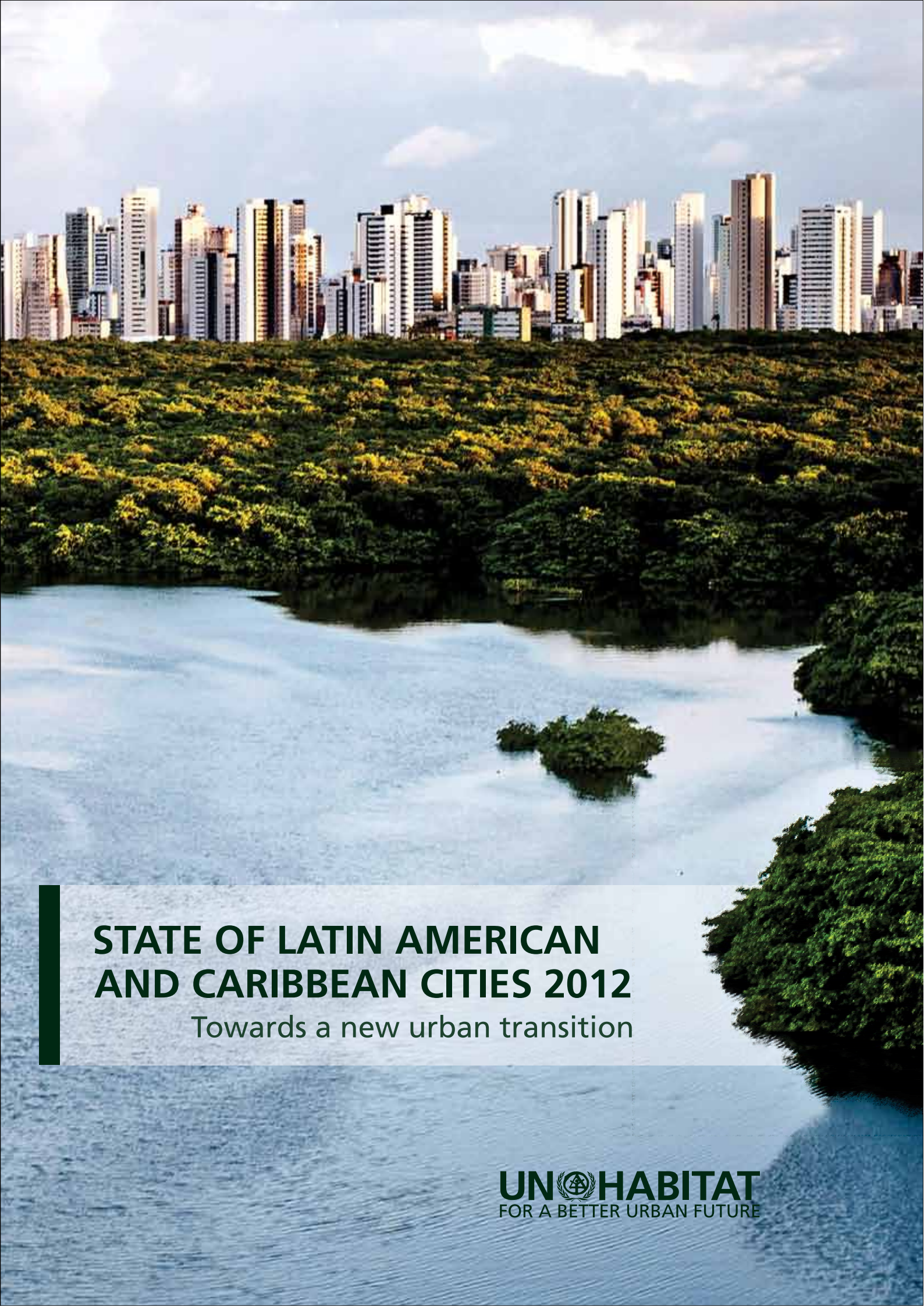

STATE OF LATIN AMERICAN AND CARIBBEAN CITIES 2012

Towards a new urban transition

UN-HABITAT
FOR A BETTER URBAN FUTURE

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THE STATE OF LATIN AMERICAN AND CARIBBEAN CITIES 2012

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NACIONES UNIDAS
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Foreword

The Latin American and the Caribbean region is considered the most urbanized in the world. It is also one of the regions where intense effort has gone into finding innovative solutions to the different challenges involved in managing cities. This report is a review of the urbanization processes and innovations in Latin America and the Caribbean, and that is what makes it especially relevant to those interested in analysing the challenges and opportunities of sustainable urban development.

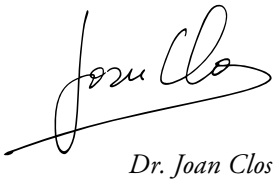
The production of this report was supported by several partners, including the Cities Alliance; CAF; Development Bank of Latin America; the Economic Commission for Latin America and the Caribbean (ECLAC); The Government of Norway; the Latin American Federation of Cities, Towns and Associations of Local Governments (FLACMA); and Ministers and High-Level Authorities of Housing and Urban Development of Latin America and the Caribbean (MINURVI), among others. Our sincere thanks go to all of them for their invaluable contributions to making this project a reality and for investing in the promotion of knowledge at such difficult economic times for the whole world.

The first urban transition in Latin America and the Caribbean is now completed. With almost 80 per cent of the population living in cities, change is now needed to the current models of urbanization. We need to set a new challenge to make urban centres more inclusive, more sustainable, with more and better-designed public spaces for people. Cities are human creations, centres of opportunity, and sources of economic, social and political development. Our future lies in them and in the spaces that we plan today for our future generations.

In this context of new urban realities, in Latin America and the Caribbean the conditions for a new urban transition are taking form, including the resources, capabilities, creativity and political will at both local and national government level. To move towards more sustainable and more compact city models that bring our urban areas improved mobility and energy-saving efficiencies, it is necessary to reaffirm our common interest in urban planning, working on social and regional cohesion policies, national urban policies, and implementing reforms to the legal and institutional frameworks.

This State of Latin American and Caribbean Cities 2012 report brings together information about the main urban centres in the region in a single document, resulting in a tool to approach public-policy making and allowing for a move towards 21st century cities that enjoy higher quality of life. This report also features many innovations and interesting approaches. From a thematic point of view it shows the renewed interest in municipal finance, urban planning and mobility, among others. From a methodological perspective, this report brings together for the first time urban data in a synthesized and accessible way and it is hoped that it contributes to improvement of monitoring systems, such as the creation of a regional observatory with updated and relevant information for developing appropriate urban policies.

Urban planning is a first step towards guaranteeing economic, social and environmental sustainability of the very urban areas where most of the population will live in the coming decades. Now is the time to take positions and decide what sort of urban future we want.



Dr. Joan Clos

Under-Secretary-General and
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La Paz, Bolivia.
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Towards a new urban transition

Latin America and the Caribbean is fundamentally an urban region and, at the same time, a region with large, sparsely populated areas. Almost 80 per cent of its population lives in cities, a higher proportion even than the group of most-developed countries, which is why the region is considered the most urbanized in the world.

In general, the process by which this subcontinent reached this level of urbanization has been positive, generating much hope but also bitter disappointments. Many of its cities have experienced traumatic transformation because of the speed and sometimes violent processes of urbanization marked by deterioration of the environment and, above all, deep social inequality.

Today, the cities of Latin America and the Caribbean are at a tipping point. After decades in which central governments and local authorities seemed unable to cope with change processes that were too fast, they have now brought together, in principle, all the requirements needed to achieve sustainable urban development in the years and decades to come.

From a demographic perspective, one could say that the urban explosion is now a thing of the past. After several decades of mass migrations from rural areas, urbanization processes are virtually completed across all the region's countries. Since the year 2000, the annual average urban population growth rate has been less than 2 per cent, a figure that corresponds to natural population growth.

In addition, several countries currently benefit from the demographic dividend in the sense that their active populations are proportionally greater than in the past, and by far exceed that of children and the elderly. This is a privileged situation that will not last for more than thirty years, and it offers an opportunity to make large investments to prepare countries for future challenges, supported by the current momentum of the active population.

Decelerated urban growth, if used properly, can help avoid those problems typically associated with fast growth, like deficits in housing and basic services, allowing them to concentrate efforts on improving urban spaces, infrastructures and existing services. Advances in the provision of access to water, sanitation, transportation, communication and other services have raised the attractiveness of Intermediatete cities, suggesting a better balance in countries' urban systems.

From the economic perspective the outlook is also encouraging. Countries in Latin America and the Caribbean are coming out of a long period of spiralling debt and they seem to be better prepared to withstand global recessions. The region has large economies that are taking on an increasingly important role in the global and regional context, and the scenarios are equally favourable in many of the smaller countries.

All of this translates into a renewed urban dynamism and the emergence of new areas of economic growth, thanks to transformations in productive processes and globalization. More than two-thirds of the wealth of the region comes from cities and, although most of the value added is concentrated in a handful of large metropolitan areas, the range of cities that contribute to that wealth has been extended and the potential product of secondary urban centres has increased.

In terms of social policy, the region's countries have shown a greater commitment to addressing persistent poverty problems and inequality. Reductions have been achieved in the proportion of urban dwellers living in conditions of poverty and in terms of improving living conditions for most inhabitants.

Generally, in the region there is the very wealth of knowledge, experience and institutional capacity required to push forward urban policies aimed at economic development and social inclusion in sectors related to housing, public spaces, water and sanitation, and transport. Cities also have active civil societies, organized and committed to reducing inequalities, thanks to historic developments in the emancipation of women, amongst other factors.

Twenty years after the first Earth Summit in Rio de Janeiro, there is obviously more awareness about the relationship between cities and the environment. Many cities have promising environmental protection initiatives with reductions of greenhouse gas emissions, recovery of rivers and coastal areas, creation of biological corridors, and the prevention of and response to disasters.

Finally, significant progress has been made in governance, mainly by way of boosting democratization and decentralization processes.

The level of female participation in politics reflects progress made in other areas, which is shown by the increasing proportion of women in local legislative bodies. The election of mayors by universal suffrage has become more widespread. Additionally, mechanisms to ensure citizen participation in government affairs have been strengthened, including mandate revocation, participatory budgets and neighbourhood commissions.

Furthermore, more responsibility has been achieved regarding the handling of resources by local authorities and with respect to the need for citizens to contribute. Important competencies have been transferred to the local level, which has favoured the emergence of stronger urban governance and, in many countries, the governments of the major cities have gained considerable space in national politics.

All of the aforementioned means we can state that Latin America and the Caribbean have the chance to escape the cycle of underdevelopment, inequality and unsustainability in which it has been immersed for decades. In this sense, the region is about to experience a new cycle of urban transition, but this time not to accommodate more people arriving from the countryside but to ensure a fundamental improvement in the urban quality of life. What we can see starting to take form is a transition to quality, equity and sustainability.

However, the encouraging analysis emerging from the trends described does not, on its own, guarantee that the virtuous circle of development can be maintained or that the benefits can be spread evenly. While it is certain that a qualitative jump is possible, it is equally true that the urban growth models promoted so far and which have been marked by a high degree of unsustainability will need to be thoroughly re-examined. Without a review of the urban development models there is a high risk of the region's cities once more embracing the demons of their past, since the challenges still remain huge.

Inequality

Viewed in aggregate, the region's cities remain the most unequal on the planet. Despite economic advances and initiatives to combat poverty, there have not been significant improvements of equality. Latin American and Caribbean cities remain strongly dual, divided, and segregated spatially and socially.

This division is expressed in a flagrant way in high urban income inequality coefficients and the persistence of informal settlements. Although, at the regional level, the proportion of population living in slums has fallen over the past two decades, in absolute terms the number has increased to 111 million people. The region's countries have adopted various housing policies, some being quite successful, but in general they have failed to respond to the needs of the poorest population sections, and they have not secured full integration of precarious neighbourhoods into the city.

In the last twenty years, public policy on informal settlements has been characterized by acceptance, legitimacy, legalization and improvements in varying degrees. Despite one or two exceptions, the large-scale land invasions and forced evictions of the past have been left behind. The informal city has come to enjoy a kind of *de facto* security of tenure. However, in many cases this has also meant stagnation, lack of development and perpetuation of social and spatial segregation.

The quantity and quality of available housing is insufficient to ensure adequate conditions for all households. Although several countries financially support families to buy or improve their housing, the mechanisms adopted are rarely accessible to the poorest and, in several countries, resulted in significant numbers of vacant dwellings. As well, they pose significant challenges regarding the quality and location of housing built, the supply of services and, in general, the urban models that these generate.

The supply of public spaces is also inequitable. Suburbs and marginal areas have limited public space and it is of poor quality. The emphasis has been on achieving security of tenure and providing basic services, which are unanimously perceived as priorities but, in most cases, the process has not gone further. Causal deficiencies were not addressed, like lack of social facilities and production structures. Moreover, the "settlement for settlers" improvement approach meant issues such as inter-urban connectivity and integration with the wider urban fabric were ignored.

Recovery of central or abandoned areas initiatives, the creation of bicycle paths and comprehensive neighbourhood improvement programmes have been highlighted worldwide, but it is not the overall trend. More frequent are cases of cities that grow with self-centred and low-quality urbanization with neither concern about the general surroundings, nor the creation of spaces for socializing other than those for consumption.

While widespread access to water and sanitation has been achieved, the poor generally still pay more for a lower-quality water service with frequent delivery cuts. There are severe limitations in terms of the affordability and financial sustainability of the municipal services provided, as these aspects do not seem to have received enough attention.

The number of private vehicles has more than doubled over a 10-year period without many responses to the challenges of urban mobility, but rather the opposite. It has generated major congestion problems. There are incentives and disincentive programmes for private vehicle use that often do not achieve their goals because they were not adopted as part of an integral city vision, including the expansion of urban sprawl.

Despite the important role of public transport, walking and travelling by bicycle, many cities suffer from high levels of congestion and at times even gridlock with attendant and significant economic, social and environmental costs.

According to surveys, violence is the main concern of citizens, ahead of mobility and employment. The cities of Latin America and the Caribbean are considered on the whole the world's most dangerous. This aspect of city life tends to become the main criterion when choosing a place to live or work. Although violence is not common to all cities, and neither is it homogeneous across the same city, those with the least income are most exposed to violence and its consequences. It is also the poor that, in general, suffer more the impacts of natural phenomena and those induced by climate change, even though they often contribute least to this phenomenon.

Although the occurrence of destructive natural phenomena is not new, their frequency and scale of impact are. This is due, in part, to poor results obtained so far in urban management and development.

Chaotic urbanization has inevitably increased the abuse of land and other natural resources. There is little awareness of how ill-conceived urban development may increase disaster risk factors and consequential material and human losses. Unfortunately, in many countries in the region, measures to reduce this vulnerability are either unknown, just not considered or simply not budgeted for.

Urban expansion

Despite deceleration in population growth, the built-up space continues to expand. With the construction of new residential complexes, shopping centres, new industrial zones and the emergence of new informal settlements, cities expand physically at rates that can be 2 or 3 times greater than the rate of population increase, resulting in a reduction in population density.

The territorial spread of cities poses great challenges for their management and sustainability. Loss of density means an increase in all infrastructure and maintenance costs. Extensive cities require more roads, more pipes, more cables, and more transport and mobility systems. Economies of scale fall and so do the benefits of agglomeration.

There is also a tendency to create gated neighbourhoods and communities, suburban neighbourhoods and mono-functional residential areas. These are short-term gain models and are derived from a vision of society in which individual comfort prevails over the collective interest or the search for social cohesion. By maintaining or strengthening spatial segregation, these models drive reproduction of inequalities and contribute to the perception of insecurity.

On a larger scale, one can observe new urban forms emerging across the region. The concentration of investments in large cities has resulted in creating a powerful point of attraction demographically and for business, and additional demand for urban space. Urban expansion has meant that many cities spill over their municipal administrative boundaries and absorb other urban centres in a conurbation process. The result has been the emergence of urban areas that have a large territorial size, sometimes formalized in a metropolitan region, comprising of many municipalities and with an intense activity across all fields.

These new urban forms have advantages from an economic perspective, but they also bring a range of new challenges. Generally, there are no mechanisms in place that would allow integrated governance of these urban areas, with consequential inefficiencies and inconsistencies in development policy and service delivery.

Management of these metropolitan areas, which is already hard enough on its own, becomes more complex when adjacent regions meet and join in mega-regions and other urban hyper-concentrations. There is still little experience in the world on how to manage the polycentric, multi-municipal regional urban systems that have recently emerged, or how to harmonize the often conflicting interests of institutional stakeholders at the lowest level - the municipalities. In the region there are also cities that are growing in border areas, which add even more complex trans-boundary aspects.

Finally, what is notable about the region is that small or Intermediatete-sized cities have enhanced their competitiveness and attractiveness as places to live. The new importance of migration between cities is undoubtedly a challenge for local authorities. Some small or Intermediatete cities undergo accelerated growth due to large-scale industrial investments. These cities generally have little room for negotiation with the entities that carry out the investments and they lack the technical capacity to lead a major urban development process. Without the appropriate technical and political support, and despite the opportunity that these investments present, the most likely result is a multiplication of precarious settlements in these cities with their already-known consequences.

Financing and Strategic Planning

The evolution of cities from physical, political, social and economic points of view poses new governance challenges. And while there have been advances in democratization and the adoption of innovative citizen participation, there is a worrying phenomenon too, with a tendency by non-state actors, private interest groups, and sometimes illegal groups to capture institutions.

The decentralization of competencies has not always been accompanied by the necessary transfer of resources and capabilities. Only the most populated municipalities manage to be self-financing, while the others continue to depend heavily on central government. Sufficient capacities have not been created at the local level, nor have regulatory mechanisms been modified which, on many occasions stops local authorities from raising their budgetary, financing and investment capacities.

One missed opportunity to finance urban development is via land surplus value payable as a result urban of investments or public policy decisions. Few countries have the appropriate legal mechanisms for this purpose but, in this case, its systematic application is also hampered by opposition from vested interests. Overall, the implementation process is frustrated by lack of political will at the local level in the name of political convenience.

Twenty years ago it was estimated that property taxes constituted less than one percentage of government revenues. While no reliable data exists, substantial improvements have been made, although the essence of the problem still exists: outdated land registers, deficient appraisal systems, and inadequate revenue collection, amongst other obstacles.

The paradigm of urban development over the last two decades has been the city. As a result of greater administrative decentralization and a sometimes better financial position, cities are better positioned than in the past to directly attract investments in an open and competitive climate. Local authorities seem determined to increase the quality of services, administrative efficiency, security, connectivity, and all other features that make a city attractive to investors and residents. However, once again, this evolution is not equal for all, and without compensatory mechanisms that facilitate more harmonious regional urban development some cities seem to be more successful in this respect than others. The concentration of investments in comparatively better-positioned urban areas threatens to deepen social and income disparities.

There are obvious limits to the ability of governments to determine or even guide investments. One of these is the persistence of fragmented and *ad hoc* problem-solving cultures where they need general and systematic approaches to strategic planning. Sectoral agendas assigned to different departments or municipal secretariats are rarely coordinated, often resulting in inefficiency and in some cases conflict. Also often missing is a strategic dimension, including an agreed spatial framework for city development and its articulation in the regional space, which can inspire, guide and coordinate the actions of individual urban development programmes.

Towards the future

The aforementioned shows that, although a new urban transition in Latin America and the Caribbean is possible, its application still faces significant obstacles. The future of cities in the region depends on the capability of local and national governments to overcome these hindrances.

The analysis carried out allows for identification of some of the keys that would make such a desperately

needed change possible in the region's cities. City models based on achieving higher levels of urban quality and sustainability can be promoted by implementing other planning, design and regulation policies.

To do so, the fundamental parameter of urban development has to become the collective interest of the urban community and generating the political will and methods to end exclusionary practices favouring the few while threatening increased marginalization of the majorities.

This also involves strengthening redistributive and social and territorial cohesion mechanisms. In the region, the debate on devolutionary and redistributive functions and transfers of fiscal and other skills between the different levels of government is still open. Considering the differences between and within countries, it is essential to promote harmonization and territorial cohesion policies to ensure equitable development for all cities and their coordination at the regional level.

Faced with budgetary constraints, it is essential to generalize urban planning and land management policies to take advantage of the value generated by public investments. Mechanisms need strengthening and promoting to guide real estate markets as agents of the collective interest, and above all, to take advantage of urban land capital gains so that these can be reinvested in the development of new services and infrastructure.

The new environmental awareness requires concrete action in all sectors. The transformation of urban areas into environmentally more sustainable models involves radical changes to curb current urban growth and mobility patterns. Ameliorating or preventing environmental disasters requires truly inter-sectoral approaches and levels of coordination that are much more advanced than those applied at present.

The region urgently needs to speed up its pace of urban reform, a term that includes reviewing institutional, operational, planning, and legislative rules and procedures to promote sustainable and equitable urban development and management. Planning, management, and government mechanisms need adapting to the new reality of urban expansion.

Finally, many of the obstacles on the path towards a new urban transition are related to limited availability of information, a deficiency detected in almost all chapters of this report. To overcome this, more effort must go to monitoring cities and analysing their behaviour, at both the local, national and international level.

There is no doubt that in Latin America and the Caribbean - a global laboratory for many innovations related to urban planning and management - the resources and the capabilities to promote new models of urban development for the twenty-first century are available; models that are simultaneously centred on the welfare of people and their inclusion in society; models that favour local employment, social and cultural diversity, environmental sustainability and the reaffirmation of public spaces.

Bogota, Colombia.
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CHAPTER 1

Population and urbanization

Summary

1. The Latin American and the Caribbean region is the most urbanized in the world, although it is also one of the least populated in relation to its territory. Almost 80 per cent of the population lives in cities, a proportion even higher than the group of most developed countries. Population growth and urbanization, processes that were accelerating in the past, have decelerated. Currently, the evolution of urban populations tends to be limited to natural growth only.
2. The number of cities has increased six-fold in fifty years. Half the urban population now lives in cities with fewer than 500,000 inhabitants and 14 per cent in megacities (more than 222 million in the former, and 65 million in the latter). Progress regarding access to water, sanitation and other services has increased the attractiveness of Intermediatete cities, which helps more balanced urban systems in these countries.
3. Mass migration from the countryside to the city has lost its urban growth-feeding importance in most countries. Migration has now become more complex and occurs mainly between cities, sometimes crossing international borders. Also relevant are population movements within cities, between the city centre and its periphery, but also between secondary cities.
4. Urban expansion has caused many cities to spill over their administrative boundaries and physically absorbing other urban centres in a conurbation process. The result has been the emergence of large urban territories, sometimes formalized in a single metropolitan area consisting of multiple municipalities and intense activity across all areas.

Keys to change

5. Demographic stability brings opportunities and challenges. On the one hand, an economically active population proportionally higher than in the past provides opportunity for large investments and prepares countries to cope with future challenges. The decelerating pace of urban growth can also help avoid rapid urban growth problems and allow for new focus on improving spaces, infrastructure and existing services.
6. On the other hand, it is disturbing to note that urban sprawl continues to expand, despite the demographic deceleration. Cities are growing in a less compact way and they are expanding physically at a rate that exceeds the increase in their population, a pattern that is not sustainable.
7. It is possible to develop a city model with higher levels of quality and sustainability by implementing other planning, design and regulation policies. To do this, it is necessary to strengthen mechanisms that can give direction to and improve real estate markets and, above all, take advantage of urban capital gains to reinvest in the development of new infrastructure.
8. The region needs to develop territorial policy and urban plans to improve current urban growth patterns, avoiding the dispersed expansion of cities, encouraging greater density, making better use of available space to avoid physical and social fragmentation.

CHAPTER 1

Population and urbanization

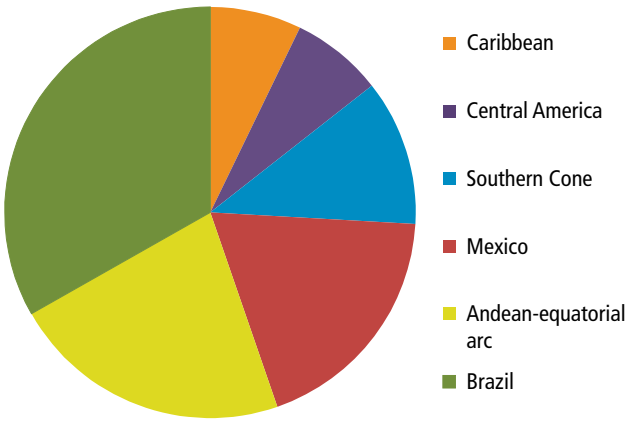
In the last century, Latin America and the Caribbean experienced a process of rapid population growth and increases in rural populations[1] which were decisive for the current conditions of life and the configuration of cities.

The region currently has an urbanization rate[2] of almost 80 per cent, the highest in the world, almost twice that of Asia and Africa, and higher than the group of highly-developed countries. A feature of this phenomenon in the region is that the rural-urban shift occurred in less than 40 years (1950-1990) and due to this fast pace it has been qualified as an 'urban explosion'.

Today, the region's urban transition is virtually consolidated and the urban population is growing at a much slower pace. But new phenomena are occurring, such as increased migration between cities, growth of secondary cities, and the emergence of mega-regions and urban corridors.

We are also witnessing significant dispersion of urban sprawl across the territory, associated with lower population densities, that brings many challenges regarding the provision of services and economic, social and environmental sustainability of these urban development models.

Figure 1.1
Latin America and the Caribbean. Population distribution by sub-regions and large countries, 2010



Source: compiled with data from UNDESA (2010). Consulted in May 2011.

1.1 Decelerating population and urban growth

Since the start of the last century, the population of Latin America and the Caribbean has increased almost tenfold, from 60 million to nearly 588 million in 2010[3]. The region now represents 8.5 per cent of the world's total population, a proportion that is projected to decline slightly through 2030.

The region concentrates a high share of its population in only two countries, Mexico and Brazil, totalling more than half the regional population (18.5 per cent and 33 per cent respectively). Central America and the Caribbean each represent seven per cent of the all inhabitants; while the so-called Southern Cone accounts for 12 per cent and the countries making up the Andean-equatorial arc represent 22 per cent (Box 1.1 in this chapter explains the sub-regional division for this report).

The relative demographic weight of each of these areas has changed little since 1970 and neither should it see major changes in the future. Forecasts indicate that, by 2030, Brazil and the Southern Cone will lose some of their share to Central America and the Andean-equatorial arc, while Mexico will remain stable.

The very rapid population growth in Latin America and the Caribbean over the last century has not been constant and, since the 1960s, the trend is towards moderation. At the beginning of this decade, the region's population increased by an average of 2.75 per cent annually, and currently it is estimated at 1.15 per cent, a rate similar to the one observed at the global level. Forecasts indicate that deceleration will continue into the future, so that the region's population will grow by less than one per cent per year in 2030, with the exception of El Salvador, where stronger growth is expected until 2025[4].

Two keys to the demographic evolution of the region have been the dramatic decline in fertility rates from 5.8 children per woman in 1950 to 2.09 in 2010[5], and a significant improvement in life expectancy over the same period, rising from 51.4 to 74.5 years.

The evolution of both indicators explains both the lower population growth and aging of the population in recent decades, a phenomenon expected to become even more

pronounced in the future. On the average, in Latin America and the Caribbean there are proportionally more people aged 15 to 64 years old (65 per cent of the population), than children under 14 (28 per cent) and over 65 years old (seven per cent).

The population structure, with more people of working age than people who depend on them, means the region is currently in a favourable situation for promoting development and allocating financial resources to savings and public investments in social areas, including the fight against poverty. This phenomenon, known as 'the demographic dividend' is however far from homogeneous and while in Chile and Cuba it is nearing its end, in others, such as Bolivia, Guatemala and Paraguay , it has only just begun.

The demographic transition described above also poses significant challenges. The evolution of fertility and life expectancy rates has been very fast and, therefore, there has been little room to adapt. At the same time, social protection systems are poorly developed in Latin America and the Caribbean, where it is also common to find high poverty and inequality rates. Within two or three decades, when today's active population reaches retirement age, there will be more pressure on pensions and healthcare systems because of the needs of the quantitatively and relatively growing elderly population.

End of the 'urban explosion'

The urbanization process - meaning the growth in the share of population living in cities - has followed a similar pattern to that of overall population growth. In Latin America and the Caribbean, urbanization was very fast between 1950 and 1990. The region went from 40 per cent of the population living in cities at the beginning of this period to 70 per cent forty years later. Since the 1990s, the urban population proportion continued to increase but at a progressively slower pace. Forecasts indicate that this deceleration will continue into the future and that the proportion of urban population will approach 90 per cent by 2050.

As in other areas, there are differences in the rate of urbanization between sub-regions and countries. Mexico and the countries on the Andean-equatorial arc follow the general pattern closely. According to an analysis by geographical area, the inhabitants of the Southern Cone

Box 1.1
Latin America and the Caribbean, one region and many realities

Population, surface area, climate and geographical conditions make Latin America and the Caribbean a heterogeneous region. The countries of the region are linked by strong historic and cultural ties, but at the same time, their differences in terms of evolution and the diversity of influences they received make their current conditions and situations very different.

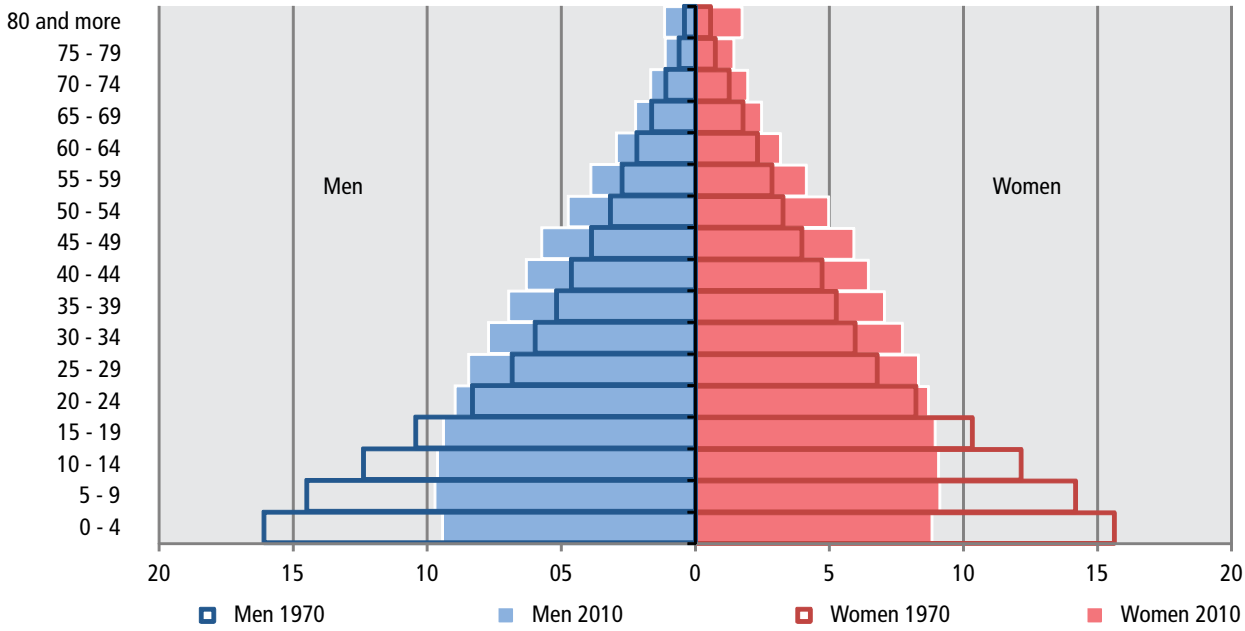
Dividing Latin American and the Caribbean into sub-regions is somewhat artificial considering political, economic and cultural aspects and also their variation in size and population. For the purpose of this report, a hybrid grouping has been adopted based primarily on geographical criteria, which allow us to visualize certain trends and synthesize complex situations to some extent.

To stop the larger countries hiding the smaller ones statistically, Brazil and Mexico, which together represent over 50 per cent of the area and population of the region, have been separated.

Argentina, Chile, Paraguay and Uruguay have been grouped as the 'Southern Cone', representing 20 per cent of the region's territory. Another 25 per cent of the surface area brings together a set of Intermediate-sized continental countries ranging from Suriname to Bolivia. These are countries from the west-northwest of South America, the so-called 'Andean-equatorial arc'.

Naturally, the 'Central America' group ranges from Guatemala to Panama (three per cent) while 'the Caribbean' group includes all islands (almost one per cent of the territory studied, but seven per cent of its population).

