URBAN LAND, HOUSING, AND TRANSPORTATION: THE GLOBAL CHALLENGE

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We're just passing one of the great milestones in human history – but hardly anyone is noticing. It isn't anything outwardly dramatic, like a revolution or a war. But it is fundamental, in the sense that the Industrial Revolution in Britain was fundamental. Future historians, doubtless, will call it the Urban Revolution. For the first time in history, a majority of the world's six billion people are living in cities. Between 2000 and 2025, on the best estimates we have from the United Nations, the world's urban population will double, to reach five billion; city-dwellers will rise from 47 percent to over 61 percent of the world's population.

But that's not all. Most of this explosive growth will occur in the cities of the developing world. There will be a doubling of the urban population, in the coming quarter century, in Latin America and the Caribbean, in Asia and in Africa together – above all in Asia and Africa. Even by 2015, the UN predict that there will be 358 "million cities", with one million or more people; no less than 153 will be in Asia. And there will be 27 "mega-cities", with ten million or more – 18 of them in Asia. It is here, in the exploding cities of some of the poorest countries of the world, that the central challenge lies.

A huge challenge, to be sure – but also a huge range of opportunities: opportunities for greater freedom, greater freedom above all for development, as people leave behind their traditional bondage to the land and the total dominance of the daily struggle for food. Urbanization is a fundamental form of liberation of the human spirit: in the famous German quotation from the Middle Ages, *Stadtluft macht Frei*: the city air makes you free. It does more than that: just because it frees up human creativity, the city is the place where the great advances occur – artistic, intellectual, technological and also organizational. You need urbanization if you're going to get development. Urban growth is potentially a great thing.

Table 1 World Urban Population, 1980-2000-2020

Urban Population

	Urban Population in %			Urban Population Growth Rate in %		
	1980	**2000**	**2020**	**1980-85**	**2000-05**	**2020-25**
World	**39**	**47**	**57**	**2.6**	**2.2**	**1.7**
Africa	27	38	49	4.4	4.0	3.0
Europe	69	75	80	0.8	0.3	0.1
North America	74	77	82	1.2	1.0	0.9
Central America	60	67	73	3.1	2.0	1.5
South America	68	80	85	3.1	1.8	1.1
Asia	27	38	50	3.6	2.8	2.0
Oceania	71	70	72	1.4	1.3	1.3
Developing Countries	**29**	**41**	**52**	**3.8**	**2.9**	**2.1**
Developed Countries	**71**	**76**	**81**	**0.9**	**0.5**	**0.3**

Source: World Resources 1998-99

But only potentially. Urbanization is a basic precondition for development. But it doesn't of itself guarantee development. There's good urban growth and there's bad urban growth. Managing urban growth so that it contributes positively to economic advance, reconciling it with ecologically sustainable forms of development and reducing social exclusion, represents the key challenge for urban planners and urban managers in this new century.

The Fundamental Challenge

The major challenge, for those of us who care about cities, comes from the burgeoning cities of the developing world, where there is a paradox: people are still flooding into these cities, too many children are being born in those cities based on the hope for a better life; but too often they are being cheated. For urban growth has brought a sharp rise in urban poverty: according to UNFPA estimates, over one in four of the people in the cities of the developing world lives below official poverty lines, and that proportion rises to more than one in three in the Middle East and North Africa and to more than two in four in sub-Saharan Africa. And a large proportion of the poorest are women.

In these cities, the quality of the environment is not improving; in far too many cases, it is deteriorating. The problem is daunting. Many of these cities are already bigger than their equivalents in the developed world, and are projected to become yet larger. Most have only recently started on their development process. And, with some conspicuous exceptions, they lack the governmental structures and the administrative traditions to tackle the resulting problems. Let's be fair: they have achieved a great deal against overwhelming odds; and some have emerged as models for the rest of the world. But they are too few, and their example is not spreading fast enough.

