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Section 3.

Challenges in Addressing Urban Growth and Housing Needs

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To unleash the full capacity of the developing world's urban areas for growth, a multitude of challenges now inhibiting their economic potential and their capacity to provide a healthy living environment for their inhabitants must be realistically faced and tackled. These include a significant shortage of decent affordable housing, especially for the poor; the abysmal housing conditions and the horrific physical environment in which many of the urban poor live, work, and raise their children; lack of a clean and adequate water supply; underinvestment in transportation; deteriorating natural environments; negative impacts of global climate change; and social instability — all of which reduce the efficiency with which developing cities function. This section briefly reviews each of these areas of need. We start, however, with a review of the characteristics of the urban poor population in developing countries, defined as those who live in what the UN identifies as slums (i.e., areas with the following five shelter deficits: lack of access to improved water, lack of access to sanitation, nondurable housing, insufficient living area, and insecurity of tenure).

The Scale of Urban Poverty

One-third of all urban residents in low- and middle-income countries live in poverty, according to the latest estimates. Although the poor are currently concentrated in rural areas in all regions except Latin America, an increasing share of the poor is urban, with the percentage of poor persons in urban populations differing dramatically among regions (see Table 1). The highest rates by a very large margin are in South Asia (76 percent, the vast majority of them in Indian cities) and Sub-Saharan Africa (68 percent).

The degree of income inequality within urban areas also differs dramatically by region. African and Latin American cities have greater inequality among their citizens than do cities in Asia and the Middle East-North African region. Higher poverty rates and greater degrees of inequality mean that those in the lower rungs of the economic ladder are living in extremely difficult conditions. In other words, a high incidence of low incomes correlates with parallel shortcomings in a whole range of dimensions—housing, water and sanitation, health, and education.

Not all the urban poor live in slums, but most do; nor are all people living in slums poor—some may find the economic advantages outweigh the hardships—but most are. About 1 billion people in developing countries live in slums. This share also varies sharply by region, as the following list makes clear: Sub-Saharan Africa (72 percent in 2001), Asia Pacific (43), Latin America and Caribbean (32), Middle East/North Africa (30). In no region is the incidence below 30 percent. Little wonder that the UN Millennium Development Goals call for a significant improvement in the lives of at least 100 million slum dwellers by the year 2020.

Not all the urban poor live in slums, but most do.

Table 1. Urban Poverty Estimates, 2002

Region (World Bank definition)	Percent Urban Population Below Poverty $2 per day[a]	Percent of All Poor Living in Urban Areas
East Asia-Pacific	18	15
Europe-Central Asia	11	10
Latin America	28	66
Middle East-North Africa	12	29
South Asia	76	25
Sub-Sahara Africa	68	31
Total	34	26

Source: M.Ravallion, S. Chen, P. Sangraula, *New Evidence on the Urbanization of Global Poverty*. World Bank Policy Research Working Paper 4199, 2007.
a. $2 cut-off adjusted for urban-rural differences in prices.

Housing in the Developing World

Decent shelter is fundamental to physical and psychological well-being and the social stability of communities. Yet the inexorable urbanization of the developing world is creating a massive shortage of affordable housing, especially for low income families. Lack of housing options for the growing urban population has driven ever increasing numbers into informal shelter in the burgeoning slums in many cities, large and small. In many of Africa's cities and towns, for example, less than ten percent of the population lives in formal sector housing. In India, recent estimates indicate an urban housing shortage of almost 25 million units in 2007, which is expected to grow to 26.5 million by 2012. Formal housing production has simply not kept pace with urban population growth in most cities of the developing world.

Housing construction is also a major component of the economies of both industrialized and developing countries. Housing is a major source of employment, especially in lower income countries where it can employ large numbers of relatively unskilled laborers and it generates additional jobs in locally-based ancillary industries such as furniture, equipment and supplies. Yet formal sector housing production in most developing countries meets just a small fraction of demand.

Housing conditions in developing countries for those who cannot afford formal sector solutions vary greatly, from fairly well-constructed sizeable dwellings of durable materials with many amenities (although still not legal) to decrepit shacks and hovels in the slums built of wood, mud and scrap materials. UN HABITAT estimated that in 2003, 133 million people in cities of developing regions lived in housing that lacked finished floor materials, with the largest percentage (73 percent) in Asia (mostly south Asia). In some of the poorer cities of Asia and Africa over half of the housing is made of non-permanent materials of various kinds.