Figure 1.2
Latin America and the Caribbean. Population structure by sex and age group, 1970 and 2010



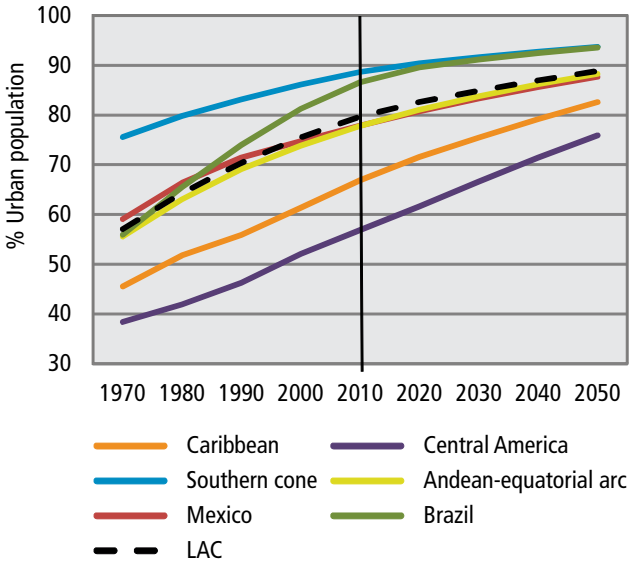
Source: Compiled with data from ECLACSTAT and UNDESA (2010). Consulted in May 2011.

are the most urbanized, followed closely by Brazil which, from the 1970s onwards, has seen particularly rapid urbanization. The Caribbean and Central America show lower urbanization rates than the rest of the region, but they are progressing constantly.

One feature worth noting is that the heterogeneity described at the sub-regional level is found within each group. In Central America, urbanization rates range from 50 per cent in Guatemala to 74 per cent in Panama. The Caribbean is more peculiar because it brings together a set of small states and territories and with varying definitions of 'urban' and socio-economic development levels that also vary widely.

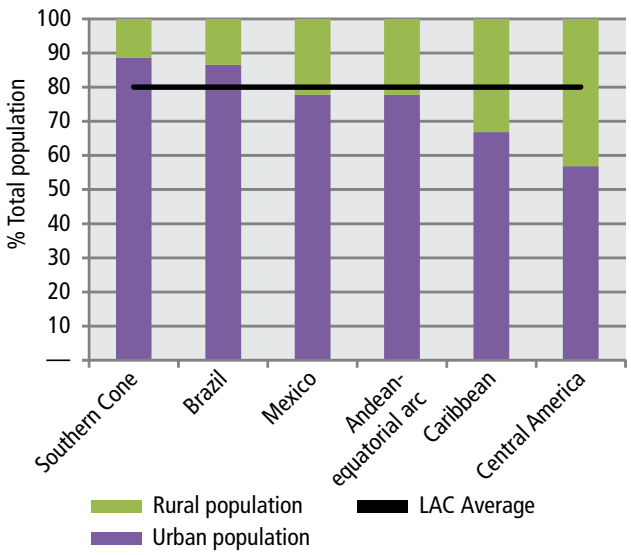
While on the average 66 per cent of the Caribbean population is urban, the national situations are mixed, ranging from 30 per cent in Antigua and Barbuda to 84 per cent in the Bahamas (while in territories such as Anguilla and the Cayman Islands the entire population is considered urban). Significant differences also exist in other areas, and, for example, Argentina, Uruguay and

Figure 1.3
Latin America and the Caribbean. Evolution and projection of the rate of urbanization, 1970-2050



Source: Compiled with data from UNDESA (2010). Consulted in May 2011.

Figure 1.4
Latin America and the Caribbean. Urban and rural population by sub-regions and large countries, 2010



Source: Compiled with data from UNDESA (2010). Consulted in May 2011.

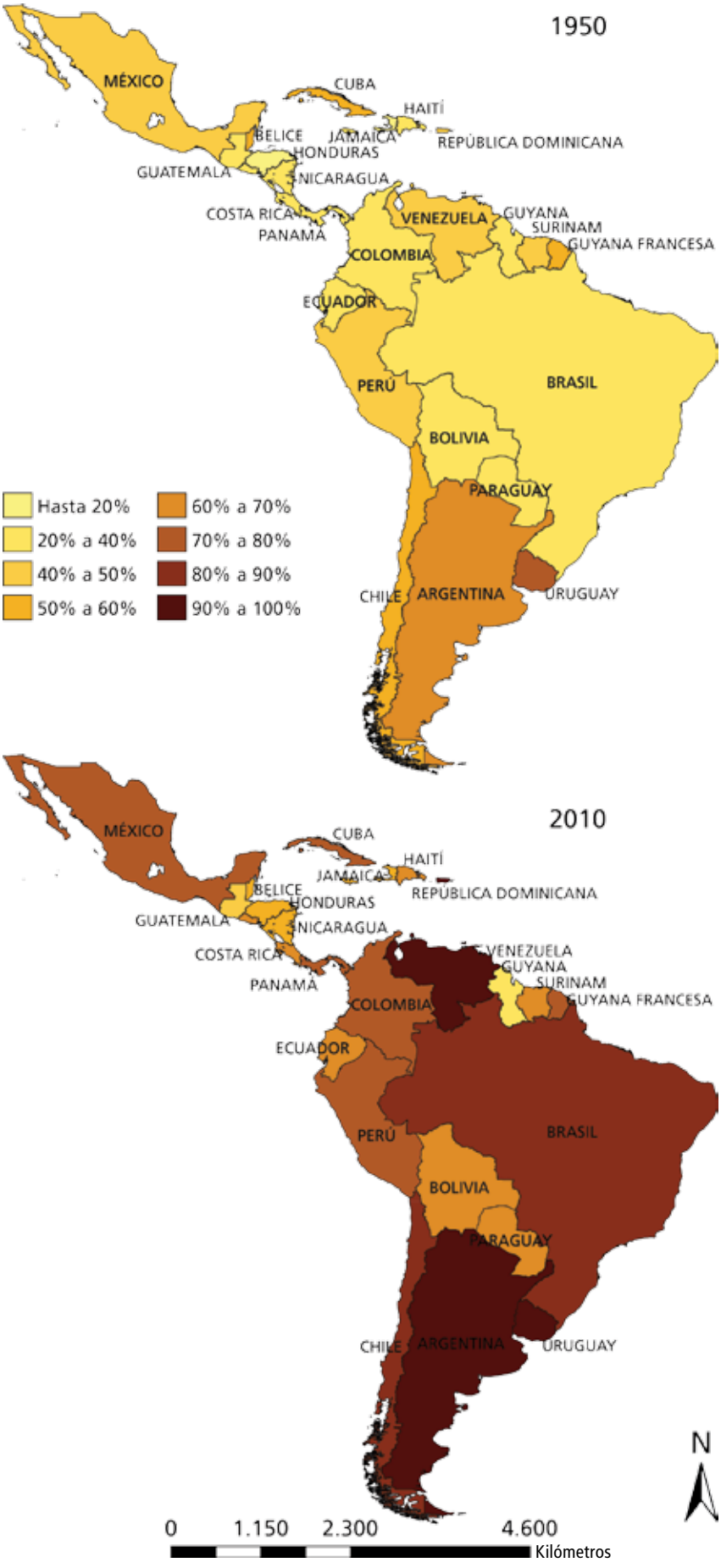
Venezuela, already had an urban majority (and very large ones in the first two) in the 1950s, while Ecuador and Paraguay did not until a quarter of a century later.

The analysis of urbanization rates should be qualified by the diversity in the definition of rural and urban areas. The classification of an area as 'urban' is a purely administrative decision and varies considerably between countries[6]. Depending on the case, the definition applies numerical census or qualitative criteria or a combination of both these. In this region, a common, albeit partial, criterion considers urban to be settlements of more than 2,000 or 2,500 inhabitants.

It is important to highlight that a built up area, which intuitively we call a 'city', does not usually coincide with the administrative boundaries. It is common, on the one hand, that the administrative area of small cities is much larger than the urban core and, on the other hand, that the physical and spatial boundaries of cities that have grown a lot overflow their own municipal territory. Adjustment processes via the administrative area or other criteria used to define the level of urbanization can generate significant variations in urbanization statistics without necessarily corresponding to changes in the objective reality of a territory.

Finally, while Latin America and the Caribbean is presented as the most urbanized region in the world, it is worth mentioning that it is also one of the least populated. The average population density is 29 inhabitants per square kilometre (inhab/km^2), a figure below the world average[7], mainly due to the very low occupancy rates in the Amazon area. Once again, this highlights the differences between regions, between countries and within these countries. Brazil and the Andean-equatorial arc countries have populations that are fairly consistent with the relative

Map 1.1
Latin America and the Caribbean. Urbanization rate, 1950 and 2010



Source: Compiled with data from UNDESA (2010). Consulted in May 2011.

weight of their regions, whilst the population density in the Southern Cone (17 inhab/km^2) is significantly lower, and much higher in Central America (83 inhab/km^2) and, above all, in the Caribbean (167 inhab./km^2).

Sub-regional differences in urbanization and the pace of these processes present diverse challenges that require policies tailored to the requirements of each country. Countries still undergoing active urban growth processes need to prepare for an increase in demand for land and infrastructure and services networks to meet the needs of those coming to the city. In countries that have reached more consolidated development processes, the main challenge is improving current living conditions of inhabitants and the pressure to set up and improve infrastructure, social services and facilities for new families.

1.2 New migration patterns

Another key component of demographic transformation in the region is migration. Historically, Latin America and the Caribbean was a recipient subcontinent of immigrants yet it became, from the second half of the twentieth century, a region of emigration. The search for higher incomes, services and opportunities, as well as avoidance of social and political conflicts, human rights violations, and disasters caused by natural phenomena have led to various international migration outflows.

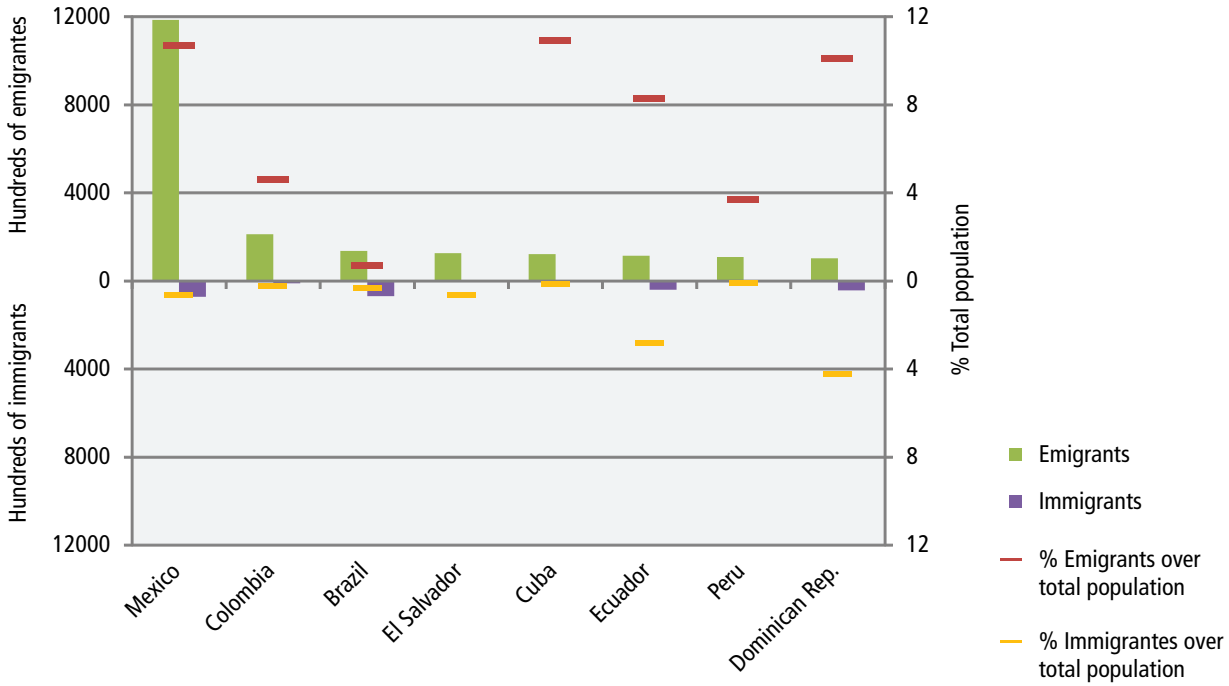
It is estimated that, in 2010, more than 30 million Latin Americans and Caribbean people (5.2 per cent) lived outside their country of origin[8], both within the region and beyond. The main destinations of emigration have been the United States of America, where the majority have taken up residence, Spain and Canada[9].

Mexico stands out as the country with the largest number of emigrants in the world (nearly 12 million Mexicans live abroad, equivalent to 10.7 per cent of its population)[10], and for being a place of transit for emigrants of other nationalities travelling on to the United States of America. After Mexico, the countries in the region with the largest number of emigrants (in absolute numbers) are, in descending order: Colombia, Brazil, El Salvador, Cuba, Ecuador, Peru, Dominican Republic, Haiti and Jamaica. The Brazilian case stands out because, although it is one of the main Latin American countries in terms of emigrants in absolute terms, these represent a very small portion of the population (only 0.4 per cent) and their principal destinations are outside the region (U.S.A., Japan and Spain).

Meanwhile, the countries of Latin America and the Caribbean are home to a total of 7.5 million international immigrants (1.3 per cent of the region's population)[11],

Caracas, Venezuela. Contrast between the towers of Central Park and the Charneca neighbourhood. © Frahydel Falczuk

Figure 1.5
Emigrants and immigrants in selected Caribbean countries
(in thousands, and as a percentage of total population)



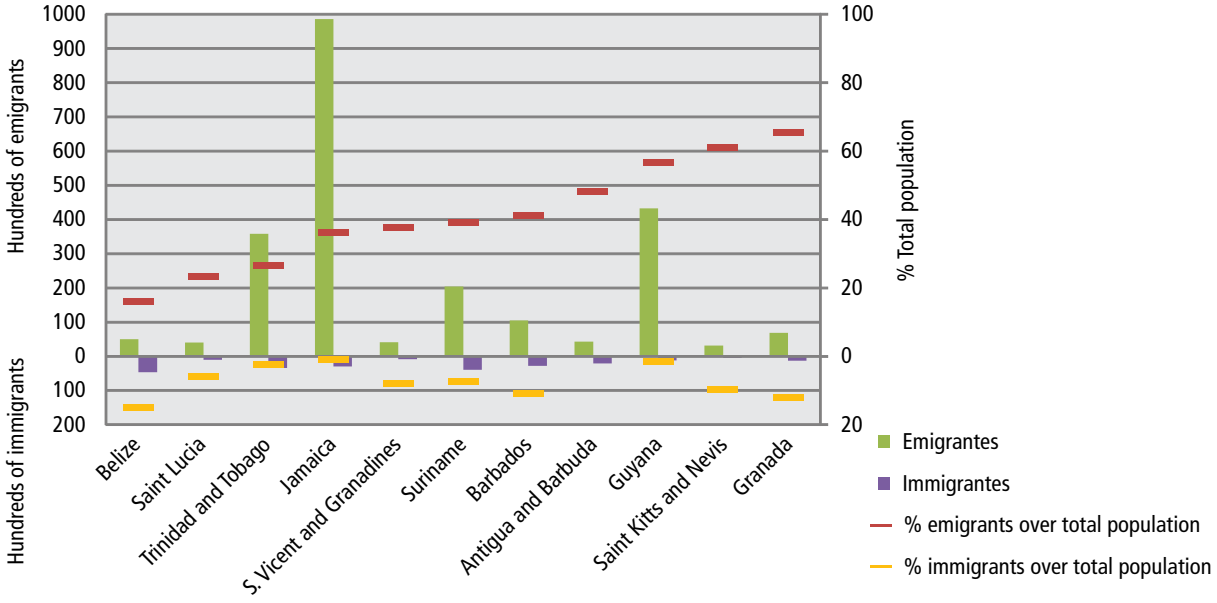
Source: Compiled with data from the World Bank (2011).

a figure that has increased by one million people since 2000[12], reflecting increased international mobility. Argentina and Venezuela are the main recipients in the region, with 1.4 million and one million immigrants respectively (approximately 3.5 per cent of their populations). Mexico stands in third place, followed by Brazil[13], and although their numbers in absolute terms seem significant, they represent just 0.7 and 0.4 of their respective populations.

These population movements occur with countries outside the region and within it. Intra-regional migration is based on geographical, historic and cultural proximity, including the support that many find due to a common language.

There are movements of people between bordering states motivated by economic or political considerations. In El Salvador, Guatemala and Nicaragua, the political violence of the 1970s and 1980s encouraged migration to Belize and Costa Rica[14], the two largest recipients in the region

Figure 1.6
Emigrants and immigrants in selected Caribbean countries (in thousands, and as a percentage of total population)



Source: Compiled with data from the World Bank (2011).

in percentage terms along with Antigua and Barbuda, and Grenada. In addition to political causes, economic reasons and the consequences of natural phenomena have also become factors. The political situation, violence and economic reasons have also motivated the departure of a significant number of Colombians.

Migration from Haiti to the Dominican Republic requires special mention, as 64 per cent of all foreigners in the Dominican Republic come from Haiti. At the same time, ten per cent of the Dominican population have emigrated to other countries, mainly the United States of America.

The Caribbean Community (CARICOM)[15] has its own dynamics, driven largely by job opportunities in tourism and increased socio-economic development relative to some countries. Around 1990, it was estimated that more than 50 per cent of the immigrants came from the sub-region[16]. The most recent data also indicate that the percentage of emigrants in relation to the total population of the country of origin is particularly high in this group[17].

Migration between cities

Migrations do not just occur between countries. The speed of urban transition outlined in the previous section is mainly explained by the mass exodus of population from the countryside to cities that happened in the last fifty years. It is a flow that is now losing its importance in urban population growth in Latin America and the Caribbean, although it is still a factor in some countries[18], especially in those with less advanced urban transitions[19].

In the 1980s, migration from the countryside contributed 36.6 per cent to the growth of urban population in the whole region, while in the 1990s this share had fallen to 33.7 per cent[20], a figure that hides a-typical behaviour in some countries (as shown in Figure 1.7). In Brazil, whose sheer size distorts the regional averages, there continue to be significant rural-urban population flows in absolute terms, although lower than other countries percentage wise.

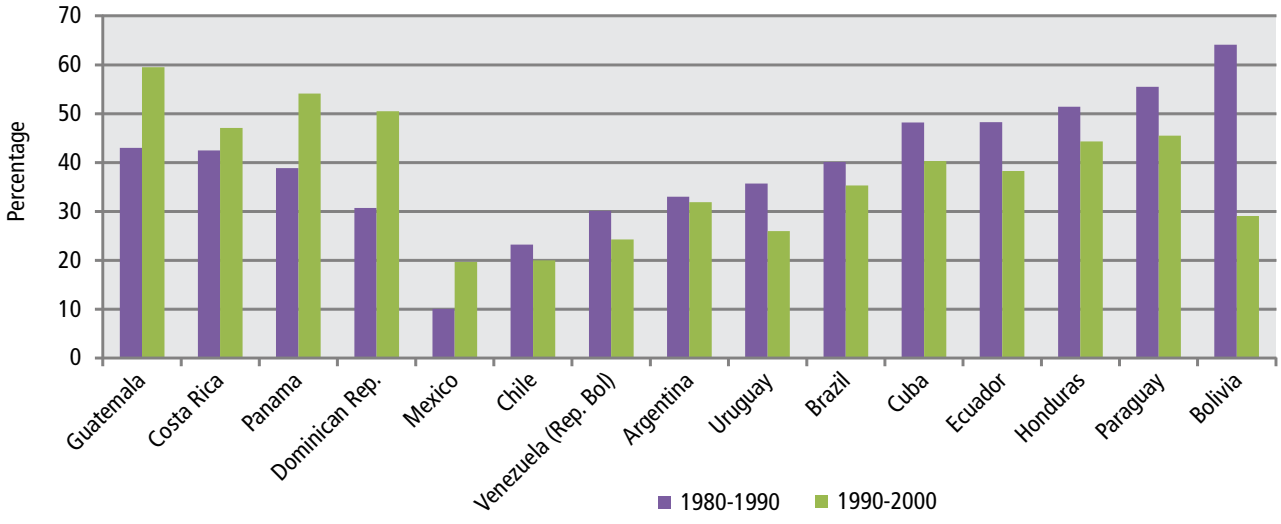
Migration between cities is more innovative, diverse and difficult to analyse, and it has become the most topical issue quantitatively in the region[21] distinguishes Latin America and the Caribbean from other emerging and developing countries.

Overall, this type of migration occurs from expulsion areas (less attractive cities in terms of economic, employment and social factors) towards recipient areas - the more dynamic and those with more potential. But this explanation is insufficient to cover its full complexity. The economic attractiveness factor needs other points adding, like the benefits of communication and location, for example, advantages of secondary cities located near a major city, or negative externalities, real or perceived, associated with many large urban areas (including higher rates of violence, congestion, high levels of pollution or higher living and land costs).

Population data analysed for a group of ten countries by ECLAC show that most of the largest cities in the region still attract more population than they expel (net immigration). Nevertheless, there are indications of a change in migratory behaviour, with net outmigration (the number of emigrants exceeding that of immigrants) found in one in three cities in the analysed group[22]. It is a discernible trend, especially in cities of more than 5 million inhabitants.

This trend, still barely studied, could be explained as due to the shifting of investments and economic activity to other areas and population movements from the central area to

Figure 1.7
Contribution of rural-urban migration to urban population growth in selected countries (1980-1990 and 1990-2000)



Source: CEPAL (2010d).

peripheral areas outside the administrative boundaries of the municipality of origin. If this trend is maintained, it could lead to a decline in the centrality of some big cities and changes in urban hierarchies, especially because of the growth and new functions of Intermediatete-sized cities.

In large metropolitan areas such as Guatemala City, Quito, Rio de Janeiro and São Paulo[23] a migratory pattern of 'concentrated de-concentration' has been observed. A portion of the population of the city has taken up residence in other municipalities, usually near the main city. This, in turn, has continued to receive immigrants from other regions in the country.

Depending on the circumstances, migrations can alter demographic distributions and eventually create territorial disparities[24] in a positive or negative way. The prevalence of young people among migrants can increase the amount of economically active population in recipient areas, while in expulsion areas there is an increase in the level of dependency due to a greater proportional presence of children and the elderly, with the risk of deepening economic and social gaps.

Regarding the possible relationship between migration and the ethnic composition in the region, data from the main agglomerations of ten countries show similar migration patterns between the indigenous and non-indigenous population in most of these cities, but there are exceptions, such as in Asuncion, Cochabamba, Guadalajara, La Paz, Mexico City and Tegucigalpa. These cities are in countries with a high proportion of indigenous population which, in the specific case of Bolivia and Mexico, receive indigenous immigrants while losing non-indigenous population at the same time[25].

1.3 Importance of secondary cities

Latin America and the Caribbean have always been characterized by concentration of population in just a few cities, which usually also monopolized the wealth, income, socio-economic and administrative functions and, in most cases, the political capital. With the proceeding urbanization processes, that type of model has been maintained with one or two major cities dominating the rest.

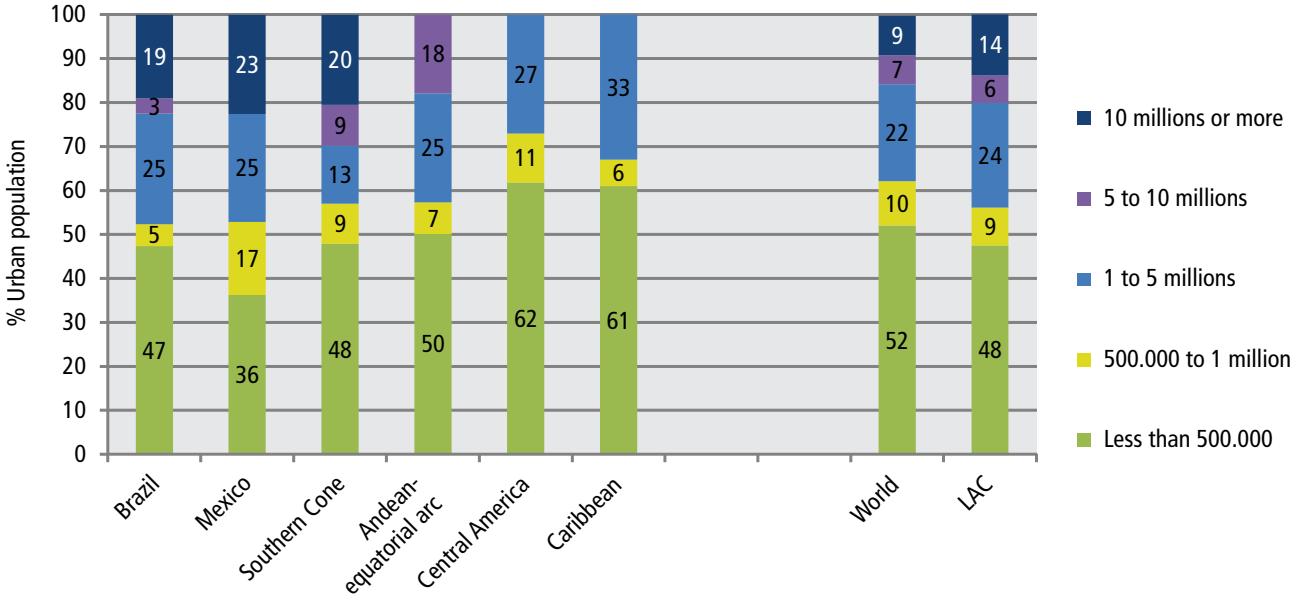
However, in recent decades, small and Intermediatete cities, where most of the urban populations live, have grown at a rate somewhat higher than the large cities, pointing to a possible rebalancing of the hierarchy of cities in the region and greater diversification.

Distribution of cities by size

Urbanization has led to an important increase in the number and size of cities in Latin America and the Caribbean. In 1950, there were 320 cities with at least 20,000 inhabitants. Half a century later, the figure was closer to 2,000[26].

The region's distribution of urban population according to city size is very similar to the worldwide one, with one important difference: the megacities of Latin America and the Caribbean account for 14 per cent of the total population (65 million), making it the region with the largest share of population in this type of city[27]. Still, it is noteworthy that more than half the region's urban population lives in cities with less than one million people,

Figure 1.8
World, Latin America and the Caribbean and geographic areas. Urban population by size of agglomeration, 2010



Source: Complied with data from UNDESA (2010). Consulted in May 2011.

La Paz, Bolivia. Contraste del centro de la capital boliviana.
© Pablo Poeta

a reality that contradicts the widely held perception that the majority of the population lives in the largest and most visible cities.

Within that general context, the lack of cities in the 5-to-10 million people bracket in Mexico needs to be highlighted, where, in addition, the proportion of people living in smaller cities is considerably lower than the remainder of the sub-continent.

In 1950, there were no mega-cities in Latin America and the Caribbean. Today, there are eight: Buenos Aires, Mexico City, Rio de Janeiro and São Paulo (all with more than 10 million inhabitants), and Belo Horizonte, Bogota, Lima and Santiago (populations approaching 10 million). This is a small group that stands out not only because of their population size, but also as they are the economic, social, cultural and, in most cases, political hubs of their country.

Far larger than the aforementioned is the number of cities with populations of 1 to 5 million people, which currently stands at 55. This includes both capitals (Caracas, Guatemala City, Panama City and San Salvador), and large metropolises, of which some are in border areas (Tijuana and Ciudad Juarez), and some deliberately established in areas without previous human settlements (Brasilia) or that developed in an accelerated manner (Belém and Manaus).

In a lower size range, from half a million to 1 million people, we find 62 agglomerations, which have between five per cent of the urban population as in the case of Brazil and 17 per cent in Mexico.

The grouping of cities with populations under 500,000 is large and diverse, ranging from very small, with rural characteristics to cities that have managed to develop an important economic fabric through the exploitation of natural resources or because they enjoy some sort of competitive advantage.

UNDESA statistics do not distinguish between sizes within the latter group. However, available data for 20 countries in the region[28] shows 1,872 cities with populations of 20,000 to half a million inhabitants, which gives an idea of the quantum leap that smaller cities represent. In addition, it is a group that has still not been studied much and which is so numerous and diverse that it escapes any attempt at systematization, consisting of towns of between 2,000 and 20,000 inhabitants, whose relative weight is progressively smaller, but wich still represents a fair portion of the urban population (19 per cent, compared with 30 per cent in 1950)[29].

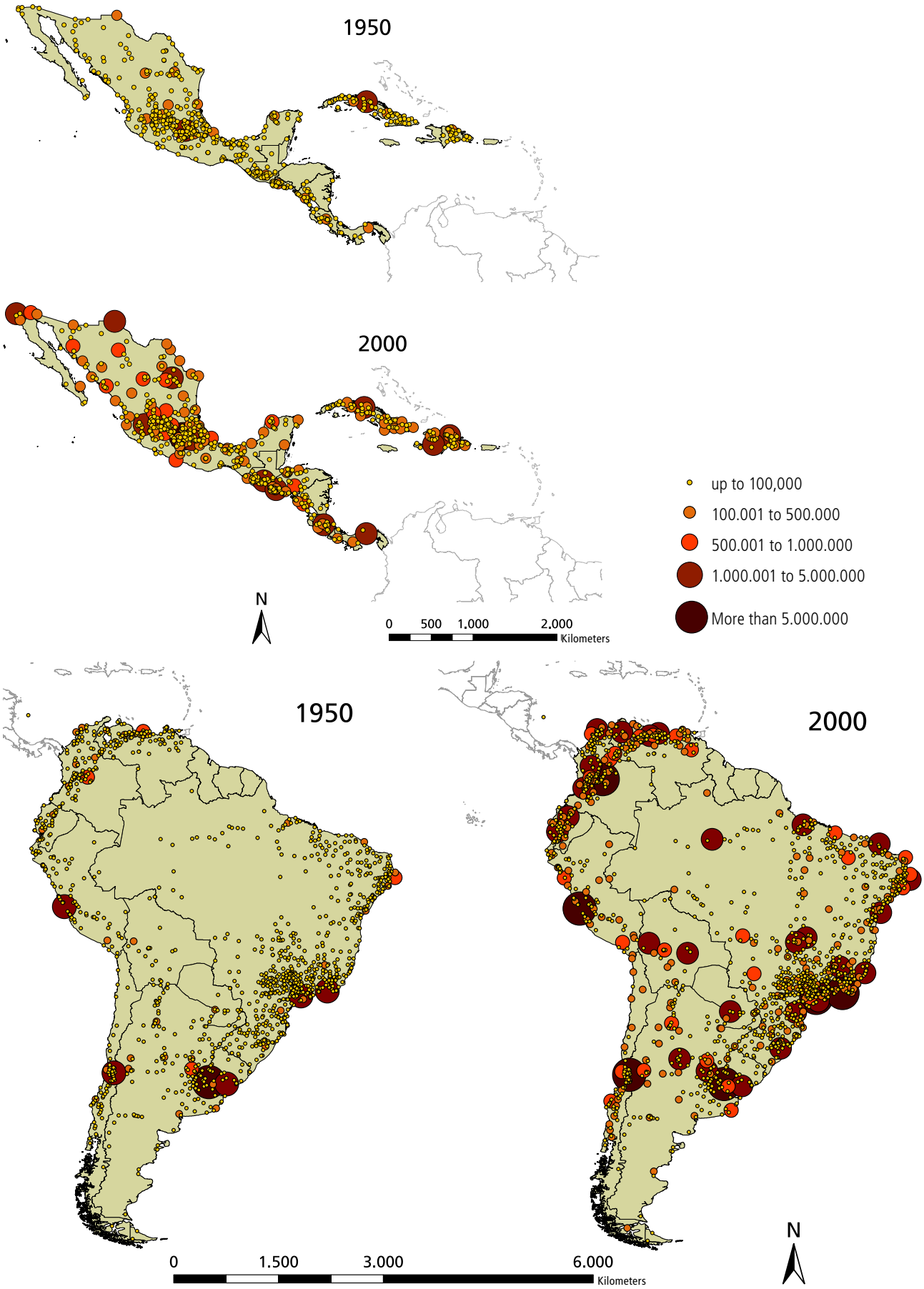
The Caribbean has some peculiarities explained at least partly by the small size of its states and territories[29].The database of the United Nations Population Division, which includes all the countries in the world, shows that there are only four cities with more than one million people in the Caribbean: Havana (Cuba), Port au Prince (Haiti), San Juan (Puerto Rico) and Santo Domingo (Dominican Republic). Kingston (Jamaica) has over half a million residents, while Nassau (Bahamas) is approaching 250,000. In all other Caribbean countries, the populations range between 3,700 in Cockburn Town (Turks and Caicos Islands), and Port of Spain's 57,000 (Trinidad and Tobago).

Cities grow at different rates

More important than the absolute number of cities or the number of their inhabitants is the pace and manner in which these agglomerations are growing and the implications for planning and management, economic development and urban sustainability.