Three Kinds of City: Three Kinds of Problems

However, and this is the first important point I want to make, the term "developing city", like the term "developing country", is no longer very meaningful. In fact, I want to argue that it's fundamentally confusing. The World Commission on 21st-Century Urbanism, which presented its report *Urban Future 21* to a major conference in Berlin in the year 2000 (Hall and Pfeiffer 2000), argued that we can most usefully divide cities worldwide into three major categories, and that so-called "developing cities" in fact fall into two different categories. Even this is crude and simplistic, but it makes the point.

The first category the Commission called *the City Coping with Informal Hypergrowth*. It is represented by many cities in sub-Saharan Africa and in the Indian subcontinent, by the Moslem Middle East, and by some of the poorer cities of Latin America and the Caribbean. It is characterized by rapid population growth, both through migration and natural increase; an economy heavily dependent on the informal sector; very extensive poverty, with widespread informal housing areas; basic problems of the environment and of public health; and difficult issues of governance.

The second type the Commission called *the City Coping with Dynamic Growth.* It is the characteristic city of the middle-income rapidly-developing world, represented by much of East Asia (including China), some of South Asia, much of Latin America and the Caribbean, and the Middle East. Here, population growth is falling, and some of these cities face the prospect of an aging population. Economic growth continues rapidly, but with new challenges from other countries. Prosperity brings environmental problems.

The City Coping with Informal Hypergrowth

In this first kind of city, the key problem is that the urban economy can't keep pace with the growth of the people. There are high birth rates – a product of sexual ignorance, superstition and above all poorly-educated, often illiterate women. This, plus continued migration from the countryside, produces a huge surplus of unskilled labor. Many of the migrants have been pushed off the land rather than positively pulled into the cities, by famine or civil war or insurrection: too often, they are virtually starving. They go into the only work they can find, in the informal economy: casual work and petty trading. This leaves them in dire poverty – especially the women and above all the female-headed households, which typically form more than 30 percent of the poor population.

The problem is that in these cities the formal or modern sector is too often struggling to survive, and too often giving up the battle. This is particularly true of indigenous enterprises. They can't compete, for multiple reasons: under-education, poor infrastructure, lack of credit, and failure to access global markets. So you find cities that – apart from global enterprises like hotel chains or fast food outlets – lack a formal economic base, cities in which the great majority of people live in informal slums, often in very bad conditions, and eke out an existence in the informal economy. They have little work and they live at the margins of existence, in places that lack the basics for a civilized life. They have little concern for the environment, because they can't afford to do anything except struggle for survival: if keeping warm means cutting down the remaining trees for firewood, they'll do it; if keeping alive means drinking polluted water, they'll do that. And they find it hard to connect with worthwhile jobs, even if they had the skills, because they can't physically reach them: lacking either a bicycle or a bus fare, they have nothing but their own two feet.

If you visit such cities, your first reaction may well be despair. But there is actually a solution to this huge raft of problems, though it may sound paradoxical. First, it is to get the birth rate down, which means basic education, above all education for the girls. Our report argues that there's a tremendous role for information technology here, if we can get low-cost machines that don't need to depend on erratic electricity service. In fact technology has taken a huge leap even in the five years since we were working on our report, through the development of battery-powered mobile phones that can hook up directly to the Internet. And this is just the beginning.

Then, the key is progressively to formalize the informal economy. Cities can do this in various ways: strengthening relationships to the mainstream economy, both for inputs and outputs – for instance, by providing microcredit, building materials, food and water, and more effective transportation to help people gain access to a wider range of jobs. They can achieve this best through communal self-help neighborhood projects, backed up by informal tax levies to pay for materials, which can help overcome bottlenecks in basic infrastructure. Microcredit, providing tiny loans so people can start their own businesses, will play a particularly crucial role.

The City Coping with Dynamic Growth

Here there's good news: the trend is for population growth to fall sharply, because of urbanization, as people see that the costs of education and rearing children rise while the economic value of children goes down. (These are two sides of the same coin: crudely, the value of uneducated young people tends to decline, so it simply takes much longer and costs more to get them to the point where they become effective earners). And this has further impacts: there is a big rise in the number of working-age people relative to the young and the old, who have to be looked after. In the jargon, the dependency ratio falls to a minimum.

