrial plants; carbon monoxide and nitrogen dioxide come mainly from the gasoline fumes of motor vehicles; and ozone is formed by the action of

sunlight on the smog from vehicle emissions (WHO and UNEP 1992). Ambient lead is almost exclusively generated by motor vehicles burning leaded gasoline, except in China, where it also originates from the very large amount of coal that is burned.

Automotive air pollution in the developing countries is largely an urban phenomenon confined to the very large cities. In many megacities, atmospheric pollutants commonly associated with motor vehicles often exceed World Health Organization guidelines (WHO and UNEP 1992). WHO recommends, for example, that human beings should not be exposed to ozone concentrations of >0.1ppm for more than one hour per year and that ozone levels not be exceeded for more than 30 days per year. The population of Mexico City (which has half of Mexico's total vehicle fleet) was exposed to more than 1,400 hours of high ozone concentrations during 145 days in 1991 (Pendakur 1992). The situation was equally bad in two other Latin American megacities, São Paulo (which has a quarter of Brazil's vehicle fleet) and Santiago. Although the Asian cities do reasonably well in terms of ozone levels, many of them greatly exceed WHO standards for suspended particulate matter and sulfur dioxide; five cities exceeded these thresholds in 1991: Bombay, 100 days; Beijing, 272 days; Jakarta, 173 days; Calcutta, 268 days; and Delhi, 294 days (Pendakur 1992). The situation is also quite serious in Lagos, Cairo, and Teheran (Faiz 1992).

Although automotive lead emissions have declined sharply in most developed countries, they are generally rising in the developing countries. Moreover, shares of automotive sulfur dioxide, and particulate and lead emissions are likely to be significantly higher in the future because of the high rate of motorization in many of the world's megacities, the more extensive use of diesel-powered vehicles, and the poorer quality of automotive fuel (Faiz 1992).

ENVIRONMENTAL IMPACTS ON HEALTH

Having briefly examined a number of macro environmental problems (e.g. water and air pollution citywide), it is important to address the issue of environmental impacts on the health of megacity residents. Compared to the complex linkages among the environment and city size and rates of urban growth, the linkages between environmental degradation and health are more straightforward. In most cases, the poorer residents of the world's megacities bear the human costs of the most debilitating impacts of environmental degradation. In many megacities, environmental pollution affects the poor more severely in part because many of them live at the periphery where manufacturing, processing, and distilling plants are often built. The periphery is also where environmental protection is frequently the weakest.

In recent years, there has been a growing body of literature on the linkages among the urban environment, poverty, and health. A 1992 review, for example, identified over one hundred studies concerned with relative environmental health impacts of urbanization (Bradley, Stephens, Harpham, and Cairncross 1992). A notable aspect of many of these studies is the focus on differentials in health status or mortality rates between var-

ious population groups within cities. Not surprisingly, many of the studies found conditions in poorer areas of cities to be much worse than in the more affluent areas or even than the city average. Infant mortality rates in poorer areas, for example, were often four or more times higher than in more affluent areas, with much larger differentials apparent in the poorest district as compared to the most affluent district. Large differentials between rich and poor districts were also common in the incidence of many environmentally related diseases (e.g. tuberculosis and typhoid [Satterthwaite 1993]).

Whereas a majority of the studies to date on environment and health have focused on infant mortality, only a few systematic studies examine urban chronic disease or adult health (this is true of developing countries generally and is not confined to urban groups). Indeed, as Stephens (1994: 9) notes, "when one opens the Pandora's box of adult as well as child health in cities, the linkages of urban environment, poverty and health become overwhelmingly complex; the physical conditions of urban poverty seem to act with economic circumstances to compound threats to health." Evidence suggests that, internationally and at the city level, the complexity of urban poverty and its health consequences have not been taken seriously enough either in our analyses or agenda setting (Cohen 1992). This is perhaps linked to a continued search for single solutions to an increasingly complex problem: "it could be argued that tackling the sanitary health of the urban populations in developing countries today is, in the long term, the least of our challenges; history tells us that the insults of urban poverty do not go away with such interventions" (Stephens 1994: 21).

PSYCHOSOCIAL HEALTH

Psychosocial diseases and trauma (e.g. violence in young adults, depression, drug and alcohol abuse, suicide, and interpersonal violence, including child and spousal abuse) have received increasing attention from researchers and policy makers in recent years. As in the case of physical health, there is a growing literature on differentials in mental health within cities which has found a higher prevalence of mental illness in low-income, physically deteriorated areas in a wide variety of settings (Bradley et. al. 1992). As Stephens (1994) notes, the complex roots of psychosocial disease in urban environments are deep within the poverty-environment nexus and are common to the poor of both developed and developing countries. However, the precise linkages between different elements of the physical environment and psychosocial disorder or disease are difficult to ascertain and to separate from other variables. Moreover, care must be taken not to overstate the effects of environmental factors on psychosocial health when more fundamental social, economic, and political factors (such as low and very unstable incomes and oppression or discrimination), underlie psychosocial disorders (Satterthwaite 1993).

Trauma and particularly violence are increasing problems of the social environment of cities that relate to psychosocial health. They are articulated as a major concern of the urban poor (and rich) in a growing number of cities. In public health terms, deaths

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from violence now overshadow infectious diseases as child killers in some poor urban environments (Stephens 1994). Violence (mostly homicides), for example, now account for 86 percent of all deaths in boys aged 15–19 in São Paulo and over half of all deaths in 5–14 year olds (SEMPLA 1992).

São Paulo has tackled its less complicated urban poverty questions—its basic infrastructure questions—with comparative success. But the urban poverty has not gone away; education and income differentials still exist in severity, with a seven-fold differential existing between best and worst zones. This is perhaps reflected in the health data—infectious diseases have gone largely from the favelas of São Paulo, but they have been replaced ferociously by an epidemic of violence-rates of mortality are the second highest internationally (after the US) and it appears that the children saved from sanitary diseases have grown up to kill each other (Stephens 1994: 15).

CRIME AND SECURITY

Crime and public security in the world's large cities has been receiving increasing attention from many quarters in recent years. Crime challenges the very foundations of the social order, takes a heavy toll in terms of human suffering, and results in economic waste and a general deterioration in the quality of life.

In recent years, massive public protests and riots in cities such as Delhi, Jakarta, Karachi, and a number of African cities, have resulted in significant loss of life and widespread destruction of property. These disturbances have at times been triggered by immediate economic circumstances (e.g. rising food prices, food scarcity, currency devaluation) or by political upheavals. In some cases, simmering ethnic and communal tensions (e.g. between Hindus and Sikhs in Delhi, Mohajirs and Pathans in Karachi, and Indonesians and ethnic Chinese in Jakarta) have come to the surface during such episodes, resulting in an even higher toll of death and destruction. Such episodes of citywide violence have serious potential for destabilizing worldwide financial markets and destroying infrastructure, thereby impacting already fragile national economies, or igniting violence in entire geographical regions.

Worldwide, however, urban crime is dominated by crimes against property (e.g. theft, burglary, car hijacking), which account for at least half of all offenses in the world's cities (United Nations Centre for Human Settlements 1996). During the early 1990s, 61 percent of the population in urban areas of over 100,000 inhabitants at world level were victims of crime over a five-year period; in the developing regions, 68 percent of the urban population in Latin America, 44 percent in Asia and 76 percent in Africa were crime victims. Violent crime, including murder, assault, rape and sexual abuse, and domestic violence, now accounts for 25 to 30 percent of offenses in cities in developing countries. One notable aspect of violent crime is the increase in murders. In several of the world's largest cities, including Los Angeles, Rio de Janeiro, Bogotá, and São Paulo, more than 2,000 people are murdered each year. In Rio de Janeiro, more than 6,000 people were murdered in 1990 alone, resulting in a murder rate of 60 per 100,000 inhabitants; as a point of com-

parison, the murder rate in Washington, D.C. was over 70 per 100,000 in the early 1990s (United Nations Centre for Human Settlements 1996).

The increase in crime has generated a feeling of insecurity, transforming the spatial forms of many cities. The result has often been the geographical and social segregation of the wealthy from the poor. In some cities, insecurity and fear are changing the city's landscape and patterns of daily life, including people's movements and the use of public transport, sometimes discouraging people from using the streets and public spaces altogether (United Nations Centre for Human Settlements 1996). In many of the world's megacities, the poor are the main victims of urban violence, including crimes against property and violent crime such as rape or assault. The poor cannot afford burglar alarms and other protection devices and have no access to private security services. At the same time, these services are becoming a burgeoning worldwide industry: as of the mid-1980s, there were 127 security companies in operation in Bogotá (with five times more privately paid guards than regular policemen) and 80 security firms in Nairobi; likewise, 94 percent of automobiles in Bangkok were fitted with security devices (Buendia 1989).

Urban crime and violence in the world's large cities is generally not a spontaneous occurrence, but rather the product of inequality and social exclusion. Although rapid urbanization and poverty partly explain the scale and extent of urban violence and crime, other factors such as the political and economic climate, local traditions and values, and the degree of social cohesion and solidarity among urban communities also play a role. Erosion of moral values and the collapse of social structure and institutions, such as the family or the neighborhood, puts communities more at risk of urban violence and crime (Habitat Debate 1998).

Urban violence is also deeply embedded in the specific local context. Among the world's large cities, there are sharply different degrees of social welfare development and income distribution patterns, contrasting demographic patterns (e.g. in terms of population growth, internal and international migration flows, age structure), varying cultural factors (e.g. religion, ethnicity), and differing paces of cultural change.

There is considerable debate about the relative importance of different factors. Many specialists stress the significance of inadequate incomes. These disparities are usually combined with very poor and overcrowded housing and living conditions, and often insecure tenure. Together the situation presents fertile ground for the development of violence (United Nations Centre for Human Settlements 1996). Other explanations focus on the contemporary urban environment, particularly the ostentatious display of wealth and luxury goods in certain areas. These displays engender an attitude that legitimizes the "distribution of wealth" through criminal activity (United Nations Centre for Human Settlements 1996). Indeed, in a simple "Robin Hood" model of income redistribution developed by a World Bank economist, inequality variables seem to play a significant role, particularly in the case of property crimes (Bourguignon 1998). Little is known about how crime varies with business cycles; a study of Lagos in the early 1980s found that fraudulent offenses appeared to occur only in times of economic prosperity, while

robbery occurred during periods of both prosperity and depression. However, violent crimes tended to diminish when a new government or economic recovery signaled hope of political or social improvement and stability (Buendia 1989).

In many cities there has been a greater susceptibility to the negative outcomes of mass culture owing to the weakening of social bonds and controls. Satellite dishes, linking individual homes to a remote outside world, are a new feature of the urban landscape in much of the developing world. The level of violence on television and other media is thought to play a significant role in engendering violence in the United States; clearly, little is known about the future impact of exporting this material to the furthest reaches of the developing world. The easy availability of guns is a factor in some societies. In many acts of violence, such as rape, alcohol is often a stimulating factor. Another factor in the increase in murder and violent crime in many cities has been the growth in drug trafficking, which has reached unprecedented levels and has diverted considerable police personnel from other tasks. At the neighborhood level, petty drug dealing has become a relatively profitable activity in many megacities.

THE MISSING LINK

When considering the linkages between urbanization, environment, and security, clearly the missing link is poverty. In coming decades, increasing numbers of cities in the developing world will be extremely large, will have a high proportion of their population living in poverty, and will suffer from severe environmental degradation. The poor in these cities will suffer disproportionately from waterborne and sanitation-related diseases as well as from psychosocial diseases and violent crime. Occasionally, disease outbreaks in developing country cities will result in worldwide epidemics such as cholera. More frequently, however, poor environmental conditions will mainly affect the health and productivity of low-income megacity residents. Likewise, citywide violence will sometimes have worldwide reverberations, raising concerns for regional stability and affecting financial markets. More frequently, however, urban crime will consist of the poor preying upon the poor.

Why should these issues be addressed? The major reason is one of basic human rights. Many of the world's largest cities will house millions and millions of people living in conditions of abject poverty. Given current economic realities, the situation of most of these people is unlikely to improve substantially in coming decades. Providing minimal environmental sanitation and health care services and basic public security may be all that can be realistically provided. As the Programme of Action of the International Conference on Population and Development emphasized:

> Governments should increase the capacity and competence of city and municipal authorities...to safeguard the environment, to respond to the need of all citizens, including urban squatters, for personal safety, basic infrastructure and services, to eliminate health and social problems, including problems of drugs and criminality, and problems resulting from overcrowding and disasters, and to provide people with alternatives to living in areas prone to natural and man-made disasters. (United Nations 1995b: 49)

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A second reason for addressing these urban issues relates to globalization. In coming decades, large cities will be at the forefront of globalization and will be the principal nodes generating and mediating the flows of capital, people, trade, greenhouse gases, pollutants, diseases, and information. If both urbanization and decentralization continue in the decades ahead, cities will carry a heavy charge of responsibility for political stability, openness, economic progress, and the quality of life in many nations.