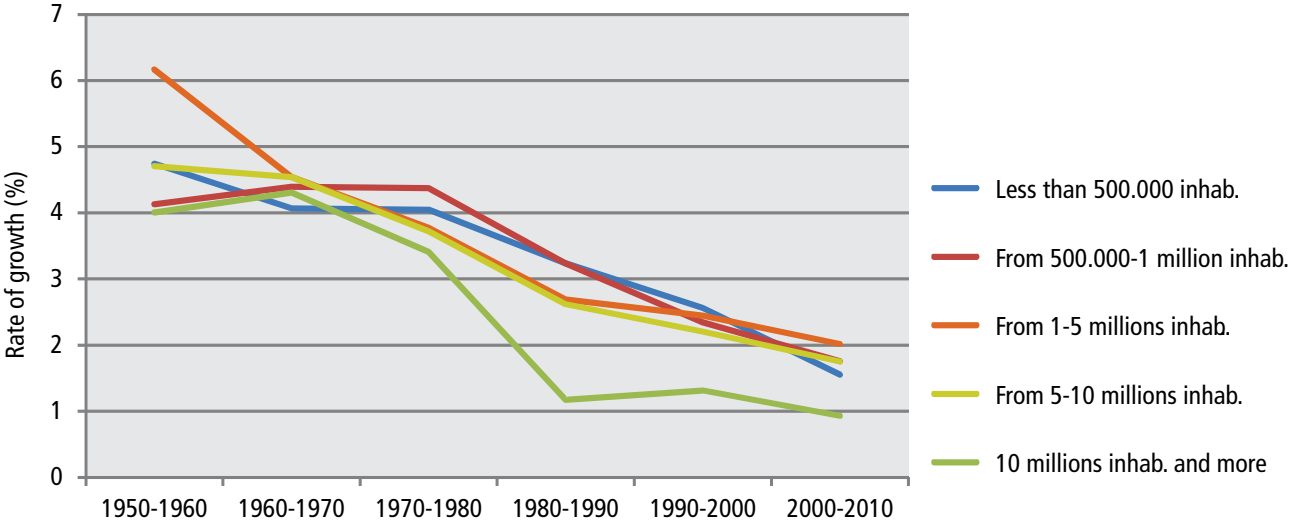
Analyses carried out using demographic data available from 1950 to 2010 shows that the average rate of growth of agglomerations in Latin America and the Caribbean is declining regardless of the population size of the country and the city. While in the 1950s this rate was around five per cent, in 2010 it was less than two per cent, which implies that, at the regional level, urban population growth has gradually approached stable rates and appears to be increasingly associated with natural growth (in a context of declining fertility rates) and less related to rural-urban migration. However, in large cities, these growth rates represent absolute figures that continue to be considerable.

Mapa 1.2
Latin America and the Caribbean. Cities with over 20,000 inhabitants, 1950 and 2000



Source: Compiled with data from CELADE, UNDESA and national censuses.

Figure 1.9
Growth of cities in Latin America and the Caribbean based on their absolute size, 1950-2010

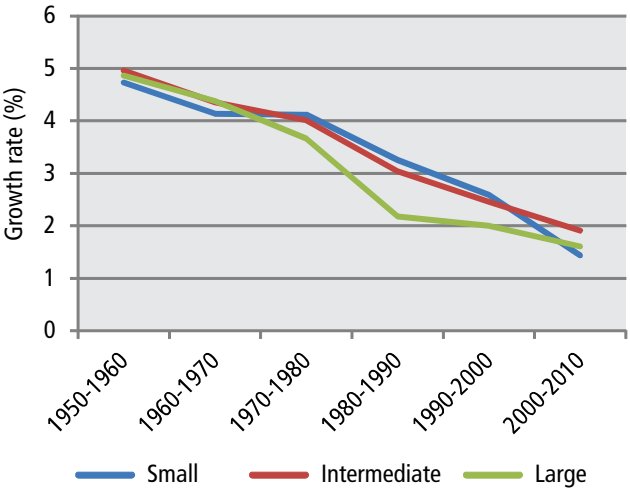


Source: UN-Habitat analysis complied from data from Urbanization in Perspective, Population Division (CELADE).

The interpretation of these data, however, should be made cautiously. Clearly, in this regional analysis, the demographic weight of some geographic areas, especially in Brazil and Mexico, could be suggesting a non-existing regional pattern.

Moreover, the data and their interpretation may be distorted by the fact that some cities change category from one decade to another because of their own demographic evolution. For example, São Paulo had 2.3 million inhabitants in 1950, but by 1970 it had nearly 8 million and in 1980 it far exceeded 10 million, an evolution that affects all city size classifications. In addition, there have been changes in names and spatial boundaries of some agglomerations, adding new areas and creating institutions that previously did not exist.

Figure 1.10
Growth of cities in Latin America and the Caribbean based on their relative size, 1950-2010



Source: UN-Habitat analysis using data from Urbanization in Perspective, Population Division (CELADE). See details in annex 3.

In general, larger cities have been growing less in terms of population since the 1970s, possibly because they are more established geographic areas. By contrast, cities with less than one million inhabitants have grown most, on the average, although for this group of cities, growth has been more pronounced in the last decade.

From demographic data for each sub-region we can infer that the rate of urban growth in the Andean-equatorial arc has tended to converge since the year 2000 and today virtually all of these cities are growing at the same pace. The Southern Cone is distinctive in that growth rates are lower and more stable. The greatest contrasts are seen in the Caribbean and especially in Central America, where the rate of urban growth is higher, which corresponds to a rural-urban transition still underway.

In order to take into account the large demographic and geographic differences between countries, it is relevant to analyse not only the amount of population in each city but also its relative size within the system of cities of the country.

In this comparison we have considered three groups of cities (small, Intermediatete and large), whose size is determined by that of the Intermediatete-sized cities in each country (between 50,000 and 1 million inhabitants). Overall, this analysis (shown in Figure 1.10) confirms the above trends.

From this viewpoint, we note that in Brazil, Mexico, the Southern Cone and countries that make up the Andean-equatorial arc, the largest cities grew least between 1970 and 2000, after which deceleration was also seen in smaller cities.

In Central America and the Caribbean each group shows large fluctuations. In these countries, the reading of the data is much more sensitive to change in classification because of the smaller number of agglomerations.

Box 1.2
Intermediatete Cities

The notion of an Intermediatete city is relative to the country's size and the structure/hierarchy of the system of cities.

Tegucigalpa and Kingston are the largest cities in Honduras and Jamaica, and the most important for their respective countries in all areas, though, in terms of population, they are equivalent to a medium sized city in Brazil and Mexico.

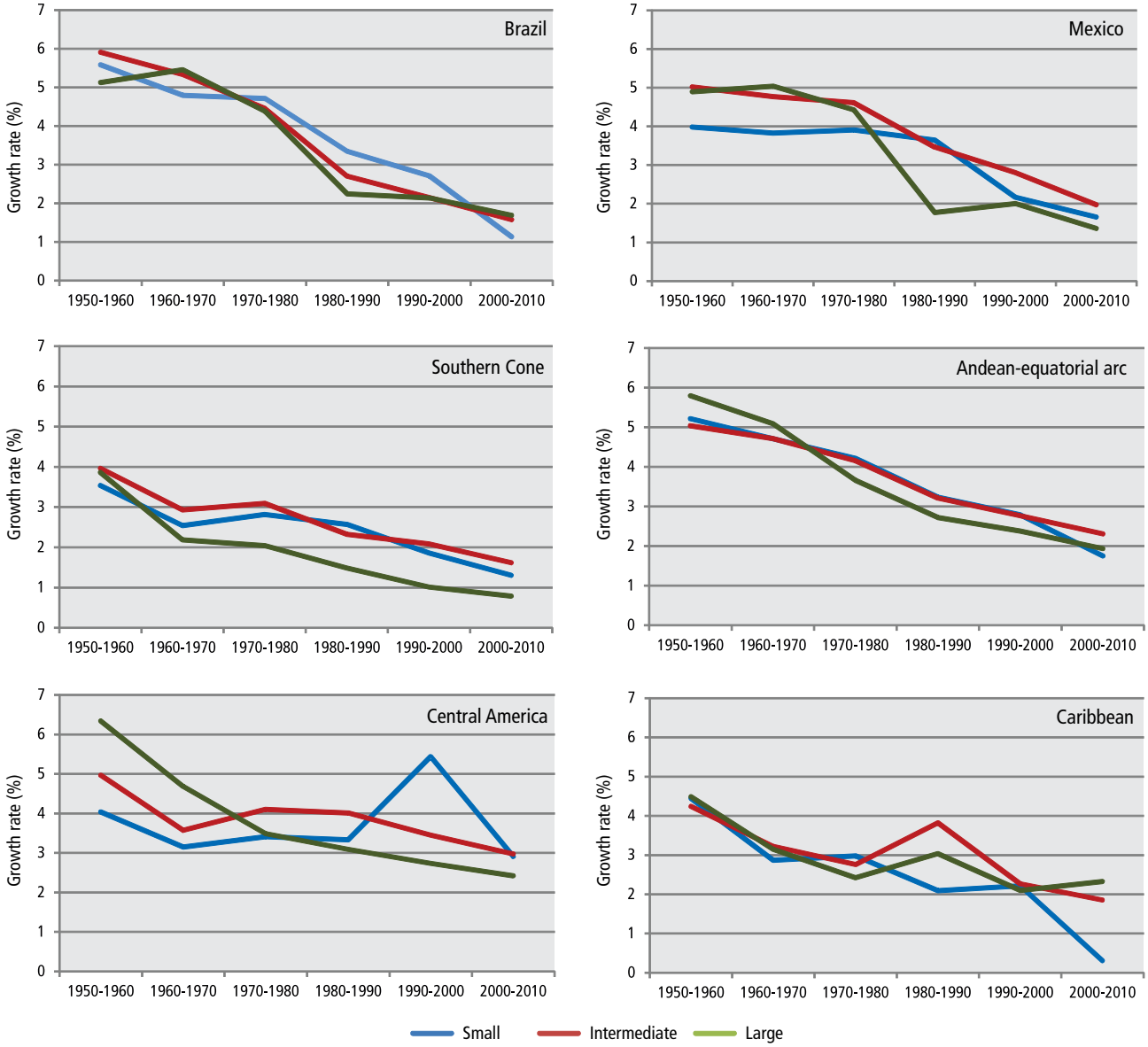
In the region, Intermediatete cities tend to have similar functions within their country regardless of the significant variations in terms of population numbers.

From this perspective, an Intermediatete city like Puerto Plata, Dominican Republic, or Oruro, Bolivia, performs functions and provides services within the country similar to the likes of Corrientes in Argentina or Goiania in Brazil.

Country size	Intermediatete city size
< 2 million inhab.	Without an urban system of cities
2-10 million inhab.	50,000-250,000 inhab.
10-20 million inhab.	70,000-350,000 inhab.
20 to 50 million inhab.	300,000-550,000 inhab.
> 50 millions inhab.	500,000-1 million inhab.

Source: Our analysis using data from Urbanization in Perspective, Population Division (CELADE).
For methodology details, see annex 2.

Figure 1.11
Growth of cities by relative size and geographic areas, 1950-2010 (per cent)



Source: UN-Habitat analysis based on data from Urbanization in Perspective, Population Division (CELADE). See details in annex 3.

The growing number of cities and the variation in their sizes have important implications for the hierarchy balance of cities and urban development policies. The higher rate of dynamism of small and Intermediatete cities refers to a diversification of the urban grid and the possibility of a better territorial balance.

With a slowdown in the pace of growth across all city groups the immediate challenges are reduced, but so too are the opportunities to promote urban patterns more oriented towards sustainability[31]. Specific cases of very fast growing cities warrant special attention, as discussed further on.

Diversification of the system of cities

The importance of having the highest growth from Intermediatete and small cities for the domestic urban network can be valued, although imperfectly, by two indices: the total population index (TPI) and the index of four cities (IFC). Both express in quantitative terms the degree of urban primacy, meaning they offer two complementary ways of measuring the demographic preponderance of the largest city within a country and in relation to the remainder of its urban network. They are also indicators that describe certain characteristics of the systems of cities in the region and some trends, but not causalities.[32]

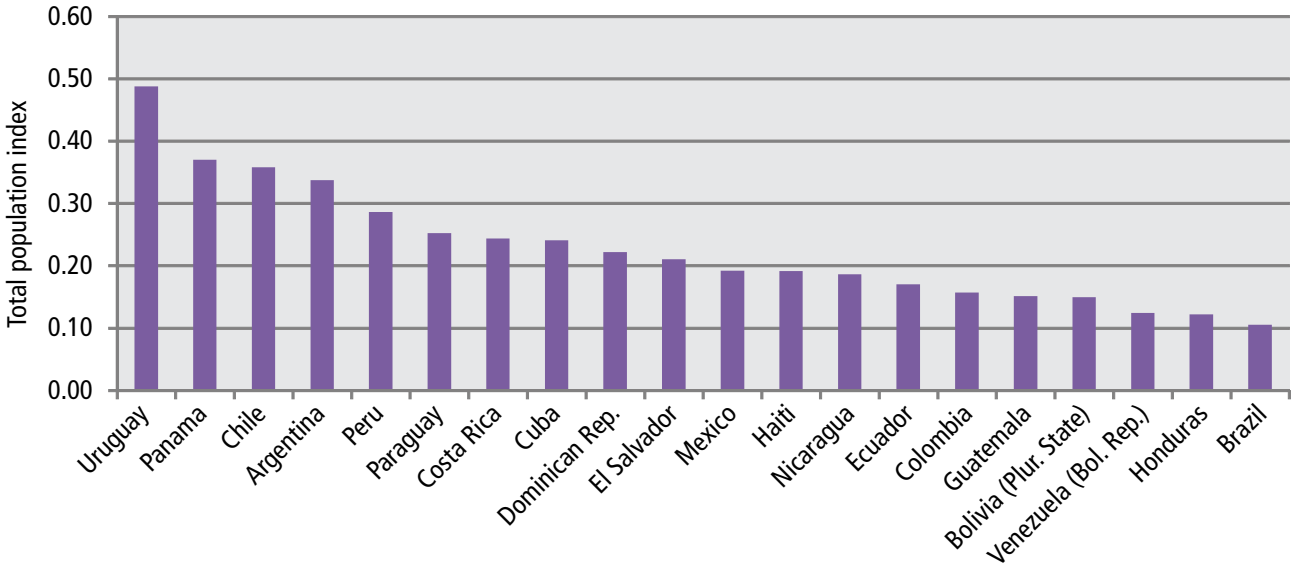
TPI is the quotient obtained by dividing the population of the first-placed city by the country's total population. The calculation for Brazil shows that only one out of every ten Brazilians live in São Paulo, which means a 'low' concentration of population even though this is one of the large mega-cities of the region. At the other extreme, in Uruguay, five in ten citizens live in Montevideo. Other countries with high primacy measured in terms of TPI are Argentina, Panama and Chile. The behaviour of TPI over time also shows that, since 1950, the demographic preponderance of the largest cities in each country has been increasing in most cases, although there are signs of stability now.

Clearly, these results are heavily influenced by the size of the country under consideration, so it may be irrelevant comparing countries as diverse as Brazil and Uruguay. The analysis would be different if, instead of considering the national level, we looked at similar-sized regional and local authorities, as in the case of Brazil, the states that make up the federation.

The IFC[33] index provides a more global idea of the urban structure because it assesses the size of the four largest cities in each country. According to this index, Uruguay is again top of the region's list in terms of urban primacy, but it is followed closely by Guatemala which, in the previous comparison, showed a moderate index rate, as only 1.5 of every ten Guatemalans live in the capital. That means Guatemala City has a strong monopoly power over the country's territory and this is not reflected by its concentration of population, because it still has a high proportion of rural population. A similar situation occurs in Peru, with the difference that Lima has a higher demographic concentration (2.9 out of ten Peruvians)[34].

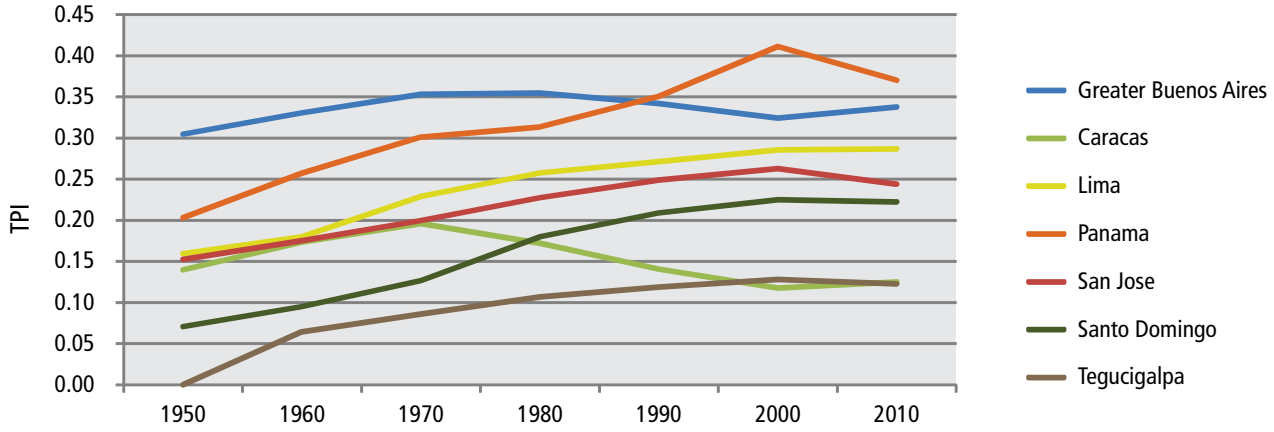
Brazil, which has a low value in terms of both indicators, is a case that stands out in the region insomuch that it has two megacities and because it has a group of large cities that act as a counterbalance, which means that there is a more diverse urban network. The same is seen, although to a lesser extent, in Colombia. In both, geographic, political and economic conditions have led to more polycentric models.

Figure 1.12
Latin America and the Caribbean. Urban primacy, 2010 (measured by TPI)



Source: Compiled with data from CELADE, UNDESA and the national censuses.

Figure 1.13
Index of primacy of selected cities, 1950-2010 (measured by TPI)



Source: Compiled with data from CELADE, UNDESA and the national census

An emerging trend showing more urban hierarchy balance can be observed in some countries. Caracas has lost its centrality and Venezuela stands out as one of the countries with an urban network that looks more likely to reach an equilibrium. The same is happening in Bolivia but, unlike the previous case, this has been achieved thanks to the growth of Santa Cruz de la Sierra which is increasingly approaching the size of La Paz. In practice this works out as a bicephalous (two-headed) system. Primacy also appears to be slightly decreasing in Mexico, Paraguay and even Uruguay.

With regard to the Caribbean, while population is increasingly concentrated in the capitals of the Dominican Republic (Santo Domingo) and Haiti (Port au Prince) and other countries such as Grenada, Jamaica, St. Vincent and the Grenadines and Saint Lucia, the situation has remained stable in recent decades.

TPI and IFC estimates of the countries in the subregion indicate that, although there are medium-sized cities that have grown in population and which are beginning to stand out as alternatives to the large agglomerations, they are still not strong enough to exert a significant impact on the urban hierarchy.

The bicephalous or monocephalous urban pattern, strengthened by the process of urban transition in Latin America and the Caribbean, is still therefore the dominant feature in the region, even though the network of cities has become more complex and while there are signs of some population de-concentration. It will take more time to see if this emerging trend is consolidated and whether the urban hierarchies of the countries in the region are moving towards a more balanced status.

The country size, topography, degree of territorial integration (mainly determined by geographical conditions and infrastructure), economic activities and the maturity of the urbanization process are all crucial in shaping economic and population concentrations, as is the level of primacy[35]. Such factors may show that a city other than the capital holds the largest demographic or economic weight, as in the case of Guayaquil, whose location and history have made it the commercial capital of Ecuador.

In the case of the region's small countries, the conjunction of multiple factors reinforces the historic monopolistic weight of the primacy city over the entire territory, as in the case of Kingston, Panama City or San Salvador.

Bogota, Colombia. Excavation for improving public roads.
© Victor Alfonso González

Esmeraldas, Ecuador. Physical expansion and economic development have led to new urban expressions. © UN-Habitat

1.4 Patterns of urban growth

The location, distribution and dynamics of cities in the region are strongly determined by geographic, political and economic conditions. Historically, the cities of Latin America and the Caribbean developed mainly in coastal areas and some strategic places in the interior, responding to colonial powers' political, military and commercial objectives. This has been the case of Potosi (Bolivia), Asuncion (Paraguay) and Cordoba (Argentina). At times, cities they replaced pre-Columbian settlements, with examples being Mexico City and Cuzco (Peru).

In more recent times, the physical expansion of cities and economic development have led to the emergence of new urban expressions across the region and established phenomena such as conurbations, metropolitan areas, mega-regions and urban development corridors.

If big conurbations pose new challenges for urban governance, a huge additional challenge has come about because of uncontrolled urban sprawl. Cities tend to occupy more land than necessary for population and urban growth, although there are tools to help make better use of land and to get more out of the network of infrastructure and expansion of basic services, which are all aspects that help ensure a better quality of life.

New opportunities, new locations

Currently, 42 per cent of the population of Latin America and the Caribbean live within a maximum distance of 100 kilometres from the coast. However, the coastal area represents only 20 per cent of the territory of the region[36]. In South America there is, besides the coastal cities, a relatively dispersed set of cities across the Andean system, several of which correspond to pre-Hispanic settlements or urban centres created because of their favourable location for production, trade or military reasons. The contrasts in mountainous areas have favoured a more linear organization in the Pacific zone and a more polycentric one in the Atlantic, where the contours are less pronounced.

In most cases, cities created by a colonial power - heavily concentrated in the coastal area because of the strategic importance of maritime routes - have prospered during the industrialization process and so maintained the competitive advantages of their coastal location.

Although relatively few, there are examples in the region of cities artificially created or planned for a specific purpose. This was the case of the Brazilian capital, Brasilia, born out of a political-administrative decision and which quickly overwhelmed its creators' population growth forecasts. Likewise Venezuela's Ciudad Guayana, founded in 1961 from the communities of Puerto Ordaz

and San Felix in its capacity as an industrial centre and river port, or the Paraguayan Ciudad del Este, created by a decree in 1957 in the tri-border area (Argentina, Brazil and Paraguay) and which has become the second-largest city in the country.

Globalization has also brought major changes for cities and opened up opportunities for Intermediatete and smaller agglomerations. With increased international trade, cities' legal, fiscal and political conditions have been strengthened. In this sense, many border cities have emerged, including Ciudad Juarez, Nogales, Nuevo Laredo and Tijuana in northern Mexico, among others.

In the same way that economic decline may induce people to emigrate, new economic opportunities, the exploitation of natural resources or tourism can stimulate the creation and growth of urban areas. Since 1950, there has been a gradual process of occupying empty or inland areas, largely related to the development of the agricultural frontier and economic development projects. This is how Manaus and Belém, in Brazil, expanded. An emblematic case of urban growth in the tourism sector is Cancun (Mexico) a fishing village in the fifties, a city with 30,000 inhabitants in the eighties, and now it has 700,000.

Large conurbations

Urban expansion has meant that many large cities have spilled over their municipal administrative boundaries and end up physically absorbing nearby urban centres via a process of conurbation. The result has been the emergence of large urban areas, sometimes formalized in a metropolitan area, consisting of multiple municipalities and intense economic activity. This is what has happened to many Latin American capitals and some large cities such as Caracas, Fortaleza, Guayaquil or Medellin.

A related phenomenon very much part of the last decades of the 20th century was the creation of satellite towns and dormitory towns near large cities and in close relation to their economic development; some are totally dependent and others have a degree of functional autonomy, but life there is closely linked to the main city.

With progressive interaction of different metropolitan areas and smaller nearby cities (industrial, services, commercial-based ones or satellite cities) the emergence of urban mega-regions has commenced, also known as urban corridors due to their typically elongated or ribbon shape because economic integration is built around a terrestrial communication route. An example of such a mega-region is the urban system formed by the metropolitan areas of São Paulo, Campinas and Baixada Santista, an area with 26 million inhabitants and which has made a name for itself as the main economic, financial and industrial centre in the country.

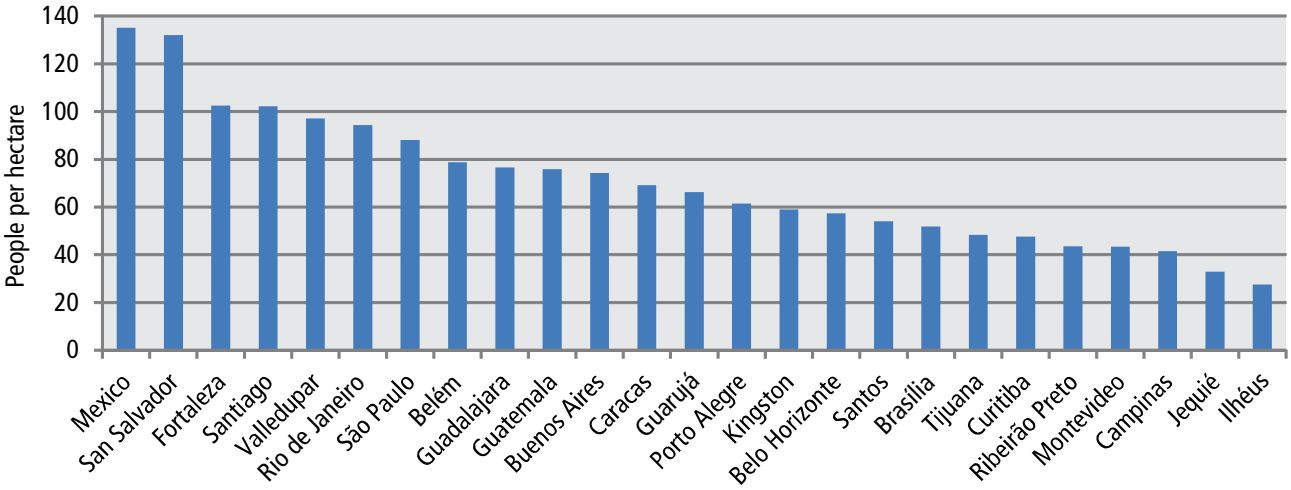
Metropolitan areas, conurbations, city-regions, urban corridors and mega-regions are new territorial expressions of the urban phenomenon that promote and support regional economic development. They are places that offer great socio-economic opportunities, but also involve daunting challenges from the social, environmental and political and institutional management perspectives.

Urban sprawl and peri-urbanization tendencies

Specific studies on how urban expansions occur in Latin America and the Caribbean seem few and far between or are too specific. Comparative analysis is particularly complex given the difficulty of defining 'urban sprawl', meaning the territory is considered 'urban' according to land occupancy and building characteristics that have shown common patterns indicating low density dispersed growth.

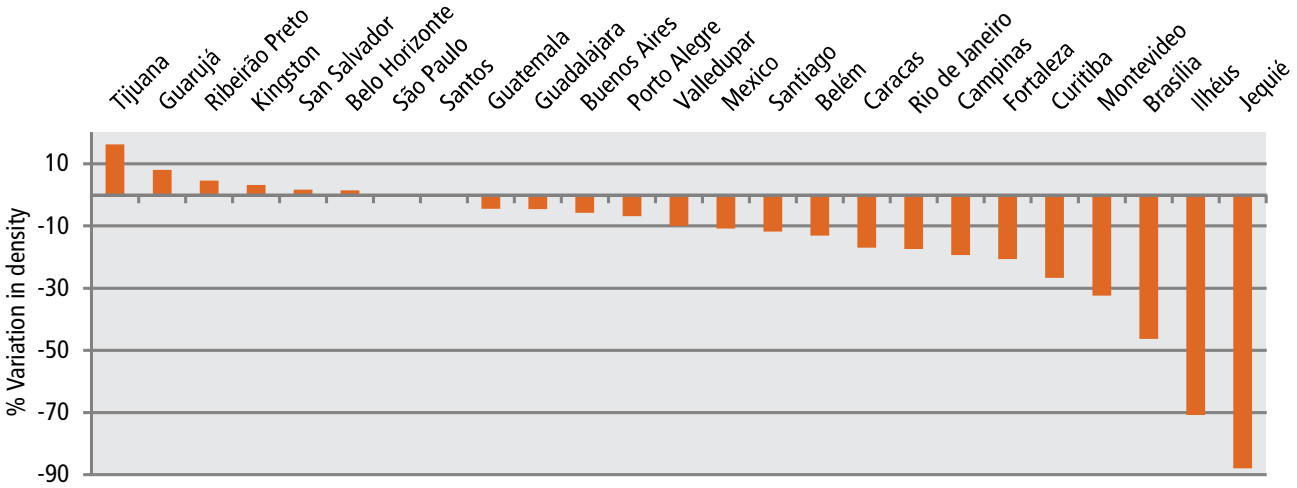
The cities of Latin America and the Caribbean are now fairly dense compared to other urban areas around the

Figure 1.14
Population density in selected cities, 2000



Source: Compiled with data from the Atlas of Urban Expansion, Lincoln Institute of Land Policy.

Figure 1.15
Variation of density in selected cities, 1990-2000



Source: Compiled with data from the Atlas of Urban Expansion, Lincoln Institute of Land Policy.

world. Data from 2000 indicated that the average urban density in the region, calculated on a basis of 25 randomly-selected agglomerations, was 70 people per hectare[37]. The cities in the region had a density similar to that observed in Europe and Africa; they were much denser than the major U.S. cities (less than 25 inhab./ha.) and much less than large Asian cities (200 to 400 inhab./ha.)[37].

Clearly, this information does not reflect intra-urban variations in population density that exist across different urban neighbourhoods or blocks, which can have a major impact on the city model, the perception of density and social acceptance. In many cities there is high density in the centre, which decreases rapidly towards the periphery. The case of Mexico City is a-typical because it contains only medium-high densities, even over a large area and in neighbourhoods located 20 km from the city centre[39].

While it is not possible to draw conclusions from partial studies, de-densification appears a trend in all cities surveyed. In 1990-2000, the number of inhabitants per hectare decreased in most of the agglomerations analysed, which means that these cities expanded with new areas less densely populated than the existing ones.

On the average, in 2000, each inhabitant occupied a larger area than in 1990 or, in other words, cities expanded spatially faster than their population growth. This is clear from the most recent estimates[40] in Mexico, for example, where on the average cities have expanded geographically three times faster than their population growth.

The propensity for urban sprawl expansion of cities has complex origins and combines many factors including urban planning controls, urban plans, the supply of transport, housing and communications, the price of land, job opportunities, services quality, identity, and lifestyle. It is also an expansion that is not limited to any social group or type of urban structure.

In the region there are examples of dispersed urban expansion from very different initiatives, like the development of closed-off housing projects in the upper and middle income brackets (gated communities) or the building of social housing projects subsidized by the state. What can also be seen is that some cities expanded in a disorderly way, with precarious and informal areas lacking in infrastructure and services, public transport or road access, the result of poverty and rapid urbanization. Each of these examples had its own dynamics, but all contribute to a general trend of spatial dispersion, with their consequential impacts and social, environmental and economic costs.

Density and urban expansion

Urban population density is a critical element for the sustainable supply of infrastructure and public and social services. It is also one of the main advantages of urbanization, since it reduces marginal costs and environmental impacts, and promotes culture and creativity. However, the dense city is not the model most wanted by the region, at least not consciously. Poor design and lack of management mean that the advantages in the short term are not always perceived.

There are many cities in Latin America and the Caribbean whose expansion plans for their peripheries use a model based on the multiplication of roads, shopping centres and gated residential communities. This model answers the multiple demands of real estate markets in a temporary fashion, but there seems to be a lack of awareness of what public powers can do to create urban structures transcending individual building projects, that cause urban areas expand with housing, at best equipped with infrastructure and services, but without creating a truly interconnected urban fabric.

Box 1.3

Three dynamics, one dispersed expansion trend

In Buenos Aires there is a tendency towards peripheral expansion for segregated housing developments for high and medium income brackets. As shown in the picture, these 'gated communities' are located along major highways in the peri-urban radius of Greater Buenos Aires with the consequential dependence on private vehicles.

Likewise, but with completely the opposite logic, and often characterized by the economic difficulties of accessing formal housing with adequate standards, informal settlements in the city of Montevideo (Uruguay) also show a significant trend towards peri-urbanisation.

In Santiago de Chile, subsidized housing projects tend to be located in areas where land is cheaper, typically the more remote, poorly connected and poorly served areas in the urban periphery, a phenomenon also observed in City Mexico.

Social housing units built in the metropolitan area of Santiago

Area	Periurban area	Metropolitan area	Total
1978-1983	3467	37908	41375
1984-1989	3575	68804	55268
1990-1995	10628	55268	65896
1996-2002	9076	37369	46445
Total	26746	199349	226095

Source: Hidalgo et al. (2008), published at CEPAL/Helmholtz Association/GTZ (2010).