So that's the good news, and it isn't the end. In these cities, the great passage from the informal to the formal economy is already well under way. Many of them are very attractive to inward investment, because they offer a well-educated and well-trained labor force at lower wages than in developed cities, and besides, economic growth is generating big domestic markets for consumer durables like cars and refrigerators and personal computers. China is the outstanding case here, following on a hugely bigger scale the example earlier set by "tiger economies" like Singapore, Hong Kong or South Korea. But there's a sting in the tale there: this foreign direct investment can always be diverted to even lower-cost countries and cities, as some Latin American cities are now unfortunately discovering. The key is to keep trading up into more sophisticated levels of production, especially advanced services, as both Singapore and Hong Kong have done during their four decades of sustained growth, and as leading Chinese cities like Shanghai are now doing.

The main result of all this is that cities in this group all find themselves in a state of quite extraordinary dynamism but also of rapid transition. It often seems as if they're going through every stage of economic development at once. Or rather, different sections of their population are going through different

stages. Side by side, in the downtown business districts you can see gleaming new high-rise office towers full of global corporations that provide advanced business services; along the arterial expressways, sleek suburban factories that are pouring out consumer goods as well as forests of new apartment towers; and, in between, wretched informal slum settlements where the people struggle to make a basic living by performing odd jobs or selling trinkets. These cities often look as if they're simultaneously first world cities and third world cities.

One result is that they are highly polarized. Many of them, though not all, display extraordinary contrasts in wealth and poverty. Cities in South Africa and Brazil, two of the most unequal countries on earth, display this pattern to an extreme degree – but it's now observable in China and Poland. A significant sign is to see heavily gated, even armed luxury apartment blocks or country-club type developments, next to wretched shacks or worn-out slum apartments. All too often, in many though not all of these cities, there are reports of escalating crime and violence. The poor, some of them, may find solace in drink or drugs, compounding the problem. Because the poor have to find somewhere to live, they often contribute to environmental disasters by building their homes on unstable hillsides or on floodplains, with results that are sometimes tragic. Even when they and their homes survive, they are often located far from job opportunities, with poor or non-existent bus services, compounded by traffic congestion.

The answer to these problems is to continue to push the economy in the direction first of advanced manufacturing and then of advanced services, always keeping one step ahead of the global competition. (Again, Eastern Asian cities provide the classic model). Of course, cities cannot provide all the necessary policies on their own: nation-states have to provide the right framework of macroeconomic policies. But cities can do a lot, especially if they are given the right degree of administrative and fiscal autonomy – which many of them have been getting, already, during the last two decades. Above all, they must and they can help their poorest citizens to join the mainstream economy and the mainstream society.

Then and Now…

It's helpful at this point, I think, to turn from a geographical kind of comparison to an historical-geographical comparison. In some important ways, not least income levels, cities in this group compare with cities in the mature developed world about a hundred years ago. London, Paris, Berlin, New York in 1907 can be compared with São Paulo, Mexico City, Caracas and Bogotá today. Both groups of cities were, or are, growing explosively both in population and wealth. Both displayed, or display, extreme divisions of wealth. Both contained, or contain, huge high-income areas of great affluence and also huge slum areas of great wretchedness. But there are, I would argue, two key differences.

The first is in housing. Then, the slums had a formal characteristic: they were of permanent construction, generally large houses built for wealthy people (as in London), sometimes apartment blocks (as in Paris or New York), subdivided and sometimes again subdivided, and therefore chronically overcrowded. Now the corresponding slums are informal: self-built and unserviced. In fact, they correspond very precisely to the slums of the first category of cities, which shows us that this second category is really an amalgam of the first type and the fully-developed mature city.