Megacities that can become and remain more competitive in international trade and investment are likely to grow in the future, whereas those that cannot are likely to stagnate or decline. This economic arena is another area where environmental issues and crime and security come into play. Growing congestion and pollution in the main urban centers make it increasingly difficult for some countries to compete for foreign direct investment. Moreover, violence and crime not only affects tourism—frequently a major foreign exchange earner—but also adversely impacts foreign investment.

The necessity for megacities to be internationally competitive in order to sustain their economic vitality in the twenty-first century may well create new and wide economic chasms if governments in cities with lagging internal competitiveness do not improve urban conditions (Rondinelli and Vastag 1998). Megacities that continue to grow in terms of population, but lag behind in international competitiveness and economic development may become less able to support large influxes of population or alleviate urban poverty.

It is important to emphasize that the population of the world's megacities will continue to grow over the next several decades, whether or not they become more internationally competitive—indeed, whether or not their economies grow at all (Rondinelli and Vastag 1998). Economically lagging metropolitan areas in developing countries continue to attract migrants because the "push factors" of rural poverty make even subsistence living in poor cities a more attractive alternative. Indeed, among the megacities with the highest rates of population growth are poor cities with sluggish economies such as Cairo, Calcutta, Dhaka, Kinshasa, Lagos, and Madras.

How the world's megacities are managed in coming decades will shape patterns of national economic growth, the settlement of vast populations, and the social and political stability of many developing countries. The stakes are high. Without extraordinary efforts to develop urban economies, especially in such a critical area as infrastructure, a segregated world economy may emerge where those megacities that have the necessary prerequisites for integration prosper, while others, fall farther and farther behind. Unless such trends are reversed, the urban landscape in many developing countries will be bleak, chaotic, and impoverished.

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1.   Although the high and low fertility scenarios differ by just one child per couple, half a child above and half a child below replacement fertility levels (about 2 children per couple), the size of the world population in 2150 would range from 3.6 billion persons to 27 billion. It is interesting to note that, even if all couples of the world had begun to bear children at the replacement-fertility level in 1995 (the "instant replacement scenario"), the growth momentum of the current age structure would still result in a 67 percent increase in world population, to 9.5 billion by 2150 (United Nations 1998a).

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Environmental and Social Stress Factors, Governance, and Small Arms Availability

The Potential for Conflict in Urban Areas

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EXECUTIVE SUMMARY

According to Michael Renner, environmental degradation, economic scarcities, social inequalities, and the easy availability of small arms (firearms) are generating conditions that are conducive to urban conflict, both by triggering population movements into cities and by creating debilitating living conditions in urban agglomerations.

Renner cites environmental degradation (of both land and water resources), climate change, increased demands on arable farmland, unequal power distribution, frequent population movements, and lack of rural services as factors which cause rural populations to turn cities for a means of subsistence. Unfortunately, the pressure of population growth in urban areas is combined with economic scarcities, internationally imposed structural programs, unemployment, and economic downswings. Renner connects the rise in urban violence with the increased pressures on urban systems and the growth of small arms dispersal at all levels and sectors of society.

ABOUT THE AUTHOR

Michael Renner has been involved in a variety of peace, security, and disarmament issues during the past 17 years, the last 12 of which at the Worldwatch Institute. His activities have been primarily in research and writing, and public education. He is the author of *Fighting for Survival: Environmental Decline, Social Conflict, and the New Age of Insecurity.* In addition, Renner authored seven Worldwatch papers including "Budgeting for Disarmament: The Costs of War and Peace," "Small Arms, Big Impact: The Next Challenge of Disarmament," and "Ending Violent Conflict." He has also been a contributor to the other Worldwatch Publications: *State of the World, Vital Signs,* and *Worldwatch Magazine.* Mr. Renner is interested in the small arms issue both from a disarmament perspective and in terms of the social development impact. Renner is also the author of *Economic Adjustments After the Cold War: Strategies for Conversion,* a study commissioned by the United Nations Institute for Disarmament Research (UNIDIR) in Geneva, Switzerland. Before joining Worldwatch in 1987, Renner was Corliss Lamont Fellow in Economic Conversion at Columbia University from 1986–1987 and a Research Fellow at the World Policy Institute in New York City from 1984 to 1986. Renner is a native of the Federal Republic of Germany. He holds degrees in international relations and political science from the University of Amsterdam, the Netherlands, and Konstanz, Germany.

INTRODUCTION

Urbanization continues at a rapid clip, and with it grows the urban challenge. Since 1950 the number of people living in urban areas has jumped from 750 million to 2.64 billion. Each year, 61 million people are added to cities worldwide, or more than one million per week. By 2025, urban areas are expected to comprise more than five billion people (Mitchell 1998a). Through rural-to-urban migration, natural increase within cities, as well as the transformation of villages into new urban areas, city dwellers now account for 46 percent of the global population, up from less than 30 percent in 1950. More than half of humanity will reside in cities within a decade, according to UN estimates (ibid.). About 90 percent of the projected urban growth over the next quarter-century will occur in developing countries (World Resources Institute 1996). In the 1950s, just 17 percent of Third World inhabitants lived in urban areas, rising to 37 percent in the early 1990s, and an expected 57 percent by 2025 (Chege 1995).

Today, there are 326 cities with more than one million inhabitants; twenty of them are "megacities," home to at least ten million people. Almost all of these are in the developing world, and they have acquired, or are acquiring, this status with unprecedented speed. Mexico City, for instance, grew from eight million residents to fifteen million in just sixteen years. But megacities with megaproblems may unduly overshadow the rest of the urban realm: they account for just 10 percent of all urban dwellers, while cities with less than one million people account for close to two-thirds of the total.

The rural poor continue to be lured to cities by the promise of jobs, better education, or improved services—though sometimes they are simply compelled to move. But according to a recent study by the U.S.-based Population Council, the quality of life in many urban centers of the developing world is poorer today than in rural areas. Partly because of continued large-scale influxes of people, cities experience high levels of homelessness and unemployment, pollution and congestion, the loss of agricultural land, and the accumulation of waste.

This paper attempts, in broad outline, to identify trends and dynamics that have a bearing on the potential for triggering or aggravating political, communal, and criminal violence in urban contexts. In doing so, it is important to distinguish between sets of factors that (a) have their origin in rural areas but nevertheless impact urban areas, principally by forcing or inducing people to migrate from the countryside into cities—either domestically or across international borders—and hence swelling the size of cities, and (b) those that are generated or at work within urban areas themselves.

Among the first set of issues, a key factor is environmental decline and the resulting resource scarcity—principally water scarcity, erosion and degradation of arable land, and deforestation—that forces peasants and pastoralists to abandon their fields and grazing grounds and often induces them to migrate to urban areas. These factors are often tightly entwined with population growth and unequal access to land, water, and agricultural credit and extension services. Also, in some cases the rural population is not

uprooted by adverse circumstances, but rather is expelled by powerful farming, ranching, and resource extraction interests.

Among the second set of issues are the lack of adequate services to meet such basic human needs as housing, sanitation, potable water supplies, education, employment, and so on. Particularly in cities of the developing world, sheer numbers—the rapid expansion of urban populations—overwhelm the ability of city administrations to provide needed human services. Rising inequalities greatly exacerbate these problems, as class differences tend to be more visible and glaring in dense conglomerations than in rural settings.

FORCES THAT CAUSE MIGRATION TO URBAN AREAS
Environmental Stress Factors

The rapid degradation and depletion of natural systems is an important source of insecurity and stress in many societies, whether in the form of reduced food-growing potential, adverse health impacts, or diminished general habitability. Although soil erosion, desertification, deforestation, and water scarcity are worldwide phenomena, the human impact is most pronounced and most immediate in regions that encompass fragile ecosystems (such as arid or semiarid zones) and that have an economy heavily geared to agriculture. Natural support systems may be weakened to the point that rural families and communities find it harder and harder to sustain themselves, eventually forcing them to abandon their fields and homes.

Land degradation poses a major challenge—principally through the plowing of highly erodible land, the overgrazing of rangelands, and the loss of arable land, rangeland, and forests to expanding urban needs. According to UN Environment Programme (UNEP) estimates at the beginning of the 1990s, some 3.6 billion hectares—nearly a quarter of the earth's land area, or about 70 percent of potentially productive drylands— are affected by desertification (Bächler 1994). One third of all agricultural land is lightly degraded, half is moderately degraded, and 16 percent strongly or extremely degraded (Oldeman, September 21, 1995; Gardner 1995). The annual loss of productive land amounts to some six to seven million hectares. Loss of topsoil is so severe that in the absence of remedial action, nearly two thirds of all cropland worldwide will perform below its potential in the next four decades (Gardner 1996a). The portion of agricultural land affected by soil degradation comes to 65 percent in Africa, 45 percent in South America, 38 percent in Asia, and 25 percent in North America and Europe. Some four hundred million poor people live in rural, ecologically fragile areas of the developing world (Oldeman, April 12, 1996; Gardner 1996b; Bächler 1994).

Water, like cropland, is a fundamental resource for human well-being—for food production, health, and economic development. Yet in many countries it is an increasingly scarce resource, under threat of both depletion and pollution. Countries with annual supplies in the range of 1,000–2,000 cubic meters per person are generally regarded as water-stressed, and those with less than 1,000 cubic meters are considered water-scarce.

More than 700 million people live in countries whose per-capita supplies are at or below the level where food self-sufficiency is problematic. Some 230 million people live in the twenty-six countries that are most water-scarce (see Table 1). As water demand grows with population and economic development, their ranks are expected to swell (Postel 1992).

Many rivers and aquifers—and not just in countries with acute water scarcity—are overexploited. Excessive withdrawal of river and groundwater leads to land subsidence, intrusion of salt water in coastal areas, and desiccation of lakes. As groundwater is drawn at a rate surpassing natural replenishment, water tables decline. Eventually, the water becomes too costly to continue pumping, too saline for irrigation purposes, or is depleted altogether. Aquifer depletion due to overpumping is occurring in crop-growing areas around the globe, including regions of China, India, Mexico, Thailand, northern Africa, and the Middle East (Postel 1992, 1996). With these trends come growing pressures for people to abandon farming and migrate to urban areas.

The already observable patterns of environmental degradation are likely to be compounded by climate change. Changing precipitation patterns, shifting vegetation zones, and rising sea levels caused by global warming threaten to disrupt crop harvests, inundate heavily populated low-lying coastal areas, intrude estuaries and coastal aquifers with salt water, and undermine biological diversity. A hotter climate could trigger an increase in heat waves, hurricanes, floods, droughts, fires, and pest outbreaks in some regions; more extreme climates in desert zones; a rise in the number of heat-related deaths and illnesses; and expansion in the reach of vectorborne infectious diseases such as malaria, yellow fever, dengue fever, and viral encephalitis (Flavin 1996).

Global warming could cause sea levels to rise anywhere from 15 to 94 centimeters during the next century (and more thereafter), with a current best estimate of about 50 centimeters (Watson, Zinyowera, and Moss 1996:ch. 9). River deltas and coastal areas around the globe affected by global warming include the Yangtze, Mekong, and Indus in Asia; the Tigris and Euphrates in the Middle East; the Nile, Zambezi, Niger, and Senegal in Africa; the Orinoco, Amazon, and La Plata in South America; the Mississippi in North America; and the Rhine and Rhone in Europe (Stevens 1995).

The low-lying areas most at risk—both urban and rural—are precisely the places with some of the densest human settlements and the most intensive agriculture. All in all, UNEP anticipates that sea level rise, along with amplified tidal waves and storm surges,

WATER SUPPLY (cubic meters per person)

Country	1990	2025
Nigeria	2,660	1,000
Ethiopia	2,360	980
Iran	2,080	960
Peru	1,790	980
Haiti	1,690	960
Somalia	1,510	610
South Africa	1,420	790
Egypt	1,070	620
Rwanda	880	350
Algeria	750	380
Kenya	590	190
Israel	470	310
Jordan	260	80
Libya	160	60
Saudi Arabia	160	50

SOURCE: Gleick (1992).