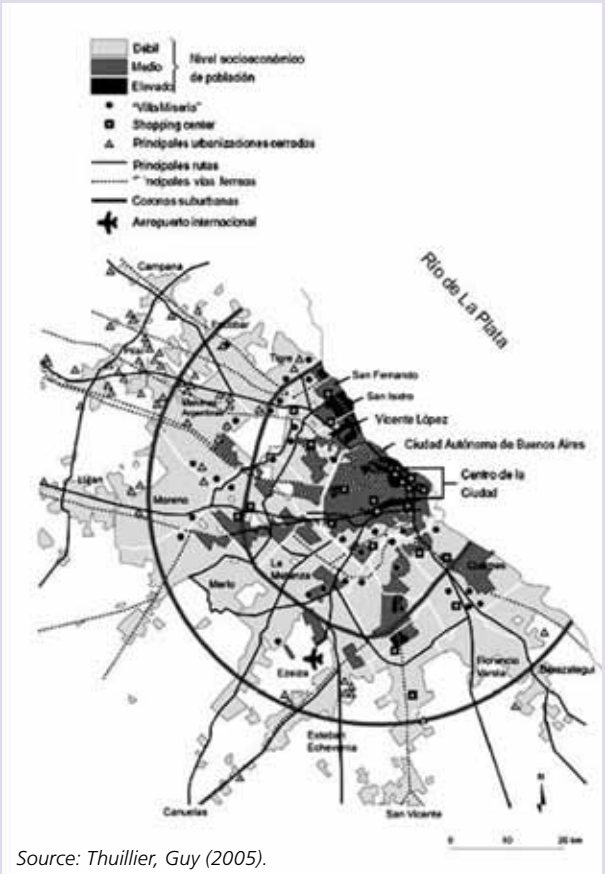
Map 1.3

Irregular Settlements in Montevideo

Source: Municipality of Montevideo.. at http://sig.montevideo.gub.uy

Map 1.4

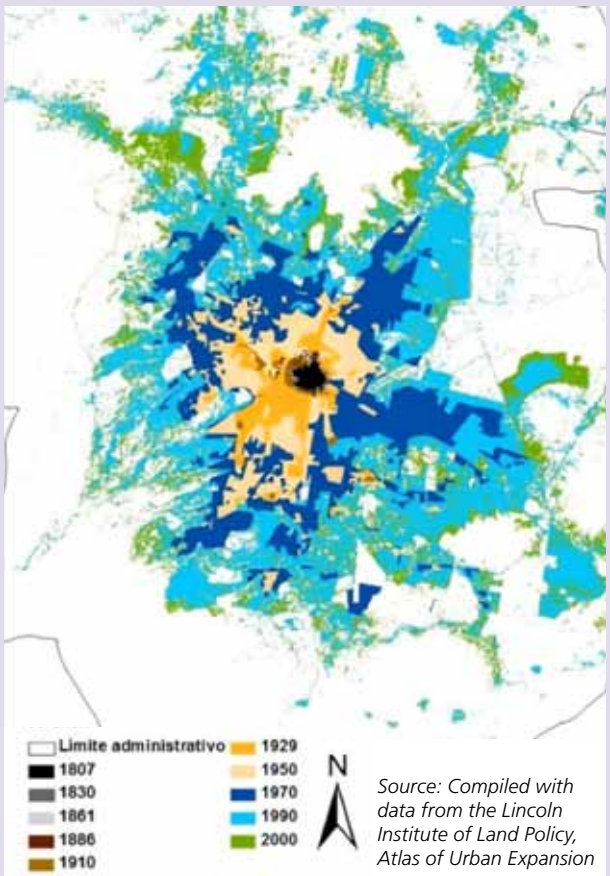
Socio-spatial Organization of Buenos Aires



Source: Thuillier, Guy (2005).

Map 1.5

Evolution of urban sprawl in Mexico, 1810-2000



Source: Compiled with data from the Lincoln Institute of Land Policy, Atlas of Urban Expansion

Belo Horizonte, Brazil. Transition to a more vertical city. © Gabriel de Sousa

Expansion without an integrated vision means that urban peripheries can exacerbate the segregation and stigmatization of communities that inhabit them. Suburbs can become poverty traps for population groups that fail to exploit the advantages offered by urbanization.

The urban expansion model is also influenced by the way land and real estate markets function. Property development mechanisms largely determine the location and characteristics of urban physical growth, while informal urbanization results from malfunctioning markets and/or territorial planning, as well as the social protection system.

In this region, urban speculation is common. In their quest for higher profits, land owners and real estate developers incorporate new land in their construction projects in the city. However, due to their remoteness they do not have adequate infrastructures and connectivity, or they are superfluous because there is free land, better located, and already prepared for development. Large land masses surrounded by public investments in infrastructure and ready for urban uses do not get realized or remain underutilized awaiting a better price, creating false land scarcity and with this the need to expand the city and extend networks and infrastructure to increasingly remoter areas.

Often, owners and developers have the necessary legal and political power to obtain land use permits at their own discretion, while legal planning frameworks are sometimes very weak and lack the required land management instruments or lack of political will prevents implementation.

Urban expansion with higher levels of quality and sustainability is possible if local governments prepare themselves early with policies for planning, design and regulation that would allow them to guide and strengthen investments and capture the associated capital gains for financing infrastructure and services. This could be strengthened with more proactive attitudes to housing markets, so that rather than trying to correct *a posteriori* the consequences of disordered urbanization, it would allow for promotion of urban development visions that are positive, equitable and more sustainable.

Notes

1. There is no globally accepted single definition of "urban area". The concept differs considerably between countries and has varied over time. Annex 1 lists the definitions of urban areas in countries found in the region.
2. Urbanization is understood as the growth of urban population in relation to the total population of a country, region or the world as a whole.
3. The time series of statistical data and future population estimates in this chapter are based on data from the Population Division of the Department of Economic and Social Affairs of the United Nations, UNDESA (2010). Consulted in May 2011.
4. This is largely due to population pyramid distortions as a result of the armed conflict that lasted until the late eighties
5. Database of the Economic Commission for Latin America and the Caribbean (CEPALSTATS). Accessed May 2011.
6. See more details in annex 1.
7. The average world population density is 51 inhab/km2. UNDESA (2010).
8. The World Bank (2011). Migration and Remittances Unit at The World Bank www.worldbank.org/migration.
9. OIM (2010).
10. The World Bank's Migration and Remittances Factbook 2011. Available on-line at http:// www.worldbank.org/prospects/migrationandremittances.
11. Estimates for 2010. UNDESA Database. Population Division. International Migration 2010
12. OIM (2010).
13. UNDESA (2009).
14. Martínez, Jorge and Vono, Daniela (2005).
15. CARICOM currently has 15 full country members: Antigua and Barbuda, Bahamas, Barbados, Belize, Dominican Republic, Grenada, Guyana, Haiti, Jamaica, Montserrat, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Suriname, and Trinidad and Tobago. In addition, Anguilla, Bermuda, Cayman Islands, Turks and Caicos and British Virgin Islands are associate members.
16. Martínez, Jorge and Vono, Daniela (2005).
17. World Bank (2011).
18. CEPAL (2007).
19. CEPAL (2010d).
20. Ibid.
21. Rodríguez Vignoli, J. (2011).
22. Rodríguez, J. (2007).
23. ECLAC (2010).
24. The effects of migration have been analysed in numerous studies by the Economic Commission for Latin America and the Caribbean, based on data from censuses and indirect estimates, which are the basis for information contained in this section.
25. Rodríguez, J. (2007).
26. Calculations based on census data for 20 countries. Rodriguez (2011).
27. In North America, which is the second-placed geographic area with most population in megacities, it represents 11.55 per cent.
28. Base de datos de la División de Población del CELADE sobre Distribución Espacial de la Población y Urbanización en América Latina y el Caribe (DEPUALC). Los países son: Argentina, Bolivia,Brazil, Chile, Costa Rica, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Dominican Republic y Venezuela.
29. Rodríguez, J. (2011).
30. In the Caribbean there are some twenty independent countries and island territories. Some of these territories are part of other states (Martinique and Guadeloupe are French overseas departments) and others are considered by the United Nations as non-autonomous territories (Cayman Islands, Turks and Caicos, and Montserrat Islands, or others), so they have a high degree of autonomy, but do not enjoy total independence from their former colonial power.
31. The fourth chapter of this report develops the aspects of infrastructure, networks, utilities and urban habitat, and the fifth addresses issues related to the effects of cities on the environment.
32. The analysis is only carried out for countries with more than 2 million people in 2010 that have a system of cities and have time series data. In this analysis we have taken data that correspond to the functional limit of the agglomeration as a whole (agglomeration criterion) and not the administrative boundary. For a more comprehensive analysis one would need a multi-dimensional set of indicators over time, but currently there is no data of this kind. To perform a causal analysis on concentrations and urban primacy, one would require studies that include economic and political power over long periods of time, exceeding the scope of this document.
33. The IFC quotient is calculated by dividing the population of the largest city by the sum of the following three largest.
34. The most recent national data show that the concentration is somewhat higher. Similar cases can occur if national figures are taken. For this study, we have taken comparable time series across countries.
35. Cuervo González, Luis Mauricio (2004).
36. World Bank (2009).
37. Study called "Atlas of urban expansion" by the Lincoln Institute of Land Policy. The methodology used pixels or coloured points in digital images to analyse selected agglomerations' urban sprawl in function of the actual occupation of land, regardless of political and administrative boundaries. Both the numbers and the maps used hereinafter are available at: http://www.lincolninst.edu/subcenters/atlas-urban-expansion/global-sample-cities.aspx
38. See http://sapiens.revues.org/914
39. Berteau, Alain, Order without design, 2002
40. Forecasts for 2009. UN-Habitat (2011e).

Contagem, Brazil.
© Marcelo Samurai

CHAPTER 2

Economic development and equality

Summary

1. Cities are the true drivers of the Latin American and Caribbean economies. The 40 main cities produce an annual GDP of more than USD 842 billion and stimates show nearly two thirds comes from urban areas, where services and industry are located. The increase in migrations has resulted in more remittances, which represent over 10 per cent of GDP in several countries.
2. Since 1970, per capita income in Latin American and the Caribbean has nearly tripled, but with wide disparities. Many cities have per capita incomes higher than their respective countries. Increases in urbanization rates have been constant in all countries, but the evolution of per capita income has been more cyclical, sometimes falling.
3. Latin American and the Caribbean have made significant progress in their fight against poverty over the past 10 years. The proportions of urban poor have fallen, but in absolute terms, numbers are still very high. About 124 million urban inhabitants live in poverty, or one in four urban dwellers.
4. Besides poverty, the region suffers from serious and persistent inequality. Income inequality is extremely high. Although there is a significant shortfall of formel employment opportunities there is abundant informal work, which is mainly taken by young people and women. Inequality is also expressed in socially and spatially-divided cities, despite the many opportunities for economic and social development that urbanization offers.
5. In economic terms, the relative weight of megacities is declining in favour of smaller cities that offer more competitive terms. Particularly dynamic are the border cities that benefit from huge investments in industry and cities in economic corridors or on the outskirts of large conurbations.

Keys to change

6. To overcome social and urban fragmentation and segregation, urban cities need strategies that combine economic growth with policies that address income inequalities and quality of life, as well as measures aimed at social and spatial integration. To this end it is crucial to coordinate national economic policies and urban development strategies, both in cities and regions.
7. Possibilities for socio-economic development exist due to the emergence of new economic centres and the consolidation of new urban configurations and their interconnection with cities. However, they also risk creating new and greater social and spatial disparities. To mitigate this and remain competitive, large urban areas need to implement more inclusive policies.
8. Rapidly growing new economic hotspots need special consideration because of the challenges they pose. Few local governments are prepared to accept changes of this magnitude. Without technical and political support, cities run the risk of repeating growth scenarios with informal and unstructured settlements with their associated economic, social and environmental consequences.

Economic development and equality

The Latin American and Caribbean economic model went through a series of transformations in the 20th century that brought about profound demographic and social change. These are reflected in the evolution of urban population concentrations and the increasingly important role of cities in the national economies.

The region's economies have grown in recent decades, but in a context of volatility, especially of late[1]. The wealth generated and the modest progress made in the fight against poverty since 1990 have not significantly reduced inequality gaps. Large segments of urban populations are trapped in vicious circles of poverty and inequality, which results in socially and spatially divided cities, despite the abundant opportunities for economic and social development that urbanization offers.

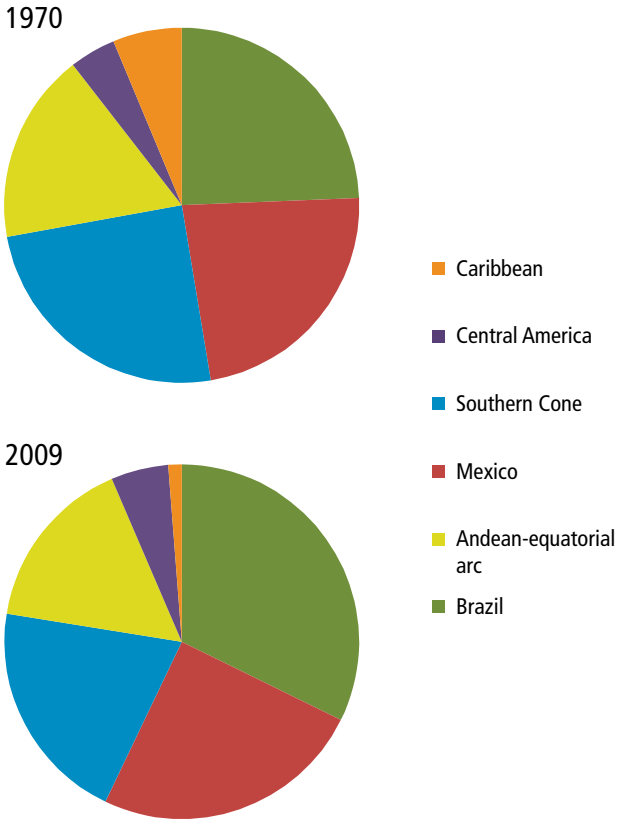
2.1 Economic performance and poverty

From a global perspective, the region's share of the economy has changed little in recent decades. In 1970, it contributed 6.5 per cent to the world's value added, while that figure currently stands at 7 per cent, as the region accounts for 8.5 per cent of the world population[2].

The regional economic situation is heterogeneous, with emerging economies that have gained global significance, led by Brazil, and others making slower progress.

Gross domestic product (GDP) in the region is unevenly distributed: 32 per cent is attributed to Brazil, 25 per cent to Mexico, 21 per cent to Southern Cone countries, 16 per cent to countries in the Andean-equatorial Arc, 5 per cent by Central America and only 1 per cent from the Caribbean[3]. Brazil's economic contribution is proportional to its demographic weight; Mexico and the Southern Cone contribute more to production than their share of population, while the countries of the Andean-equatorial Arc, Central America and the Caribbean contribute less than their relative weight in terms of regional population.

Figure 2.1
Latin America and the Caribbean. Regional GDP share of sub-regions and large countries[a], 1970 and 2009

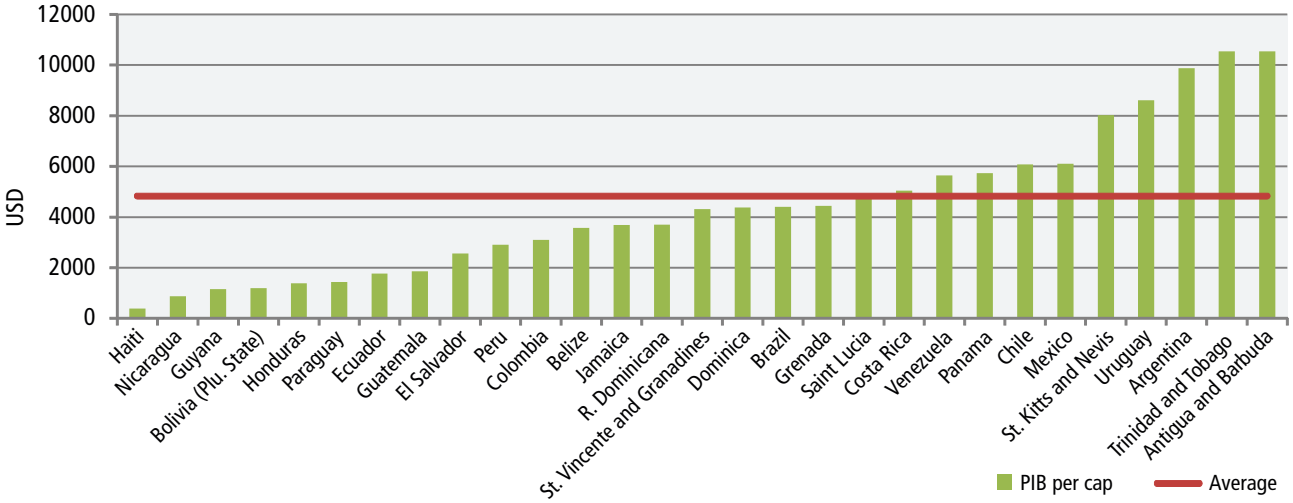


[a] Dividing data into sub-regions follows the same criteria as Chapter 1 (see Box 1.1).

Source: Compiled with World Bank data. Consulted July, 2011.

The main changes in the region's economy between 1970 and 2009 included an eight per cent increase in Brazil's contribution to GDP, a modest increase from Mexico and Central America, and a sharp fall from the Caribbean. In the case of the Southern Cone, the decline was mainly due Argentina's lower share.Los principales cambios en el escenario económico regional entre 1970 y 2009 fueron el incremento del aporte de Brazil en el PIB (en ocho puntos porcentuales), un aumento modesto de Mexico y Centroamérica, y la fuerte contracción del Caribe. En el caso del Cono Sur, la disminución se debió, en buena medida, a la Small participación de Argentina.

Figure 2.2
Latin America and the Caribbean. Countries' GDP per capita, 2010



Source: Compiled with data from the World Bank National Accounts. Consulted July 2011.

Since 1970, Latin American and Caribbean per capita income has nearly tripled. But GDP per inhabitant is only a partial indicator, because it does not show the distribution of income. However, it does provide an overview of the region-wide situation and provides a first look at the complexities of income inequality and opportunities between different population groups. In 2009, the average per capita income stood at USD 4,823[4], compared with a world average of USD 5,868. This figure masks wide disparities at all levels: among and within countries, and in the same city.

The extremes of income distribution are found in the Caribbean. In 2009, Antigua and Barbuda, whose small population and economy rely primarily on the services sector, had a GDP per capita 27 times greater than Haiti, which has the lowest per capita GDP across the region. Likewise in the Southern Cone, where Argentina has an average per capita income seven times that of Paraguay. Among the Andean countries, Venezuela's per capita income is five times that of Bolivia, while in Central America, Panama's GDP per inhabitant is six times that of Nicaragua, whose economy still suffers from the burden of foreign debt.

The importance of remittances

One important economic phenomenon for many countries, linked to increased transnational migration, is the flow of remittances which have increased ten-fold over the past twenty years[5]. Estimates by the Multilateral Investment Fund show emigrants' transfers amounted to almost USD 56.9 billion in 2009 and 58.1 billion in 2010, a figure that would be even greater, if funds sent through informal channels are also taken into account[6].

In absolute terms, Mexico is by far the largest remittances-receiving country (USD 22.6 billion in 2010), followed by Brazil and Guatemala (USD 4.3 billion each). But if measured as a percentage of GDP, the main recipients are Honduras (19.3 per cent), Guyana (17.3 per cent), El Salvador (15.7 per cent), Haiti (15.4 per cent), Jamaica (13.8 per cent) and Nicaragua (10.3 per cent)[7].

Not only are remittances important for national economies, they have also become a basic component of many families' incomes. In Mexico, more than 60 per cent of the households declaring remittances belong to people in lower income groups, while only 4 per cent were from the highest income quintile. The situation is similar in

Victoria, El Salvador. Poverty rates in the region are usually higher in rural than in urban areas. © Oscar Armando Payés

Box 2.1
Methods for measuring poverty and inequality

There are different ways of measuring poverty, but the most common are based on income (an indicator linked to wider economic factors) or the satisfaction of basic needs (characterized by a longer-term process). Both attempt to measure where the standard of living of the population falls below a base line; the difference is that the first measures whether the monthly household income meets basic family needs, while the second evaluates if these needs have been covered in practice.

The World Bank considers people 'poor' if living on less than two dollars a day, adjusted for purchasing power parity, and 'destitute' (or in extreme poverty) those surviving on less than one dollar a day.

ECLAC applies the cost method of basic needs. It uses 'poverty' and 'extreme poverty' lines through a calculation of the minimum income required to meet basic needs, taking into account the local currency, cost of a basket of basic food (specific to each country), feeding habits, food availability and relative prices (taking into account the price differences between rural and small urban centres and metropolitan areas). By this method, 'extreme poverty' is considered households with incomes up to 0.6 poverty lines, and 'poor' to be households with incomes between 0.61 and 1.2 poverty lines. A limitation of these indicators is that they do not include a weighting for the costs of housing or differences between or within cities.

One concept linked to poverty that assesses the coverage of basic and complementary needs is the human development index (HDI), developed by the United Nations Development Programme (UNDP) in 1990. Currently, the HDI calculation involves four indicators: per capita income based on purchasing power parity, level of education, life expectancy and a 'multidimensional poverty index'. The latter includes health and quality of life variables in order to more comprehensively express the condition.

There are other measurements of inequality, with the Gini coefficient the most common. This coefficient assesses income inequality in a country or city based on individual income distribution on a scale from zero to one, whereby zero represents a fully equitable distribution, and one represents maximum inequality. Measurement of socio-spatial inequalities is still in its infancy.

In Latin America, progress towards meeting the Millennium Development Goal on poverty is evaluated against national poverty lines estimated by ECLAC.

Paraguay, although with somewhat different proportions. In other countries, like Nicaragua and Peru, the situation is reversed. There, the proportion of high-income bracket households receiving remittances is greater than that of low-income families[9]. Although the number and profile of beneficiaries differ between countries, remittances are an indispensable resource for many to cover housing needs, health, food or education[10].

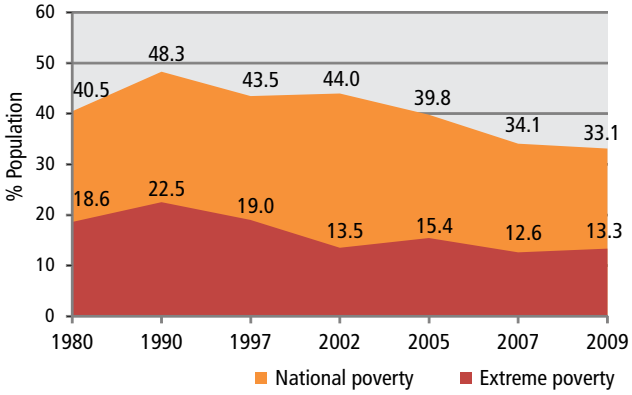
Poverty and inequality still unresolved

Since the Millennium Declaration was adopted in 2000, Latin America and the Caribbean have made some progress in reducing poverty (the first of the objectives set out in this document), but the gains have been quite modest compared to other developing regions[11]. Currently, 180 million inhabitants in the region (33 per cent) live in poverty and of those, 71 million are destitute (13 per cent)[12].

The region's major advances towards poverty eradication have occurred over the past decade[13], mainly through combinations of growth in average incomes and slight improvements in its distribution[14]. Analyses by ECLAC show that the share of population living in poverty dropped from 48 to 33 per cent in the period 1990-2009. This decrease puts the region on track to meeting the first of the Millennium Development Goals, although the absolute number of poor has not fallen. Rather, ithis figure is now higher than in 1990.

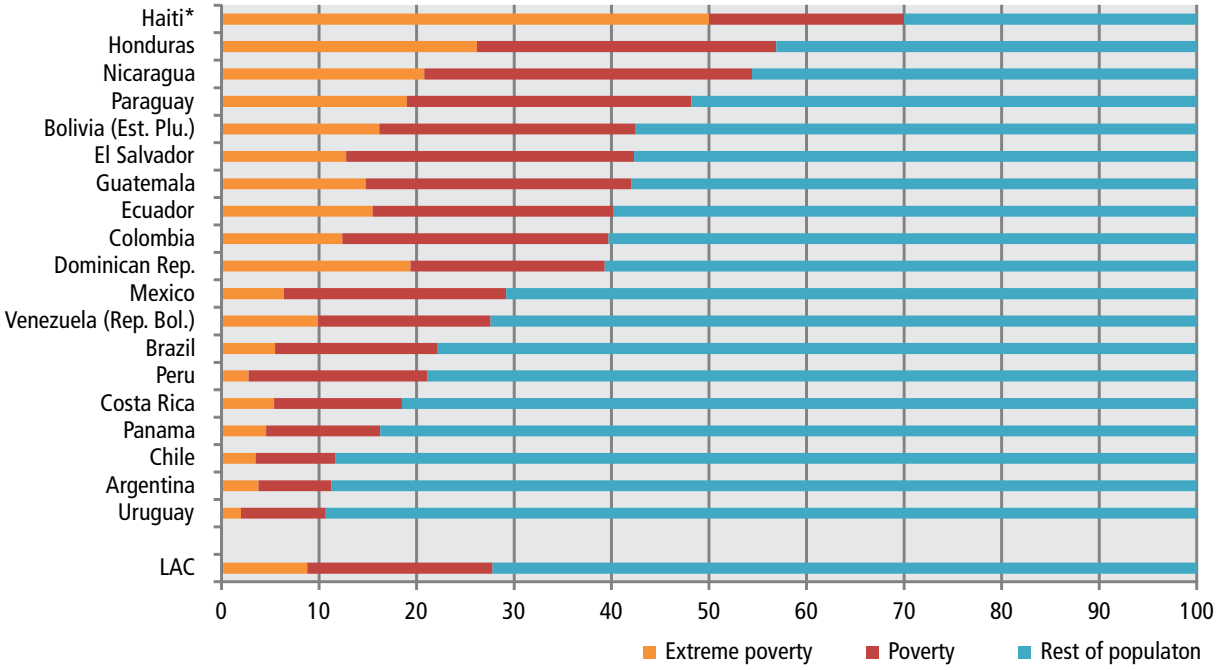
Living conditions show wide contrasts, according to statistical data. While Argentina, Chile and Uruguay have low national poverty levels (less than 12 per cent of the population), more than half the people of Bolivia, Guatemala and Paraguay are poor, while in Nicaragua and Honduras the rate exceeds 60 per cent. The most dramatic case is Haiti where, according to UN studies conducted after the earthquake that devastated parts of the country in 2010, poverty has increased to levels only seen a decade earlier when the 'poor' accounted for over 70 per cent of the population and the 'extremely poor' 50 per cent[15]. In absolute terms, of the approximately 124 million poor people in the region's cities, more than half live either in Brazil (37 million) or Mexico (25 million).

Figure 2.3
Latin America and the Caribbean. Evolution of poverty and extreme poverty, 1980-2009



Source: Compiled with data from ECLAC (2010a).

Figure 2.4
Latin America and the Caribbean. Urban poverty rates[a],2009



[a] Data for Nicaragua are for 2005, for Guatemala 2006, for Bolivia and Honduras 2007, for Mexico 2008. Data for Haiti and Venezuela are the national and extreme poverty rates.

Source: ECLAC (2010a).

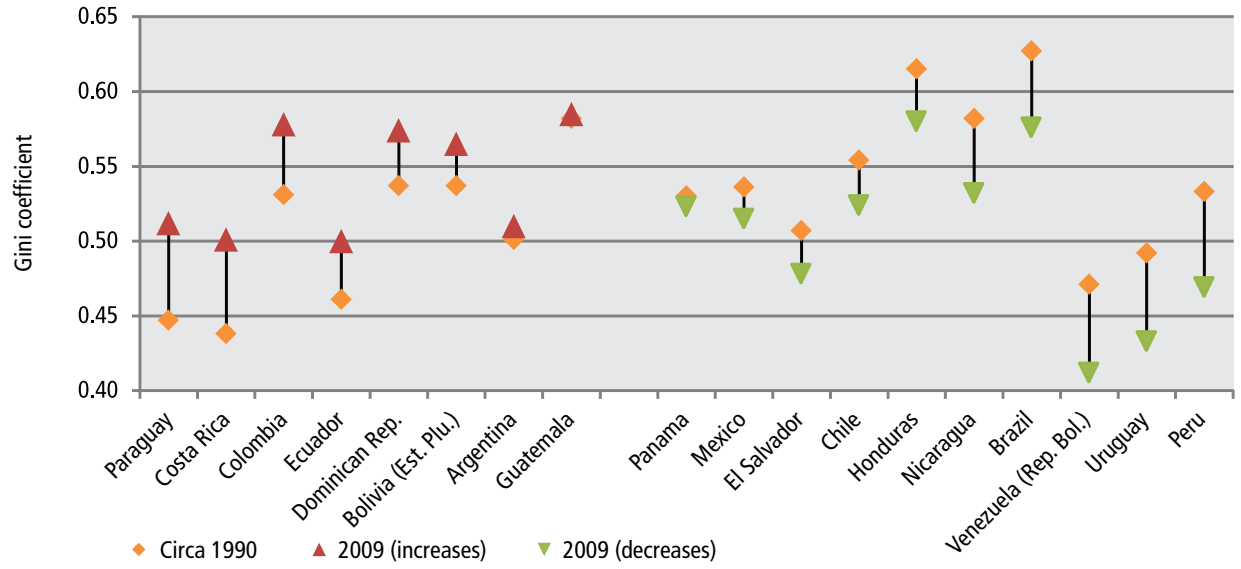
Table 2.1
Latin America and the Caribbean. Percentage of urban population living in poverty and extreme poverty, 1990-2010

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Argentina					16					24			45		29	26	21			11	9
Bolivia					52			52		49			52		54			42			
Brazil	41			40			31			33		34	34	36	34	33	30	27	23	22	
Chile	39				27		22		21		20			19		14				12	
Colombia		53			45			45		51			49	47	46	45			40	40	39
Costa Rica	25				21			19		18			18		19	20	18	18	16	19	17
Ecuador	62				58			56		64			49		48	45	40	39	39	40	37
El Salvador						46		44		39		39			41					42	41
Guatemala									49				45				42				
Honduras	70				75			73		72			67	63			59	57		55	56
Mexico					37		46		39		32		32		33	29	27		29		32
Nicaragua				66					64			64				54					
Panama		31			24			23		20			26		22	22	20	19	17	16	15
Paraguay					50		46			49		50			58	53		54	50	48	47
Peru								34		36		42		60	37	37	31	26	24	21	19
Dominican Rep													42		52	45	42	43	42	39	40
Uruguay	18				10			10		9			15		21	19		18	14	11	9
Venezuela (Rep. Bol.)[a]	39				47			48		49			49		45	37	30	29	28	27	28
LAC	41				39			36		37			38			34	31	29	27	27	26

[a] After 1997 data for Venezuela correspond to national poverty.

Source: CEPALSTAT. On the basis of special tabulations of household surveys in respective countries. For details on the areas included and methodological details, see:http://websie.eclac.cl/sisgen/ConsultaIntegrada.asp

Figure 2.5
Evolution of the Gini index in selected countries, 1990 and 2009



Source: Data from CEPALSTATS. Consulted in August, 2011.

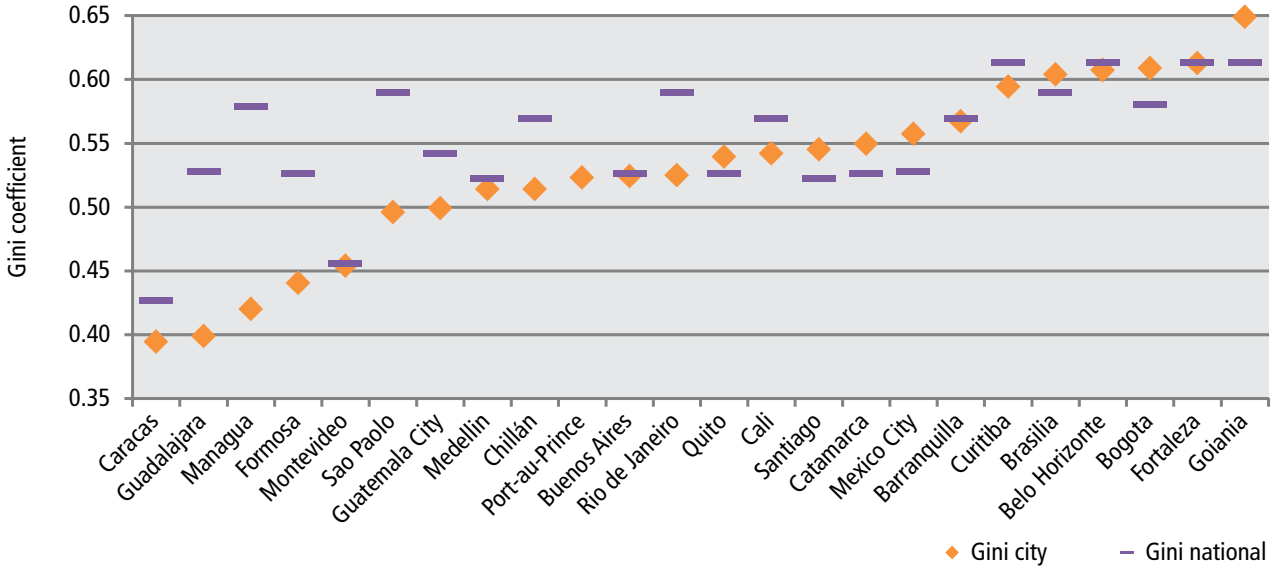
Statistics show that poverty affects female heads of household more than males in the same role. There are also significant differences according to ethnicity. For the indigenous and groups of African descent the poverty rate can represent between 1.2 and 3.4 times that of the remainder of the population[16]. There are also large differences within countries in terms of area of residence. Poverty rates in the region are generally higher in rural than urban areas (27.8 per cent[17], on the average) but, due to the high rates of urbanization, there are many more urban than rural poor. In absolute terms, the number of urban poor are twice as high as the rural poor.

Comparisons of relative poverty levels in urban areas in the two decades up to 2009 show considerable progress in Chile, Ecuador and Brazil but somewhat less in Panama, Colombia, Honduras and Mexico. In Paraguay the decline is hardly noticeable, while in Argentina, where urban poverty rose sharply just after 2000 due to the economic recession, the rate is half that of 1999 in relative terms.