The second key difference was, or is, in transportation. The basic reason for the slums of 1905 was that the poor, who depended on informal employment, had to crowd ever more closely into housing near their work – that is, in or near the city center. In London at that very time, the great social reformer Charles Booth wrote a paper entitled *Improved Means of Locomotion as a first Step towards the Cure of the Housing Difficulties of London* (Booth 1901). And in fact, just that was happening. Already, London had the world's first underground railway; in 1900, it was already nearly 40 years old. And, aided by American capital, the tunneling teams were burrowing under London's streets. Most of the tube network, on which you travel if you visit London today, was built by the year 1907. And simultaneously, the municipal authority for London, the London County Council, was electrifying and extending the tramcar system to serve new public housing estates, offering very low worker's fares so that poor people could afford to live in good housing on the edge of the city while getting to their jobs in the center. Many developing cities today, in

contrast, are in some cases very much larger – the São Paulo metropolitan area is three times the size of London a century ago – yet have much less well-developed public transportation systems. The paradoxical, even perverse, result is that relatively speaking, the poor in these cities have much greater problems in getting to work than their counterparts in London or New York in 1907.

Housing in the Developing World

How adequate is housing in the developing world? UN-Habitat figures show a mixed picture. Very evident is the fact that two areas – Latin America and the Caribbean, and Asia – show far better standards than Sub-Saharan Africa, or North Africa and the Middle East. The same is evident for provision of basic infrastructure like water, sewerage, electricity or telephone service. To a remarkable degree, throughout the developing world, most housing is well-serviced. But for informal housing, this position varies considerably. Generally, however, provision in Sub-Saharan Africa falls well behind that in the rest of the developing world.

That raises the basic question; what is sub-standard housing? How do we define a slum? UN-Habitat has sought to produce a rigorous, generally-applicable definition. They use five key elements: access to water, access to sanitation, structural quality of housing, overcrowding, and security of tenure. Using that as the basis, Table 2 from UN-Habitat shows the relative proportion of slum housing by region, worldwide, in 2001. Overall, slum dwellers constitute 32 percent of the world's urban population. For developing countries, the figure is 43 percent; for the least developed countries, 78 percent. This represents a huge differential between Sub-Saharan Africa and the rest of the developing world.

Table 2 Distribution of the World's Urban Slum Dwellers, 2001

Region	Urban population (000)	% in total population	% slum dwellers in total urban population
Sub-Saharan Africa	231,052	34.6	71.9
Asia Pacific	1,211,540	35.4	43.2
Latin America and Caribbean	399,385	75.8	31.9
Middle East and Northern Africa	145,624	57.7	29.5
Transition economies	259,091	62.9	9.6
Advanced economies	676,492	78.9	5.8
World	**2,923,184**	**47.7**	**31.6**
Developing countries	*2,021,665*	*40.9*	*43.0*
Least developed countries	*179,239*	*26.2*	*78.2*

Source: UN-Habitat, 2003a.

Slum development is systematically associated statistically with GDP per capita and with the UNDP's Human Development Index. But there is a striking systematic relationship between the prevalence of slum housing and inequality of income (rather than absolute income), as Table 3 shows. The UN-Habitat analysis suggests that generally throughout the developing world, despite rising per capita income levels, housing is becoming less rather than more affordable, both for owners and renters. But there are major differences between the least and the most developed regions: Latin America appears quite highly developed in terms of housing affordability, suggesting that the process of formalizing informal settlements has been successful overall. Rather remarkably, most inhabitants of informal housing do not

squat rent-free, but pay rent to a landlord. This suggests the degree to which there is an incentive to own.

Table 3 Slums and Income Inequality

Country	Income ratio (richest 20% to poorest 20%)	Slum dwellers (% of urban population)
Sierra Leone	57.6	96
Nicaragua	48.8	81
Guatemala	46.0	62
South Africa	45.9	33
Lesotho	43.4	57
Honduras	42.7	18
Nigeria	40.8	79
Cameroon	36.6	67
Kenya	36.1	71
Cambodia	33.8	72
India	33.5	55
Central African Republic	32.7	92
Bolivia	32.0	61
Morocco	30.9	33
Lao People's Democratic Republic	30.6	66
Ghana	30.1	70

Sources: UN-Habitat, 2003b; UNDP, 2002.

Housing and Transportation: The Pacific Asian and Latin American Ways

One important key for the people in such areas is to help them formalize their housing: to use communal self-help to provide the necessary infrastructure, so that they begin to turn their informally-built areas into middle-class neighborhoods. In countless Latin American cities, it has been happening and is still happening. In many eastern Asian cities, the approach has been different: the city itself has intervened to tear down informal neighborhoods and provide high-quality housing, first for rent, later for sale, either through public provision or, increasingly, by policies that foster the growth of owner-occupation, as in Singapore. There is no one right way here; there are different paths towards the same goal.