Overcrowding is also a serious issue in many cities of the developing world. UN-HABITAT recommends a minimum of 75 square feet per person to ensure sufficient privacy and good health but estimates that more than 20 percent of the world's urban population lives in dwellings with less space, with two-thirds of the total in Asia. In some of the poorer cities of Asia and Africa, more than 40 percent of the population lives in housing of insufficient living space and in larger cities in Africa and Asia, such as Addis Ababa, Kampala, Dhaka, Karachi and Ulan Bator, the percentage is higher than 50 percent. The situation is comparatively better in Latin America.

A third serious housing problem in the cities of many developing countries is the lack of secure tenure for most informal sector housing. The precariousness of their legal status and the possibility of eviction make families living in the informal sector reluctant to invest in improvements to their housing despite the obvious benefits to the quality life that would accrue. Renters, who constitute a significant percentage of slum dwellers, have even less security in their living situation than those who own their homes.

One in every four children in the Embakasi slum in Nairobi, Kenya die before their fifth birthday, compared to one in every 125 in the U.S.

Conditions in the Slums

Urban slum dwellers live, raise families, and work in conditions that are almost literally unimaginable for any inhabitants of the developed world who have not witnessed those conditions in person.

One dramatic measure of the dismal nature of slum conditions is the health of resident children. For example, the prevalence of children's diseases in various locations in Kenya underscores the consequences of dirty water, nonexistent or primitive sanitation, and flimsy and overcrowded housing (see Table 2). Nairobi's informal settlements generally,

Table 2. Infant Mortality Rates and Diarrhea Prevalence in Kenya by Location

Location	Infant mortality rate[a]	Under Five Mortality Rate[a]	Percent Prevalence of Diarrhea in Children Under 3[b]
Kenya	74	112	3
Rural Kenya	76	113	3
Urban Kenya, excl. Nairobi	57	84	2
Nairobi—all areas	39	62	3
>informal settlements	91	151	11
>>Kibera settlement	106	187	10
>>Embakasi settlement	164	254	9

a. per 1,000 births b. In the two weeks prior to the interview
Source: Tannerfeldt, G., and P. Ljung. 2006. *More Urban Less Poor*. London: Earthscan, Table 2.

and especially the two largest and worst slums (Kibera and Embakasi), have much higher rates of infant and under-five mortality than rural areas or for Nairobi as a whole. One in every four children in the Embakasi settlement, for example, dies before reaching the age of five, compared with slightly more than one in ten in rural areas and slightly more than one in 20 in Nairobi overall. These rates compare with a one in 125 mortality rate for children under five in the United States.

Housing conditions in most slums are appalling, with serious repercussions for the health, safety and well-being of the residents. Extreme crowding is the norm, with the typical slum family inhabiting a one-room structure of less than 300 sq. ft., often partitioned only by curtains. Indoor toilet facilities and individual house water connections are rare. In such close quarters, diseases spread quickly. Lack of privacy also exposes children to sexual relations of family members at a very young age, contributing to the early onset of sexual activity found in many slum communities. This is reinforced by high levels of prostitution resulting from a lack of economic opportunities for many young slum girls, which leads in turn to very high levels of unwanted pregnancies and sexually transmitted diseases (STDs) in the slums, including HIV/AIDS.

Cooking in the slums, particularly in Sub-Saharan Africa, is often done with solid fuels such as bio-mass and charcoal. This causes indoor air pollution, leading to high rates of respiratory disease. Indoor air pollution is estimated to be responsible for between 2.7 and 2.8 million deaths worldwide annually, mostly in developing countries. UN-HABITAT cites a recent study that shows housing deprivation can lead to a 25 percent greater risk of disability or severe health across a life span, especially if exposure to poor housing occurs in childhood.

The location of slums is another concern. Slums tend to be either in the city center or in peri-urban areas where land is more readily available, but far from employment opportunities. Slum dwellers in the city center often occupy land unsuitable for other purposes, such as zones subject to flooding and areas adjacent to environmentally hazardous land uses, railroad tracks, and landfills. Without adequate storm drainage during the rainy season, low-lying streets, pathways, and residences are subject to frequent flooding, while communities on slopes are subject to landslides and erosion of any makeshift barriers they may construct. A case in point — almost every other year the 55,000 slum dwellers living in Asuncion, Paraguay's river flood plain are driven from their homes.

Stresses caused by such harsh living conditions lead to major lifestyle illnesses, in the form of high and increasing incidence of alcohol and drug use, cardiovascular disease, diabetes, depression, and domestic abuse. The WHO estimates that by 2030, the proportion of the disease burden represented by non-communicable diseases will increase from 44 to 54 percent in low- and middle-income countries, and that the poor in urban slums will suffer the most.