Besides poverty, the main socio-economic problem facing Latin America and the Caribbean is inequality. The region is considered the most unequal in the world[18], illustrated clearly by the distribution of income, but also by housing conditions, access to goods and services (education,

Mazatlan. Mexico. Poverty especially affects female heads of household. © Luis Brito

Figure 2.6
Comparison of the Gini index of selected cities and respective countries, circa 2005



Source: UN-Habitat: Global Urban Indicators and CEPALSTATS. Consulted in August, 2011.

health, finance etc.), by employment opportunities, heritage and access to public space, amongst other factors that determine a person's well-being.

In the region, the richest 20 per cent of the population has an average per capita income nearly 20 times the income of the poorest 20 per cent[19]. However, the intra-regional differences are considerable. In Venezuela and Uruguay – which have the lowest inequality in the region – the income gap between the wealthiest and the poorest is not more than ten times, it exceed s30 time in those countries with the greatest inequality.

The average Gini[20] coefficient for Latin America and the Caribbean has been higher than other regions in the world since at least 1970[21]. In the region, Guatemala, Honduras, Colombia, Brazil, Dominican Republic and Bolivia (ranked here in descending order of inequality) have the most unequal distributions of income, all with coefficients above 0.56. Costa Rica, Ecuador, El Salvador, Peru and Uruguay are all below 0.50. Venezuela, the country with least income inequality (0.41 Gini) had, according to estimates for 2009, a higher income inequality than the U.S.A., as well as the most inequitable country in the Euro zone (Portugal), both with values of 0.38[22].

Broadly speaking, poverty in the region has fallen in relative terms, as has income inequality, albeit only slightly. The evolution has been positive in ten countries, but deteriorated in eight, including Costa Rica, which historically was among those with a lower ratio in the region[23]. The improvements are attributed to higher earnings, a decline in the wage gap, and the expansion of transfer programmes in several countries[24].

Few Gini coefficients are known for individual agglomerations. In general, similarities are seen between cities and their respective countries, although in some cases there may be differences; the reality is that all show very high levels of inequality.

Dominance of the services sector

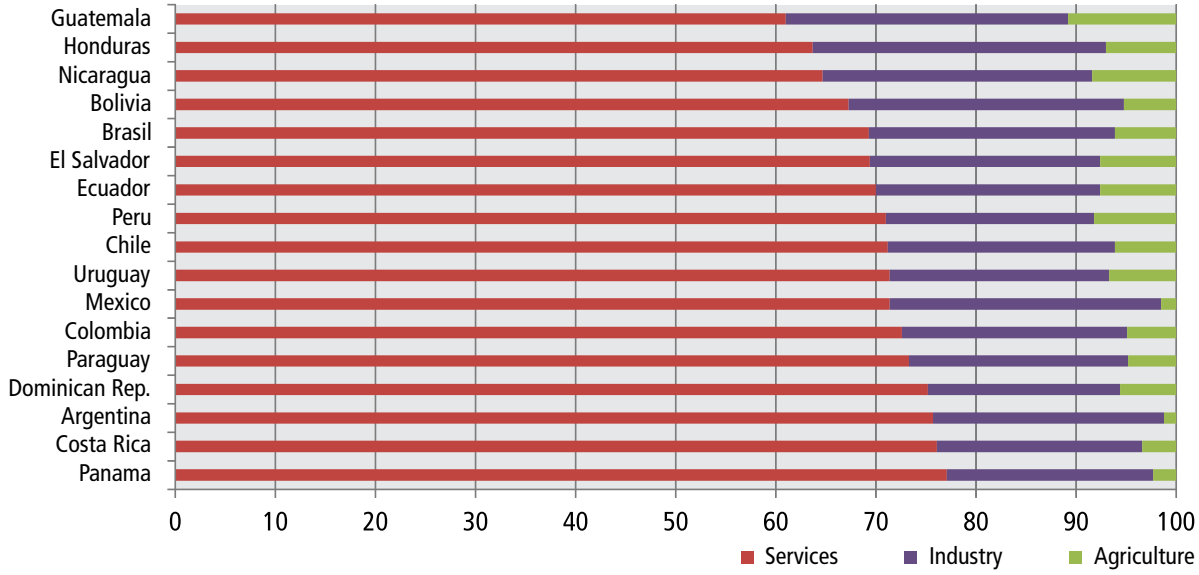
At present, the main economic drivers of cities are industry and, especially, the services sector. The predominance of services can be seen in the composition of the workforce. On the average, 70 per cent of the urban population of Latin America and the Caribbean works in the services sector and 24 per cent in industry[25]. Guatemala has the lowest percentage of population employed in the services area and yet, this group still represents over 60 per cent of all urban workers. The manufacturing sector employs, at best, about 30 per cent of the urban dwellers but in some countries it can be as low as 20 per cent.

Six per cent of the urban population works in agriculture. This may be related to the agricultural sector's role in small towns, especially those with fewer than 20,000 inhabitants, as well as the fact that relatively many farm workers live in cities. An average of 14 countries with relevant data shows that 20.7 per cent of agricultural workers live in urban areas[26].

The current economically active population (EAP) in Latin America and the Caribbean is a reflection of urbanization and aging populations, both already discussed in Chapter One. In 2010, the region's active population was 276 million workers and of these, 223 million (81 per cent) were urban and 53 million (19 per cent) agricultural workers.

In countries further along the urbanization processes, like Argentina, Uruguay and Venezuela, the workforce has neither grown nor declined in absolute terms since 1990; for those with lower urban population rates, the rural

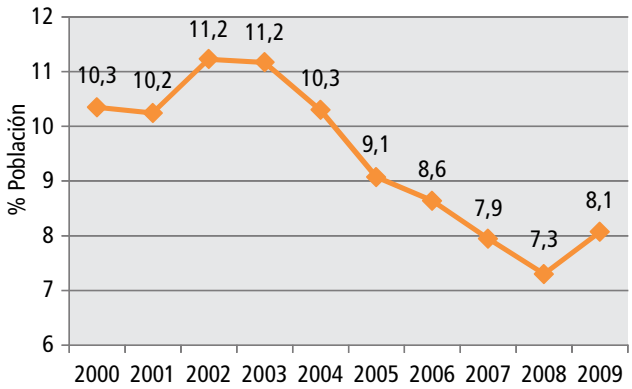
Figure 2.7
Urban population employed in major economic sectors in selected countries, circa 2009[a]



[a] Data for Nicaragua from 2005, for Guatemala (2006), Bolivia and Honduras (2007) and Mexico (2008).

Source: CEPALSTATS. Economic Commission for Latin America and the Caribbean, Statistics and Economic Projections Division. Social Statistics Unit. Accessed July, 2011

Figure 2.8
Latin America and the Caribbean. Evolution of the urban unemployment rate, 2000-2009[a]



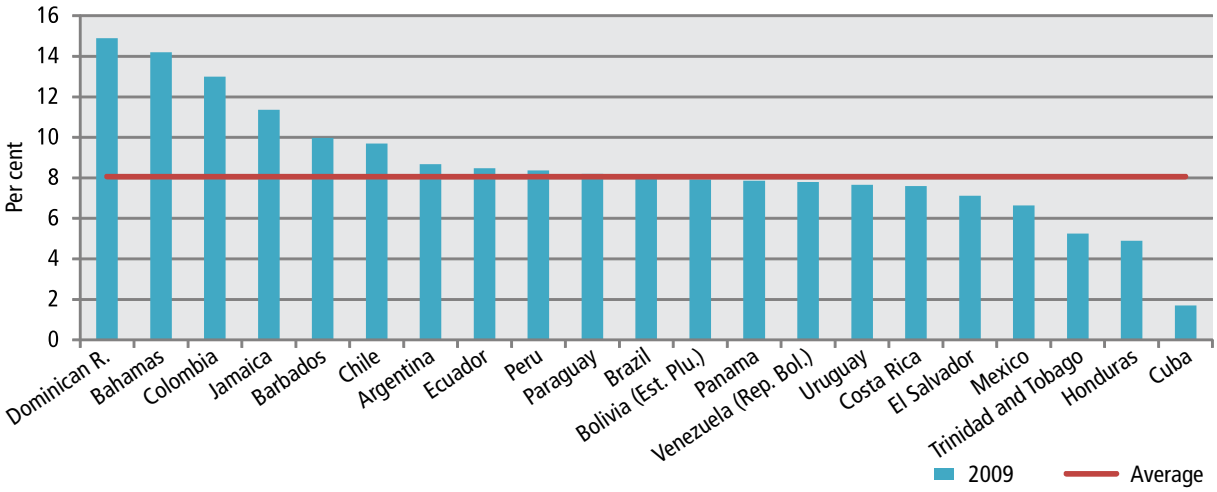
[a] See technical and specific notes for each country in the 2010 edition of the ILO Labour Outlook. *Source: Labour Outlook. 2010, ILO.*

EAP has been rising both in absolute and relative terms, but always by less than the urban EAP rate.

The statistical data available for 2011 indicates that there were over 17 million people without work in urban areas in the region, although, broadly speaking, the labour market has improved in the last decade.

Youth unemployment is of particular concern. Not only does youth experience higher rates of unemployment, but they are also the most affected by job insecurity and informal employment. Even in the formal sector, working conditions for young people are inadequate since six out of ten are not covered by social security[27].

Figure 2.9
Latin America and the Caribbean. Urban unemployment rate, 2009



Source: Labour Outlook. 2010, ILO.

Box 2.2
Recovery of the construction industry

The construction industry has always been considered a key sector for growth and job creation. In Latin America and the Caribbean, this sector is often cyclical and volatile, and in the past two decades has mirrored regional economic performance.

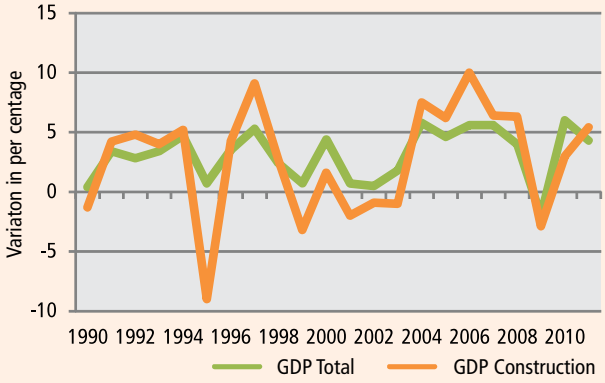
Highly fragmented with many small and medium-sized firms, the construction industry accounted for 5 to 6 per cent of the GDP in the region since 1997, with significant variations between countries, ranging from 2.7 per cent in Bolivia to 13.2 per cent in Saint Kitts and Nevis.

Also, this sector employs a significant percentage of urban dwellers, with particularly high rates in Nicaragua and Panama and Nicaragua, more than 33 and 10 per cent respectively.

The sector has benefited from Government spending on major projects including road and rail networks, airports, waterways and ports, to stave off the impacts of the international financial crisis, according to the Inter-American Federation of Construction Industry (FIIC). In Chile, for example, the portfolio of projects planned through 2014 amounts to USD 11.7 billion and USD 5.6 billion in Peru. In Brazil, construction is being fuelled by the Growth Acceleration Programme, hosting soccer's World Cup and the Olympic Games, as well as a real estate boom and developments in the oil industry.

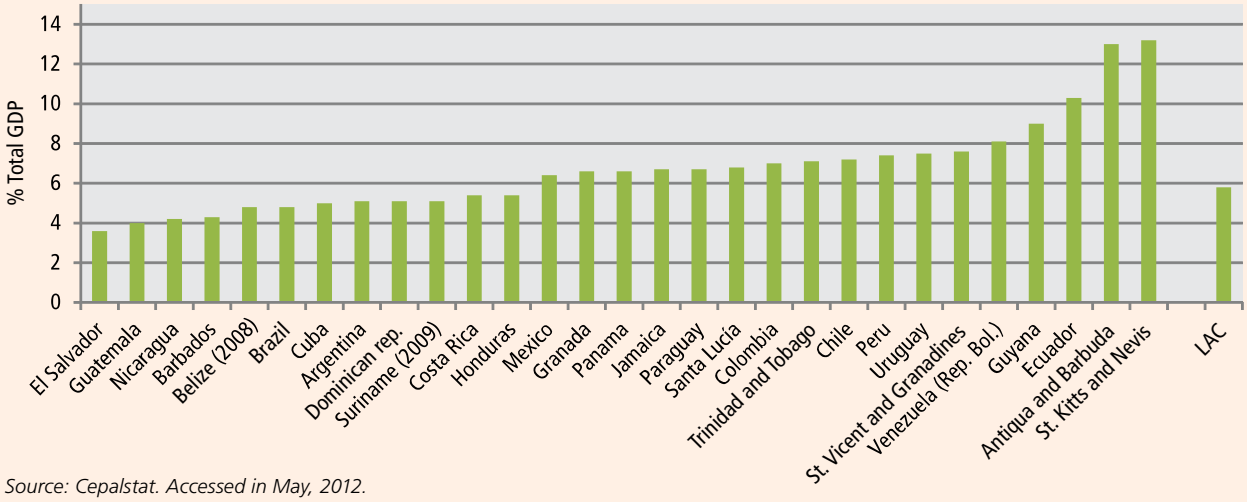
FIIC expects the sector's recovery to extend over the coming years, influenced by the favourable economic environment, the increasing pressure to improve existing infrastructures, and new financing models in place since the nineties with greater private sector participation and other mechanisms, like the use of pension fund capital. Benefits should also come from utilizing infrastructural works as a tool in the fight against poverty.

Figure 2.10
Growth rate of regional GDP and the GDP of the construction industry



Source: Cepalstat. Accessed in May, 2012.

Figure 2.11
Construction industry's share in gross domestic product, 2010



Source: Cepalstat. Accessed in May, 2012.

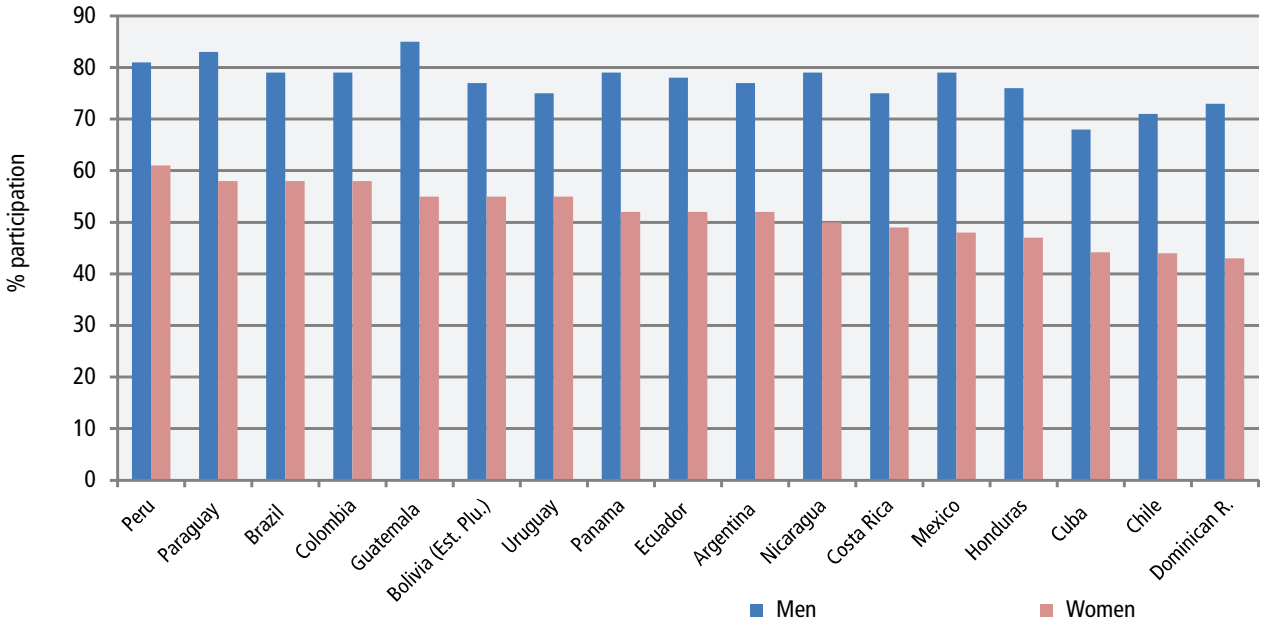
Women's participation

Urbanization has led to an increase in the participation of women in the labour market. In terms of urban workers, 128 million are men (57 per cent) and 95 million women (43 per cent)[28] representing an increase in the female labour force of 7 per cent since 1990, a trend that should continue in the coming decades.

The Dominican Republic, Guatemala and Mexico (with gender gaps of at least 30 percentage points)[29]. have higher statistical differences in the participation rate of men and women in the urban labour market. Greater equality is found in peru and Uruguay, with a gap of 20 percentage points between men and women, followed by Bolivia and Brazil, which has a slightly wider gap[30].

In general, female participation in the labour force is higher in urban than rural areas[31]. In Colombia and El Salvador, female participation in urban areas is 18 per cent higher than rural areas. Brazil stands out because the difference has decreased over the past decade and is currently negligible.

Figure 2.12
Male and female participation rates in urban economic activity, selected countries, circa 2009[a]



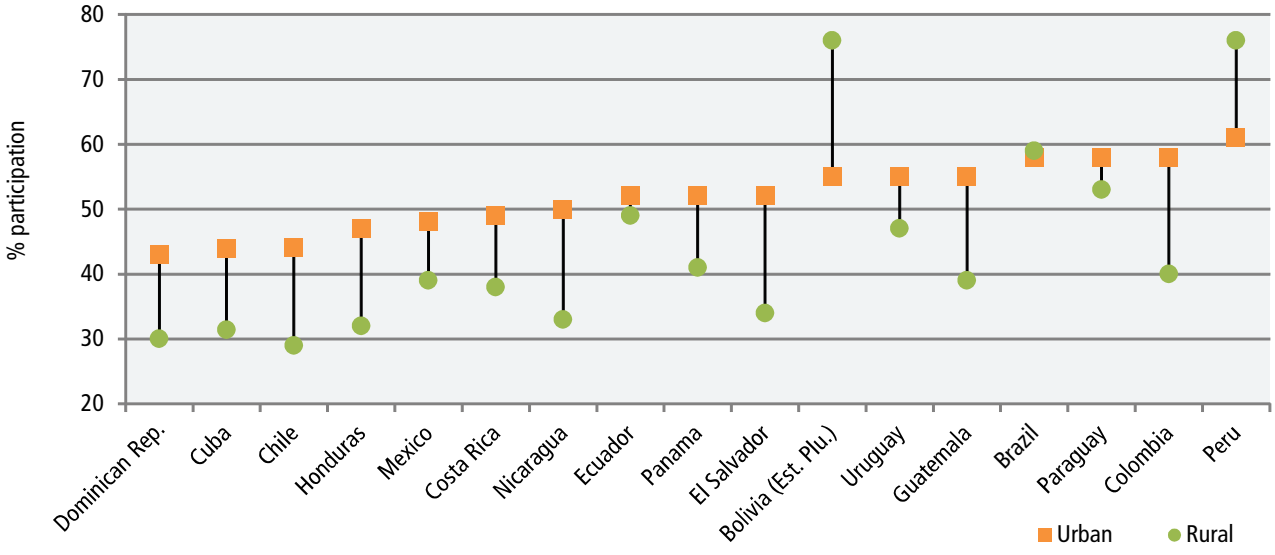
[a] Data for Nicaragua, 2005, for Guatemala, 2006, to Honduras and Bolivia, 2007, Cuba and Mexico, 2008, all other countries, 2009 data.
Source: ECLAC (2010c), on the basis of special tabulations of household surveys in respective countries

While progress in female participation has been achieved, gaps between sex and age are far from closing, especially in terms of wages. Salaries earned by women aged 20 to 49, working 35 hours per week or more are well below those of men of a similar age and professional category[32]. According to data available for 17 countries, the greatest degree of equality exists in Venezuela, where women earn 94.8 per cent of men's wages. Brazil, Peru and the Dominican Republic have the greatest difference, since the average woman's salary is more than 20 per cent less than a man's.

Importance of informal labour

The informal sector exists in one state or another across the world, but in Latin America and the Caribbean it plays a fundamental role in the economy, and is concerning because of its impact on employment. Getting an accurate measurement of the phenomenon is difficult, but the World Bank estimates that the informal sector accounts for 40 per cent of the economies of the region. Informal sector activities are estimated to account for 50 to 70 per cent of employment, depending on the data source[33].

Figure 2.13
Female participation rate in the urban and rural labour force, selected countries, circa 2009



Source: ECLAC (2010c), on the basis of special tabulations of household surveys in respective countries.

Cali, Colombia. Fruit vendor in the San Fernando neighbourhood. © Paola Andrea Mazuera

Although a long-standing phenomenon, the informal sector intensified in the eighties and nineties with trade liberalization, government downsizing and other reforms inspired by neoliberalism, leading to a dramatic contraction of the formal labour market, high unemployment and job insecurity.

In general, formal employment increases in periods of economic growth, but this isn't a rule, shown by Colombia, where there has been an increase in the informal sector in a period of good economic performance.

Box 2.3
Ways of defining the informal sector

As in other regions of the developing world, informal economies are an important part of the labour market in Latin America and the Caribbean. The definitions of informal economic activity are diverse, which makes collecting standardized data to analyse this sector so difficult.

International agencies allow broad definitions, encompassing the various guises of labour informality. Data are obtained mainly from censuses and household surveys, but depend on each country's measurement, which limits analyses.

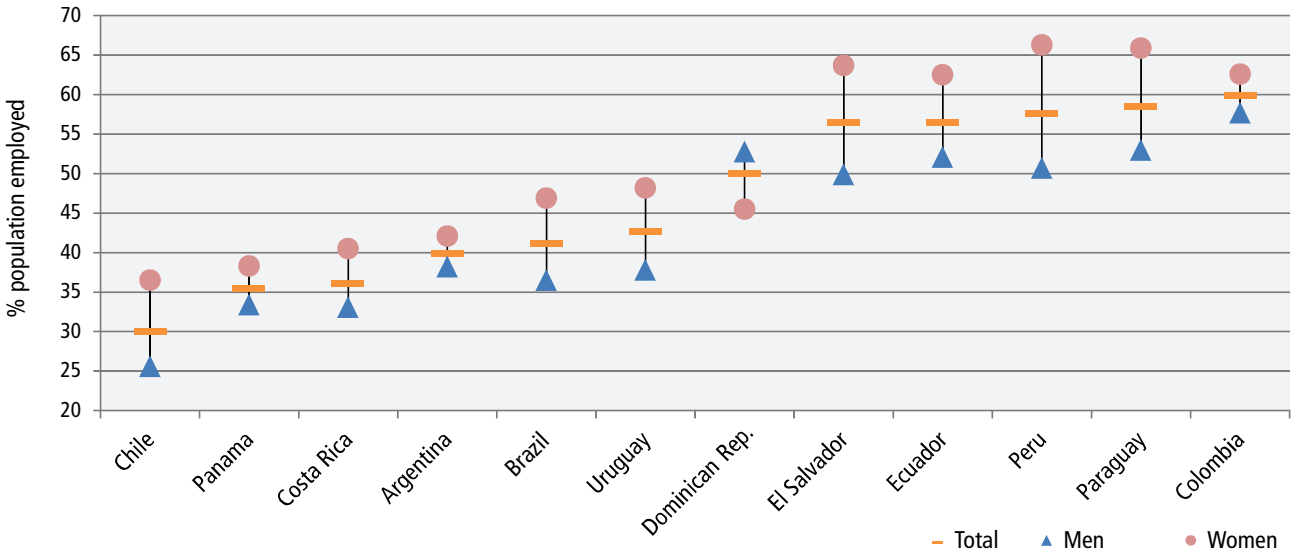
The International Labour Organization (ILO) considers informal urban employment as comprising self-employed persons (excluding professional services), employees in micro-firms of up to five people, unpaid working family members and unpaid domestic services. Formal employment is composed of urban professionals and similar, and all workers in companies with more than five employees.

In terms of statistics, ECLAC differentiates the urban population in jobs with unfavourable conditions in wages, length of employment and social security, among other features. The employed population in the low productivity sector (informal) is understood to be a person who is an employer or employee (with or without professional or technical qualifications) working in firms with up to five workers (micro), in domestic employment or as an unskilled, independent worker (self-employed and unpaid family workers without professional or technical qualifications).

Most definitions associate the phenomenon with precarious working conditions, low-paid work, almost to the point of subsistence, with no social protection, low productivity and higher labour risks than the formal sector.

San Salvador, El Salvador. Informal trade in the historic centre. © Astrid Alexia García

Figure 2.14
Informalidad urbana en países seleccionados, 2009 (% población ocupada total, masculina y femenina)



Fuente: CEPALSTATS. Estadísticas de América Latina y el Caribe. Consultado en julio de 2011.

For small businesses, informality is often the only option, considering the labour costs and tax burden that formal activities represent.

Statistics available for twelve countries in the region show significant variations in levels of informality. In Chile, it represents 30 per cent of the employed population, but in Colombia the figure rises to 60 per cent. Labour informality is a situation which particularly affects women, with all countries in the analysis, showing higher rates than for men[34].

Achieving full, productive and decent[35] work for all is one of the objectives that would help eradicate poverty. Informality does not always involve poverty but, in general, statistics show a higher risk of experiencing poverty among informal sector workers, who also tend to have greater income inequality.

Urban segregation

Poverty and inequality are two complex phenomena with multiple causes. In a region as urbanized as Latin America and the Caribbean, concentration of population also means concentration of povertry. There are initiatives taking place in the region to address poverty, but the reality is that cities are deeply divided socially and spatially. Inequality is persistent, accompanied by low social mobility and a tendency for inter-generational transmission creating poverty traps. Differences in income are not the only cause of inequality. It is also influenced by the education gap, weak social protection systems, unemployment and the larger average size of poor households.

Although unsystematic, there is a strong correlation between income inequality and spatial fragmentation; they are mutually reinforcing and represent a challenge for governments and society alike. Living in a slum or neighbourhood with a high concentration of poor people reduces access and opportunities for employment, education and services, while increasing exposure to urban violence and vulnerability to natural disasters, issues to be discussed in later chapters and for which local government action is crucial.

Although urban areas account for much wealth generation, as discussed in the next section, the vicious circle of inequality appears stronger than the benefits of urbanization. Moreover, higher income per capita in the region's major cities does not necessarily mean less inequality.

2.2 Cities, economic engine and space for opportunities

The economic role played by cities in Latin America and the Caribbean is closely related to each country's respective production structure[36], which has changed over time in function with economic and technological transformations, and each government's economic policy.

The industrial revolution and modernization of the agricultural sector entailed a qualitative leap in the economic role of urban areas. Investments in the manufacturing sector, which requires an abundance of labour, encouraged the concentration of people and activities in cities, creating a spiral of population and economic growth. In Latin America, this process started strongly in the mid-twentieth century, although in some countries, like Argentina, for instance, industrialization and urbanization began before that. Economic and trade liberalization from the 1990s onwards has brought about changes in the model, and this has had knock-on effects on cities' activities and performances.

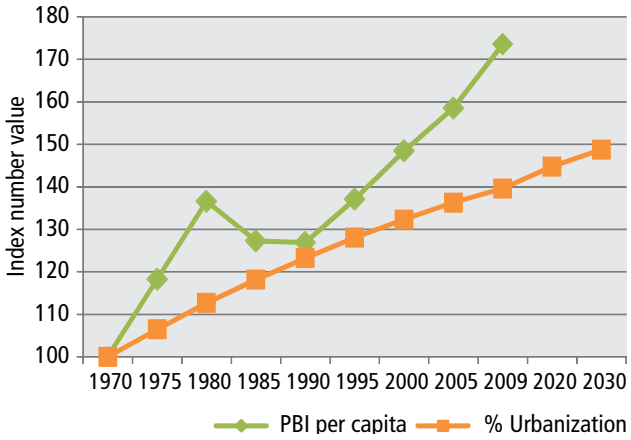
Currently, cities are the engines of the region's economies. The annual production of the main 40 cities in the region exceeds USD 842 billion (approximately one third of regional GDP). But the individual weight of a city in any one country's economy depends on a variety of factors. Although large cities still play an essential economic role in the region, there is also the basis of a group of dynamic Intermediatete cities which should play an increasingly larger part in national wealth generation.

Urbanization and economic growth

Studies by UN-Habitat show that, in general, regions with higher economic growth tend to experience faster urbanization and vice versa[37]. However, although the link between these two factors seems quite clear in Asia, analysis shows that in Latin America and the Caribbean this relationship is not so clear cut. In recent decades, the economies of Latin America and the Caribbean have kept up five-year growth periods, but there have been short-term economic difficulties. The region's economic performance has been volatile with periods of expansion, stagnation and contraction.

Urbanization, however, has been such a forceful process that it has shown a positive evolution regardless of the economic cycle. The pace of urban growth was particularly strong between 1970 and 1990, after which it lost steam as urbanization reached higher levels. By 2030, regional urban population is forecast to reach 85 per cent and then remain stable, as already discussed in Chapter One.

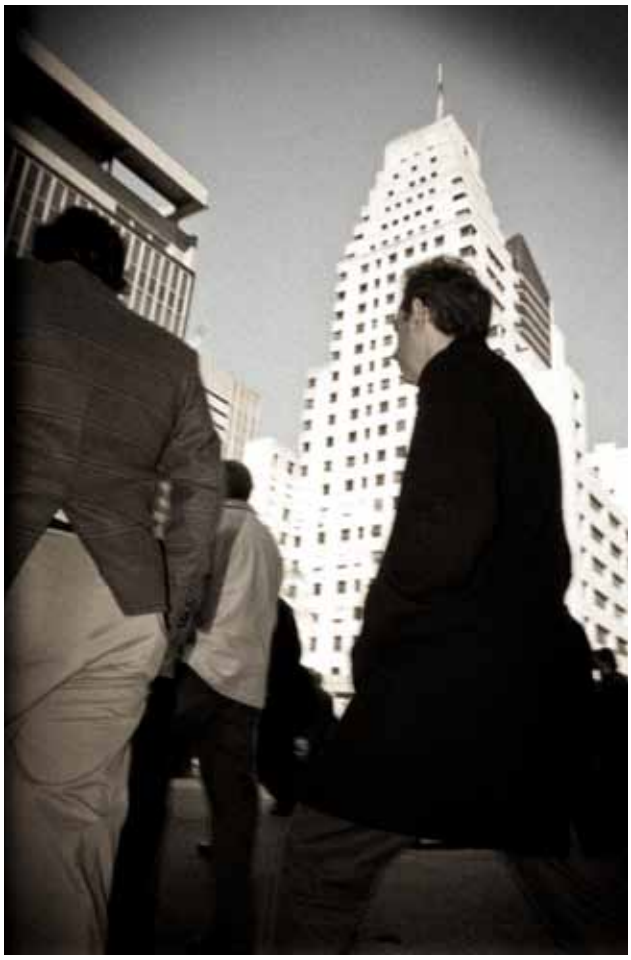
Figure 2.15
Latin America and the Caribbean - Economic growth and urbanization trends measured in index numbersa, 1970-2009



[a] Given that they are different variables, index numbers have been used for historical comparisons of growth and urbanization.

Source: Urbanization data from UNDESA (2010) and GDP per capita from the World Bank. Consulted in July 2011.

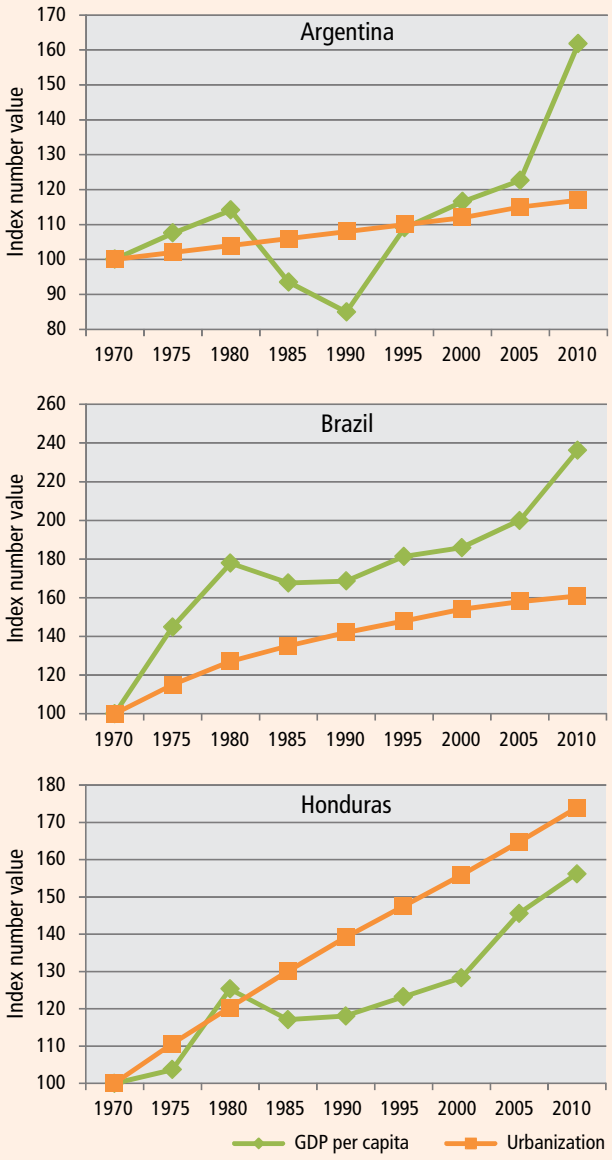
There is also difficulty determining whether economic growth and urbanization reinforce each other at the nation level, and in this case there is a positive relationship



Buenos Aires, Argentina. People travelling to work in the rush hour.
© Guillermo Gallego González

Box 2.4

Urbanization and GDP per capita for selected countries measured in index numbers, 1970-2010

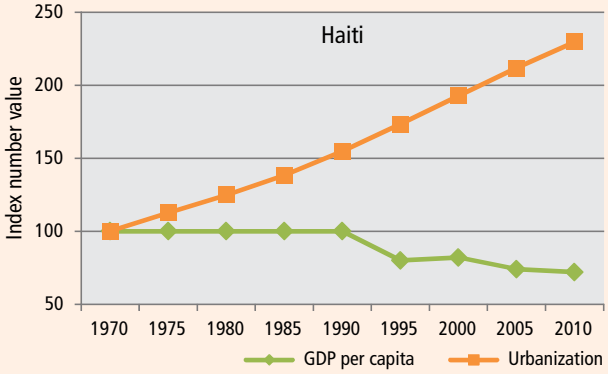


Argentina is historically one of the countries with the highest percentage of urban dwellers and its urbanization rate has shown a tendency towards stability for several decades. At the same time, its economic performance has been very variable, marked by a sharp drop in income per capita in the 1980s and 1990s. Since then, the five-year trend has been rising and, today, it has one of the highest GDPs per capita in the region.