Table 1—Selected Water-Scarce Countries, 1990 and 2025

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could eventually threaten some five million square kilometers of coastal areas worldwide. Though accounting for only 3 percent of the world's total land, these areas encompass one third of all croplands and are home to more than a billion people. The Intergovernmental Panel on Climate Change (IPCC) points out, for example, that almost 10 percent of the world's rice production, feeding more than two hundred million people, takes place in areas of Asia that are considered vulnerable to sea level rise (Watson, Zinyowera, and Moss 1996; Myers 1993).

Global warming's impact on agriculture—through rising seas, higher or more variable temperatures, more frequent droughts, and changes in precipitation patterns—is indeed a major concern. Higher temperatures mean greater evaporative losses and hence faster desiccation of soils. The effects would be highly uneven, with some areas benefiting from changes in temperature and alterations in the hydrological cycle, but others that now receive plentiful rainfall becoming substantially drier. Given current water shortages, agriculture in arid and semiarid areas is particularly vulnerable to climate change. This would include areas such as the Sahel, southern Africa, the Indian subcontinent, eastern Brazil, and Mexico (Gleick 1992).

Environmental degradation, enhanced and intensified by climate change, is likely to continue to uproot sizable populations; many will end up migrating to urban areas. As they seek new homes and livelihoods in already crowded cities, they may clash with unwelcoming host communities, and cities will be hard pressed to cope with the added demand for services and jobs.

Demographic Factors

By simple arithmetic, population growth means that, all else being equal, the claim on natural resources increases. More mouths have to be fed, which means that more land—less productive or even unsuitable land—needs to be plowed, more irrigation is required, land use needs to be intensified, and fallow periods shortened or abandoned. Greater efficiency and improved techniques may offset part of these pressures and food-growing yields can be boosted (indeed, world grain yields per hectare have increased by a factor of 2.5 since 1950 [Brown 1995]). Yet on the whole the environmental impact rises and societies are pushing against the limits.

Where arable land is limited, a growing population implies that plots of land tend to get smaller and smaller as they are passed along from one generation to another and subdivided among the heirs. This in turn makes it more difficult for rural families to feed themselves and increases the pressure to find other means of sustenance or to abandon farming and move to the city instead. Where rural jobs are scarce, this tendency is being reinforced.

Equity Issues in an Era of Globalization

Rural dynamics and rural-urban migration are not governed just by simple arithmetic. In a world in which wealth and power are distributed in a highly unequal manner, per-capita

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Country/ Region	Observation
Brazil	Top 5 percent of landowners control at least 70 percent of the arable land; the bottom 80 percent have only 13 percent of the cultivatable area; 12 million rural Brazilians are landless or near-landless[a], yet enough land is currently left idle by large landowners to provide the 12 million with more than 2 hectares of land each.
Peru	Three quarters of the rural population is landless or near-landless.
Central America	In Guatemala, 2 percent of farmers control 80 percent of all arable land; in Honduras, the top 5 percent occupy 60 percent; in El Salvador, the top 2 percent own 60 percent, and almost two thirds of the farmers are landless or nearly landless; in Costa Rica, the top 3 percent have 54 percent of the arable land.
India	40 percent of rural households are landless or near-landless. The 25 million landless households in 1980 are expected to reach 44 million by the end of the century.
Philippines	3 percent of landowners control one quarter of the land; 60 percent of rural families have no or too little land.

[a] Near-landlessness means that a rural family or household possesses too little land to sustain its members' livelihoods with farming alone.

SOURCE: Myers (1993); UNDPI (1996a); Stichele (1996).

figures of arable land and other resources tell only part of the story—and may even obscure the key factors and pressures. In most developing countries, where agriculture is a mainstay of the economy and key to people's livelihoods, access to land is a crucial indicator. Landless and near-landless peasants are being forced onto marginal lands by unequal land distribution, the lack of secure land tenure, the marginalization of small-scale agriculture by cash-crop operations, the conversion of land to cattle ranching, and still-high rates of population growth. In 1981, an estimated 167 million households (comprising 938 million people) were landless or near-landless, and their numbers were expected to increase to nearly 220 million (or more than 1.2 billion people) by the turn of the century (Durning 1989).

Many of the landless and land-poor are forced to migrate to more marginal areas, such as hillsides and rain forests, that are susceptible to erosion and whose soils are quickly exhausted. In Mexico, for example, more than half of all farmers are eking out a living on

Table 2—Land Distribution and Landlessness, Selected Countries or Regions

land on steep hill slopes that now account for one fifth of all Mexican cropland (Myers 1993). Others turn to seasonal or permanent wage labor on large agricultural estates; many others end up seeking new livelihoods in already crowded cities (see Table 2).

Unequal landownership is of course nothing new—in Latin America, it is an enduring legacy of colonialism; but in more recent years the mechanization of agriculture in some areas has led to the eviction of millions of small peasants and sharecroppers by commercial farmers—as is the case in Sudan (Suliman 1992). The Institute for Development Studies in the United Kingdom estimates that 90 percent of the marketable agricultural production in Sudan is controlled by fewer than 1 percent of its farmers (Prendergast 1992).

In an age in which agriculture is increasingly being subjected to globalization, governments in many developing countries have decided to give priority access to fertile land and water to the larger commercial cash crop producers (who are typically more oriented toward lucrative export markets and urban markets for nonstaple and perhaps even nonfood crops) to the detriment of the numerically much larger subsistence or small-scale commercial farmers. In the Jodhpur district of Rajasthan, India, increasing use of scarce groundwater to cultivate chili peppers and other water-intensive cash crops has caused village wells used by the rural poor to go dry and village communities to fall apart (Postel 1992, 1996). Similarly, in Colombia, flower production for foreign markets has caused groundwater levels to fall, harming local food production (Launer 1994). In Senegal and Mali, fruit and vegetable export plantations were developed to the detriment of the peasant economy (Chossudovsky 1995).

In many countries, small farmers have been losing access to credit, extension services, and other forms of support, such as guaranteed prices. The 1994 edition of the *Human Development Report* (UNDP 1994) showed that in many developing countries, 40 percent of the people typically receive less than 1 percent of the total credit disbursed. In Chiapas, Mexico, 87 percent of agricultural producers were found in 1990 not to have any access to government credit (Chossudovsky 1995; Howard and Homer-Dixon 1996).

Many small commercial farmers and particularly subsistence peasants are struggling to survive and do not have the resources required to modernize and intensify their operations in order to compete in the brave new world of globalized agriculture. With import tariffs being lowered now that agriculture is to be opened up more to international trade, these producers increasingly compete with a flood of cheap grain imports. Although this development may be a boon to urban middle classes, it is devastating to many in rural areas. Some five million poor Brazilian peasant households, for example, see their very existence threatened in this manner (Stichele 1996): Brazil's wheat imports, which surged sixfold between 1988 and 1995, now supply 79 percent of the country's consumption (U.S. Department of Agriculture 1995). In Mexico, up to 80 percent of rural producers are potentially threatened by cheap imports (Renner 1997a).

Capital-intensive mechanized agriculture and other large-scale projects, such as dam-building and irrigation schemes, logging, mining, and oil and gas development, are uprooting millions of people—either by appropriating their lands or by undermining the natural systems they depend on for survival. Many of those displaced end up in urban

areas. In the Sudan, mechanized agriculture projects drove out some 4.5 million peasants and pastoralists; many went to Khartoum, the capital (Suliman 1992). Large-scale irrigation projects and hydroelectric facilities often lead to the displacement of sizable local populations which, in turn, may lead to disputes among ethnic or economic groups (Gleick 1992). A study by the International Rivers Network found that the construction or expansion of 604 dams in 93 countries displaced at least ten million people during 1948–93, most of whom received no compensation or rehabilitation support. This is by no means a complete accounting, and the ranks of the displaced are continuing to swell with additional projects. A 1994 World Bank study put the current displacement toll of dams in developing countries at more than four million a year (Deutch Stiftung für Internationale Entwicklung 1995b; World Bank 1995; Kane 1995).

The implications for social stability are stark. The frictions between subsistence or near-subsistence peasants and commercial farms can lead to intensified social conflict in the countryside and in some cases to violent skirmishes. Or marginalized peasants, already facing environmental and demographic pressures, may join the trek to urban areas, where they add to the strain on infrastructure, social services, and jobs.

Population Movements

Large numbers of people are on the move each year—either voluntarily or under duress—and many of them move to urban areas. The first category of people on the move is migrants. The number of cross-border legal migrants is estimated to have reached about one hundred million worldwide, while illegal migrants are thought to number anywhere from another ten million to thirty million. More than one hundred countries are now experiencing major migration outflows or inflows, according to the International Labour Organisation. A quarter of these nations are simultaneously a source and recipient of migrants. Within countries, too, substantial flows of people are taking place, typically from rural to urban areas (an estimated twenty to thirty million people migrate to cities within their own country each year), and from poorer to more prosperous provinces (Kane 1995; UNHCR 1995).

The other category to consider in the present context is the flow of refugees. Although it is certainly true that not all refugees originate in the countryside and not all refugees seek asylum in cities, a substantial portion of them are part of the rural-urban migration picture. The number of people that, under international rules, qualified for and were given refugee assistance soared from slightly more than one million in the early 1960s to an estimated 27.4 million in 1995 before declining somewhat to 22.7 million in early 1997. But because official definitions of what constitutes a refugee and who therefore is eligible for assistance and protection are quite narrow, these statistics do not include all those forced to abandon their homes. UN High Commissioner for Refugees estimates that some thirty million people worldwide may be internally displaced, although its programs covered only slightly below five million in 1997 (UNHCR 1995; *Refugees Magazine* 1997; Mitchell 1998b).

These numbers are still conservative; they do not include people uprooted by environmental calamities or "oustees"—those displaced by large-scale infrastructure projects (including dam projects, as noted above). Over the past decade, for example, as many as ninety million people may have lost their homes to make way for dams, roads, and other "development" projects. In addition, land degradation, water scarcity, and the threat of famine are powerful factors forcing people to move. The mid-1980s drought in the Sahel region, for instance, drove more than two million people out of Burkina Faso, Chad, Mali, Mauritania, and Niger. Desertification has uprooted one sixth of the populations of Mali and Burkina Faso. Many of these individuals ended up in cities and towns (Jacobson 1988; Kane 1995).

The potential for "environmental refugees" is far larger, though. As we have seen earlier, some four hundred million people live in ecologically fragile areas, eking a precarious living out of marginal soils; more than seven hundred million people are already affected by water scarcity, a figure bound to grow. Adverse conditions may in future years force large numbers of them to move on, and often to move on with a city as their final destination.

Traditionally, a sharp distinction has been made between migrants and refugees. Migrants are thought to leave largely of their own choosing, "pulled" by the prospect of better jobs or higher earnings, whereas refugees are compelled to vacate their homes, "pushed" out by war, repression, or other factors beyond their control. But the categories are becoming blurred. People are increasingly leaving their homes for a mixture of reasons—involving both fears and hopes, both voluntary and involuntary influences. In some situations, migrants could be characterized as individuals who had the foresight to leave early, before local conditions deteriorated to the point where they were compelled to move—that is, before human rights violations become massive, before economic conditions turned wretched, or before environmental deterioration made eking out an existence impossibly burdensome (Suhrke 1993; Kane 1995).

The phenomena of migrants and environmental refugees can be observed on a massive scale in China, which now experiences enormous rural-urban flows of people within its borders. The reason can be found in the large and growing disparities of both environmental quality and economic development between China's poverty-stricken hinterland and its booming coastal provinces.

Vaclav Smil of the University of Manitoba points out that ten northern interior provinces, home to about 40 percent of China's population, account for almost 80 percent of the country's soil erosion and two thirds of its severe water shortages. The northern interior is characterized by arid lands, highly variable rainfall, and soil easily susceptible to erosion. These adverse natural conditions have been magnified by environmental mismanagement. Smil puts the number of Chinese peasants displaced by environmental degradation during the 1990s at twenty to thirty million, with at least another thirty to forty million uprooted by 2025—a figure that could be much higher if climate change becomes a full-blown reality (Smil 1992, 1995).

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Where would these people go? Most likely to the southern and coastal provinces, putting immense pressure on local governments. Already in the past several years, the coastal cities have been swamped with unmanageable waves of unskilled peasant migrants seeking better economic opportunities—neither needed for farming nor employed by rural industries. China now has a "floating" population of job seekers estimated at more than one hundred million (ibid.).