Uncertain property rights and a lack of tenant rights contribute to poor housing conditions and add to the difficult living conditions in slums. In informal urban settlements where many dwellings are owner-occupied, residents have only weak rights to the land they occupy and thus are at risk of eviction. Owners, who believe they are safe from eviction, are more likely to incrementally build and upgrade over time by adding or improving walls, roofs, and floors or making other improvements. In specific cases, such as Kibera in Nairobi, occupants rent from landlords who often have legal claims on the land. Some landlords own hundreds of badly maintained dwellings and have little incentive to invest in them. For their tenants, making improvements is risky because of the lack of formal leases or other tenure security. In both cases, uncertainty discourages residents from incrementally improving their housing. Especially in Sub-Saharan Africa much of land occupied without rights is government owned, meaning it could be comparatively easily transferred to the occupants.

Water and Sanitation

Another defining characteristic of slum conditions is a lack of access to basic services such as education, health facilities, clean water, and sanitation facilities – basic citizen rights. Access to a clean and adequate supply of water is a fundamental human necessity. Yet in 2004, over one billion people in the world, almost all in developing countries, still lacked access to "improved" sources of drinking water. Millennium Development Goal (MDG) Target 7c challenges the world to reduce the number of people without sustainable access to safe drinking water by half by 2015. If the past is any guide, this goal will be extremely difficult to meet. Despite serious efforts to address the problem, for example, between 1990 and 2004 the number of people without such access decreased by less than 120 million. Given existing trends, by 2015 the number of people in urban areas without such access will actually increase to 240 million. Almost all of this increase will be in developing countries.[3]

Many municipal systems in developing countries suffer from enormous water losses caused by broken pipes and water piracy, restricting water availability only to short periods at certain times of day.[4] Broken pipes also lead to extremely high levels of microbial contamination and hazardous levels of chemicals such as arsenic and fluoride.

It is the slum-dwelling poor, of course, who suffer disproportionately from poor quality and limited availability

One billion people in the world lack access to clean water.

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of clean water. Although about 70 percent of households in the cities of developing countries have access to clean water, just 40 percent do in the slums. Indeed, most urban slum residents do not enjoy water connections at the household level, as already mentioned, forcing them to purchase water from itinerant vendors at prices almost five times the average price of water from the municipal system. As a result, slum dwellers average less than half the water use of the average user in the same cities, exacerbating already poor hygienic practices.

Sanitation conditions are even more daunting. In 2004, in Sub-Saharan Africa, just 53 percent of urban residents were covered by "improved" sanitation services, compared with 63 percent in southern Asia, and 86 percent in Latin America and the Caribbean. And coverage is generally substantially lower

Table 3. Water and Sewerage in Informal Settlements, 1998 (percentages)

Region	Water Connection	Sewerage Service	Access to Water
SS Africa	19.1	7.4	40.0
N. Africa/ Middle East	35.7	21.5	42.7
Asia/Pacific	38.3	7.4	89.1
Lat. Am. & Caribbean	57.9	30.3	66.8
All Developing Regions	37.2	19.8	57.6

Source: UN-Habitat. 2003, *Global Report on Human Settlements: The Challenge of Slums*. London and Sterling Virginia: Earthscan, Table 6.9.

in the slums than in urban areas as a whole (Table 3). In Sub-Saharan Africa, for example, where conditions are worst, only 19 percent of households in informal settlements have water connections and a mere 7 percent have sewerage services.

And the available global statistics for sanitation are misleading. Coverage is almost certainly over-reported in urban areas, as it is for water. Moreover, the standards for service need to be higher in urban areas to achieve the same level of adequacy. Whereas sharing a simple pit latrine may suffice in rural areas, the much higher urban densities, especially in the slums, make such sharing generally inadequate.

Lack of toilet facilities is often the single worst part of slum dwelling, particularly for girls and women. Most housing in informal settlements does not have indoor sanitary facilities. Instead, slum residents must rely on public toilets. When working, these toilets are often insufficient for the number of households in need, forcing people to queue up at certain times of the day. When not properly maintained, they overflow and contaminate the surrounding environment.[5] Impatience and disgust with the public toilets lead people to defecate in the open or in plastic bags and in worst cases use these bags as weapons of intimidation. Lack of adequate toilets is particularly devastating for women, who often must either suffer indignities or jeopardize their health and risk their safety by waiting to defecate until dark.