Brazil reached 65 per cent urban dwellers in 1980. Over the past thirty years, it experienced one of the fastest urbanization processes in the region, reaching 85 per cent. In terms of economics, its behaviour has been less stable, with growth since 2003.

A completely different scenario is presented by Haitia, for which there are few statistics and whose GDP per capita is lower today than twenty years ago. Despite this continuing economic decline, urbanization has continued to advance. While Haiti is still predominantly rural, the urban population has increased from 19 to 45 per cent over the past 40 years and is expected to continue rising in the coming decades.

Finally, Honduras follows the region's economic trend, although at a slower pace, being in the middle of its rural-urban transition. It has experienced steady growth and urbanization over time.



Nota: Haiti maintained constant GDP between 1970 and 1990, although we don't have data to compare statistics before that year.

Source: GDP per capita data from the World Bank; data on urbanization from UNDESA (2010).

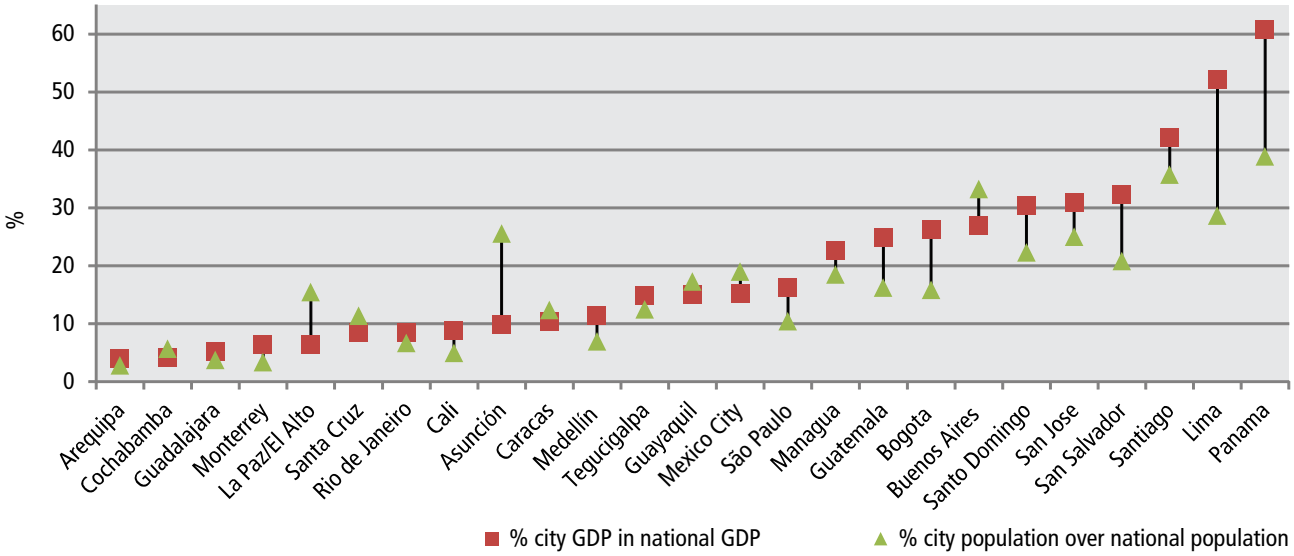
between both variables in the long run, as shown in the box featuring Argentina, Brazil, Honduras and Haiti.

La dificultad de establecer si crecimiento económico y urbanización se estimulan mutuamente aparece igualmente a escala nacional y también en este caso se observa una evolución positiva de ambos fenómenos en el largo plazo, como se ilustra en el Box con los ejemplos de Argentina, Brazil, Honduras y Haiti.

Economic potential, productivity and competitiveness

Currently, between 60 and 70 per cent of regional GDP is generated in urban areas[38]. This production is concentrated in a few cities due, in part, to the highly centralized economic management model adopted for many decades which led a high levels of concentration near

Figure 2.16
Major cities' share of national GDP and population in their respective countries, circa 2008



Source: UN Habitat analysis (for methodology, sources, statistics details, see annex 4).

centres of political power[39]. Data analysed for this report shows that the top 40 cities in Latin America and the Caribbean produce over 30 per cent of regional income[40], with nearly half coming from four cities (Buenos Aires, Mexico, Rio de Janeiro and São Paulo).

Latin America and the Caribbean, with its advanced stage of urbanization, provide an ideal framework for industrial production and the supply of services. The growth of large urban centres helps reduce physical barriers, lowers costs and streamlines production and distribution of goods and services, thus boosting productivity[41]. Such positive externalities are known as economies of agglomeration, which determine the location of companies in densely-populated areas and stimulate economic growth.

In recent decades, the low productivity of the region's countries has been one of the reasons why economic growth is lower than in other emerging economies[42]. One the average, productivity has increased by 1.4 per cent in the past twenty years, while India's has grown by 4.7 per cent and China's 8.4 per cent[43]. Different factors are to blame and include high rates of informality, lack of access to credit, macroeconomic volatility, the costs of transportation, and low levels of innovation[43].

Locally, the productivity of a city and its relationship with domestic production can be evaluated by GDP per capita. One drawback is that this variable does not distinguish between the contribution of activities outside and inside cities. Mining and hydrocarbon corporations frequently operate in areas outside urban centres but added value is recorded in the cities where they are headquartered.

Many major cities in the region have per capita incomes higher than their respective national figures; for the moment, they are the drivers of much of the region's economic dynamism. The participation of these cities in the national economy may be higher than their demographic weighting, as illustrated in the graph showing Panama City (responsible for 39 per cent of the country's total population and 61 per cent of its GDP) and Lima (29 per cent of population and 52 per cent of GDP).

World Bank studies show the highest per capita incomes, along with population density and business concentration, are in places that do not suffer deep divisions, whether social, ethnic, linguistic or political (war or armed

Box 2.5
The most competitive cities

Various institutions have begun to carry out systematic studies on the attractiveness of cities. One of the best known is by the América Economía magazine, which ranks a set of 45 cities annually based on the index of urban competitiveness (ICUR). This measurement includes eight dimensions with different variables such as GDP and unemployment, security, the price of renting office space, infrastructure and physical connectivity[45].

Think-tank Centro de Pensamiento en Estrategias Competitivas (CEPEC) at the University of Rosario, Colombia, and Chilean firm Inteligencia de Negocios (IdN) have also created a ranking of the 48 most attractive cities to invest in using 'index of urban investment attractiveness', including 36 national and metropolitan indicators.

McKinsey Global Institute[46] has calculated an innovative 'Cities' Performance Index' with 100 indicators including economic, social, environmental, financing and governance data, and applied it to a sample of eight major cities.

Ciudad Juárez, Mexico. Maquiladora industry. © Veronica Suchil

conflict) and that have managed to bridge the 'distance' factor in economic trade[47].

There are not many studies on the competitiveness of the region's cities. Most focus mainly on countries or companies[48]. In general, these studies analyse how attractive cities are for investment or for doing business. They use economic indicators measuring demographics and sociological, political, institutional, and technological factors, and aspects related to the environment.

A city's economic dynamism and its economic participation depend on how competitive it is. This, in turn, depends on a number of different factors[49]. A city can overcome the disadvantage of not having one or more of these characteristics with strategies that promote other comparative advantages.

Monterrey, for example, has seen its indicators related to violence worsen in recent years[50] and although it does not have a long-term urban plan, it benefits from public-private collaboration in the higher education and technology sectors, and close links to the education system and business. Also, productivity is high compared to other cities in the region. A similar case is Guadalajara, Mexico, a city that might not be so competitive[51] if it were not for its physical infrastructure and connectivity[52] which are better than those of many larger cities. The opposite occurs in Valparaiso ,Chile, which has a deficit in infrastructure but offers high environmental sustainability instead.

In general, the region's cities lack research initiatives. In the area of innovation, Santiago has 2,373 scientific research projects per million inhabitants, lower than Valparaiso's 2,681 or Porto Alegre's 3,515 – both smaller cities.

Box 2.6
Curitiba's commitment to high technology

The capital of Parana, a state in Brazil, has made a strategic commitment to high-end technology and innovation to make itself into a regional centre for specialized companies and to create economic growth[53].

In 2008, the city[54] launched Tecnoparque, a programme that connects educational institutions, computer and technology companies, and public and private sector research and development institutions to stimulate economic activity and trade in these sectors. The city offers low services taxes set at two per cent and exemption from municipal and state taxes for ten years. Thanks to the programme and other comparative advantages such as extensive communications infrastructure, sustainable urban development, low wages, and lower costs of living than the largest cities in Brazil, Curitiba has attracted foreign companies, including multinationals.

More than 150 companies, with 16,000 direct jobs, are taking part in the programme, while participating schools attract 46,000 students, 3,300 faculty and 500 academic research groups.

Tecnoparque aims at attracting companies in telecommunications, computing, software development, data management and distribution of electronic information, design, quality control, precision instruments and industrial automation, biotechnology, microtechnology and health, all considered key strategic sectors.

Known internationally for its innovative and environmental management, Curitiba faces some negative externalities, like traffic congestion, just as other cities do. The challenge ahead is to keep training enough specialized personnel or to attract them to meet companies' rising demand.

Another important aspect is the social and political context. This indicator, which normally includes variables related to political governance, institutionalism, security, social development and legal certainty, shows why Santa Cruz, Caracas, La Paz and Tegucigalpa are less attractive[54] than many other Latin American cities.

New urban economic centres

The aforementioned studies recognise that large urban agglomerations will continue to be central to countries' growth, but the evolution of recent decades indicates that the economic weight of major cities is falling. On the one hand, some large cities have begun to show signs of losing the competitive advantages that drove their economies. A comparision of certain cities' GDP per capita with their respective countries' at two time periods[55], carried out for this report, shows income per inhabitant in various megacities is rising slower than that of the country as a whole. This is happening in Mexico City, Rio de Janeiro and São Paulo. It doesn't mean megacities are losing their dynamism, but it could reflect limitations that conglomerations face once they have expanded rapidly.

On the other hand, cities like Arequipa, Barranquilla and Cartagena offer different advantages to the capitals of their countries and, although their competitiveness is lower, they have lots of potential to improve.Also; they can adopt strategies to prevent negative externalities experienced currently by the larger cities.

Some countries have higher GDP growth and GDP per capita levels than the national averages in important aggmolerations. Between 2003 and 2008, the GDP of Mexico's Puebla grew by 48 per cent, compared with a national average of 18 per cent. That also happened, for

Box 2.7
The economic transformation of Mexico

The impact of national economic changes on the structure and economies of cities is seen clearly in the case of Mexico.

Economic integration and opening up the economy favoured manufacturing in cities near the border with the U.S.A. In 1980, there were 620 *maquiladoras* in Mexico, which number grew 3,550[56] by 2000. During this period, the number of workers in *maquiladoras* amost multiplied by ten, to reach 1.2 million.

This period saw two opposing trends:

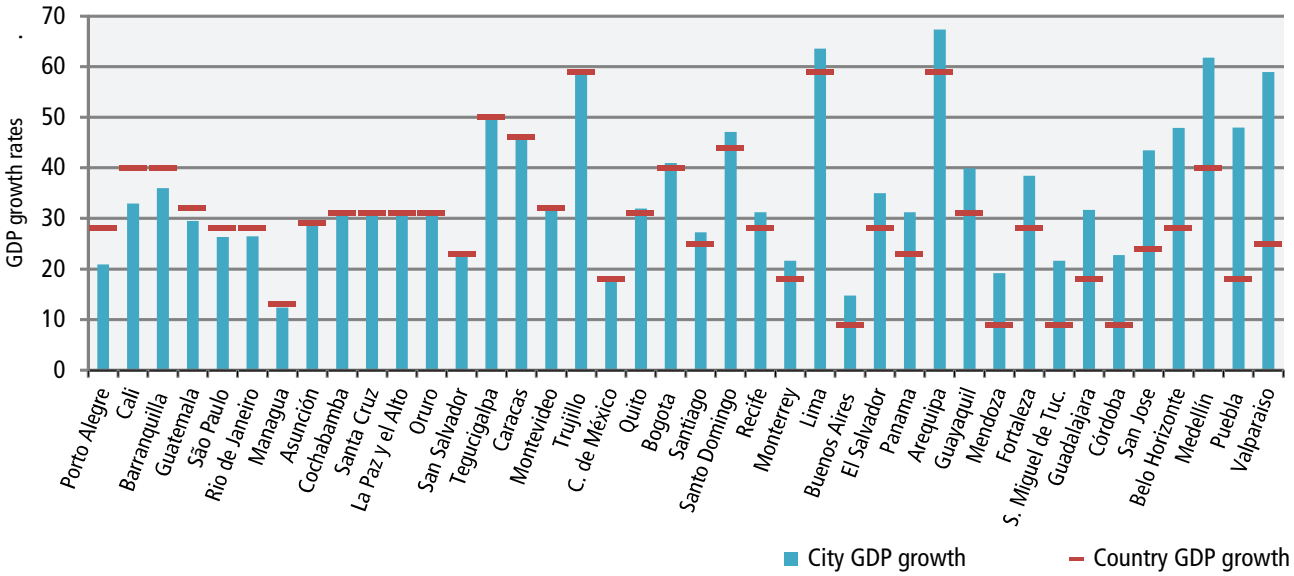
1) the decentralization of industry to intermediate cities, mainly in the central valley of Mexico, and

2) the concentration of tertiary activities in Mexico City[57] itself.

At the same time, the country's northern cities, like Ciudad Juarez, Hermosillo, Mexicali, Monterrey, Saltillo, Tijuan and Torreón benefited from dispersion and locational advantages *vis-a-vis* the U.S.A. and experienced accelerated growth. This process also favoured the emergence of urban corridors in the central and northern areas. Calculations show that 60 per cent of Mexico's GDP is generated by economic activities in these corridors[58], bringing economic buoyancy to the cities that they connect. But they can also be a source of new inequalities between regions, which highlights the need for planning to promote local growth throughout the territory.

Another consequence was a change in the relative weight that cities had in the national economy, as well as their weight in the local economy. Mexico City reduced its relative importance in domestic manufacturing but kept its dominant role in the country's economy.

Figure 2.17
Latin America and the Caribbean. City and National GDP growth, 2010



Source: UN-Habitat. For methodology, data sources and statistic details, see annex 4.

: Panama Canal, Panama. The region is experiencing a favourable period for investment and development. © Mariana Nissen

example, in Belo Horizonte, Brazil, Medellin, Colombia, and Valparaiso, Chile, in different years and with different percentages.

The economic liberalization, opening up to foreign investment, and international trade of the past three decades has created new development possibilities for cities that previously were not important economically. Amongst them are those offering clear location or business-friendly advantages and those applying innovative government policies and systems[59].

Proximity to borders, the coast, important urban centres, a market, water resources, minerals or oil finds, is important for the competitiveness of a city, but there are other factors. Developing communication routes (ports, airports, and roads), free trade zones, investments in sectors related to information technologies and financial services have proved to be crucial for attracting investments and workers. This happened, for instance, in 1967 when Manaus set up a free zone to encourage and promote industry investments and the integration of this region in Brazil.

The dynamism of some of Intermediatete cities is linked to large urban centres, which act as magnets for human and financial capital. The increase in supply of sufficient qualified labour to meet industrial requirements, coupled with lower land prices, and in some cases, infrastructure and connectivity improvements, helped decentralise companies to these secondary conglomerations.

The development of a large city can influence economic activity in smaller outlying cities positively. They progressively form an area of exchange of goods and people, creating a virtuous circle between agglomeration, production, demand and income, of which there are numerous metropolitan examples. This is seen even more in urban mega-regions such as that of São Paulo. There is no doubt that proximity between this megacity and the cities of Campinas and Santos, less than 100 kms away, creates a privileged area of exchange of all kinds. A similar example of this phenomenon is found in urban corridors with the emergence of important communication routes between different cities with interconnected economies that feedback onto each other's activities.

Intermediatete cities not only provide a suitable environment for boosting economic and social growth; they also have the opportunity to foster better planning and sustainable urban development patterns and urban management.

Challenge of rapid economic growth

Investments in productive activities in underdeveloped urban areas can have favourable impacts on the decentralization of domestic economic structures and the creation of new centres of wealth generation. However, it can also bring about profound and negative changes in spaces, producing urbanization that is peripheral, sudden, precarious, polluting, predatory, servicesless, or socially and economically exclusive, both for local people and the migrants attracted by employment and business opportunities.

These changes often result from an increase in population which, because of its speed, overwhelms the capacity of local governments, but also from lack of planning, support and assistance in the area in question. This is a governance problem, addressed in depth in Chapter Six of this report.

Changes like those generated by the industrial developments in northern Mexico created many border towns, urban chaos and informality. Likewise in Brazil, where oil extraction has brought about a considerable increase in per capita incomes in the production areas but without reducing inequality in the area. Investments have led to some improvements in living conditions, but not for everyone, and these activities have been a frequent source of environmental and social problems.

The negative impacts of unplanned urban development, such as in Macaé, Brazil, have raised awareness among national and local governments, business, civil society and other sectors of the need for preventive measures and to anticipate and address problems with policies and goals aimed at promoting sustainable development with concrete plans to implement them.

Box 2.8
The growth and development of Macaé and Itaboraí, Brazil

The city of Macae in the state of Rio de Janeiro, grew from a small farming town to a base for petroleum operations. With its new economic vocation and immense investments, GDP per capita (about USD 27,000) rose enormously, in what was a complex socio-spatial transformation. Between 1980 and 2010, the population grew by 170 per cent (from 75,863 to 206,728 inhabitants). The city has had to meet a growing demand for public services and infrastructure, and needs to address informal settlements, some of which are located in hazardous or environmental conservation areas. While formal employment offers grew, they required qualifications, so many locals and immigrants were unable to get jobs in the sector.

Macaé's experience brought about a change of approach after a new venture was announced in 2006 with the Petrochemical Complex of Rio de Janeiro (COMPERJ). The project focuses on Itaboraí, though its area of influence includes ten other municipalities, totalling more than two million inhabitants, 18 per cent of whom live in poor areas. The project, which will begin operations in 2014, has an estimated investment of USD 8.4 billion and will create some 200,000 direct and indirect jobs and undoubtedly encourage other industries and services to set up there, which could have a huge social, economic and environmental impact on the region.

This operation will mean an increase in taxes collected and transformation of the social, economic and environmental profile of the territory. A risk with this type of project is that it may overshoot the institutional capacities and increase population under conditions of exclusion if nothing is done to strengthen local governance.

To mitigate that risk, the oil company, the Regional Office for Latin America and the Caribbean of the United Nations Human Settlements Programme (UN-Habitat) and the Federal Fluminense University (UFF) have formed a partrnership to support the Inter-Municipal Conleste Consortium, consisting of 11 municipalities in the east Rio de Janeiro area: Itaboraí, Niterói, São Gonçalo, Cachoeiras de Macacu, Casimiro de Abreu, Guapimirim, Magé, Maricá, Río Bonito, Silva Jardim and Tanguá.

The partnership aims at promoting sustainable and inclusive development by monitoring the impact the petrochemical complex is having and meeting Millennium Development Goals (MDGs) in the region. Such monitoring will help to develop and implement economic, social and environmental public policies, and strengthen the skills and training of local officials in decision-making processes.

The communities of the east Rio de Janeiro region added an additional objective to the eight already existing under the Millennium Declaration, which includes poverty and hunger reductions, targets in basic education, gender equality, child mortality, improving maternal health, combating AIDS, promoting environmental sustainability and promoting a global partnership. This ninth goal is to accelerate the process of local development by reducing inequalities in the Conleste area. This means making economic growth viable in the region above the state of Rio de Janeiro and the country. It also aims at attracting skilled workers to the region, improving employment and labour participation rates, developing the region's specialized production model and boosting entrepreneurship.

The development process implies that the region's housing provision, energy supply, transportation networks, telecommunications and healthcare infrastructures need to be matched to the growth, as well as reductions in violence, and improvements in living conditions and investments in municipal capacity-building. Each goal has its own indicators to see whether communities are moving in the right direction.

More and more companies recognize the need to implement corporate policy that goes beyond the requirements of environmental and labour laws to ensure that markets, trade and finance move forward in a way that is not exclusively about economic returns but also conducive to the societies where they operate. From this perspective, more and more companies are participating in the Global Pact[60], adopting corporate social responsibility policies.

While some do so to improve their public image or because of external pressure (consumer associations, unions etc.), the approach is gaining followers convinced that it provides competitive advantages and a better balance between financial, social and environmental performance.

The Latin America and the Caribbean region is experiencing an period of investment and socio-economic urban development. The economic environment, the demographic dividend, the strength of large cities, and increases in the productive capacity of Intermediatete cities, offer possibilities for achieving greater economic equilibrium in the urban network and a multiplication of the beneficial effects of urbanization.

The great challenge facing these countries is to improve productivity and take advantage of the opportunities offered by these new dynamics to break with the vicious cycle of poverty and inequality, and so improve the living conditions of disadvantaged groups. It is particularly important to accompany large investment projects with economic development which, because of size, can lead to rapid population growth, whilst taking measures to support labour participation and the social integration of local populations and migrants.

Notes

1. De Gregorio, José (2008). Economic growth in Latin America. From the disenchantment of the twentieth century to the challenges of the XXI century . "El trimestre económico", Vol. LXXV (1), no. 297, January-March 2008.
2. Global statistics on production for the year 2009. GDP estimates are based on information from the World Bank's database, accessed July 19, 2011.
3. The division into sub-regions and large countries has been carried out in a similar way as in Chapter One, based on geographic and demographic weight (see box 1.1).
4. World Bank data in constant USDollars from 2000.
5. IBRD/World Bank (2007).
6. The 2009 figure represents 1.5 per cent of regional GDP for the same year. World Bank (2011).
7. World Bank (2011).
8. This takes into account aspects like the adequacy of housing and space, according to the number of occupants, access to water, sanitation, electricity etc.
9. IBRD/World Bank (2007).
10. Maldonado, R., Bajuk, N., Hayem, M. (2012).
11. Eastern Asia, for example, has reduced its poverty to 16 per cent of the population; much better than the planned target for 2015, and Southeast Asia to 19 per cent, just below the target. United Nations (2011).
12. ECLAC (2010c).
13. For a more detailed analysis of the evolution of poverty and advances in the region, see United Nations (2010).
14. ECLAC (2011b).
15. Government of Haiti. Haiti Earthquake PDNA: Assessment of damage, losses, general and sectorial needs. Government of Haiti working document with technical support of the United Nations, IDB, ECLAC, World Bank and the European Commission, 2010.
16. ECLAC (2010g).
17. The average urban poverty in 2009 for 18 counties in the region with available and comparable data: Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, the Dominican Republic, Uruguay and Venezuela.
18. UNDP (2010).
19. CEPAL (2010c).
20. See Box 2.1 on measurement issues of poverty and inequality.
21. Ver Medina, Fernando and Marco Galván (2008) and UNDP (2010).
22. OECD (2009).
23. Comparative based on CEPALSTATS data. Available online: http://websie.eclac.cl/sisgen/ConsultaIntegrada.asp?idAplicacion=1&idTema=363&idioma=
24. ECLAC (2011b) and United Nations (2012)
25. ILO (2010). The industrial sector comprises electricity, gas and water, manufacturing and construction. The services sector includes community, social and personal services, transport, storage and communications, trade, financial and unspecified activities.
26. ECLAC (2005b).
27. ILO (2011).
28. Data based on statistics and forecasts from ECLAC (2010a) and ECLAC (2006).
29. There seems to be a different participation level between men and women in Venezuela, but this country has been excluded from the table given that the latest data is from 1994 (at that time there was a gap of 40 percentage points).
30. Calculations are based on data from ECLAC (2010c), who warns that female employment is not always fully reflected in the surveys, especially in rural areas, and that variations can make data response better.
31. ECLAC (2010c). Includes data from Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Uruguay and Venezuela.
32. CEPALSTATS.
33. The lowest estimation comes from CEPALSTATS. The highest calculation appears in Loayza, N.V., Servén, L. and Sugawara, N. (2009).
34. CEPALSTATS. Statistics for Latin America and the Caribbean. Consulted in July, 2011.
35. The phrase 'decent work', coined by the ILO, is productive work for all men and women in conditions of freedom, equity, security and dignity. That implies productive employment, providing an adequate and fair income, security in the workplace and social protection, better prospects for personal development and social integration; as well as equal opportunities and treatment, and social dialogue.
36. Ferrari, C. (2010).
37. UN-Habitat (2008).
38. IDB (2011b).
39. McKinsey Global Institute (2011).
40. See anex 4 for more details.
41. McKinsey Global Institute (2011).
42. IDB (2010b).
43. McKinsey Global Institute (2011).
44. IDB (2010b).
45. América Economía magazine. Available at http://rankings.americaeconomia.com/2011/ciudades/ranking.php
46. This is the business and economic research unit at the consultancy company that goes by the same name.
47. The World Bank (2009).
48. One of these is the World Bank's Doing Business report which classifies countries according to the ease of doing business there.
49. Manzano, N. (2009)
50. McKinsey Global Institute (2011).
51. According to the Index of Urban Competiteness (ICUR) applied by the magazine América Economía.
52. The connectivity index combines variables relating to the size and quality of land, sea, and air transport for passengers and cargo and freight, both within countries and abroad, and complex indicators showing investment and the development of public and private infrastructure. View methodology at http://rankings.americaeconomia.com/2011/ciudades/metodologia.php
53. For more information, see Curitiba Development Agency: http://www.agencia.curitiba.pr.gov.br/publico/conteudo.aspx?codigo=10
54. Ranking "América Economía".
55. The data comes from different years for each country in function of their availablity. More details in annex 4.
56. Data published by García de Fuentes, A.; Morales, J. y Pérez Medina, S.
57. Aguilar, Adrián G. (2002).
58. UN-Habitat (2011e).
59. McKinsey Global Institute (2011).
60. The Global Pact is a United Nations initiative to reconcile the interests of businesses and civil society through a set of principles based on human rights, labour and environmental principles, and the fight against corruption.

Valparaiso, Chile.
© Juan Baialardo

CHAPTER 3

Housing, public spaces and living together

Summary

1. Inequality and poverty can be expressed in terms of the prevalence of urban slums in the region. In general, the proportion of people living in slums has fallen, but the actual population in these areas is 111 million, a higher figure than twenty years ago.
2. House rental and land markets are poorly developed and regulated, despite their decisive role in the housing problem. In general, there has been an increase in security of tenure in informal settlements, although the integration process is still incomplete.
3. The quantity and quality of the housing stock is insufficient to ensure adequate conditions for every household. Several countries financially support families to buy or improve their housing. The mechanisms have proved effective, but are not always accessible to the poorest and pose significant challenges to the quality and location of dwellings, the supply of services and the urban model.
4. Shopping malls are becoming the main public spaces for socializing. Governments pay little attention to the creation and maintenance of formal public spaces, which are scarce and often of lower quality in the suburbs and marginal neighbourhoods. The region's cities experience high levels of violence and insecurity; a problem with important social and economic consequences which also has an impact on the organization and layout of cities.

Keys to change

5. The region has considerable experience in housing policies and neighbourhood improvement schemes. However, the housing deficit is so deep that few countries can aspire to universal housing in the short or medium term. Faced with budgetary constraints, it is essential to generalize planning policies and land management to harness the value of public investment and give greater support to improving existing housing and the incorporation of segregated and fragmented urban areas.
6. Housing policies should always include an urban dimension, with specific measures promoting access to basic services, mobility and public spaces. In the region, there is some experience with historic urban centre revitalization and integrated neighbourhood improvement schemes that could be replicated.
7. Lack of security in cities is an enormous problem requiring coordinated action by different state institutions, including local authorities, who can also contribute to small-scale programmes involving the communities and encouraging coexistence and social cohesion.
8. Data and indicators for analysing housing conditions are very biased. Improving quantitative and qualitative modalities for measuring housing and public space deficits would bring a better understanding of the problem, focus policy interventions and help make budget adjustments as necessary.

CHAPTER 3

Housing, public spaces and living together

In the past twenty years, the housing situation of the population of Latin America and the Caribbean has improved. Governments have taken important steps to implement the right to decent housing, but there are still serious deficiencies to guaranteeing adequate housing for everyone.

Housing is not only a roof to shelter under, it is also a place to live in and raise a family. For many, it is their most important asset in monetary and, sometimes, emotional terms; the biggest investment of a lifetime and often the place where resources are generated to support the household. Housing is also the basic unit of urban growth. It defines neighbourhoods, demands on mobility, services and, in a large part, our relationship with the city and the environment.

A multidisciplinary approach is needed to address urban housing needs due to the strong linkages between housing and social sciences, economics and the environment. While the scope of this publication is limited and cannot cover all these aspects, the sections of this chapter are an approach to some of these with an intentional focus on the situation of vulnerable populations.

3.1 Housing

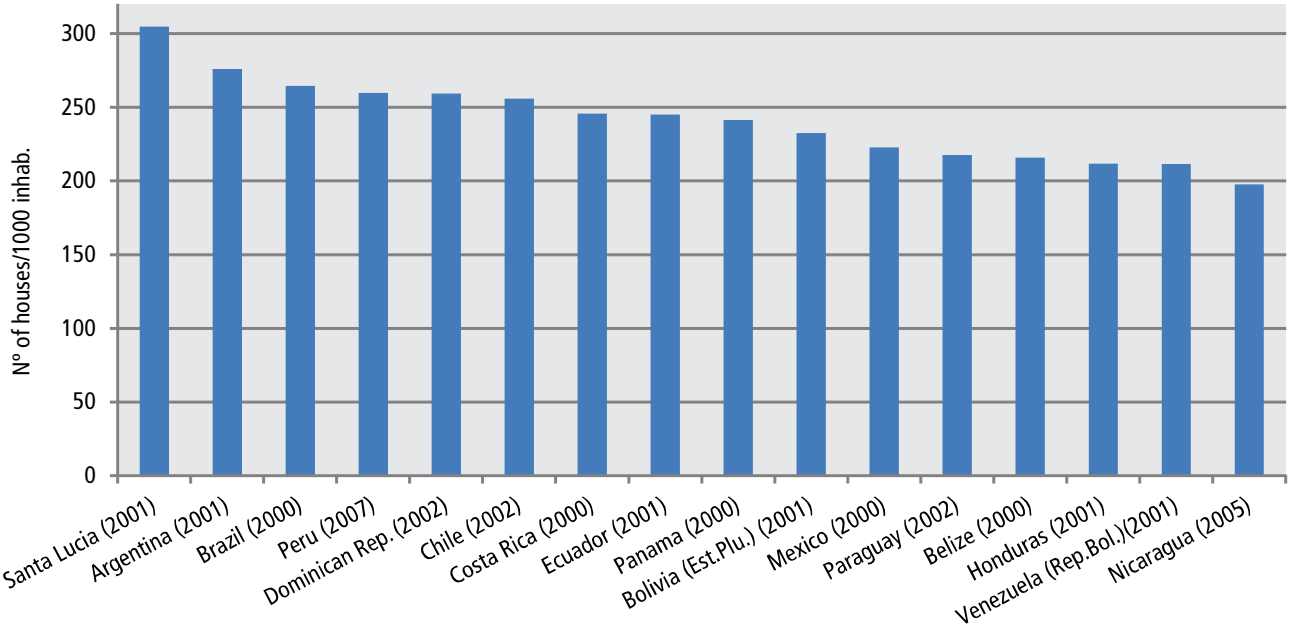
Three basic aspects describe the housing situation: the number of existing houses (housing stock), the shortfall in the number of units needed (quantitative deficiency), and the number of units that do not offer a minimum standard of habitability for an adequate and decent quality of life (qualitative deficiency).