Furthermore, the Chinese government is in the process of pruning state-owned industries in the country's northeast, causing millions of workers to lose their jobs. In many large cities, unemployment is believed by Western observers to be more than 20 percent (compared with an official 4 percent rate). Another thirty million workers are expected to be shed. Although the government is trying to build a new welfare system, it is also gambling that rapid economic growth will create enough new jobs for those laid off. According to a recent *New York Times* report, there are numerous scattered protests around the country by the unemployed. Although calls for independent labor unions are being heard, it remains to be seen whether these demands will coalesce into any serious movement. As China pursues its own brand of capitalism, income gaps are opening and becoming more visible between those who benefit from reforms and those who suffer the consequences. Laid-off urban workers are often competing for employment with migrants from rural areas (Eckholm 1997, 1998).

SOCIAL STRESS FACTORS
Unequal Income Distribution

In many countries, we see a highly uneven distribution of the benefits of economic growth (or of the woes of economic contraction). Inequality, marginalization, and the resulting polarization in society appear to be on the march virtually worldwide. Even as economic growth has been strong, the gap between rich and poor has grown dramatically. In 1960, those in the top 20 percent had thirty times the income of those in the bottom 20 percent; by the beginning of the 1990s, they had almost sixty times as much (UNDP 1994; UNDPI 1996a, b). The world's 358 billionaires had a combined wealth of $762 billion in 1994—the equivalent of the income of 2.4 billion people, 45 percent of the global population (Arrudal 1995).

For many developing countries in Latin America and Africa, the sharp increases in what were already large social and economic discrepancies were a consequence of structural adjustment programs imposed by the International Monetary Fund and the World Bank since the early 1980s—in turn a consequence of these countries' severe foreign debt crisis. These programs typically require recipients of adjustment loans to implement measures such as lowering trade and investment barriers; devaluing the currency; reducing or eliminating subsidies, price controls, and social programs; and privatizing state enterprises (Heredia and Hellinger 1995). Privatization, deemphasis of social priorities, and the needs of debt servicing proved to be exceedingly bitter medicine for the poor and

Country	Ratio
South Africa	45
Brazil	32
Guatemala	30
Senegal	17
Mexico	14
United States	13[a]
Malaysia	12
Zambia	9
Algeria	7
China	7
South Korea	6
Germany	6
India	5
Japan	4

[a]Data for 1993.

SOURCE: UNDP (1995); Dembo and Morehouse (1995).

Table 3—Ratio of Richest 20 Percent of Population to Poorest 20 Percent in Selected Countries, 1981–92

even for large parts of the middle class. Most people in highly indebted African and Latin American countries suffered a severe drop in living standards during the 1980s. Bread for the World (1996) notes that African governments spend more than twice as much servicing their debts as they do on health and primary education combined.

A good deal of the global rich-poor gap is embodied in the persistent North-South disparity: the developing world accounts for three quarters of the world's population but has only 16 percent of global income. But huge gaps exist also within countries of both the South and the North (see Table 3). Part of the domestic picture can be explained, of course, by urban-rural differentials; but within cities, too, discrepancies are high and rising.

As a group, Latin American countries have long displayed the most unequal income distribution in the world—disparities that grew even bigger during the 1980s and 1990s. As foreign capital pours into the region—a fourfold increase between 1990 and 1993 alone—in response to privatization, trade liberalization, and deregulation, new markets are emerging and new opportunities beckon (Deutch Stiftung für Internationale Entwicklung 1995a). Yet despite the upturn in macroeconomic indicators, the benefits are distributed highly unequally. Income distribution in the region remains more skewed now than it was before the start of the debt crisis (UNECLAC 1994) and the region's poverty rate is not expected to drop below its 1990 level of 46 percent; in fact, it may increase slightly (NAFTA 1995). The incomes of some 192 million Latin Americans are below the poverty line, and almost half these people are extremely poor; 130 million people are homeless or live in unfit housing structures (Nash 1994). A front-page *New York Times* headline in late 1994 summarized the situation well: "Latin Economic Speedup Leaves Poor in the Dust" (ibid.).

In Western industrial countries, too, inequality is on the rise. Some one hundred million people—more than 10 percent—live below the poverty line, and more than five million are homeless (UNDP 1995). Another one hundred million people in formerly Communist industrial countries live in poverty (UNDP 1991). In the United Kingdom, the income ratio between the top 20 and bottom 20 percent went from 4:1 in 1977 to 7:1 in 1991 (UNRISD 1994). In the United States, which has the widest income gap among industrial nations (UN 1994), it went from 4:1 in 1970 to 13:1 in 1993 (Dembo and Morehouse 1995).

Source of Insecurity	Observation
Income	1.3 billion people in developing countries live in poverty; 600 million are considered extremely poor; in industrial countries, 200 million people live below the poverty line.
Clean Water	1.3 billion people in developing countries lack access to safe water.
Literacy	900 million adults worldwide are illiterate.
Jobs	820 million people worldwide are unemployed or underemployed.
Food	800 million people in developing countries have inadequate food supplies; 500 million of them are chronically malnourished, and 175 million are children under the age of five.
Housing	500 million urban dwellers worldwide (roughly one out of every five) are homeless or live in inadequate housing; 100 million young people are homeless ("street children").
Preventable Death	15–20 million people die each year due to starvation and disease aggravated by malnutrition; 10 million people die annually due to substandard housing, unsafe water, and poor sanitation in densely populated cities.

SOURCE: UNDP (1991, 1994, 1995); UNDPI (1996a, b, c); UNRISD (1994); UN (1996).

Unmet Basic Human Needs

For people at the bottom of the global economic heap, particularly in developing countries, the day-to-day reality is typically one of innumerable hardships and chronic insecurity. They contend with meager incomes despite long hours of backbreaking work, insufficient amounts of food and poor diets, lack of access to safe drinking water, susceptibility to preventable diseases, and housing that provides few comforts and scant shelter. Despite undeniable improvements in living standards and health and education since mid-century, massive numbers of people, mostly in developing countries, remain mired in poverty, with some of their most basic needs unmet (see Table 4; UNDP 1991).

Safe drinking water and adequate sanitation illustrate this point. More than one billion people worldwide do not have access to safe drinking water, of which 170 million live in cities (Chege 1995; US Government Printing Office 1993:17). Although availability of sanitation grew in absolute terms, the share of developing-country populations with access to adequate sanitation nevertheless fell from 36 to 34 percent between 1990 and

Table 4—Dimensions and Magnitude of Human Insecurity, Early 1990s

1994, and the unserved population grew by 274 million people—at a faster rate than during the 1980s. In urban Africa, the share of population with access to adequate sanitation fell from 65 to 55 percent between 1990 and 1994 (Gardner 1998). According to the WHO, half the population of developing countries suffers from one of six diseases (diarrhea and others) associated with poor water supply and sanitation. Although the greatest shortcomings are found in rural areas (some 2.3 billion lack adequate sanitation compared with 590 million in urban areas), the need for adequate sanitation is most urgent in cities because of the greater potential there for mass infections from pathogen-tainted water.

Unemployment

One key reason for rising inequality and poverty—and a major threat to social cohesion and stability—is found in what various observers have termed the global jobs crisis. Out of the global labor force of about 2.8 billion people, at least 120 million people are unemployed, while 700 million are classified as "underemployed"—a misleading term because many in this category are actually working long hours but receiving too little in return to cover even the most basic of needs (Marshall 1995; Barnet 1994; Kane 1995).

Unemployment, underemployment, the threat of job loss, and the specter of eroding real wages are challenges for many workers across the globe, though the particular conditions and circumstances diverge widely in rich and poor countries. Three phenomena can be observed. First, the rise of microelectronics has dramatically reduced the need for labor—particularly unskilled labor. Second, measures such as subcontracting work and temporary or part-time hiring allow companies to adapt rapidly to fast-changing market conditions but render job tenure more tenuous and insecure. Third, due to modern communications and transportation networks, the ability to parcel out components of the work process, and increased capital mobility, corporations are increasingly able to tap into a large pool of cheap labor in developing countries, replacing a much higher paid work force in the old industrial countries. Initially, unskilled or semiskilled jobs were at risk in this manner, but recent evidence suggests that skilled workers are now facing similar pressures (UNRISD 1994; Barnet 1994; Bradsher 1995; Uchitelle 1994).

Countries that embrace a low-wage strategy and "flexible" labor markets may be able to create more jobs than those countries that do not, but strong downward pressure on wages is associated with such policies, as evidence from the United States makes clear. Between 1973 and 1990, real wages for production or nonsupervisory workers (excluding agriculture) declined by more than 20 percent; despite recent gains, wages today have still not caught up with those prevalent in 1973 (Dembo and Morehouse 1995).

Many other industrial countries have not embraced the low-wage strategy—for fear of rapidly growing economic inequality among their populations and the implied threats to the social and political health of their societies. But in a globalizing economy, they face high and growing unemployment rates that not only burden the welfare state but gnaw at the foundations of social stability. In Western Europe, some 18 million peo-

ple are out of work. In France and Germany, unemployment now runs at more than 12 percent—postwar records. Among members of the Organisation for Economic Co-operation and Development (OECD), Japan alone has managed to keep joblessness low—at 3.9 percent in early 1998, this is nevertheless the highest it has been since the end of World War II (Marshall 1995; Andrews 1997; Whitney 1998; Cowell 1998a, b).

Increasingly, there is a gap among workers who, due to advanced technical and other skills, have relatively secure and well-remunerated jobs; workers whose hold on jobs is tenuous or who have marginal and poorly-paid jobs; and those who are now considered "unemployable" (because they are regarded as too old or as too unskilled). These divisions lead to growing polarization among the labor force and within communities.

The social and psychological impacts of unemployment, or the threat of loss of employment, are often traumatic for the affected individuals and their families. But on the societal level, failure to deal appropriately with sharpening social problems could have fatal political consequences. People whose hopes have worn thin, whose discontent is rising, and whose feelings of security have been stripped away are more likely to support extreme "solutions," and it is clear that some politicians stand ready to exploit the politics of fear.

The threat to job and wage security has already triggered two reactions: calls for protectionist policies against imports from countries where labor is cheap, and hostility toward immigrants seen as taking jobs or social benefits away from domestic workers. It matters less whether these perceptions are correct than that they are clearly helping to fan antiforeigner sentiments and hatreds that have led to violence and that can generate explosive social and political conditions.

Whereas Western countries have experienced a gradual rise in unemployment during the past two decades, the formerly Communist countries of Eastern Europe and the Soviet Union have had to contend with rapidly emerging mass unemployment and dramatic increases in poverty and inequality. They continue to undergo a wrenching and uncertain transition to what must seem like a highly uncertain future from a system that, although highly inefficient and even demoralizing, provided a sheltered kind of employment and a sense of steadiness. The ranks of the unemployed have grown rapidly (World Bank 1995; ILO 1995). After the breakup of the Soviet Union, Russia experienced six straight years of industrial decline. Payment of wages is lagging so far behind that workers and pensioners are now owed at least $10 billion. Millions of Russians are barely scraping by, and many took to mass protests in March 1997 (Specter 1997).

Unemployment, poverty, and the growing gap between rich and poor has fueled social conflict across Latin America. Strikes in Bolivia by workers pushing for an increase in wages and opposing the government's economic policies have grown in size in recent years. In 1995, the government imposed a state of emergency in response, and detained union leaders (Sims 1996). Argentina has seen widespread and partly violent protests over high unemployment and poverty; unemployment is around 17 percent, and hundreds of thousands of jobs have been lost in recent years in the course of privatization (Sims 1997). Congressional elections in October 1997 brought defeat to the governing

Peronist party. Yet President Menem is proposing to do away with collective bargaining and seeking greater ease in hiring and firing (Cohen 1998b). In Brazil, bills were approved in early 1998 to strip down social security benefits and job protections (Cohen 1998c). Unemployment in the São Paulo area has risen from 10.2 percent in 1990 to 16.3 percent in 1998. The crime rate is soaring, as is violence (Cohen 1998a).

Until recently, the dynamic economies of East and Southeast Asia experienced high growth in productivity, output, employment, and real wages. But in 1997, a number of countries in the region plunged into a serious crisis. South Korean unemployment went up to 12 percent in early 1998, a twelve-year high (*New York Times* 1998). In Thailand, forecasts say that two million people could lose their jobs by end of 1998. Many of the four million who came to Bangkok from the countryside (and who are still poor) during the past decade are affected. Economic growth in the past benefited primarily a small group. Half the country's wealth resides in the hands of the richest 10 percent of the population, making Thailand one of the five most unequal countries in the world (Mydans 1997).

In Indonesia, too, the severe economic crisis means that millions are losing their jobs. In February 1998, government officials raised their estimate of the country's unemployed by one-third, to 8.5 million, yet true unemployment is believed to be even higher, and growing rapidly. With social and economic suffering spreading, large-scale unrest is a real possibility. Numerous riots have already taken place in response to rising food and fuel prices and economic hardship. These factors are increasingly joined by anger at the lack of democratic, accountable governance and resentment against the ethnically-Chinese portion of Indonesia's population (Mydans 1998a, b; Landler 1998).