Finally, the storm and sanitary sewer systems of cities in many developing countries, particularly in informal settlements, have insufficient capacity or function so poorly that much of the industrial, commercial, and household wastewater and storm water run-off is not captured (to say nothing of woefully insufficient waste-water treatment capacity), especially during rainy seasons. Poor drainage leads to frequent flooding and to pools of stagnant, polluted water that function as vectors for water borne diseases such as malaria and cholera.[6]

Transportation

Anyone who has visited Bangkok, Cairo, Lagos or Mexico City—or has traversed a mid-size city in India or Pakistan—has seen first-hand the results of underinvestment in road and mass transit infrastructure and poor traffic management. The scale of transport problems — in adverse effects on mobility, economic efficiency, and the environment — are greatest in the mega-cities. But medium size cities suffer as well. Overall, transportation problems are worst where population growth surges ahead of economic growth—which includes all Sub-Saharan Africa and many Latin American countries.[7]

Transportation problems fall into three types: service deficiencies due to congestion, non-congestion deficiencies, and inequitable transportation services that systematically

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discriminate against definable citizen groups. Congestion means long commute times, which reduces worker productivity and increases costs to businesses for moving goods within cities. One-way average commute times in Jakarta, Kinshasa, Lagos, and Manila are over 75 minutes. Survey data for Mexico City show that ten percent of workers spend 2.5 hours on their one-way commute. In comparison, New York's commute time, the highest in the United States, averaged 38 minutes one-way in 2003.

Non-congestion problems take many forms. One is long wait times for public transportation. Another is para-transit safety. Para-transit is passenger service by privately-operated vans on fixed routes; operators are usually licensed by the municipality. Cities have turned to para-transit when public transit services are unable to meet the population's needs, often a result of prices insufficient to cover costs and inefficient operations by public providers. Para-transit's poor safety record results from a combination of aggressive driving behavior, over-crowding, and poorly maintained vehicles — a combination that causes scores of deaths and thousands of injuries to passengers, pedestrians, and other motorists.

The poor suffer from urban transport systems in three ways – long commute times, relatively expensive transportation costs, and a lack of safety - with the form of discrimination depending on where they live. In very high density central cities poor commuters often do not use public transport systems because they walk or bike to work, but their commute may put them in physical danger and contribute further to congestion.[8] Chinese commuters, for example, traditionally relied on bicycles. But pedestrians and bikers now struggle to find a place on the crowded streets, with separated lanes for them being very rare. In peri-urban areas, in contrast, the poor suffer from lack of access because of limited-to-no service from public companies and long and expensive (relative to their income) commutes. The average distance of black townships from the central business districts of South Africa's seven largest cities, for example, is 28 kilometers. The same pattern holds for many Latin American cities.[9]

As difficult as these problems are today, they are likely to get

much worse as economic growth raises household incomes and permits a higher incidence of automobile ownership. It takes little imagination to contemplate the extreme adverse greenhouse consequences of future massive car fleets in China and India alone.

Environment

Urbanization by its very nature alters the earth's surface and changes the natural environment. The environment of many developing world cities is deteriorating in part because of poor urban planning and regulation, and in part because insufficient human and financial resources are being marshaled to keep the demands of increased urbanization in balance with the capacity of the natural environment to support it.

UN-HABITAT structures the debate around the "burdens" on the environment posed by urbanization as follows. Construction activity required for industrial, commercial and residential development alters the natural landscape. The concentration of production and consumption activities (e.g. energy demands) in urban areas, including industry and motorized transport, can lead to degradation of the environment and ecology if not adequately managed and mitigated. Such effects include air pollution, urban ground and surface water extraction and contamination, urban waste dumping, and the expansion of built-up areas and its effect on natural areas, agriculture and biodiversity. Improper disposal and treatment of liquid wastes into lakes, rivers and coastal waters are yet another increasing problem. Many cities in developing countries do a very poor job collecting solid waste, with disastrous consequences for the urban environment. In Cairo, Egypt for example, just one-third of


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the solid waste is collected and processed; in Freetown, Sierra Leone the proportion is between 35 and 55 percent.

The health impacts of poor solid waste management are substantial. Particularly in slum neighborhoods, poor collection and disposal results in piles of solid waste building up in public spaces, vacant lots, and even on streets and back yards, frequently clogging drainage and sewer systems. This attracts disease-carrying insects and pests, which in turn cause cholera, diarrhea, and dysentery, especially in children. A 2001 survey in Benin showed that the prevalence of diarrhea in children under five was 18.5 percent in households where garbage is dumped in the yard versus seven percent in households where garbage is collected. Similarly, in Ethiopia, the prevalence of acute respiratory infections is six times higher in children living in households where the waste is uncollected than among children whose household waste is regularly collected.

The sheer economic cost of environmental degradation must be added to its human impacts. The Asian Development Bank estimates that neglect of the environment is costing Asian economies an average of five percent of GDP. China may be losing as much as ten percent of its national income to pollution and India five to six percent. The direct cost of water and air pollution in India may approach $10 billion annually. Yet the environmental budgets of many Asian countries are actually shrinking.