The UN-Habitat 2003 report contains a number of urban case studies, several located in Latin America. Bogotá demonstrates forty years of "informal" growth – here, mainly not due to squatting, but to illegal subdivision. Vast settlements such as Ciudad Bolivar, Bosa, and Usme at first lacked water, drainage, sewerage, power, education, and health care. But they saw consistent improvement, in which the city authorities worked collaboratively with local inhabitants (UN-Habitat 2004, 88).

In Bogotá, which is characterized by a special form of low-income neighborhood called the *barrio pirata* ("pirate" neighborhood), formed not through land invasions but through an informal process of land subdivision and granting of title, there has recently been a huge "de-marginalization mega-project", which between 1998 and 2000 used a budget of US$800 million to construct 110 kilometers of local roads, 2300

kilometers of drainage, six hospitals, 51 schools, 50 parks, four major public libraries and legalizing 450 settlements. It did not fully achieve these targets, falling significantly short on surfacing and lighting of roads, partly because it depended on the sale of a telephone company that failed to go through – but it is nevertheless impressive. The problem, as in so many other Latin American cities, is that though the city achieved measurable and significant improvements on key measures[1], none the less poverty rose sharply (from 35 percent below the official poverty line in 1997, to 49.6 percent in 2000) and income inequalities grew as more and more internal refugees flood into the city escaping political violence outside, causing new household formation to surge ahead of housing provision (Skinner 2004, 80-1).

São Paulo demonstrates that there are two distinct kinds of slum: *corticos* (rented rooms in subdivided inner-city tenements), of very poor quality but close to jobs and urban services, and *favelas,* found everywhere, but for the fact that in the city itself, private owners tended to regain possession of squatted areas – two only survive here, both very large (Heliópolis and Paraisópolis) but the great majority are now found in the poorest, peripheral, environmentally-fragile areas (UN-Habitat 2004, 89).

Mexico City produces two case studies in the UN-Habitat 2003 report. The first, *Nezahualcóyotl,* concerns a huge irregular settlement that developed from the 1950s on a drained lake bed outside the Federal District. Here, legal title was ambiguously legal: speculators "sold" plots and the state government subsequently regularized title. But the resultant developments lacked basic services such as paved roads, lighting, water, and main sewerage. From the end of the 1960s a citizens' movement, *Movimiento Restuarador de Colonos,* successfully campaigned to secure progressive legalization of titles and basic servicing, even extending, at the Millennium, to extension of the Metro transit system outside the Federal District. As a result, by the end of the 1990s, only 12 percent of the area was still held in irregular title. But the quality of basic services varies greatly: 63 percent of households have inside water supply, but 15 percent still have poor roofing (UN-Habitat 2004, 94).

The second Mexico City case study concerns the *Valle de Chalco Solidaridad*, a vast informal settlement southeast of the Federal District. This was an agricultural area, where in the early 20th Century, after the Mexican revolution, the land was expropriated and given to the peasants. But after 1950 the plots became uneconomic to farm at just the time when, resulting from urban sprawl, the land became attractive to speculators. The land was subdivided and sold on credit, and between 1970 and 2000 the population rose from 44,000 to 323,000. Here too, by 1998, 90 percent of the plots had regularized title, and major infrastructure had taken place. Even so, at that date basic housing conditions remained very bad: 78 percent of households had no inside water, 40 percent still had cardboard roofing, and 20 percent of households lived in one room (UN-Habitat 2004, 91).

The conclusions from these UN-Habitat case studies are very clear, and they give mixed signals. Informal settlements tend quite rapidly to become regularized, and their inhabitants to receive legal title, while services are progressively provided: first basic ones like piped water, sewers, paved streets, and street lighting, then more advanced services like schools, libraries, and even public transportation service. But the resultant provision is still incomplete, with different standards. Meanwhile, the entire invasion/improvement process ripples ever farther out from the urban core, bringing a problem of access to jobs, with long commuting distances and even longer times. As a result, the quality of transportation service becomes crucial.