Economic crisis, unemployment, and urban unrest are beginning to translate into potential conflict across national boundaries. An estimated 1.2 million Indonesians are working in Malaysia, most of them illegally. As Malaysia deals with its own economic crisis, it has begun to expel illegal Indonesian laborers and decided not to renew work permits for those who are in the country legally. Thailand also has announced its intention to expel some three hundred thousand foreign workers (Mydans 1998c).

In Asia as in other developing societies, many of those unable to find regular jobs drift into the informal sector—the underbelly of the economy of many developing countries. But this area is characterized by low skills, productivity, and pay (though some talented entrepreneurs can do well), and offers no form of social protection. In Africa, the International Labour Organisation (ILO) finds that the majority of workers in the informal sector would be very fortunate to earn even the official minimum wage. According to the ILO, in sub-Saharan Africa the informal sector employed more than 60 percent of the urban work force in 1990. Its share of the nonagricultural work force in Latin America rose from 40 to 53 percent during the 1980s (UN 1994, ILO 1993.)

Perhaps most unsettling is the reality of large-scale youth unemployment, which virtually everywhere is substantially higher than that for the labor force as a whole. One survey of fifteen African countries showed youth unemployment rates to be triple those for adults. Even in most industrial countries, youth unemployment is an enormous chal-

lenge: in the early 1990s, it reached 14 percent in the United States, 15 percent in the United Kingdom, 26 percent in Italy, and 36 percent in Spain. Japan and Germany are the exceptions, with rates of 5 and 6 percent, respectively (UNDPI 1996c; ILO 1993, 1995).

The world's labor force is projected to grow by almost one billion during the next two decades, mostly in developing countries hard-pressed to generate anywhere near adequate numbers of jobs (Kane 1995). During the 1990s, an additional 38 million people sought employment each year in these countries (UN 1994). High rates of population growth and the resulting disproportionately large share of young people in many developing countries translate into much greater pressure on job markets there. Roughly 20 percent of the population in industrial countries is age fifteen or younger. But in China, the figure is 27 percent; in Latin America, 34 percent; in South and Southeast Asia, 38 percent; and in Africa, 45 percent (Population Reference Bureau 1995). The uncertain prospects that many young adults face are likely to provoke a range of undesirable reactions: they may trigger self-doubt and apathy, cause criminal or deviant behavior, feed discontent that may burst open in street riots, or foment political extremism (UNDPI 1996c; Gizewski and Homer-Dixon 1995).

Inequality, poverty, and lack of opportunity are, of course, nothing new. But today's polarization is taking place when traditional support systems are weakening or falling by the wayside. In developing countries, there is an erosion of the bedrock of social stability—the webs and networks of support found in extended family and community relationships (although these are admittedly often paternalistic and exploitative). It is unclear what will take its place.

SMALL ARMS PROLIFERATION AND THE POTENTIAL FOR VIOLENCE

The ability of different societies to cope with urban challenges varies considerably, depending to a considerable degree on their ability to counter—to mitigate and reduce—the environmental, social, and economic pressures discussed earlier. This may to a large extent be a question of the resources and capacities that are available to them. But they will also be better able to respond and cope if the social resilience—the strength and cohesion of the communal fabric—is strong.

Gross disparities in wealth and power and ability to cope with life's pressures tend to tear at the fabric of society and lead to polarization. If profound social and economic grievances are unable to find expression or are ignored, they may assume violent forms. Governments do not always show themselves capable of dealing adequately with accelerating political, social, economic, and environmental pressures, and disputes fester; in the worst cases, they may even be tempted to exploit the resulting divisions for their own benefit in divide-and-rule fashion. Particularly where the legitimacy and effectiveness of political institutions is shaky, people will try to find support, identity, and security in the immediate group they belong to or feel kinship with. But as diverse groups and communities step into the breech, they will almost inevitably be in competition with each other. As zero-sum thinking prevails, societies splinter and tensions build.

These developments do not have to lead to violence. But increasingly, societies are suffering from the broad dispersal of small arms—firearms of both civilian and military type. There is growing, if belated, recognition of the dangers inherent in this proliferation. These weapons filter through all levels of society—to armed opposition groups, drug traffickers, organized crime, terrorists, private security forces, paramilitary groups, and vigilante squads. To the extent that ordinary citizens feel that the state fails to provide them with a sense of security, they, too, are increasingly arming themselves.

Small arms are infecting many communities and particularly urban conglomerations, where they encourage the impulsive, habitual, or deliberate use of violence for power, profit, and vengeance. Empowering those least hesitating to use violent means to act with impunity. The dispersal of small arms not only fuels widespread violence and escalates minor disputes into potentially major carnage, but it also debilitates societies by obstructing social and economic development and by hindering efforts to address the political, social, economic, and environmental challenges of today.

Because there has to date been little effort to track and control these types of weapons, no one really knows the quantities of small arms in circulation, or even the number that are added from new production each year. Ownership—whether by institutions or individuals—is widespread in many countries. Only a portion of all firearms are held legally, and only a portion of legally-held firearms are registered. A weapon produced and sold legally may at some point fall into the "wrong" hands and become an illegal weapon. Hence, any global figures can be little more than educated guesses. One analyst put the number of military-style firearms in worldwide circulation at five hundred million. In all likelihood, civilian-type firearms also number in the hundreds of millions. There are at least three companies in fifty-two countries that are manufacturing small arms and related equipment. All in all, worldwide production easily runs to several millions, if not tens of millions, of units each year. A plethora of legal and illegal trading networks spread arms—both newly produced weapons and "recycled" weapons of war—far beyond the borders of the producer countries.

Cities in such disparate countries as El Salvador, South Africa, Pakistan, Mexico, or Russia, to cite only some examples, have seen a tremendous upsurge of violence. This includes personal revenge deeds, "survival" crimes committed by desperate individuals, gang and organized crime violence, and hostilities between feuding communities. But the broader background can be seen as the severe lack of urban services, resources, and opportunities; social disorder; and the pain of wrenching economic transformations. All of these provide fertile ground for violent responses.

In consequence, urban policy needs to concern itself not only with an array of social, economic, and environmental issues, but also needs to address the challenge of small arms dispersal (Renner 1997b).

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URBANIZATION, POPULATION, ENVIRONMENT, AND SECURITY

Urbanization and Security

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EXECUTIVE SUMMARY

Alan Gilbert argues that no consistent or meaningful relationship exists between urbanization and security because even if we observe some correlation between those two factors, it does not tell much about the nature of causation. It fails to explain how the links between urbanization and variables like life expectancy, nutrition, and literacy actually operate. No doubt, urbanization often contributes, and sometimes detracts from, the quality of people's lives, but we cannot tell by how much.

According to Gilbert, the very words "urbanization" and "security" do not mean a great deal because they embrace too many cross-cutting ideas and processes. The definition of "urbanization" is not universal since virtually every country in the world describes it somewhat differently. In the case of security, it is hard to define whether the term relates to international relations, national matters, the city, a neighborhood or an individual feeling of welfare.

Gilbert divides the existing literature on urbanization and security into seven popular theories or, in his words, "urban myths of our times." He explores the possible outcomes of urbanization, specifically, its impact on the quality of citizens' lives. Gilbert comes to the conclusion that a city's success or failure to create a secure environment depends on specific policies employed by the city government rather than urbanization itself. Secure urban development, therefore, is predominantly the outcome of urban policies and urbanization is only a secondary explanation.

ABOUT THE AUTHOR

Alan Gilbert is a professor of Geography at the University College London. He received his Ph.D. from the London School of Economics and his B.A. in Social Science from the University of Birmingham, U.K. Gilbert's research covers such issues as housing, poverty, and urban/regional development in Latin America and South Africa. He has been the director and coordinator of five major research grants investigating housing issues in Latin America. In addition, he has advised a number of international organizations including the Inter-American Development Bank, the United Nations Population Fund, and the Business Monitor International.

Currently, Gilbert is researching on self-help housing in Colombia, housing processes in South Africa, and housing subsidy practices in Chile. In the last book he edited, *The Mega-City in Latin America* (1996), Gilbert examines urban development in six large cities of Latin America: Mexico City, São Paulo, Buenos Aires, Rio de Janeiro, Lima, and Santa Fe de Bogota. Gilbert has contributed to a variety of books on migration, and development in the Third World: *The Latin American City* (1994), *In Search of a Home: Rental and Shared Housing in Latin America* (1993, together with Camacho, O., et. al.); and *Cities, Poverty and Development: Urbanization in the Third World* (1992, together with Gugler, J.)

INTRODUCTION

This paper will argue that no consistent or meaningful relationship exists between urbanization and security. First, the words "urbanization" and "security" do not mean a great deal because they embrace too many cross-cutting ideas and processes. Second, researchers have found few consistent correlations between the numerous dimensions of security and urbanization. Third, insofar as one can find a close correlation, independent variables usually account for the statistical relationship. Fourth, even when a direct correlation between security and urbanization exists, the direction of causation is by no means obvious. Finally, every country and every city contains so much internal variation that most generalizations across nations, let alone across regions, are rendered meaningless.

Of course, because urbanization does not produce poverty, crime, and political protest either automatically or inevitably does not mean that poorly managed urbanization cannot stimulate undesirable forms of social development. What is required across the globe, and particularly in the poorer parts of the world, are sensible urban policies backed by adequate resources. Providing that the shantytowns receive electricity and water, the poor have the opportunity to work, the transport system allows them to get to work, and urban wealth is not distributed so unequally that the system appears wholly inequitable, then cities will continue their historical role of helping to improve the human condition.

WHAT IS MEANT BY "URBANIZATION" AND "SECURITY"?

The terms urbanization and urban development are often confused. Urban development, or urban growth, simply means an increase in the number of people living in urban areas. Insofar as urbanization is used as an analogy for urban development, it means precisely the same thing. But urbanization also has a more subtle meaning that conveys something about economic, social, and cultural change. It is part and parcel of the process of modernization—a phenomenon that involves a shift from agricultural to urban forms of work, a change in social relationships, and important modifications in family life. People change their lifestyles when they move from the countryside to the city.

None of this is especially complicated, although measuring it can be. It has never been very clear what distinguishes an urban from a nonurban area. When I was at school in Britain, a handy definition was that a town had a Woolworth's; a city had a cathedral. Today, the first definition has ceased to be very helpful; perhaps McDonald's should be substituted for Woolworth's? Elsewhere such definitions are even less helpful. As a result, virtually every country around the world defines an urban area, a town, and a city somewhat differently. If we have difficulty defining an urban area, we will naturally have difficulty measuring the level and rate of urbanization (I will set aside the seemingly increasing difficulty that most countries have in actually counting people).

Perhaps the greatest problems, however, lie with interpreting the limited data that we have. Urbanization is a heterogeneous process, even in a single country. Life in a small town is very different from that in a huge city. Lifestyles among the urban poor are very

different from those of the rich. Unfortunately, when writing about the effects of urbanization, many people only seem to think about large cities. And, within large cities, mental blinders often exclude large chunks of the population: the poor in the case of most planners and the middle class in the case of most academics. The quality of writing about urbanization is vitiated by value judgments and selective thinking.

However, certain problems in defining urbanization shrink into insignificance in the face of the problems involved in defining security. As usual, my Oxford English Dictionary is both useful and unhelpful. Security is "a secure condition or feeling," and secure means "untroubled by danger or fear; safe against attack; reliable." The major problem in defining the meaning of security is twofold. First, what variable is under discussion; if I feel insecure, what is the nature of my insecurity? The answer might be almost anything: nuclear warfare, unemployment, my savings, my roof falling in, my students rebelling, and so on. Second, there is the problem of scale. Does security relate to international relations, national matters, my particular city, my neighborhood, my street, my family, my household, or my individual feeling of welfare?

Once we narrow down the issue and the scale in question, then we may be better placed to measure the relationship between security and urbanization. Only then might we attempt to measure whether a particular form of security, at a specific scale, rises or falls with the level of urbanization, the rate of urban growth, the nature of the urban process, or the size of urban centers.

LINKS BETWEEN URBANIZATION AND SECURITY

Table 1 represents an extremely tentative attempt to show some likely links between the level of urbanization and different manifestations of security. The number of question marks constitutes clear warning that this is a highly problematic exercise.