On a global scale, low- and moderate-income people in the cities of the developing world have very little impact on environmental degradation. They generate almost no waste or greenhouse gases, and use few products with high ecological impacts or that generate hazardous wastes. Yet they are the ones who disproportionately bear the consequences of such degradation, as they suffer from huge deficits in environmental infrastructure and have less capacity to afford preventive or palliative measures, such as air conditioning for poor air quality and clean water for proper hygiene.

Global Climate Change

The evidence is indisputable that the temperature of the earth has risen by between 0.74 and 1.8º Centigrade over the past century; estimates are that it will continue to increase by between 1.8 and 4º C over the course of the next. Human activity is responsible for at least part of the increase. One of the leading causes of this "greenhouse effect" is the amount of carbon dioxide emitted into the atmosphere through the burning of fossil fuels—coal, gas and oil.

Rich cities in the developed world emit substantially higher levels per capita of greenhouse gases than do cities in the developing world. But as the developing world grows economically, its contributions to global climate change will inevitably increase. Should current trends continue, greenhouse gas emissions will drive declines in agricultural production and increases in heat waves, droughts, flooding, biodiversity loss, disease, and soil erosion. Abrupt and large-scale climate change could lead to an average loss of five to ten percent in global GDP, with developing countries suffering in excess of ten percent of GDP. Again, it is the poor in developing countries who bear the brunt of environmental degradation caused by climate change, as they most often live in sites that are vulnerable to flooding and erosion.

Last, but hardly least, rising ocean water levels from global warming will cause massive destruction and displacement. Nearly 300 million urban residents live *today* in the low elevation coastal zone (less than ten meters above sea level), putting them at immediate risk from rising sea levels.

It is important to recognize that urbanization actually has positive impacts on the global climate. Greater use of public transit and higher urban densities achieved in multifamily housing can lead to less energy consumption per capita than

in rural areas and suburbs. Greater urbanization can also help to preserve natural areas in the countryside that can act as carbon sinks and help to sustain biodiversity.

Social Instability

The deplorable slum living conditions just described—aggravated by lack of employment and low social status—foster stress and low self-esteem generally and especially for disaffected youth.[10] These problems manifest themselves in a variety of ways. One is violence. A study of three Rio de Janeiro *favelas* over a 30-year period found a broad improvement in the economic standing of those remaining in


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these areas and of the one-third of original families who had moved to better neighborhoods. But the increased violence in the *favelas* had caused some families to relocate and had sharply reduced the social capital of those who remained because they were afraid to be on the streets. In nine slums in Colombia and Guatemala, crime and violence are viewed as the primary problem, more important than unstable infrastructure or unemployment.

Not surprisingly, slum conditions can lead to protests and sometimes riots. In 2005 in South Africa, about 900 protests were reported in urban slums, for example, of which half turned violent; the year 2008 witnessed further disturbances, this time aimed at foreign immigrants. Youth disaffection and related conditions, including oppressive regimes and militant religious leaders, create fertile conditions for recruiting persons into terrorist organizations,[11] leading a number of scholars to call for improving slums and related conditions to address a root cause of terrorism.

The Drag on Economic Efficiency

With the very real human suffering already portrayed, it is easy to lose sight of the economic consequences of the kinds of conditions recounted in this section. Urban mismanagement has powerful negative effects on the efficiency with which a city functions and in turn its growth. Three dimensions make the case.

First, consider the effects of an unreliable or insufficient electricity supply. In Lagos, 92 percent of enterprises recently surveyed have had to invest in their own generators; in Indonesia the figure is 65 percent; in Thailand, where reliability is much greater, the figure is six percent.[12] Capacity shortages in the Yemini cities of Aden and Mukalla have forced firms to resort to self-supply and have restricted economic growth. Obviously, the competitiveness of affected firms is inevitably reduced.

The second dimension is the loss of women's productive time in fetching water in areas with limited water sources. This problem is widely recognized and the health impacts of such drudgery are documented. Forty-seven percent of woman living in Kumasi, Ghana slums, for example, allocate two to three hours per day to fetching water (traveling to sources, queuing, and returning); 27 percent spend four hours or more. A major portion of potentially productive time is thus simply lost.

The third dimension is delays in firms' acquisition of land needed for expansion. In Mozambique, firms pay on average $18,000 in processing fees for land, and in Nigeria they must re-register land to use it as collateral, a process that can take up to two years and cost 15 percent of the property's value in official fees (not counting bribes).


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Twenty-seven percent of the women living in slums in Kumasi, Ghana spend four or more hours a day just fetching water.