Here, too, there is a basic difference in approach. Some Eastern Asian cities have deliberately encouraged high-density development which support top-quality rail transportation systems – and some, like Hong Kong and Singapore, had no choice because they had so little land. China seems to be going the same way, as can be seen in Shanghai. Some Latin American cities, in contrast, have made extraordinary innovations in operating bus systems to serve their more far-flung residential neighborhoods – and one of the most extraordinary of all, Curitiba in Brazil, has created a bus system that works like a metro railway service, with local buses that feed into an express system traveling on its own tracks; Bogotá in Colombia has developed a very similar system.

Latin American cities, above all Brazilian cities, have taken a world lead over the past three decades in developing highly innovative urban bus-based transit systems. For this there have been very good reasons. As we have seen, rail-based metro systems have been far less developed, especially 30 years ago; Brazilian cities simply lacked the resources for expensive tunneled rail systems, and made a virtue out of necessity. Curitiba's "Bus Metro" system was the great pioneer, widely hailed and now widely imitated in cities as diverse as Bogotá, São Paulo, and many others. Brazilian engineers took the lead in developing these solutions. But at their best they involved not just engineering but also planning approaches, since they integrated bus service and land-use planning.

The central feature of the Curitiba system is a variety of services – express buses running along special bus corridors, orbital services, and local services, all integrated through high-speed transfer stations at a variety of points all over the city, and used as the basis of a land-use policy that encourages high-density development and redevelopment along the express corridors. The buses on the express corridors are very high-capacity bi-articulated vehicles with a total capacity of 270, more akin to a light rail train than an ordinary bus. Painted red, they interchange at the transfer stations with buses running on orbital routes from suburb to suburb, painted green, and with local feeder or "conventional" buses painted yellow. The comparative capacities of the buses on the different systems vary greatly. All are operated privately on a franchised system. The express corridors have been deliberately developed through planning and zoning controls for very high-density, high-rise mixed development – as is very evident from the tourist's view from the top of the city's television tower.

Thus Curitiba's success became a Brazilian success. Brazilians make over 60 million bus trips a day; Americans, living in a country with twice the urban population, make only one third as many. Brazilian cities demonstrate some of the highest rates of bus ridership in the world: São Paulo and Rio between them have about as many daily bus journeys as the entire United States, which has ten times their combined population. All the major Brazilian cities have made major innovations in bus operation: in the 1970s, São Paulo and Porto Alegre pioneered the idea of running buses in convoys along a dedicated lane, and Porto Alegre developed an integrated paratransit system. These innovations were driven by necessity: bus-based transit systems average $5 million per mile ($3 million per kilometer) against $20-$100 per mile ($12-62 per kilometer) for light rail or metro subway systems. The success of these bus-based solutions – urban bus operations in Brazil yield positive net revenues of over $3 billion per year – have created a flourishing export industry, with worldwide consulting operations; the engineer Pedro Szasz, who developed the bus convoy systems in São Paulo and Porto Alegre, engineered the combination of local, skip-stop, and express services that constitute the *Transmilenio* Bus Rapid Transit (BRT) system in Bogotá (Golub 2004, 4-5; Skinner 2004, 78).

But there's an odd point: if you visit Singapore and Curitiba, the two cities look very alike, because both have integrated their land-use and transportation policies, encouraging high-density and high-rise development along their main transportation corridors. Again, there's more than one way towards the same goal, but in the end the outcomes may be very similar.

It's no accident, perhaps, that Curitiba and Singapore are now two of the richest cities in this group; in effect both have made the transition into the developed world, and both are technologically and organizationally among the world's most advanced cities. These cities are leading their countries in technological and organizational innovation, showing the way for other cities either to imitate them or to go in a different, equally innovative, direction. That is the path of rapid development.