The number of plus signs suggests that urbanization is good. However, there are problems with such an interpretation. First, what may have been good for decades can change; after years of economic growth, rapid urbanization, and improving welfare, the debt crisis led to a serious deterioration in living standards in most parts of Africa, Latin America, and limited areas of Asia. Second, the impact of urban growth may vary according to its speed and the level of urbanization achieved. For example, the early stages of urban growth may lead to environmental deterioration, but later stages may lead to improvement. Life in urban Britain was probably worse in 1850 than in 1750 but much better in 1960 than in either 1750 or 1850. Third, the correlations depicted in the table tell us little about the nature of causation; the intervening variable of economic development is probably a better explanation of both urbanization and security than the latter are of one another.

Urbanization, Population, Environment, and Security

IMPACT OF % LIVING IN URBAN AREAS RISING

	International	National	City	Neighborhood
Economic Security				
Proportion of non-poor	+	+	+	+
Economic growth	+	+	+	+
Equality	?	?	0	0
Access to employment	?	?	?	?
Political				
Democracy	+	+	+	+
Reduces riots	0	0	0	0
Social and cultural				
Infrastructure improvement	+	+	+	+
Level of literacy	+	+	+	+
Access to higher education	+	+	+	+
Access to entertainment	+	+	+	+
Safety				
Official violence	0	0	+	+
Decreasing political violence	0	0	0	0
Decreasing violent crime	0	0	0	0
Decreasing nonviolent crime	0	-	-	-
Safety against natural hazard	0	0	0	0
Safety against environmental threats	?	?	?	?
Pollution-free environment	-	-	?	?
Psychological				
Decreasing personal stress	?	?	?	?

NOTES

+ Improvement   U Deterioration then improvement   ? Uncertain Link

- Deterioration   0 Denotes no change

Table 1—Correlation between level of urban development and different types of security

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SOME URBAN MYTHS OF OUR TIMES?
1. Migration to urban areas causes social anomie

Urbanization has frequently been portrayed as a social ill by novelists of the nineteenth century, such as Dickens, Hardy, and Zola, as well as many twentieth-century novelists from the Third World, such as Ngugi and Paton. Social scientists have often echoed this negative attitude toward urbanization, particularly when referring to the Third World city. Hoselitz (1957) compared the "generative" cities of the developed world to the "parasitic" cities of Africa, Asia, and Latin America. And, Lerner (1967: 24–25) condensed most forms of bias against urbanization as follows: "Every student of development is aware of the global spread of urban slums . . . that infest the metropolitan centers of every developing country from Cairo to Manila. . . . [T]his suffering mass of humanity displaced from the rural areas to the filthy periphery of the great cities . . . are neither housed, nor trained, nor employed, nor serviced. They are . . . a human flotsam and jetsam that has been displaced from traditional agricultural life without being incorporated into modern industrial life."

This flotsam and jetsam were doomed to live in desperate circumstances and develop some kind of "culture of poverty" in order to survive (That idea did not disappear with Oscar Lewis' discovery of Cuba). Speaking of contemporary Lima, Sánchez-León (1992: 201–2) declares that: "a large part of the population, particularly the children and young people, lives in poverty. These are the children of chaos, of poverty, and of urban violence. . . . [A] city like Lima produces an immense population with distinctive traits: people who know only despair; young people who live alongside criminals, and drug addicts, who may at any moment fall into prostitution; people who carry in their lungs a concentration of smog."

Relatively few social scientists share that view any longer. Innumerable studies have demonstrated that social anomie and mental dislocation are not the fate of most cityward migrants. We know that most migrants in poor countries move for sensible reasons and are equipped for urban life (Butterworth and Chance 1981; Roberts 1978; Gilbert and Gugler 1992). Once they arrive they stay with or are advised by family and friends (Doughty 1970; Mangin 1959; Gilbert and Ward 1986). Although some no doubt go off the rails, the majority get work, establish themselves in self-help communities, and manage to make the best of an unpromising situation. There is little sign of a "culture of poverty," "marginality," "irrationality," or "despair" (Perlman 1976; Portes 1972; Roberts 1978; Mangin 1970). As Castells (1983: 175) once put it: "contrary to the expectations of those who believe in the myth of marginality and in spite of the fears of the world's establishment, social organization seems to be stronger than social deviance in these communities."

2. Shantytowns are hotbeds of radicalism

For those who recognized only the negative side of urban life, the political future looked bleak. The seething masses would one day revolt and overthrow the system. There would

be protests, riots, and, in places, even revolution. In practice, there is limited evidence of such behavior, and even those who have looked hopefully for signs of political radicalism have been forced to note its absence: "It is remarkable how few riots—even food riots— there have been in the great Latin American cities during a period in which the masses of their impoverished and economically marginal inhabitants multiplied, and inflation as often as not was uncontrolled" (Hobsbawm 1967: 56).

What quickly became clear was that the majority of the population was conservative. They were more interested in making good in the city than attempting to overthrow an admittedly rotten system. Certainly the consensus in the 1970s was that few revolutions would start in the city: "Few theories have been more widely held than that of slum radicalism. Few have met with more consistent rejection from empirical research. Studies in almost every Latin American capital have found leftist extremism to be weak, or even nonexistent, in peripheral slums" (Portes 1972: 282). Cornelius (1975: 167) underlined the patience and tactical nous of the urban poor: "demand articulation usually does not involve table-pounding, protest demonstrations, or other aggressive behavior." Subsequent studies have found political radicalism to be very thin on the ground (Gilbert and Ward 1985; Mainwaring 1989; van Garderen 1989; Roberts 1970).

Of course, a few Third World cities have experienced major protests and even riots over the years. But the incidence of protest is low because there are too many reasons why it has not been in the interest of the poor to kick up a fuss. For a start, most are extremely busy earning their living and building their own self-help homes. They may also face a hostile audience; many governments are anything but gentle in handling dissent, particularly in societies under authoritarian rule where repression is often extremely violent. At other times, the poor's inclination to riot is reduced by political patronage; politicians of every hue are adept at making promises and offering jobs and services in return for obedience (Gay 1990; Mainwaring 1989; Gilbert 1998).

3. A crisis of collective consumption causes urban social movements and revolution

In the 1970s, Manuel Castells' book, *The Urban Question* (1977) provided many radicals with theoretical justification for renewed hope in revolution. Clearly influenced by the events in Paris in 1968, he argued that as urbanization proceeded, urban life became more complicated. The private sector could not, or would not, cope with the demands for infrastructure and services. Only government involvement could begin to satisfy the basic needs of the population. The state would enter into the arena of the "collective means of production." Either it would invest in housing, infrastructure, and public services itself or it would persuade or subsidize the private sector to do so. In intervening in this way, the state would inevitably polarize different interest groups and be drawn into an ever deepening political morass. The difficulties involved in supplying services would increase with rapid urban growth and be impossible to solve where most of the population was poor. Arbitration would become ever more difficult, and, eventually, the state would be unable

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to satisfy most demands and urban protest would break out. If carefully channeled, these protests might develop into true social movements that would demand the radical restructuring of society.

During the 1970s, many "Marxists lost faith in the labor-proletariat as a vanguard of social change [and looked to the] huge masses of people living on illegal occupied land near the major urban centers" (van Garderen 1989: 27). Experience had increasingly shown that most trade unions did not play the revolutionary role expected of them. Therefore, it would be the urban masses, alienated by the lack of infrastructure and basic services, who would mobilize and challenge the state. The search for social movements was on.

In practice, most researchers found urban protests against specific actions or policies rather than urban movements. Many people might get upset about a specific problem, but few were interested in structural change. They were outraged about the quality of public services or about the introduction of wage freezes but had little awareness of the structural causes of their poverty. They wanted improvement for themselves and were not much interested in building up alliances with other neighborhoods or with the labor movement (Evers 1985).

A second Castells (1983) book recognized that there was little in the way of social movements in cities and political conservatism was the dominant feature of urban life. Some on the left accepted his argument and moved into other fields of inquiry, others denounced him for selling out. The latter group continued to discover social movements. Indeed, urban social movements seemed to appear out of a hat, almost by magic. Many Latin American and Latin Americanist scholars became excited by their discovery of protests emerging from the most diverse sources. Movements were "made up of young people, women, residential associations, church-sponsored 'grass-roots' communities, and similar groups" (Portes 1989: 36). They were perhaps best reflected in the community-based protests supported by the Church in Brazil, the collectives established in Chilean campamentos, and in the urban coalitions being built across Mexican cities (Boran 1989; Kowarick 1988; Kusnetzoff 1990; Schneider 1995; Haber 1990; Coulomb and Duhau 1989).

I have several doubts about these social movements. The first is whether they are essentially urban movements; although some have clearly been based in urban problems, many others were rural-based—for example, the Zapatista revolt in Chiapas in 1994, the Sem Terra movement in Brazil, and the guerrilla movements in Colombia and Peru. Second, are these movements sustainable or are they, as Evers (1989) argues, too anarchist and disorganized in nature to bring about real change? And, finally, are such protests responsible for as much change as has been attributed to them? For example, did the proliferation of social movements in Latin America in the 1980s bring about the return to democracy or was it merely an outcome of the rejection of totalitarian rule throughout society? Weakening authoritarian regimes were in no position to stop people protesting in the streets.

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4. Austerity riots constitute a new form of urban social movement

There are others who also see signs of a turbulent future. Gizewski and Homer-Dixon (1995: 17) for example, believe that it will be the disenchanted young of the cities who will be the future dissidents: "Although rural-urban migration will continue and will, in many cases, magnify the social and economic problems of cities, it seems likely that the participants in urban violence will be urban born."

Such an interpretation is compatible with what some have designated the "austerity" or "IMF" riots that broke out during the 1980s as a result of the debt crisis. The terms laid down by structural adjustment were alienating the previously passive urban dweller. According to Walton (1989: 309), austerity led to "an unprecedented wave of international protest; unprecedented in the scope and essentially singular cause of a global protest analogous to earlier national strike waves." These "modern austerity protests begin in the mid-1970s, first in Peru and then Egypt. We shall define austerity protest as large-scale collective actions including political demonstrations, general strikes, and riots, which are animated by grievances over state policies of economic liberalization implemented in response to the debt crisis and market reforms urged by international agencies" (Seddon and Walton 1993: 39).

The riots broke out because of general disappointment and outrage at sudden rises in fares, food prices, and unemployment accompanied by sudden falls in real incomes, subsidies, and future prospects. Frequently, it was the suddenness with which IMF policies were implemented that provoked outrage (Drake 1989: 53–54). Sometimes, as in Caracas in 1989 or in Rio de Janeiro in 1987, it was because recently elected and trusted politicians suddenly changed their economic strategies (Hellinger 1991; Roett 1988). No doubt, too, the limited resources now available to the public sector reduced the opportunities for politicians to buy off opposition (Roxborough 1987: 107). For me, perhaps the key factor was that there were fewer autocratic governments likely to send in the troops.

However, even if we accept that there was a wave of austerity riots, this does not mean that there will be political instability in urban areas in the future. The rate of economic growth in most parts of the Third World was higher in the 1990s than in the 1980s. If there is a relationship between the pace of economic growth and social protest, faster growth will reduce the amount of protest.

But perhaps the most significant question is whether the austerity riots were essentially urban in nature. Did they occur mainly in urban areas because the population was more prone to protest than in rural areas or because the urban authorities were less able to use force in a democratic society? Or is the fact that most such riots occurred in the cities not a simple outcome of the nature of the debt crisis, which hit the cities much harder than the rural areas (Gilbert 1992; Cohen 1990)? As O'Connor (1993: 117) argues in the African context: "Cuts in government spending . . . affected the cities more than the rural areas, partly because such spending has been heavily concentrated there. City hospitals reliant on the government health budget naturally

1976 per capita income ($US)	Democratic in 1974	Democratized or liberalized 1974–89	Non-democratic	Total countries
<250	1	2	31	34
250–1000	3	11	27	41
1001–3000	5	16	5	26
>3000	18	2	3	23
Total	27	31	66	124

SOURCE: Huntington (1991:62)

Table 2—Economic development and third-wave democratization

feel the impact more directly than traditional healers in remote rural areas. The breakdown of electricity supplies is of more concern to urban residents and enterprises than to most in rural areas." It is logical that protest would be greatest where austerity measures hit hardest. It is also a fact that the countries most affected by IMF policies were the most urbanized countries of the Third World. The riots occurred where most people lived.

But not every city that was badly affected by austerity programs suffered from riots. In Mexico City, for example, where policy measures "resulted in abrupt price increases in basic foods and transportation," the population did not resort to "riots, looting, street demonstrations, and other forms of protest" (Eckstein 1990: 176). Why this should be the case can only be explained by local political and social circumstances. And Walton (1998) is clearly correct when he argues that we need to know much more about the different circumstances that either cause or fail to cause conflict to break out.