Current measurements have constraints because they focus on those aspects that are easiest to quantify and do not include subjective criteria such as habitability, privacy and design aspects of housing[1], or they do not consider the wider environment that can be decisive for the quality of life.

Quantitative Deficit

The region's national housing stocks show significant gaps compared to each countries' population size, which has an impact on housing conditions and price[2]. According to figures derived from the Census of 2000, which offers the latest available comparative data on this issue[3], the region's countries have between 200 and 300 dwellings per thousand inhabitants.

Figure 3.1
Existing Housing per 1,000 inhabitants



Source: Compiled with data from CELADE. Population and Housing Census (last census available). Consulted July, 2011.

Mazatlan, Mexico. The problem of housing includes access to basic services. © Luis Brito

It is difficult to determine exactly how many houses would be required to meet population needs, as the definitions of standards of habitability vary culturally. The deficit depends not only on the number of existing units and inhabitants, it is also linked to population growth, the phase of urban transition, reductions in the household sizes, housing retention practices by markets, and policies on land access and housing for the poor. To determine the quantitative deficit, the number of secondary households that coexist in the same dwelling is also required, as well as the number of units so precarious that they need replacing.

There are no official figures on the quantitative housing deficit for the whole of Latin America and the Caribbean. In some cases, the censuses provide insufficient information and the updated versions are not available for comparison with data from the 2010 census round. Studies on several countries in the region show the quantitative housing deficit exceeding 50 per cent for all households in Honduras and Nicaragua, and is close to, or above, 30 per cent in Argentina, Bolivia, El Salvador, Paraguay and Venezuela[4]. The figures give a clear indication of the degree of cohabitation in the region, which has cultural roots, but which is also a strategic response to economic survival, job insecurity, poverty and the expense of housing, particularly for women and young people[5].

Beyond the current housing stock, the evolution of the deficit, which increased from an estimated 38 million units in 1990 to between 42 and 51 million in 2011[6], is worrying. Without a profound change in this trend, housing shortages will continue to be one of the biggest challenges for Latin America and the Caribbean in the coming years.

Major Housing Shortages

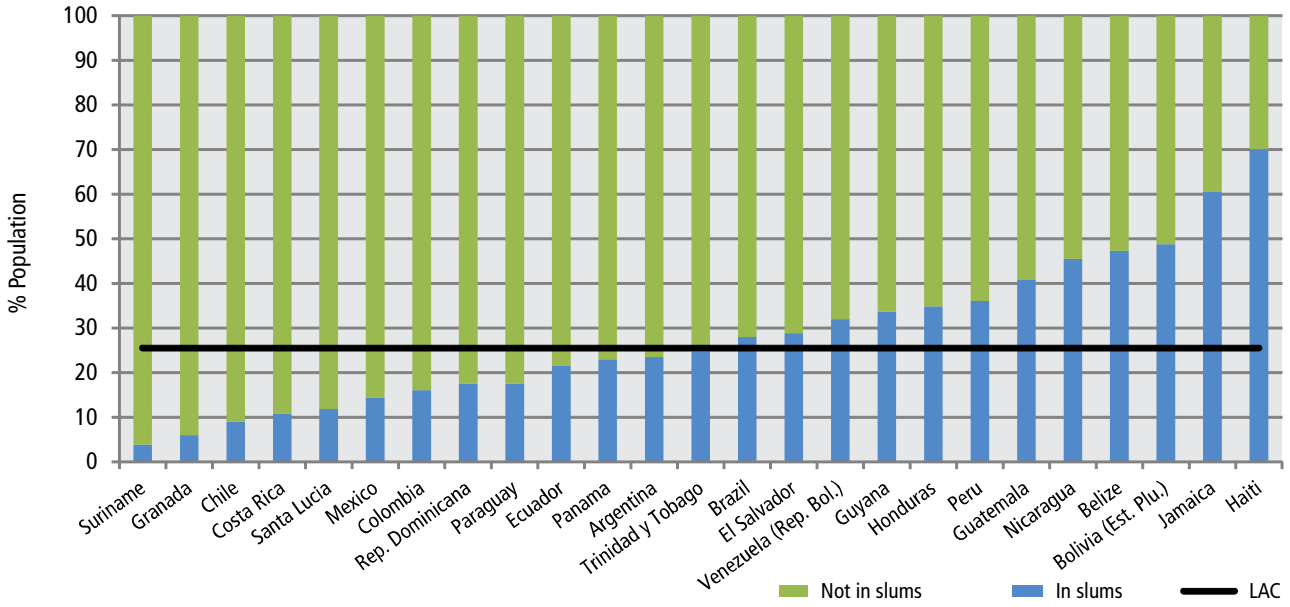
The housing shortage problem is not just about insufficient numbers, but also the present condition of a high proportion of units in terms of space, construction materials and access to public services[7]. Many are concentrated in socially and spatially segregated areas, named in different ways, according to the country in question, like slums, shanty towns, shacks, *favelas* or misery belts.

Assessing housing deficiencies is even more difficult than estimating quantitative deficits because it is a broad phenomenon with multiple causes and outcomes. While many countries have improved data collection systems and unified some criteria, the type of information collected still does not allow an accepted comparative analysis of the phenomenon[8].

A slum household is, according to UN-Habitat[9], a group of individuals living under one roof in an urban area, deprived of one or more of the conditions set out in Text Box 3.1, including housing made of durable materials, with sufficient space, access to good water sources and sanitary facilities, and without risk of eviction. This definition is part of the Millennium Development Goals, which aim, among others, to 'significantly improve the lives of at least 100 million slum dwellers by the year 2020.'[10]

Under this definition, one in four inhabitants in the LAC region live in slum conditions[11], a physical and spatial sign of poverty and inequality, as discussed in Chapter Two, which are persistent phenomena in the region.

Figure 3.2
Latin America and the Caribbean. Urban population living in slums, circa 2005[a]



[a] The average for Latin America and the Caribbean includes 27 countries and territories. 2005 data, except for Argentina, Bolivia, Brazil, Colombia and Guatemala, with data for 2007.

Source: UN-Habitat. Global indicators database. Special processing of household surveys using the four components analysis for slums (improved water, improved sanitation, durable housing and sufficient living space)

Box 3.1
UN-Habitat's Slum Definition

UN-Habitat defines 'a slum household' as a group of people living under one roof in an urban area that does not have one or more of the following conditions:

1. The house is hard-wearing, permanent, and protects against adverse weather conditions.
2. It has a large enough living space, meaning no more than three people sharing a bedroom.
3. There is easy access to enough drinking water at a reasonable price.
4. There is access to adequate sanitation: private or shared public toilet for a reasonable number of people.
5. There is tenure of security against forced evictions.

Not all settlements are homogeneous, and not all inhabitants of slum and informal settlements suffer the same degree of deprivation. This depends on how many of the five above conditions are met.

Given the difficulty of finding words that meet diverse cultural feelings, international agencies indiscriminately use the terms 'precarious/informal settlements', 'slums' and 'marginal neighbourhoods'.

Source: UN-Habitat http://www.unhabitat.org/documents/media_centre/sowcr2006/SOWC%204%20Slum%20Definitions%20and%20Deprivations-Espa%C3%B1ol.pdf

The regional situation is heterogeneous. The proportion of urban population living in slums varies from Suriname, with almost 5 per cent, to 70 per cent in Haiti[12]. In addition to Haiti, others with high levels (in descending order) are: Jamaica, Bolivia, Belize, Nicaragua and Guatemala. In general, countries with lower supply and/or a wider quantitative housing deficit, have the worst physical conditions and access to basic services.

Many current housing deficiencies started as temporary housing options that became permanent in the absence of alternatives. The social (Self-help) production of informal housing conditions often remains the only or best option for those living in poverty or excluded from the formal markets.

These homes are located in informal settlements, usually in peri-urban areas, run down central areas, and places of environmental risk, both within and outside the city limits. The degree of consolidation, deficiencies and problems are diverse, but these settlements are often totally or partially deprived of basic services, adequate access to public spaces and transport systems, and are particularly vulnerable to urban violence and environmental threats, as will be discussed in the following sections and chapters. Informal and slum housing affects women and the young most, especially in terms of overcrowding, lack of security and economic opportunities.

To assess the true complexity of housing conditions, dwellings need to be considered in relationship to the

environment and the city, and not in isolation; yet these aspects are not covered by international measurements.

The region has seen some interesting experiences, like those carried out in the 1990s in Venezuela and Chile, with measurements based on aerial photographs[13]. While these experiments at the time were not repeated, increased computing capacity, cheaper satellite imagery and census geo-referencing – which have already been employed in the last census in Brazil and Chile – open up a new opportunity to include a spatial dimension in housing analyses. Technological advances mean that more complex calculations can be carried out while processing greater volumes of information, even from the inhabitants and services users.

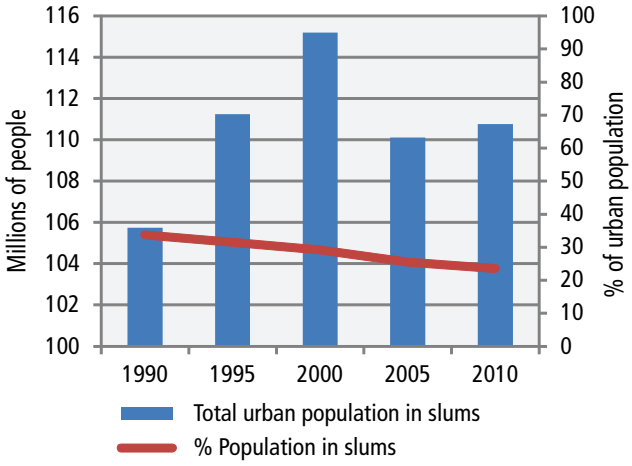
Relative Improvements to Slums

In the past twenty years, access to basic services for households throughout the region has improved considerably. Today, urban access to electricity is almost universal (between 97 per and 100 per cent coverage); 97 per cent of the urban population has access to improved water supplies; and 86 per cent has improved sanitation, but these rates neither take into account service conditions, nor price and quality[14].

During the same period, the share of the urban population living under slum conditions decreased by nine percentage points (from 33 to 24 per cent)[15]. But this was not enough to reduce the absolute numbers as people living in these conditions increased from 106 to 111 million.

At the country level, important progress has been made in Colombia, Nicaragua and Peru, where the number of people without adequate housing conditions was reduced by a quarter between 1990 and 2007. Mexico also made progress, while the situation in Argentina and the Dominican Republic has stabilized. In Brazil, estimates show that, despite a decline in relative terms, the population living in informal settlements rose by more than five million in the same period[16]; likewise in Haiti, where absolute numbers have almost doubled over the past two decades which, in part, is the outcome of the 2010 earthquake.

Figure 3.3
Latin America and the Caribbean. Urban slum population trends, 1990-2010



Source: Compiled with data from UN-Habitat (2009). Database Global Urban Indicators.

Box 3.2
Housing Emergency in Paraguay

In 2011, the Government of Paraguay formally declared a domestic housing emergency and proposed a plan to increase the supply of housing to poor families, including a subsidy scheme inspired by the Chilean model, and significant change to the traditionally-low public investment in housing.

The censuses of 1992 and 2002 provided the basis for an analysis to determine the housing stock and to estimate the quantitative and qualitative deficit. They established an index reflecting the overall housing quality based on three indicators (materials used, sanitation and housing types) and classified the housing according to overcrowding and grouping (families who lived under the same roof and shared or had independent household budgets).

The analysis showed an official urban housing deficit close to 58 per cent of the current stock. Some 72,000 new units were needed to meet the quantitative deficit, and the conditions of 327,000 existing homes needed to be improved to resolve the qualitative deficit.

Additional information available at: www.senavitat.gov.py/pdf/deficit.pdf

With the above data interpretation measurement limitations should be taken into account because they depend heavily on the criteria used. Apart from the UN-Habitat indicators, data produced by other methodologies is also available, such as CELADE's 'secure tenure index'[17]. The diagnosis of the housing situation may differ considerably depending on the indicator under consideration, as illustrated by the case of Paraguay.

The Majority are Owners

Regular surveys in the region show that home ownership is the main legal form of tenure in the region, regardless of city size. Despite large economic differences across the region, a clear relationship has not been established between a country's economic level and its distribution among owners, tenants and other inhabitants.

For all countries with available data, more than half of all urban households stated they owned the place they lived in. However, this does not mean they hold the legal deeds. In many countries, including Argentina and Brazil, the term refers to ownership of the physical structure, meaning the house itself, but neither land ownership nor deeds to the property. Nor does the term refer to whether the house or the neighbourhood is legally recognized, according to urban plans, nor whether it meets any legal requirements to be considered 'urban' under city planning laws.

There are variations between countries in terms of rental tenancy, with five per cent of households falling in this category in Nicaragua, nine per cent in Peru, 34 per cent in the Dominican Republic and 38 per cent in Colombia[18]. Estimates show that the rental market is proportionally greater in formal areas because of mechanisms that provide more effective legal protection[19].

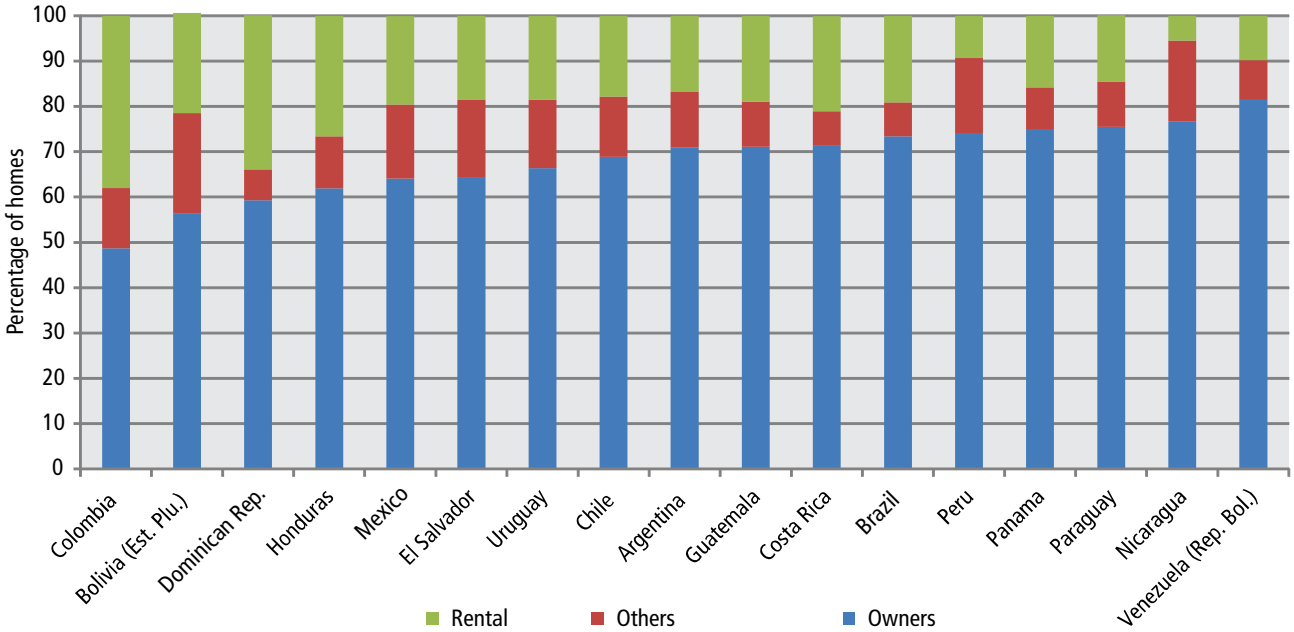
Regarding those classified as 'other forms of tenure', the percentages differ from country to country but there is always a significant number in this group, ranging from 10 to 20 per cent of households. This category can be prone to high housing shortages. These figures could be higher in Caribbean countries with Anglo-Saxon traditions due to their traditional or collective property systems (currently transitioning to a private scheme), the legacy of colonial systems, and the weakness of property registration and ownership systems, but it remains difficult to estimate without official data.

Despite their economic and social importance, policies dealing with housing rentals have hardly been developed. Low-income groups could find alternative housing in urban areas, if there were subsidized rentals targeted this group. They would also have a positive impact on real income levels, housing conditions and quality of life for families and the city would avoid public expenditures associated with illegal urbanization[20].

Morelia, Mexico. Home ownership is the main legal form of tenure in the region.. © Jorge Adrián Ortiz

Regarding tenure in irregular/informal settlements, the region has over forty years' experience redefining property rights in these contexts. Many cities now offer title-deeds as a means of legalising the possession of individual plots for families that occupy them[21]. There are many variations; both on the scope and format, and such policies exist in at least 17 countries in Latin America and the Caribbean[22].

Figure 3.4
Distribution of Urban Households by Tenure Status of Housing, circa 2007



Source: Compiled using data from ECLAC, Statistics and Economic Projections Division, based on tabulations of household surveys in the respective countries.

Table 3.1
Recent Urban Tenure Trends

Country	Country	Variation in percentage of households		
		Ownership	Rental	Others
Venezuela (Rep. Bol.)	1990-2007	7,3	-7,7	0,4
Peru	1997-2003	6,9	-4,6	-2,3
Brazil	1990-2007	6,5	-2,7	-3,8
El Salvador	1990-2006	6,3	-8,3	2
Chile	1990-2006	5,3	-1,9	-3,4
Honduras	1990-2007	4,3	2,3	-6,7
Bolivia (Est. Plu.)	1990-2007	3,9	2,6	-6,4
Guatemala	1998-2004	2,6	-1,7	-0,9
Paraguay	1990-2007	1,7	-5,0	3,4
Uruguay	1990-2007	-0,3	-2,7	3
Costa Rica	2000-2007	-4,9	4,5	0,3
Nicaragua	1993-2006	-4,9	0,2	4,8
Argentina	1991-2006	-5,6	2,2	3,4
Mexico	1992-2006	-7,2	3,3	3,8
Dominican Rep.	1995-2006	-7,8	6,5	1,4
Colombia	1990-2007	-12,5	3,6	8,8

Source: Compiled with data from ECLAC Statistics and Economic Projections Division, based on tabulations of household surveys in selected urban areas of respective countries.

Box 3.3
Regulatory land title changes in Peru and Brazil

A well-known case is Peru, where large-scale land title programmes have been developed. Between 1996 and 2006, over a million and a half land titles were issued, with over a third of these in Lima[23]. This scheme was not accompanied by investments in or improvements of basic services networks, roads or public places, and has therefore not yielded the expected results while the impact on poverty has been debatable. Contrary to expectations, there has also been no significant change in access to formal credit for title-holding families[24].

In Brazil, a representative example is Recife which has one of the oldest informal settlements located on public land. Legislation prevented any land rights recognition for residents in these neighbourhoods. To overcome this, authorities created a 'Real Rights of Use Assignment' legal modality, which helped establish a new paradigm for the social function of public and private property. The assignment was a first step in stabilizing neighbourhoods and urban improvement action plans, as well as public investments. This case is particularly important because the legal concept was subsequently incorporated into the City Statutes (federal legislation approval in 2001), thus becoming a tool for all Brazilian municipalities.

Subsidies for Housing Construction and Improvements

Latin America and the Caribbean stand out in the international arena for the quality and diversity of their subsidized housing programmes. Subsidies, public gants, generally in monetary terms, but also in materials, credit facilities, reduction of costs associated with housing, and other supplements have been used in the region as important instruments for public policy interventions in the area of housing and habitat.

Since the 1980s, several countries in the region have progressively adopted social housing policies with a market focus and so-called 'demand-side' subsidies, by which the state grants low-income households or people cash supplements so they can access social housing produced by the market. As well as helping families, this policy is also designed to increase housing stocks through private-sector production, incentivizing the construction sector and boosting economic dynamics.

Following the pioneering Chilean model, countries such as Colombia, Costa Rica, Mexico and Brazil have adopted similar subsidy schemes for the construction, acquisition or improvement of housing.

Depending on the country and the target population, the demand-side subsidy scheme also offers other products, like favourable mortgage loans and other direct or indirect subsidies for housing construction. These are 'supply-side' subsidies, which support companies and services with the purchase of land, construction materials, housing and infrastructure, banking services and credit. Also included are discounts on payments associated with official procedures, drafting the deeds and registration of the property as social housing.

In the past, mass subsidies to the housing supply-side were not very successful because they did not allow for cost optimisation. However, it is worth highlighting that, with this mechanism for facilitating or accelerating adjustments to the supply of housing and services of social interest, housing is not generated spontaneously, because it does not offer sufficient short-term returns.

There are also direct subsidies and grant programmes, consisting of small amounts to improve physical housing conditions that do not meet an adequate standard, especially regarding kitchens and bathrooms. Generally, these programmes reach more beneficiaries as they are not linked to any legal conditions like property rights or formal recognition of the settlement. These are very visible politically because they provide concrete housing improvements, even though they do not solve more fundamental problems, such as lack of access to water mains, sewage and waste water networks.

The advantages and disadvantages of this subsidy programme have been the subject of numerous debates. Whereas subsidies are powerful tools, they introduce market distortions and should be used with care and transparency to avoid social, economic or environmental costs that could compromise their objectives and sustainability.

Grants or subsidies should benefit those most in need. Market logic tends to exclude the most vulnerable sectors that do not offer the right economic, savings and financing profile. This exclusion is made worse by inefficient and underdeveloped urban land markets, finance and credit facilities in the region. The solution is to include selection criteria in line with the socio-economic realities of poor large families. Also, it is not always feasible to own a house and get a bank loan, and in such cases alternatives have to be found, such as rental subsidies.

A weakness of these schemes is linked to the location, design and quality of subsidized housing, because these components are decisive for the market. The pressure to cut costs leads to choices of extremely peripheral land and inadequate housing services. As such, subsidies have to be linked to minimum quality standards or otherwise new poverty traps are created. Without guidance from public authorities, the market would continue with its economic logic and reproduce the very spatial patterns of social segregation that prevail in the region.

Although no universal solution exists in all contexts, it is reasonable to say that the most effective programmes are those that manage to combine the advantages of supply and demand modes, public authority action to regulate standards and the dynamics of land markets.

An important factor to consider is that many housing needs can be satisfied with the current housing stock. But it is important to address the quality of existing units with housing and neighbourhood improvement programmes, and interventions to reduce structural weaknesses and promote urban renewal.

Box 3.4
The Chilean Model and Its Limits

Considered a regional paradigm, the Chilean Government developed a model that minimized the quantitative housing deficit, providing virtually universal coverage for basic services in urban areas. With a market orientation, the state used direct subsidies to enable households to acquire new social housing produced by the private sector which, in the 1980s, was highly innovative. This scheme deregulated housing standards, design and location, and liberalized land regulations.

While the housing stock has greatly increased and the quantitative deficit has decreased to a minimum, public concerns focus on quality problems, segregation, fragmentation, insecurity, urban violence and overcrowding, especially in neighbourhoods and areas where subsidized housing is located.

Academic research like *Those with Roofs*[25] and *Crime and Urban Violence*[26] talk about the impacts of subsidized housing design and location on these social problems. The quality and location of housing, and its surroundings, stand out as key elements in housing policies.

The dynamic nature of social housing construction, together with the deregulation of new urban areas and a lack of coordinated land and housing policies, contributed, at least in the case of Santiago, to disproportionate land price increases on the urban peripheries. Consequentially, land represents a higher proportion of final housing costs, and is at farther distances to the city centre and its sub-centres. This hinders poor people's access to housing, while reducing the quality of housing stock[27].

Box 3.5
Housing Subsidies in Colombia and Brazil

In Colombia, since 1991 there has been an institutional and financial framework for the development of public subsidies to households, mainly for the purchase of new housing. The device distinguishes two groups: priority housing for the poorest families, and affordable housing for households with limited resources. The subsidy amounts are progressive in terms of economic means, and based on a score calculated by the national system for identifying potential social programme beneficiaries (SIBEN).

According to a recent IDB[28] evaluation, only 15 per cent of all Colombian households have the financial capacity to cover the costs of a mortgage. An important consequence is that the effective use of allocated allowances is variable, because households do not always meet the savings requirements or banking profile. The evaluation showed the cost of home ownership and bank credit compromise 25 per cent of the basic consumption needs of beneficiary households, implying that housing effectively induces poverty.

In 2009, the Government of Brazil launched the national 'My house, My Life' programme to build one million houses in two years. The programme offers various formats, depending on household income levels. For families earning up to three times the minimum wage, the programme works through grassroots organizations and public-private partnerships. For other groups, the mechanism is in line with traditional private sector approaches.

The programme combines demand-side subsidies and financing for affordable housing through repayable loans. More than 338,000 homes were built and handed over in the first two years, with more than a million more contracted. Some BRL 53,140 million (USD 28 billion) have been invested, creating 665,000 new jobs.

The programme has been considered a successful consolidation of Brazilian housing policy because of its size and the amount of money involved. There are still challenges, however, like how to create more compact, integrated and sustainable cities with services, which are planned to be addressed in the project's second phase.

More information available at:
http://www1.caixa.gov.br/gov/gov_social/municipal/programas_habitacao/pmcmv/

Land and Urban Planning Policies

In most economies in the region, urban land markets were liberalized over the past few decades which, together with other factors, have created a breeding ground for speculation. Land markets are unique in that they are not elastic. It is a natural resource available in limited quantities and determined by the criteria of location and infrastructure, neither of which are transferable.

The problem is that land does not just have an economic function but also an inherent social purpose. Land acquisition, either in the formal or informal sense, is one of the principal ways to access housing. It determines the forms and conditions of urban sprawl. Policies addressing housing, urbanism, and poverty reduction cannot be effective if land markets, including the informal component, are ignored.

Paradoxically, urban land has rarely been the subject of state policy and, in most countries, governments have only taken retroactive measures to regularize illegal or informal situations. Apart from some exceptions, urban land markets are subject to very little regulation in Latin America and the Caribbean, and there are no clear public policies promoting equitable distribution.

The concentration of economic resources in cities and sustained increases in urban land prices make land taxation a key tool for financing local government. Faced with traditionally low property taxes, several cities, including Bogota and São Paulo, have put measures into practice to obtain resources from the profits that governments can make when they assign land uses and set land densities, and when they make public investments in a city.

Box 3.6
The Land Taxation as a Resource to Finance Infrastructure

Bogota and São Paulo are good examples of the compensation governments can derive from using urban projects as part of a wider mechanism for land management and planning[29].

Bogota used 'Share in Land Surplus Values' to collect approximately USD 38 million[30] between 2009 and 2011 and redistributed this mainly through funding social housing and improving slums.

São Paulo has been able to capture significant revenues to cover infrastructure costs and ensure housing for low-income residents through 'Additional Floor Space Construction Certificates' (CEPAC). This is a type of public auction of additional floor space area that was not originally planned in the urban operation. One example is the "Faria Lima Urban Project"; between 1995 and 2004, developers bought up about one million square metres of addition construction space to be used within the perimeter of the project, capturing more than USD 150 million[31].

There are experiences in other cities too with instruments adapted to local urban dynamics, or technical and legal frameworks. The tools can be tax-based, as in the case of Bogota, or non-tax obligations associated with planning, such as land quotas for constructing infrastructure, social housing quotas in real estate projects etc. These measures increase the supply of developable land, creating financing for urban infrastructure and discouraging speculative land hoarding practices[32].

3.2 Public Spaces

Housing evaluations cannot be made without considering the supply, availability, quality and safety of public space. Public spaces are the places, *par excellence*, we utilize together and where we socialise. They are the backbone of cities and their services, and have social, institutional, environmental, mobility and recreation functions.

Urban public space and space for private property built for public use, such as shopping malls, have an important role because they are extensions of houses, particularly when these are small. The availability of public space, both in terms of quantity and quality, plays a central role in the attractiveness of cities and the social acceptance of the urban densities so necessary for sustainability.

Weak Measurement and Control

The region does provide studies on public space from functional, legal and social perspectives. However, the qualitative and quantitative measures of urban public space, its availability, use and condition are almost non-existent and very partial.

Measuring the supply of public space poses challenges similar to those of housing. Quantitative measurements vary according to the definition of public space. Measurement may be limited to traditional public spaces, consisting of squares and parks or, on the other end, non-

Box 3.7
How are We Doing?

Various civil society initiatives in the region have tried to measure the quality of life in urban environments with a view to contributing to the debate on public space and its inclusion on the political agenda.

Citizen watchdogs have emerged in cities like Bogotá[36], Guadalajara[37], Lima[38] and La Paz[39] to control municipal management and generate knowledge to facilitate decision making. These organizations have joined the Latin American Network of Fair and Sustainable Cities. The network already comprises more than 37 observatories or local authority entities in nine countries (Argentina, Brazil, Chile, Colombia, Ecuador, Mexico, Paraguay, Peru and Uruguay).

With a mix of quantitative and citizen perception indicators, these observatories monitored and assessed various components under the question 'How are we doing?'

A pioneering project in the region was 'Bogota, how are we doing?', designed to measure the condition and quality of public space from a perspective that emphasizes collective and pedestrian issues, based on:

- Changes, conditions and coverage of the "Transmilenio" transport network and bicycle paths;
- Quantity of public space per resident.;
- The condition of sidewalks and central reservations, according to users; and
- Citizen ratings of parks and green spaces, neighbourhood access roads, lighting of public spaces, public transportation, road network and traffic management.

São Paulo, Brazil. There are few measurements of available public spaces in the region. © Dannielle Moody

built up areas, including roads, sidewalks, pedestrian spaces, green areas, road dividers, sports areas, drives, gardens, forest reserves or conservation areas, beaches and brownfield sites used as football pitches, and even malls. There is also an ambiguity between the measurement of a city's public space and green areas, which is not always accessible space or for public use[33].

The amount of green space is one of the most common measures of public space[34] along with pedestrianized streets, dedicated lanes for public transport and cycling, squares and public facilities, but additional research is needed to systematize information so that syntheses can be produced at the national and regional levels.

A project in Mexico by the National Institute of Statistics and Geography (INEGI) using data from the 2010 census, sets out to measure the condition of roads, signage, street lighting, pedestrian areas and drives for vehicles, drains, ramps and areas where trees have been planted in urban areas. This was the first benchmark measurement of the urban environment[35]. Another initiative used satisfaction surveys, carried out for the network 'New York City, How Are We Doing?'. However, the complexity of the task means that it has to be subjective, and the specific contexts of each situation represent structural constraints to finding answers to the challenge of measuring the quality of public spaces.

Fuzzy Boundary between Public and Private Space

In a region with high rates of income and opportunity inequality, access to urban services and facilities is closely linked to socio-economic status. In the cities of Latin America and the Caribbean, public space has become fragmented in terms of supply and the conditions of design, maintenance, access, security, localization and their promotion. Fragmentation is associated with social and spatial[40] segregation, mechanisms that tend to reinforce each other.

The deficit and inequality in access to public spaces has not been solved as cities expand. As land markets have been weakly regulated, land transfers to public space in the course of urban development, where they exist, are not always appropriate, neither in terms of their proportions, quality or location.

In informal urban areas, the best-case scenario is a soccer field and a community room as the only public space available besides streets. Unplanned urban areas have very narrow roads with no pavement or drains, in which the land could have been used for community activities has been occupied by private use. This is particularly disturbing considering that the negative impacts of lack of public space increase when the domestic space per person is small, effectively doubling urban confinement.

However, it would be wrong not to value public spaces that result from organic or informal occupation of land, especially considering the nature of the activities and events that they host[41]. Existing public spaces in urban slums have a particular meaning for the inhabitants[42] and have the potential to become fully-consolidated public areas with high levels of economic and social sustainability through relatively limited physical interventions.

On the other hand, gated-communities for the middle-to-high purchasing power market tend to have restricted-access recreational areas that are, generally, limited in size and design, and far from what could be achieved with proper planning and collective investment. At the same time, shopping centres have emerged as common meeting places, replacing traditional public spaces but with one crucial difference: they are private spaces, designed exclusively for consumption with access rules that depend on the appearance and the purchasing-power of people.

Many cities in the region also face the problem of public space occupation by traditional, formal or informal, economic activities. This phenomenon is largely due to lack of regulations and control by local authorities. Faced with the problems this can generate, it is important to note that informal trade in public spaces is an essential source of revenue for large sectors of the population sustained by

Box 3.8
Public Space in the Charter for the Right to the City

In the 1990s, civil society started a number of projects inspired by the World Social Forum, which resulted in the Charter for the Right to the City[43] - a tool to fight exclusion and establish commitments and measures to favour a decent life in cities.

In terms of public space, the Charter states the right to an equitable enjoyment of cities within the principles of sustainability and social justice (Preamble).

The formulation and implementation of urban policies should promote urban spaces that are socially fair and environmentally balanced and provides conditions of safety, dignity, and gender equality (Article II).

To ensure rights to equitable and sustainable urban development, city planning and programmes and projects should integrate the issue of urban security as an attribute of urban public space (Article V).

Cities must establish and ensure the right of association, assembly, demonstration and democratic use of public spaces (Article IX).

The right to fully enjoy the city and its public spaces has received unique recognition in Ecuador, where it was included in the 2008 Constitution (Article 31)[44]. The Mexico City government signed the Charter for the Right to the City in July 2010[45].