There are some important conclusions, therefore, regarding transportation. Latin American cities demonstrate that bus-based cities do work: they can deliver good service, with high passenger volumes, at remarkably low cost. But there is a basic question. Can they do so everywhere, especially to the urban periphery? If they fail to do this, is the urban transportation problem in the largest cities destined to become steadily worse? I want to argue that it will not, because of the emergence of a new urban phenomenon: the *Mega-City Region.*

A New Urban Phenomenon: The Mega-City Region

Another key difference between the great cities of a century ago, and now, is this new phenomenon: the Global Mega-City Region (MCR). This is a pattern of extremely long-distance deconcentration stretching up to 150 kilometers from the center, with local concentrations of employment surrounded by overlapping commuter fields, and served mainly by the private car. The Pearl and Yangtze River Deltas in China and South East England, around London, are two of the world's leading examples of this phenomenon. In Pacific Asia, it has recently been predicted that by 2020, two-thirds of the population of the ASEAN group of countries will be found in only five MCRs: Bangkok (30 million), Kuala Lumpur-Klang (6 million), the so-called Singapore Triangle (10 million), Java (100 million) and Manila (30 million). In adjacent Eastern Asia, these agglomerations are even bigger: Japan's so-called Tokaido corridor (Tokyo-Nagoya-Kyoto-Osaka-Kobe) is predicted as having a total population of 60 million, China's Pearl River Delta (Hong Kong-Shenzhen-Guangzhou) 120 million, and the Yangtze River Delta (Shanghai-Suzhou-Hangzhou-Nanjing) 83 million (McGee 1995, Wo-Lap 2002, quoted in UN-Habitat 2004, 63).

The precise spatial details vary from country to country according to culture and planning regime, and for this reason population figures and predictions should be treated with caution, but the pattern is emerging very clearly and very rapidly around some of the largest cities in this second category: it is quite evident around São Paulo, and has recently been analyzed in some detail by Adrián G. Aguilar and Peter M. Ward for Mexico City (Aguilar and Ward 2003).

Latin America is highly urbanized. In 2000, in Latin America and the Caribbean, 75.4 percent of the total population, 400 million, were urban; 31.6 percent of the total population and 41.8 percent of the urban population lived in cities of more than one million, while 15.1 percent of the total population and 31.5 percent of the urban population lived in metropolitan areas with 5 million and more people. And these included some of the biggest urban agglomerations in the world: Mexico City, with 18.1 million, 2nd largest in the world; São Paulo, with 17.9 million, 3rd; Buenos Aires, with 12 million, 11th; and Rio de Janeiro, with 7.4 million, 15th. Also in this list were Bogotá (6.8 million) and Santiago (5.5 million) (UN-Habitat 2004, 64).

However, it is extremely important that the term "city", in this sense, is not the administrative entity but a much larger metropolitan area. In the largest cases, such as Mexico City and São Paulo, it is in fact an equivalent of the Asian Mega-City Region. These Mega-City Regions develop through a complex process of simultaneous decentralization at a regional scale, and recentralization at a more local scale: a process that Dutch planners in the 1960s called "concentrated deconcentration". Thus they are increasingly polycentric. In recent decades, it has been observed that central city growth has slowed while peripheral growth has speeded up. As the UN-Habitat 2004/5 report notes, "…significant shifts from city-centered to regional forms of urbanization are currently taking place" (UN-Habitat 2004, 65): multi-nodal, urbanized regional systems are developing, in which new sub-centers are independent in terms of their social and economic patterns, but are functionally linked to the big city, a process that in a recent European study we have termed *functional polycentricity* (Hall and Pain 2004). In the Mexico City metropolitan region, more than half the population lives outside the central *Distrito Federal,* which is generally regarded as the city. In São Paulo, the city contains 10 million people, just half that found in the wide metropolitan area (19.8 million). In Buenos Aires, out of a total metropolitan population of 12 million, only 3.5m live in the *Capital Federal* (UN-Habitat 2004, 65-66).