5. Urbanization encourages the development of democracy

Modernization theory suggested that a series of social, economic, and cultural processes were linked to industrialization. Urbanization and the rise of democratic government were prominent examples of the kinds of change that could be expected to follow from industrialization: "economic development, industrialization, urbanization, the emergence of the bourgeoisie and of a middle class, the development of a working class and its early organization, and the gradual decrease in economic inequality all seem to have played some role in the movements toward democratization in northern European countries in the nineteenth century" (Huntington 1991: 39). Africa, Asia, and Latin America were expected to follow this example and become more democratic as they became more developed. Table 2 provides a measure of quantitative support for modernization theory by showing how, at the beginning of the 1990s, most developed countries were broadly democratic while most of the least developed countries still labored under totalitarian regimes.

Unfortunately, many analyses have demonstrated that the path from totalitarian to democratic government is narrow and prone to disappear. In most parts of Africa, the path has never appeared on any map, and in Latin America, regular military incursions have blocked the path for decades at a time. Table 3 shows that in practice the tide of global democracy has ebbed and flowed.

Had there been a simple correlation between economic development, urbanization, and democratization, the

Year	% democratic states	Total states
1922	45.3	64
1942	19.7	61
1962	32.4	111
1973	24.6	122
1990	45.0	129

SOURCE: Huntington (1991:26)

Table 3— Democratization in the modern world

results in Table 3 would have been different. In practice, only urbanization among the three processes has continued uninterrupted. Economic development effectively stopped in Africa between 1970 and 1990 and in Latin America during the 1980s. Urbanization in Latin America was loosely associated with increased numbers of democratic governments during the 1960s, but the 1970s produced urbanization and totalitarian rule (Hartlyn and Morley 1986; O'Donnell 1973).

Of course, there is plenty of evidence that urbanization encourages political liberalism and sets in motion a whole series of forces that change societal attitudes. Over the years, many Colombians moved to the city and shifted their political allegiance from the Conservatives to the Liberals. According to Huntington (1991: 98), urbanization helped to undermine racially based government in South Africa: "Apartheid was compatible with a relatively poor rural economy: it was not compatible with a complex, wealthy, urban commercial and industrial economy." The problem is that under conditions of economic dependency, urbanization can point up contradictions that help to destroy democracy. The history of the rise of bureaucratic authoritarianism in Latin America after 1964 is ample testimony to that fact (O'Donnell 1973; Skidmore and Smith 1997; Tulchin and Bland 1995). Similarly, if urbanization helped destroy apartheid, it also played an important role in creating it.

Fortunately, the totalitarian wave has ebbed (temporarily?) in Latin America and democracy has returned to South Africa. However, it is difficult to argue that the return of democracy was brought about by the angry urban poor. According to Huntington (1991: 67), the working class, let alone the lumpenproletariat, were not in the vanguard of change: "Third-wave movements for democratization were not led by landlords, peasants, or (apart from Poland) industrial workers. In virtually every country the most active supporters of democratization came from the urban middle class."

Huntington's argument suggests that urbanization and development lead to democracy rather than to revolution. This is not, or at least was not, the belief of the radical left who hoped that capitalist development would lead sooner or later to social revolution. But history has tended to suggest that most revolutions have been fostered in the

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Country	Area	Year	Poor	Extremely poor
Brazil	Urban	1990	39	17
	Rural	1990	56	31
Colombia	Urban	1992	23	10
	Rural	1992	51	31
Costa Rica	Urban	1990	22	7
	Rural	1990	25	12
Venezuela	Urban	1990	33	11
	Rural	1990	38	17
Latin America	Urban	1990	34	13
	Rural	1990	53	30

SOURCE: Altimir (1994: 11–12) and World Bank (1994: 200)

Table 4—Rural and urban poverty (% households)

countryside, and that even when the urban poor have participated, they have rarely been among the leaders of radical political change. The differences between Marx and Mao on this issue are well known, as well as the fate of Che Guevara in the depths of rural Bolivia; but to me there appears to be little evidence in support of a unilineal link between urbanization and revolution. Perhaps the safest conclusion is that it is impossible to generalize because there are so few true social revolutions on which to base reliable judgment.

6. Urbanization reduces living standards

Despite fears, urbanization was long associated with an increase in most households' level of economic security. Certainly, the figures suggest that the average person living in urban areas lives better than those in rural areas (Table 4). We also know that most migrants tell researchers that they have moved to the city because of better opportunities for employment (Butterworth and Chance 1981; Gilbert and Gugler 1992; Cornelius 1975). Theory also suggested that inequality would fall with urbanization and economic development (Kuznets 1955).

Unfortunately, the 1980s threatened to change that situation. In Latin America, stabilization policies led to poverty increasing in most urban areas and declining in many parts of the countryside (Altimir 1994:11; UNDIESA 1989:39). In certain cities, the combination of rapid inflation and structural adjustment hit the urban poor very hard. In Peru, for example, "in 1985–86 one out of every 8 residents of Lima were poor, but by 1990 more than half were poor" (Glewwe and Hall 1992: 25).

For some, increasing urban poverty was a temporary problem that would be resolved once structural adjustment had corrected macroeconomic distortions (Dornbusch and Edwards 1991; Edwards 1995). The New Economic Model would stop inflation, the most significant poverty tax, and would eventually lead to economic expansion and the creation of more work. In practice, the economic conditions of the 1990s, although undoubtedly better for the urban poor than those of the 1980s, have often failed to raise living standards.

As the Inter-American Development Bank and United Nations Development Programme (1993: 1) point out: "The tendency for income to concentrate in the wealthiest sectors has not only continued, it has also intensified. An additional result of the crisis and of some of the stabilisation and adjustment measures, is that broad segments of the middle-income sectors and most of the workers in the industrial and service sectors have slipped below the poverty line, while conditions for their access to housing and basic health care and education services worsened."

What many fear is that under the new conditions of global competition, economic growth will not create enough work and will reward only those with the requisite skills to sell in the marketplace (Klak 1989; Tardanico and Menjívar-Larín 1997). There are signs that if the New Economic Model does not necessarily increase absolute poverty, it increases the differences between the rich and the poor. The evidence is that this is occurring in the United States, in Britain, and in most parts of the Third World (Philips 1991; Tardanico and Menjívar-Larín 1997; Londoño and Szekeley 1997). Clearly, there will be places that will not be able to compete in the global marketplace, and there it is feasible that urban poverty may well increase. The rise in urban unemployment in the very different circumstances of Argentina and South Africa suggests that this could become a real problem (Tardanico and Menjívar-Larín 1997; May 1998; Nattrass 1998). It is possible that in the future we will see growing evidence of a link between urban poverty and urban growth. Arguably, in much of Africa, that link has been very evident for the last twenty-five years (O'Connor 1993; Stren and White 1989; UNDIESA 1989).

7. Urbanization increases crime

"It is held as a matter of common sense that the main cause of violence in society is urban development and the growth of huge cities. This conviction has deep roots that go back to the wave of urbanization that started in the twelfth century and the resulting polarization between town and country" (Pinheiro 1993: 3).

Pinheiro does not believe that urbanization is the cause of crime; nor do I. Unfortunately, it is difficult to present any reliable evidence either way because in most countries the figures on crime are desperately unreliable. Many people do not report crimes to the police, the police only record certain kinds of crime, different police forces record crimes in different ways, and politicians manipulate the figures according to the argument they wish to demonstrate. In Britain, the statistics are so poor that it is not even certain whether crime levels are rising or falling over time. If that is true in a country

where many people report crime because they are insured, where there is broad trust in the police, and where the police are expected to tabulate the crimes reported to them, what is the situation like elsewhere?

Despite the statistical problems, it is likely that certain forms of crime are more common in urban areas if only because urban people are more affluent and therefore have more to steal than their rural compatriots. The limited figures available for developed countries suggest that crime is more common in urban areas than in the countryside (Richardson 1973: 102). However, this does not mean a great deal because there are such important variations in crime rates between urban and rural areas. Within the same country, some cities are much safer than others, and within cities most suburbs are much safer than many inner city areas. In Britain, crime rates in certain "sink" estates are horrifyingly high, whereas in the suburbs of most towns and cities crime is relatively uncommon. The nature of crime also varies by area (not many tractors are stolen from the center of Manchester, even if a lot of other things are).

In any case, there would appear to be no obvious logical connection between urbanization and crime levels. Like most of the other supposed linkages discussed here, crime is predominantly the outcome of a range of social factors, and urbanization is only a secondary explicator. This is clear if we look at variations in crime rates across urbanized countries. In some parts of the world, such as the Middle East, most urban areas are largely free of crime; in Latin America, the United States, and South Africa, many urban areas are major crime centers.

Even when crime levels rise in urban areas, it is difficult to associate that rise with urbanization per se. For instance, the rapid rise in crime that has been noted in so many Latin American cities during the 1980s and 1990s (Green 1995: 203) can hardly be blamed on urban growth since the pace of urbanization has been slower during the 1980s than it was during the 1970s. The same is true in Western Europe. Another explanation of rising crime might be found in the employment situation or the level of poverty. In fact, there is no clear link; in Britain at least, crime rises and occasionally falls without any clear relationship with rising poverty or unemployment. It is more likely that crime is a cultural phenomenon, and that in the increasingly unequal globalized world of today, many view crime as the only way to obtain their rights to the good life (Amis 1994). A further explanation, at least in some societies, is that crime is linked to drugs. As the level of use rises, addicts need to steal in order to feed their habit (some estimates in Britain blame addicts for up to one-half of the robberies committed).

Received wisdom suggests that murder and violence are higher in urban areas than in the countryside. For example, Hasan writes: "From Los Angeles to New Delhi, urban crime statistics reveal that not only is the incidence of violence becoming more frequent but the nature of those crimes more heinous" (Hasan 1993: 1). While not denying that urban violence is often on the rise, other authors such as Archer and Gartner (1984: 105–7) suggest that violent crime in Third World countries is just as common in rural areas as in the cities. And, if we include political and official violence in the category of crime, it is likely that many rural areas are much less safe than most urban areas.

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In Colombia, most people are much safer from paramilitaries, guerrillas, and drug gangs if they are living in the cities; the flood of people out of many "battle" zones is ample testimony to that fact. In Peru, when the Shining Path was at its most effective, it was the countryside that was most dangerous. Only later did some of the violence spread to Lima (Riofrío 1996).

The violence associated with drug production and trafficking is of course found in both urban and rural areas. Parts of Colombia are virtually no-go areas, and the level of violence in Medellín in the years preceding Pablo Escobar's death reached truly frightening proportions: 34 murders per 100,000 inhabitants in 1992. Similarly, the drug trafficking going on in the favelas of Rio de Janeiro is generally blamed for the recent rise in violence in that city. Since Rio's population is growing relatively slowly, it is unlikely that the murder rate is associated with the process of urbanization.

Unfortunately, whenever crime and violence rise, politicians, journalists, and the general public are all eager to attribute the rise to some clear culprit. Thus in different countries crime seems to be rising because of drugs, the arrival of too many people from the countryside, foreign immigration, illegal immigration, alcohol, gangs, social exclusion, poor policing, or the nature of capitalism (Amis 1994; Pinheiro 1993; Archer and Gartner 1984). All I am prepared to say is that crime is a sin of society. Of course, this makes it an "urban" phenomenon insofar as most societies are becoming increasingly urban. But, if we attribute growing crime to urbanization, we are falling again into the trap of confusing causation with correlation.

8. Big cities make every kind of problem worse

Aristotle is said to have believed that in a healthy democracy every citizen should know every other, and that Plato "set the number of citizens in his ideal city at 5,040" (Max-Neef 1992). Most social observers since, and certainly most politicians, have come out with similar nonsense about city size. Certainly very large cities have rarely been popular with decisionmakers. Queen Elizabeth I wanted to stop London's "excessive" growth when it contained around 100,000 people, and the proliferation of new cities from Brasília and Dodoma to Milton Keynes suggests that the attitude of modern politicians has not been very different (Gilbert and Gugler 1992).

However, despite the frequency with which urban size and social pathologies are linked, it is difficult to determine objectively whether there is any connection or not. Even if sufficient data existed, the fundamental problem of how to separate the effects of size from those of other variables would remain (Richardson 1973). Research studies examining the relationship have produced little in the way of reliable results. The problem is easy to demonstrate. Although Los Angeles, New York, and Rio de Janeiro are giant cities that have terrible crime rates, other megacities, such as Tokyo and Cairo, do not suffer from a great deal of crime. Nor is there any clear relationship within countries between city size and the quality of life. To continue with the example of crime, violence is worse in Rio than in the much larger São Paulo, worse in Detroit than in New York, and

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more common in six other Colombian cities than in Bogotá (Richardson 1973; Coyuntura Social August 1993: 32).