Failure to appreciate or understand this process has led to some quite serious errors. In the 1970s, urban analysts incorrectly predicted further explosive growth of metropolitan areas: Mexico City for instance was predicted in UN publications as growing by the year 2000 to 30 million. In fact, almost as these predictions were being made, growth tapered sharply and stopped at the 20 million point. There were two reasons for this, neither having much to do with planning. First, because of obvious emerging negative externalities in the Mexico City metropolitan region, migrants from rural areas diverted to second-order cities such as Guadalajara and Monterey. Secondly and even more significantly, within the general area of Mexico City, population growth diverted to "secondary cities" at increasing distances,

many informal settlements of vast size such as Nezahualcóyotl and Ecatapec, located in the adjacent State of Mexico (UN-Habitat 2004, 50, 65).

Aguilar and Ward show that Mexico City's Federal District is now merely the core of a huge and polycentric Mega-City Region stretching up to 100 kilometers and more from the Zócalo. In fact more than half the population of the region is now found outside the Federal District. Over the last 35 years, population growth has rippled out in concentric circles at steadily increasing distances from the city center, and the most rapid growth is now in the peripheral areas. This outer zone is characterized by huge informal settlements like Ecatapec and Nezahualcoyotl, with up to one or two million people apiece. Very significantly, these settlements suffered from serious deficiencies in basic infrastructure three decades ago, but had largely caught up by the 1990s (Aguilar and Ward 2003, passim). I will return to that point a little later.

Equally important however is another point: these outer areas are not just vast residential zones. They now contain economic sub-centers that are increasingly important in their own right. And in this process, which could be called the increasing "polycentralization" of the metropolitan region, there is an increasing specialization of function: the more advanced or formal parts of the economy remain within the Federal District, even in its core, while the outer centers attract manufacturing and retail functions. To the north these are dominated by heavy, large-scale and high-technology enterprises such as metal and chemical industries; to the east, they are dominated by small-scale informal activities; in some parts of this zone, significantly, there was a decline in employment in traditional craft industrial employment. But there was also a notable growth of services and trade activity in this zone along major transportation corridors (Alguilar and Ward 2003, 15-16).

This process has distinct advantages. As jobs develop in the outer rings of these metropolitan areas, the burden of commuting can lessen. In Bogotá, though population grew by 40 percent, travel distances have stayed the same (UN-Habitat 2004, 52).

The Basic Emerging Problem: Governance in the Mega-City Region

There is currently a basic problem with all these Mega-City Regions: they suffer from fragmented governance. The Mexico City metropolis has 28 municipalities, and more than half the population lives outside the *Distrito Federal*. The São Paulo metropolitan region is similarly divided among 39 districts and municipalities; Rio de Janeiro among 13 municipalities, and Buenos Aires among 20 municipalities that enjoy varying degrees of autonomy; the Curitiba metropolitan area is governed by no less than 25 municipalities (UN-Habitat 2004, 58, 66). This last case is particularly significant: within the Curitiba metropolitan area the population of the city accounts for only 61 percent of the population – and is falling. And, despite the legendary worldwide reputation of the city for delivery of highly innovative services, the evidence from the wider region is far less encouraging: 500,000 live below the Brazilian official poverty line, there are 89,000 substandard dwelling units in 903 problem housing areas, only 58 percent of the area is sewered and only 35 percent of the sewerage is treated. A regional planning authority, COMEC, has existed for nearly 20 years and has generated plans but no action, because it has no effective powers (Macebo 2004, 547-8).

In conclusion, therefore, the overwhelming need in all of these great metropolitan areas is for effective metropolitan governance across the entire Mega-City Region. Such regions are the new reality of urban existence in the 21st century. They are, as earlier stated, both the solution and the emerging problem. They are a *Solution* because they offer the prospect of re-equilibrating homes, jobs, and transportation across a new and vast spatial scale. But they are also the *Problem* because this demands effective planning, powers, and action across a very wide metropolitan scale. Unless this opportunity can be grasped, the evident risk is that such regions will be characterized by a deepening economic and social imbalance and polarization, between rich central cities and marginalized poor peripheries. The signs are already evident. There is some time to grasp the problem and resolve it – but, perhaps, less than we think.

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[1] Between 1993 and 2001, the percentage lacking more than one of five key measures – inadequate housing, lack of drinking water or sewerage, overcrowded shelter, non-attendance at school by at least one child in the household, and dependence of more than three household members on a head with less than four years of primary school – fell from 3.5 to 2.4.

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