Equally problematic for the relationship between social pathology and urban size is that some large cities suffer from different problems than other cities of similar size. Some big cities have a great deal of poverty whereas others do not; some have terrible traffic congestion and others less. Most of the differences can be attributed to intervening variables. Air pollution is worst in cities with a great deal of manufacturing industry (Shanghai, Seoul, and São Paulo), that use coal as a domestic and industrial fuel (Shanghai and most Eastern European cities), and that suffer from temperature inversions (Los Angeles, Mexico City, and São Paulo). Other large cities experience less air pollution (UNEP 1992). Certainly the debate about optimum city size suggests that urban problems are not generally worse in giant cities, except possibly with respect to traffic congestion, land prices, and nonviolent crime.

In addition, very large cities have certain advantages over smaller cities with respect to economic performance and service provision (Richardson 1973). This is reflected in the fairly common finding that the incidence of poverty is less marked in large than in small cities. For example, a United Nations study in the mid-1980s found that levels of poverty in Bogotá, San José, Panama City, Lima, Montevideo, and Caracas were all lower than those found in other urban areas of their respective countries (Fresneda 1991: 164; Bolvinik 1991).

Overall, therefore, the case for or against megacities is inconclusive. However, even if the case were made, this kind of analysis would not take us very far given that it takes no account of government policy. For many years, Latin American governments tended to pamper their largest cities. Not only did such cities contain a significant proportion of active voters, they also had most of the gossiping classes. Insofar as the largest cities were also capital cities, governments were particularly sensitive to protest in their own backyards. Megacities needed to be placated and, consequently, large cities did well in terms of government spending. Large city bias meant that rich and poor alike were treated rather better there than their cousins elsewhere. If research showed that the poor in Mexico City did better than the poor in Veracruz or Oaxaca, the only sensible conclusion might be that "megacity size is not a critical policy variable" and therefore "effective megacity management is much more critical than megacity size" (Richardson 1993: 52).

CONCLUSION

I have been forced by the evidence to come to the extremely boring conclusion that there are few clear linkages between urbanization and most dimensions of security. This is true at most levels of analysis, across most countries, and over time. Even when correlations can be found, they do not explain much. This key point can be illustrated by a trite example. Personal security is higher in the most urbanized countries than in the least urbanized countries. It is safer, in terms of most social and economic variables, to live in Britain,

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Japan, or Switzerland than to live in most parts of Africa or India. People live longer, eat better, and are more literate in more urbanized countries than in less urbanized countries. But, what does this correlation prove? It proves absolutely nothing about the link between urbanization and security because it fails to explain how the links between urbanization and variables like life expectancy, nutrition, and literacy actually operate. No doubt, urbanization often contributes, and sometimes detracts from, the quality of people's lives, but we cannot tell by how much.

If we are interested in the link between urbanization and different forms of security, we should be asking different questions. Why do some cities have more people living in poverty than others with similar levels of per-capita income? Why is it that crime and violence are particularly high in one city and very low in another? Why are living conditions for the majority so much better in some cities than in others? Comparing broadly comparable cities, why do some do well and some badly on a particular indicator of welfare and security?

Perhaps most critical of all is to examine why, despite our hugely impressive economic and technological progress over the last century, we have not done a better job in removing poverty. Why are so many urban people living so badly and why is inequality increasing rather than decreasing? Unfortunately, I suspect that we know the answer to that question, and the answer does not have much to do with urbanization. Sending the proletariat back to the countryside or bringing the peasants to the city is not going to make a huge difference.

What will make a difference is to introduce policies that give people hope for a better future, assuring them that their children will lead better lives than they have. Satisfying that criterion requires that they have access to work, services, and transport. It requires seldom disrupting their lives by extreme events, preventing human-induced disasters, ensuring that the economic situation does not fluctuate violently, guaranteeing that governments are not constantly changing, and making sure that prices are under control. Satisfying my criterion for ensuring "security" also requires fairness, not in the sense of total equality, but in giving everyone some kind of life chance and removing any perception that everything is loaded against the disadvantaged. In turn, this means that crime must be under control, that there be a relatively efficient and honest police force, that blatant forms of social discrimination are reduced, and that people with genuine complaints have someone in power to whom they can appeal with some expectation that something will be done. Of course, rather few cities in the world satisfy most of the conditions on that list. Nevertheless, in a rapidly urbanizing world, it is only by satisfying those conditions that we can be sure that business will proceed as usual. Otherwise, what has in the past been predominantly a process of sustained, harmonious, and secure urban development, will not remain so in the future.

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Appendix A:
Comparative Urban Studies Publications

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Number 15: Renner, Michael. *Environmental and Social Stress Factors, Governance, and Small Arms Availability:The Potential for Conflict in Urban Areas*. 1998.

Number 16: Stren, Richard. *Urban Research in the Developing World: From Governance to Security*. 1998.

Number 17: Voronin, Yuriy. *Organized Crime: Its Influence on International Security and Urban Community Life in the Industrial Cities of the Urals*. 1998.

Number 18: Savitch, H.V. *Small Ships on a Global Sea: Local Democracy in a Turbulent Age*. 1998.

Number 19: Vaguine, Vladimir. *The Russian Provincial City: Key Elements of the Structure of Life*. 1998.

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Number 21: Yacoob, May and Margo Kelly. *Secondary Cities in West Africa: The Challenge for Environmental Health and Prevention*. 1999.

Number 22: Brennan, Ellen. *Population, Urbanization, Environment, and Security: A Summary of the Issues*. 1999.

Number 23: Wilheim, Jorge. *Overcoming the Trauma of Transition: Trends and Changes on the Threshold of the 21st Century*. 1999.

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Number 25: Malombe, Joyce. *State and Local Approaches to Poverty in Washington, D.C.* 1999.

Number 26: Rolnik, Raquel. *Territorial Exclusion and Violence:The Case of São Paulo, Brazil*. 1999.

Number 27: Sivaramakrishnan, K.C. *The Legacy of Habitat II: Issues of Governance*. 1999.

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OTHER MEDIA AND PUBLICATIONS

Urban Update: Annual newsletter from the Comparative Urban Studies Project.

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About the Editors

DR. BLAIR A. RUBLE

Blair A. Ruble is currently Director of the Kennan Institute for Advanced Russian Studies of the Woodrow Wilson International Center for Scholars in Washington, D.C. He also serves as Co-Chair of the Comparative Urban Studies at the Woodrow Wilson Center. A native of New York, Dr. Ruble worked previously at the Social Science Research Council in New York City and the National Council for Soviet and East European Research in Washington, D.C.

Dr. Ruble received his M.A. and Ph.D. degrees in Political Science from the University of Toronto, and an AB degree with Highest Honors in Political Science from the University of North Carolina at Chapel Hill. He has edited seven volumes, including two reference works and five collections of articles, and is the author of four monographic studies.

Dr. Ruble's book-length works include a trilogy examining the fate of Russian provincial cities during the twentieth century. The first, *Leningrad. Shaping a Soviet City* (1990), traced the decline following World War Two of the former Imperial capital and co-primate city to mere provincial status by the end of the Soviet regime. The second, *Money Sings! The Changing Politics of Urban Space in Post-Soviet Yaroslavl* (1995), captured the confusion and optimism widely felt at the time of the collapse of the Soviet Union. The third volume, *Second Metropolis: Pragmatic Pluralism in Gilded Age Chicago, Silver Age Moscow, and Meiji Osaka* (forthcoming, 2000), placed Russia's great heartland metropolis of Moscow into a comparative perspective just as it was about to become the Soviet capital. Taken together, these studies explore a distinctly Russian urban life away from the raw ambition, stilted ceremony, and pervasive anxiety of the country's political capital.

Among Dr. Ruble's most recent edited works are *Fragmented Space in the Russian Federation* (co-edited with Jodi Koehn and Nancy E. Popson) (forthcoming, 2000); *Preparing for the Urban Future: Global Pressures and Local Forces* (co-edited with Michael A. Cohen, Joseph S. Tulchin, and Allison M. Garland) (1996), and *Russian Housing in the Modern Age* (co-edited with William Craft Brumfield)(1993). Dr. Ruble's articles on urban affairs have appeared in the American publications *Urban Anthropology* and *Journal of Urban History,* as well as in France's *Annales, Economies, Societies, Civilisations,* Japan's *Ima Naze Toshika,* Britain's *Planning Perspectives* and *Urban Studies,* Russia's *Chelovek, Arkhitekton, Moskovskii zhurnal,* and the Soviet-era *Leningradskaia panorama.*

Dr. Ruble's honors and commendations include election to the Phi Beta Kappa academic honor society at the University of North Carolina, the City of Yaroslavl "Yaroslav the Wise" Medallion, the United States Vice-President's "Hammer Award" for Reinventing Government, as well as numerous academic grants. He is also a member of the Committee of 100 on the Federal City.

Dr. Ruble and Kennan Institute Deputy Director Nancy Popson are currently engaged in research examining the reception of non-traditional immigrant groups in contemporary Kyiv. He also follows evolving urban patterns and urban management arrangements in post-Soviet Russia.

DR. JOSEPH S. TULCHIN

Joseph S. Tulchin is the Director of the Latin American Program and Co-Chair of the Comparative Urban Studies Project at the Woodrow Wilson International Center for Scholars. As the Latin American Program Director, he coordinates research on and public discussion of issues of concern to Latin America. Before moving to Washington, Tulchin was Professor of History and Director of International Programs at the University of North Carolina at Chapel Hill. He taught at UNC for twenty years and at Yale University before that for seven years. His areas of expertise are U.S. foreign policy, inter-American relations, contemporary Latin America, strategic planning and social science research methodology.

Dr. Tulchin was born and raised in New York City. He holds the B.A. degree, magna cum laude, and Phi Beta Kappa from Amherst College. He read History at Peterhouse, Cambridge before attending Harvard University where he completed his Ph.D. in History in 1965. While at Yale, he was recognized as an outstanding teacher by the College and was awarded a prize from the Conference on Latin American History of the American Historical Association for one of his articles. He has taught also at the Naval War College, Newport, RI; the University of Buenos Aires, Argentina; the Ortega y Gasset Foundation, Madrid, Spain; Georgetown University; The Johns Hopkins University School of Advanced International Studies; several branches of the Latin American Social Science Faculty (FLACSO), and El Colegio de México, Mexico. He is fluent in Spanish and has made public appearances or taught in nearly every country in Latin America, as well as in Japan, Germany, the Soviet Union, France, the United Kingdom, and Spain.

Dr. Tulchin is an active and prominent Latin Americanist. He was Associate Editor and then Editor of the *Latin American Research Review*. He served on several national committees of the the Latin American Studies Association and the Conference on Latin American History. He is often called upon to give testimony to committees of the United States Congress. He has delivered more than one hundred papers at professional meetings and conferences, and has published fifty scholarly articles, in English, French, Spanish, Portuguese, Russian and German. He has published more than twenty books, including three monographs, on inter-American relations, Latin American affairs, Spanish foreign policy, and international relations. He was the editor of a pioneering series of monographs on Latin America for Harper and Row, and his book, *Latin American Nations in World Politics,* edited with Heraldo Muñoz, has become a standard reference work throughout the hemisphere. His book, *Argentina and the United States: A Conflicted Relationship,* was a best seller in Argentina for several years. He is now editor of *Current Studies on Latin America* for Lynne Rienner Publishers.

CHRISTINA ROSAN

Christina Rosan has been the Project Coordinator for the Comparative Urban Studies at the Woodrow Wilson Center since 1997. While at the Woodrow Wilson Center, she has worked with the Project Directors to coordinate the Urbanization, Population, Environment, and Security meeting series and working group. She also worked on a multi-meeting project entitled, Building Sustainable Urban Communities in the Global Arena. Christina was responsible for two forums: one in Guatemala City on natural disaster relief in Central America and the Caribbean and the other in Southern Africa on the way in which local government can address the growing needs of HIV/AIDS orphans. At the Woodrow Wilson Center, Christina has organized meetings on the crisis of urban governance in the District of Columbia as well as a series of Mayors' Forums with U.S. mayors. As the Project Coordinator, Christina edits the Projects' occasional paper series and the Project newsletter, *Urban Update*. Christina graduated magna cum laude from Williams College in 1996 with an honors degree in History and an interest in urban affairs. Starting in the Fall of 2000, Christina will begin her master's degree program in City and Regional Planning at the Massachusetts Institute of Technology.