Arequipa, Peru. The city streets are overrun by cars. © Claudia Lucía Palacios

this activity. Police evictions and confiscation of goods, a frequent resort in the region, do not solve the problem, especially if not accompanied by alternatives that are economically and socially viable.

With car ownership rates steadily increasing[46], cities have increasingly seen their streets invaded by cars. Recent initiatives in the region include a number of projects to re-appropriate road space by opening weekend bicycle lanes or the temporary or permanent pedestrianization of some streets. Such initiatives generally have a high degree of public engagement.

Urban Level Initiatives

In recent years, the region's countries have developed multi-purpose, integrated projects to address slums and rundown areas of the city. These initiatives aim to overcome narrow interest group perspectives in exchange for integral projects, including the implementation of major public investments aimed at opening and re-classifying public spaces, roads, parks and infrastructure, and expanding social services, even restoring the rule of law with increased police presence.

Box 3.9
Rio de Janeiro: Integrating Favelas into the Formal City

In 1994, the government of the municipality of Rio de Janeiro launched 'Favela-Barrio'[47], a new initiative for the physical improvement of informal settlements (favelas) in different areas of the city. 'Favela-Barrio' aimed at the physical and social integration of slums into the formal city through the provision of infrastructure improvements, public services and spaces for collective use, rather than just through improved housing.

The initiative took on a new dimension in 2010 with the launch of 'Morar Carioca', a new programme whose focus was on physical and social inclusion, and the ambitious objective of integrating all Rio de Janeiro's favelas socially and spatially by 2020. The programme aims to develop the previous phases, adopting a more holistic approach, with greater emphasis on long-term urban planning, environmental sustainability and access conditions to favelas. Also, the city government wants to establish a system for maintaining the works carried out and controlling and managing the occupation and use of land, as in formal city areas[48].

To extend and consolidate these efforts, the programme is looking for partnerships with federal and state governments, NGOs and civil society. Forty projects aimed at introducing higher quality in *favela* public spaces, which would help their full integration, were selected from a competition held in collaboration with the Institute of Brazilian Architects (IAB-RJ)[49].

It is too early to evaluate the specific contribution of 'Morar Carioca', but there is no doubt that the integration of Rio de Janeiro's favelas into the formal city has started, at least at the south side of the city. Parallel initiatives like the organization of athletics races, publishing good food guides, tourist visits, and the opening of restaurants and hotels in favelas are all clear signs of change.

Box 3.10

Same-site Resettlement Pilot Project: Housing with a Heart in Quebrada Juan Bobo (Medellin, Colombia)

In 2004, Medellin's municipal government chose an informal settlement at Quebrada Juan Bobo for an *in situ* social and spatial improvement pilot programme that would not require displacing the local population. The lower part of the creek that runs through the area, which mainly carries foul waters, was occupied by 1,260 people, mainly women, elderly and children, living in extremely precarious housing, with major deficits in public space and accessibility, critical social conditions and with 35 per cent of these homes at various risks from their surroundings.

The project's main priorities included establishing a high-degree of agreement with the community on the project's management, and protection against expropriations and expulsions.

Financing came from national and municipal funds, and even contributions from the local population. The key aspects of the project were underscored by respect for the environment and avoidance of new occupations of land deemed at risk environmentally and, in general, working with the community to establish new codes of social coexistence, respect, and use of common and public space.

Final results included access to water, sewers, waste collection, a mobility system and public spaces. Families had their property rights recognised and a so-called 'urban pact' between the authorities and groups that controlled this territory guaranteed safe access to the settlement[50].

Source: Best-practice programme, Cities for a sustainable future. Available at http://habitat.aq.upm.es/bpal/onu08/bp1982.html

Working simultaneously on different aspects of neighbourhood informality can create a critical mass and positive dynamics that can feed into and root themselves in public spaces, which can serve as focal points for new educational, social, cultural and communal services. Although these interventions have proven to be successful, because they require large investments there are limited replication possibilities. Such initiatives could have increased funding, if tax collection mechanisms were applied to surplus values and contributions from public works.

Lack of public investment and the progressive abandonment of historic centres have frequently resulted in their degradation and transformation into slums. In the region, there have been several comprehensive development initiatives aimed at the recovery and renewal of historic centres, particularly in capital cities like Havana, Mexico City and Quito. Beyond the successes which have achieved worldwide recognition, these interventions also pose significant challenges, particularly things to avoid, or at least to slow down, include the urban gentrification that often goes with them. Without preventive measures, the recovery of historic centres tends to displace the most vulnerable to informal peripheral areas which can become poverty traps.

Interventions in public spaces are particularly complex given the number of parties involved, both from the public and private sector and communities. Faced with this challenge, it is encouraging the see the adoption of national

Quito, Ecuador. The recovery of historic centres is being promoted in the region. © Aitor Pena Bilbao

Box 3.11
Regenerating the Historic Centres of Havana and Quito

In 1993, the historic centre of Havana, Cuba, listed as a World Heritage Site and characterized by a high density of low-income population, was declared a priority area for conservation-led programmes because of its dilapidated state.

The move led to a housing regeneration plan to restore over 300 buildings in the period up to 2005. The priorities were to improve housing, accessibility, healthcare facilities, schools and community centres.

Financing came from sources as diverse as government, the hospitality industry, the real estate sector, donations, international cooperation funds and funds from workers.

Regeneration saw improvements to social and cultural facilities and services for tourism. The project, which recovered the centre's historical heritage without losing its residential character, favoured the development of new economic activities and inspired similar initiatives in other cities in Cuba[51].

The historic centre of Quito, Ecuador, a World Heritage Site since 1979, is one of the largest in the region, occupying 376 ha. As in many other cities, from the 1980s it saw parts of the population with the economic resources leave the centre which has consequently undergone many changes, both in use, density and population.

The central area hosted institutions and businesses, while adjacent areas became tenement areas, with affordable rooms but also with serious deficiencies, overcrowding and high risks, especially from fires caused by electricity network overloads. This situation resulted in a housing project for the historic centre, the relocation of street vendors to malls, and vehicle traffic regulation (1994-2004).

With local and international financing, and private sector support, the project focused on the regeneration of vacant buildings to create social housing and private housing free of public subsidies. One of the objectives was to achieve mixed occupation by different social groups. The architectural heritage was restored while basic infrastructure like water and sanitation have been improved, and so too the lives of inhabitants. The initiative, replicated in Cuenca, Ecuador, faces the challenge of maintaining socio-economic diversity and the financial viability of the zone[52]

Source: Best Practices Programme, http://habitat.aq.upm.es/lbbpp.html

policies in countries like Mexico[53] and Colombia[54], which focus on the preservation and regeneration of public space as a tool to improve the quality of urban life.

While maintenance of public space is the responsibility of all citizens, regulation of the use of different spaces, their planning, regeneration, management and financing are competencies that fall on local authorities. The characteristics of public space, and the programmes carried out there, are crucial to city models, conditions of life for the population, and the ability to achieve more inclusive cities.

Box 3.12
Mexico: Rescue Programme for Public Spaces

The Government of Mexico started its 'Rescue of Public Spaces' programme in 2007. Its latest results assessment highlights both the positive poverty and insecurity outcomes and the inherent difficulties of its application, especially in a large country with a background of profound organized crime-related problems.

Surveys carried out in 2006 and 2008 in Mexico indicated that public spaces were perceived as unsafe; that they were underutilized, run down and poorly maintained; that they did not meet the population's needs, and offered insufficient recreational activities, which made them environments of criminal behaviour and risk.

The rescue programme was aimed at deprived areas in cities and metropolitan areas of at least 50,000 people, improving the physical aspects of spaces (parks, plazas, sports areas, gardens), and a range of social programmes aimed at promoting community organization and social participation, and preventing insecurity and risk factors. It also aims at encouraging the participation of beneficiaries at various stages of the rescue. The target units are not homes or houses, but rather areas defined by specific conditions such as deteriorated, abandoned or insecure public spaces.

The Secretary of Social Development (SEDESOL) was overseeing the project from start-up, together with state and municipal governments. Resources from these three levels of government have mainly been financed by the federation and municipalities. Accepted projects are submitted by municipalities, according to their needs, and followed by a process of modification or cancelation and the reimbursement of subsidies not exercised. Occasionally, some municipalities chose not to participate in the programme, or did not to continue it, because they did not have the financial resources to contribute the required 50 per cent of the total project cost as stipulated in the programme-specific guidelines.

Every one of the 32 states in the Republic has seen public space interventions which, in 2010, stood at 1,620. Calculations show that for each space, about 5,000 people benefit from the work carried out (installation of lighting, installation of playground equipment, rehabilitation or conversion of existing facilities, construction of sports fields etc.) and other initiatives (courses, workshops, sports activities, artistic and cultural events, awareness campaigns etc.)[55].

Source: Martha Schteingart. El Colegio de Mexico, 2012.

3.3 Living Together and Security

Public space plays a central role in social life. In the same way that run-down public spaces which are poorly planned or lack space promote antisocial and violent behaviour, their availability, quality and free access encourage open social integration and the breakdown of the physical and social barriers of inequality.

Coexistence in Latin American and Caribbean public spaces is seriously compromised by insecurity. Violence and crime have become, according to opinion polls, the main concern of citizens in the region along with unemployment, corruption and poverty[56]. The economic costs associated with insecurity are high and, as shown by a World Bank calculation for Central America[57], estimated at nearly 8 per cent of GDP[58]. The cost in human lives is reflected in the statistics: in 2008 alone, there were more than 130,000 people killed by firearms[59] in Latin America and the Caribbean.

Worrying Levels of Violence

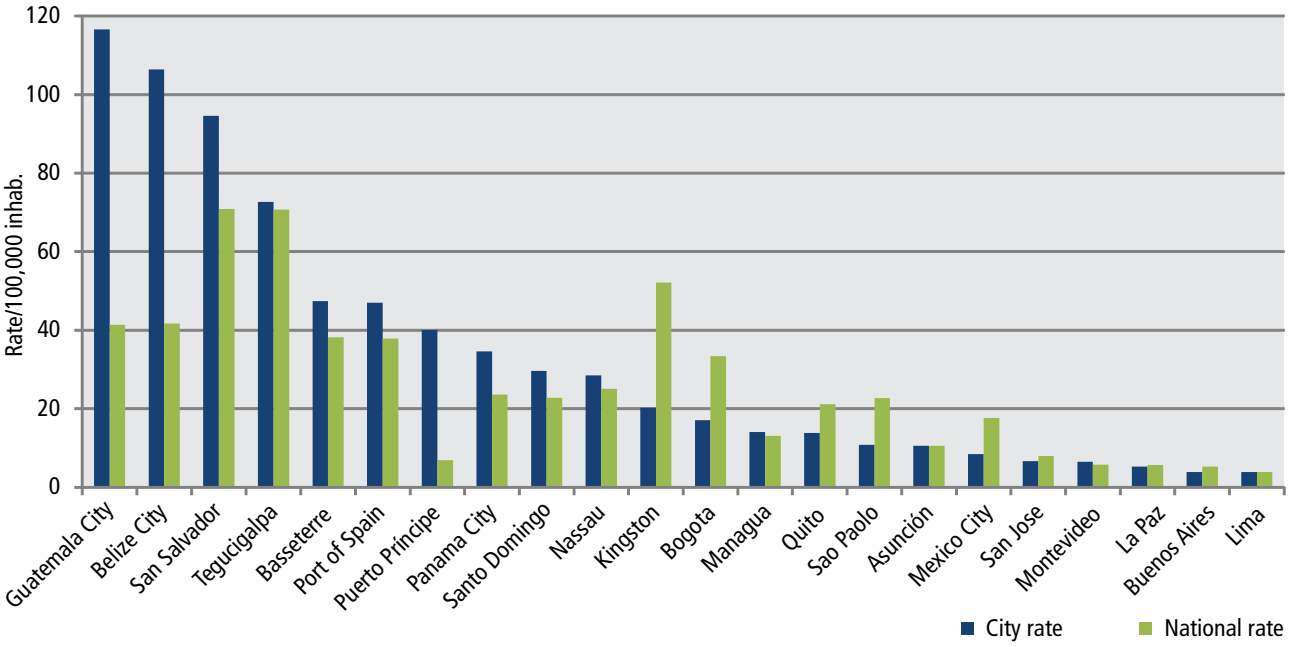
Worldwide, the highest levels of homicide are associated with low human and economic development and wide income disparities[60]. Overall, Latin America and the Caribbean has the highest homicide rate in the world (over 20 per 100,000 inhabitants), ranking well above the world average of seven per 100,000 inhabitants[61]. In El Salvador, Guatemala, Honduras and Jamaica, urban violence is reaching large proportions, causing a higher death toll than 'classic' armed conflicts[62].

Violence does neither affect every area of a city in the same way, nor all cities. If the exposure to violence of a city and its respective country are compared there are no identifiable patterns. Some cities have a high concentration of homicides in relation to their country, like Caracas, Guatemala City or Belize City, while others have the opposite situation, although with much smaller differences between the national and local rates.

One particularly disturbing type of violence, because of its intensity, frequency and low visibility, is gender violence[63], which is shown in different ways. Many violent acts against women occur in public spaces, but also on public transport, in the workplace and at home[64]. Women abandon public spaces because of a lack of security, leading in turn to a weakening of the social fabric and the seclusion of women in private spaces[65].

Between 2004 and 2009, of the 25 countries with the highest rates of femicide in the world, 13 were in this region. El Salvador was placed first, followed in descending order, by Jamaica, Guatemala, Guyana, Honduras, Colombia, Bolivia, Bahamas, Venezuela, Belize, Brazil, Ecuador, and the Dominican Republic[66]. The case of Juarez, Mexico, is well-known because of its seriousness. It has received special attention from international organizations and the media because of the duration, frequency and brutality of violence there, and the low speed of justice[67].

Figure 3.5
Homicide Rates in Selected Cities and Respective Countries, circa 2009



Source: Compiled using data from the United Nations Office on Drugs and Crime (UNODC). Accessed November, 2011

Pending Agenda

Increased crime and violence in the region has been motivated by tangible and intangible issues, the main one undoubtedly being the absence of solutions to socio-economic inequality[68]. Urban insecurity is also nourished by the deterioration and poor design of public spaces. Strategic location, accessibility, lighting and quality street furniture, which also respond to social demands, not only ensure more equality, they are crucial for ownership and social relations in urban space, as well as access to other elements and services.

Insecurity requires greater investments from society to reduce the risk of victimization, which is an additional overhead for the economy. This also impacts heavily on housing market values.

Violence has a high social cost, because it decreases options for interaction, generating distrust between people and towards institutions[69] and, ultimately, loss of cohesion which, in turn, tends to fuel the problem. The inhabitants of poor, socially and spatially segregated neighbourhoods experience higher levels of violence and coercion, especially when exposed to the presence of organized criminal groups.

Beyond the objective of violence, fear has important consequences for how cities organize themselves and the design of public and private spaces. Insecurity has a negative impact on the physical and temporal availability of urban spaces, to the extent that citizens tend to avoid areas considered dangerous or use them at certain times only. In extreme cases, this can lead to a loss of the concept and practices of community life, causing individuals to isolate themselves at home or in gated communities.

Crime and insecurity seem to have overwhelmed the response capacities of various governments[70] in the region, representing a destabilizing element for institutions and even the rule of law. The regional challenge is two-fold: to reduce levels of violence in general, and to increase levels of interpersonal trust[71].

To do so, decisive State action is needed against criminal structures. At the same time, social cohesion is the main social and public protection tool and the future of the fight against organized criminal groups. To maintain cohesion, more purposeful action by the state and society is needed to protect communities and create opportunities and capacities, not just to recover and control affected areas, but also to overcome the barriers to social exclusion.

Box 3.13
Rio de Janeiro: From Coercion to Trust

Drug trafficking is the source of much of the organized violence of Rio de Janeiro, the second largest city in Brazil. Criminal groups have acted as autonomous cells that take advantage of the geography of urban exclusion: areas occupied by poor communities, many of them in the hills, with very poor access conditions, and with inadequate social services or public security. These are the so-called favelas, where children and young people with no opportunities are co-opted by drug traffickers.

For decades, the favelas have been under the control of criminal gangs who have used these areas for illegal economic activities. They gradually took over these territories by providing services, such as selling gas cylinders or cable television connections, administering 'criminal' justice and charging fees for real estate transactions. These parallel structures have benefited from the complicity and corruption of police groups. The inhabitants of these communities have been exposed to a high degree of insecurity and violence, excluded from the benefits provided by the city and state services.

In 2008, the sheer level of violence and criminality made resolving this problem a government priority and, in December of that year, the Government of the State of Rio de Janeiro began the deployment so-called Police Pacification Units (PPU) to recapture these territories.

In January 2011, the municipality of Rio de Janeiro took a second step in this direction: the introduction of Social PPUs[72] in already pacified areas. This new programme aimed to consolidate peace and control of areas by combining public and private sector efforts with those of citizens themselves.

By May 2012, peace had been achieved in 87 favelas spread over the city, benefiting about 300,000 people with freedom of movement and regular access to services. These units, which have a high degree of social acceptance, have helped build a safer city.

This social and public commitment aims to reverse the legacy of violence and socio-territorial exclusion, consolidating peace and security, promoting social development, citizenship and the full integration of these areas in the rest of the city.

Notes

1. Torres, Jorge (2010a).
2. Ibid.
3. In reality, the censuses of 2000 include various years by country (from 2000 to 2007). While some countries have published information regarding the first decade of the century, such as Brazil and Mexico, each uses its own criteria for measurement, which are then standardized by international organizations such as ECLAC.
4. Torres, Jorge (2010a).
5. Arriaga Luco, (2003).
6. Gilbert (2012).
7. Torres (2010a).
8. At the academic level and for public policy making this differentiation tends to be made and few countries in the region measure both deficits at the general level; the most frequent is to measure the quantitative deficit.
9. http://www.unhabitat.org/documents/media_centre/sowcr2006/SOWCRper cent205.pdf
10. http://www.un.org/spanish/millenniumgoals/pdf/MDG_Report_2010_SP.pdf#page=64
11. Global Indicators Database. Special processing of household surveys using the four components analysis for slums (improved water, improved sanitation, durable housing and sufficient living space).
12. The calculation corresponds to the previous situation before the earthquake of 2010.
13. Chile applies a measure of the housing shortage that incorporates the potential for renewal the housing (acceptable, repairable, irreparable). MINVU (2004).
14. The supply of water and sanitation services is discussed in depth, along with other aspects of urban living, in Chapter 4
15. Global Urban Indicators (2009).
16. These data do not include results that appear to have been obtained in recent periods.
17. Indicator combining four aspects of habitability: access to electricity, piped water, sanitation connected to a sewage system and property ownership or lease. The data source for this index is the census of each country.
18. In some countries, official figures may vary according to whether the analysis used household surveys or census data. An example is Peru, where the census from 2007 shows that 15 per cent of the households were tenants, suggesting important differences in the measurement and conceptual approach to the condition of tenure, as well as to services and housing markets.
19. Lanjouw y Levy (2002).
20. Torres (2010b).
21. Fernandes, Edesio (2011). The author points out that the earliest experiences were Peru's regulation law (1961) and Mexico's (1974) CORETT programme.
22. Angel et al. (2006)
23. Fernandes (2011), citing Julio Calderón.
24. Fernandes (2011).
25. www.scielo.cl/scielo.php?pid=S0250-71612004009100004&script=sci_arttext
26. www.seguridadenbarrios.cl
27. CEPAL (2000).
28. IDB-OVE (2011)
29. Furtado et al (2012)
30. These figures are taken directly from Bogota District Finance Department, Treasury Management, regarding budgeted income and revenue at December in each year for the period 2009-2011.
31. Todtmann Montandon, 2007
32. Smolka y Biderman (2011).
33. Chapter 5 discusses the status and importance of green areas in cities in the region.
34. This is the case of measurements made by UNEP in 2010 on green areas in selected cities in the region, offering variations ranging from 30 square meters per inhabitant (m^2/inhab) in Rio de Janeiro, and 20 m^2/inhab in Bogota, up to 2 m^2/inhab in cities like Chiclayo, San Jose, Costa Rica, Santiago and Buenos Aires, and 0.5 m^2/inhab in Esmeralda. Source: UNEP (2010).
35. For additional information, see http://www.inegi.org.mx
36. For more information, see http://www.bogota.gov.co/portel/libreria/php/01.27090901.html and http://www.bogotacomovamos.org
37. b http://www.jaliscocomovamos.org
38. c http://www.limacomovamos.org/
39. d http://lapazcomovamos.org/
40. Segovia, Olga y Jordán, Ricardo (2005).
41. UN-Habitat (2012).
42. In English, one says that they have achieved a 'sense of place', or feeling of belonging, a concept related the theories of Christian Norbert Schultz on 'Genius loci'.
43. www.lapetus.uchile.cl/lapetus/archivos/1239291239Carta_mundial_derecho_ciudad.pdf
44. www.asambleanacional.gov.ec/documentos/constitucion_de_bolsillo.pdf
45. www.hic-al.org ; http://derechoalaciudaddf.blogspot.com
46. Chapter Four provides detailed information on urban mobility.
47. 'Favela Barrio'. Available at: www.fau.ufrj.br/prourb/cidades/favela/favelabairroES.rtf and IDB (2010) Effectiveness of development, 2010, available at http://idbdocs.iadb.org/wsdocs/getdocument.aspx?docnum=35804529.
48. Information based on data from the Mayor's Office at Rio de Janeiro. Available at http://www.rio.rj.gov.br/web/smh/exibeconteudo?article-id=1451251
49. Fernandes (2011), citing Abramo (2009).
50. Source: Best-practice programme, Cities for a sustainable future. Available at http://habitat.aq.upm.es/bpal/onu08/bp1982.html
51. Information about the project can be found at http://habitat.aq.upm.es/dubai/06/bp1315.html
52. Information about the project can be found at http://habitat.aq.upm.es/bpal/onu00/bp517.html and the book Best practice on social sustainability in historic districts, published in 2008 by UN-Habitat and UNESCO, available at: http://unesdoc.unesco.org/images/0017/001784/178405e.pdf
53. Rescue of Public Spaces. Secretary for Social Development. http://148.245.120.155/index/index.php?sec=31 and National Development Plan http://pnd.calderon.presidencia.gob.mx/index.php?page=documentos-pdf
54. See National Policy on Public Space adopted by the Republic of Colombia, document 3718 National Council of Economic and Social Policy, 31 January, 2012.
55. See http://www.sedesol.gob.mx/es/SEDESOL/Programa_Rescate_de_Espacios_Publicos for an evaluation of the programme.
56. Latinobarómetro 2011 .http://www.latinobarometro.org/latino/latinobarometro.jsp
57. Study does not include Panama. World Bank (2011b).
58. World Bank (2011b).
59. Figure includes data for 31 counties and territories. 2008 was the baseline, because it was the last year with complete estimations for the whole region. UNODC (2011).
60. UNODC (2011).
61. Average rate for all countries on the American continent is 16 per 100,000 inhabitants, only exceeded by Africa (17 per 100,000 inhabitants). If you exclude the United States and Canada, the average in the three sub regions, Central America, South America, and the Caribbean, is the highest continent rate. UNODC (2011).
62. Geneva Declaration on Armed violence and development (2011).
63. Massolo, Alejandra (2005).
64. Domestic violence affects all societies, and means social violence. UNDP (2008).
65. Vargas, V. (2008).
66. Geneva Declaration on Armed Violence and Development (2011).
67. CIDH (2003).
68. UN-Habitat (2007).
69. Beltrán y Velasquez (2011).
70. Banco Mundial (2011b).
71. Beltrán y Velasquez (2011).
72. www.uppsocial.com.br

Lima, Peru.
© Pedro Chincoa Rodríguez

CHAPTER 4

Basic Urban Services

Summary

1. Latin America and the Caribbean have reached the Millennium Development Goals on water supply. Currently, 92 per cent of the urban population has piped water and the figure rises to 98 per cent if we include other water sources. However, there are significant shortfalls in service quality. Estimates show that 40 per cent of the treated water is lost due to infrastructure malfunction, leaks and misuse, while pricing policies do not always cover running costs and rarely benefit the poor.
2. Progress in sanitation has been less dramatic. Seventy-four million people (16 per cent) still do not have adequate sanitation in cities. In general, the situation is slightly better in larger cities than in smaller ones, but less than 20 per cent of wastewaters and sewage is treated before discharge, resulting in health and environmental hazards.
3. Each urban inhabitant in the region generates nearly one kilogram of solid waste per day, an amount that has been increasing. While cities have improved refuse collection and disposal, extending the service to informal neighbourhoods remains a challenge. Outside the informal sector, recycling and reuse are still emerging and far from their full potential.
4. In terms of urban mobility, cities of the region stand out because of the extensive use of public transport (43 per cent), walking and cycling (28 per cent), as well as development of integrated mass transit systems (BRT). However, recent increases in private vehicles (the number has more than doubled in 10 years) and urban sprawl imply that many cities suffer from congestion and gridlock, with significant economic, social and environmental costs.

Keys to change

5. Management of basic urban services has become more complex because of urban sprawl and conurbation. Integrated approaches are needed that go beyond traditional administrative municipal boundaries, promoting compact cities and linking with urban planning and land management policies.
6. Guaranteeing the right to water and sanitation is not limited to providing infrastructure. Although countries have made progress with decentralization, regulation and control of water and sanitation, there are still challenges in terms of efficiency, availability, quality, affordability and continuity of services. Overcoming these requires reviewing and refining current governance, management and financing models.
7. Unsustainable private car use determines the patterns of urban growth in the region. There is the option of consolidating travel and public transport, addressing incentive and disincentive policies more comprehensively, taking on board socio-spatial perspectives and encouraging, where appropriate, common solutions for municipalities.
8. Defining management policies for basic urban services requires relatively advanced technical monitoring. In the region, there are no accurate records of water quality, sewerage and treatment of sewage or solid waste. Neither are there accurate assessments of mobility supply and demand. In general, data comes from the actual providers, so it is essential to define indicators that are precise, comprehensive and comparable, so that strategies can be adapted to each situation.

CHAPTER 4

Basic Urban Services

In 2010, the United Nations proclaimed access to clean drinking water essential to the full enjoyment of life and all other human rights, including the right to live in dignified and adequate conditions[1]. This aspiration goes beyond achieving Target 7 of the Millennium Development Goals (MDGs): halving the proportion of people without sustainable access to clean drinking water and basic sanitation.

In recent years, countries in Latin America and the Caribbean have made significant efforts to move towards universal access to both services. Important steps have also been taken to improve the management of municipal solid waste and facilitate mobility, but there are still serious deficiencies in quality, efficiency and continuity of services, as well as access conditions, particularly affecting the poorer population.

4.1 Water and Sanitation

Increasing demand for water worldwide, especially for agricultural use, coupled with pollution and destruction of watersheds and recharge areas, is putting pressure on water resources that affect the supply, economic development and sustainability of human settlements.

Latin America and the Caribbean are rich in renewable fresh water sources. However, some areas, especially arid and semi-arid regions of Mexico, Central America and the Andean countries, suffer from natural or seasonal shortages worsened by the impacts of climate change such as prolonged droughts and low rainfall[2].

Besides these problems, the Caribbean has additional problems, like its heavy reliance on rain water, and challenges associated with tourism, which represent, on the average, 40 per cent of gross domestic product, but which also has water consumption rates between five and ten times higher than domestic rates and also generates more waste[3].

Throughout the region, lack of access to clean drinking water and adequate sanitation is mainly associated with infrastructure problems, inefficiencies and poor services management, besides supply inequalities. Existing deficiencies and insufficient attention from the public sector imply that large amounts of liquid waste are discharged untreated into waterways and on land, resulting in the contamination of water sources that creates serious environmental damage and high social costs.

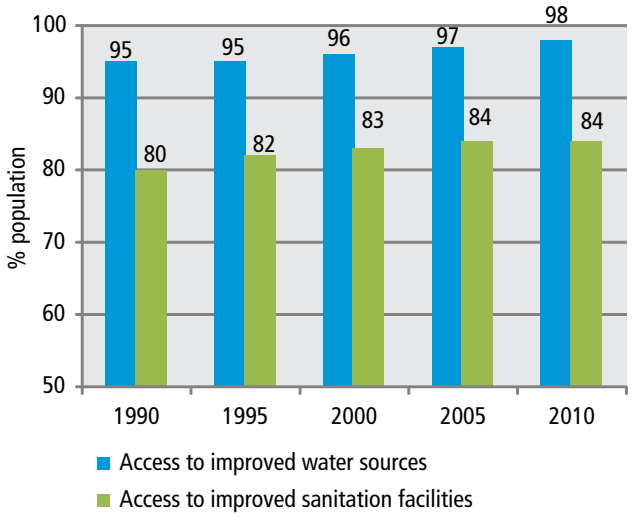
The gap in water and sanitation coverage is related to rapid urbanization over recent decades, the socio-economic status of the population, and a lack of supply of formal housing for poor families, as well as appropriate policies to generate urban financing[4].

According to data collected by the Joint Monitoring Programme for Water Supply and Sanitation (JMP)[5], water supply, measured primarily in terms of the infrastructure that carries the resource to users, covers 98 per cent of the urban population of Latin America and the Caribbean. Adequate sanitation, not including sharing or households without latrines, would amount to 84 per cent[6].

According to these results, the urban areas of Latin America and the Caribbean have achieved the MDG for water supply (97.5 per cent), almost reaching universal coverage. However, if urban sanitation coverage rates do not improve, results will be lower than those set in MDGs (91 per cent) for the year 2015 and still quite far from reaching the entire population[7].

Port-au-Prince, Haiti. There is a gap in water and sanitation coverage.
© Mariana Nissen

Figure 4.1
Region-wide Trends in Urban Access to Water and Sanitation, 1990-2008



Source: Data from the WHO-UNICEF Joint Monitoring Programme (JMP) for water supply and sanitation. Consulted in April, 2012.

Al the same, in 2010, more than ten million urban dwellers in Latin America and the Caribbean still did not have access to improved water sources and 74 million did not have improved sanitation facilities. The situation has important nuances, however. The estimate of shortfalls in sanitation would be even higher if it included such criteria as whether facilities are connected to a sewage network, or whether waste is treated. In the case of water, the figure of those 'under-served' would increase significantly if considerations of water quality, affordability and service continuity were included.

There are only isolated reports on the conditions under which services are being provided, as available information is provided by public or private operators themselves. Estimates show that approximately 25 per cent of water coverage is achieved through precarious and sometimes informal or illegal means, while for sanitation the figure is 35 per cent of the total coverage[8]. The type and quality of data available is directly related to existence of regulatory and legal frameworks and the requirements these bring[9]. Data is typically incomplete and inaccurate, excluding services provided by small-scale operators, cooperatives, associations and neighbourhood groups.

Coverage and Access to Water Services

According to the JMP, access to improved water resources implies water reaching homes through a domestic connection (in-house, patio or onto the plot) or from other sources, including public taps, tube or dug wells, boreholes, protected springs and rainwater harvesting. This definition is useful to establish whether there is access to water in its basic sense, but omits access conditions.

In the region, the main achievement of the past twenty years has been a reduction in the number of people depending on surface water and non-improved water sources by four per cent (approximately seven million people), and the increase in the percentage receiving piped water.

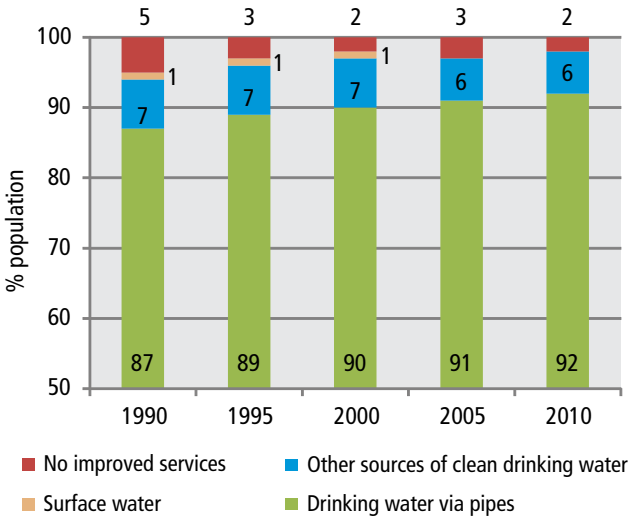
Conditions are not homogeneous throughout the region. Water coverage from improved sources is universal in the urban areas of Barbados and Costa Rica, and in some overseas territories, with almost full coverage in Chile and Uruguay. Haiti is the furthest from achieving this level, but Haiti is exceptional in the region. Likwise in the Dominican Republic where coverage declined from 98 per cent to 87 per cent between 1990 and 2010 - a period with significant population growth. Other cases of slippage are Panama and Suriname, although in both countries the coverage is higher (97 per cent of the population is served).

The data are less encouraging if one looks at the coverage of piped water. At least eleven countries in the region are still below 90 per cent: Belize, Cuba, El Salvador, Guyana, Nicaragua, Paraguay, Peru, the Dominican Republic, Saint Lucia, Suriname, and Trinidad and Tobago.

Although some countries still need improvements to achieve universal coverage, they have made significant strides over the past twenty years towards providing piped water to the population, including the Cayman Islands, where access increased by 58 per cent; Bolivia with an increase of 17 per cent; and Ecuador, Guatemala and Paraguay with improvements of around 27 per cent each[10].

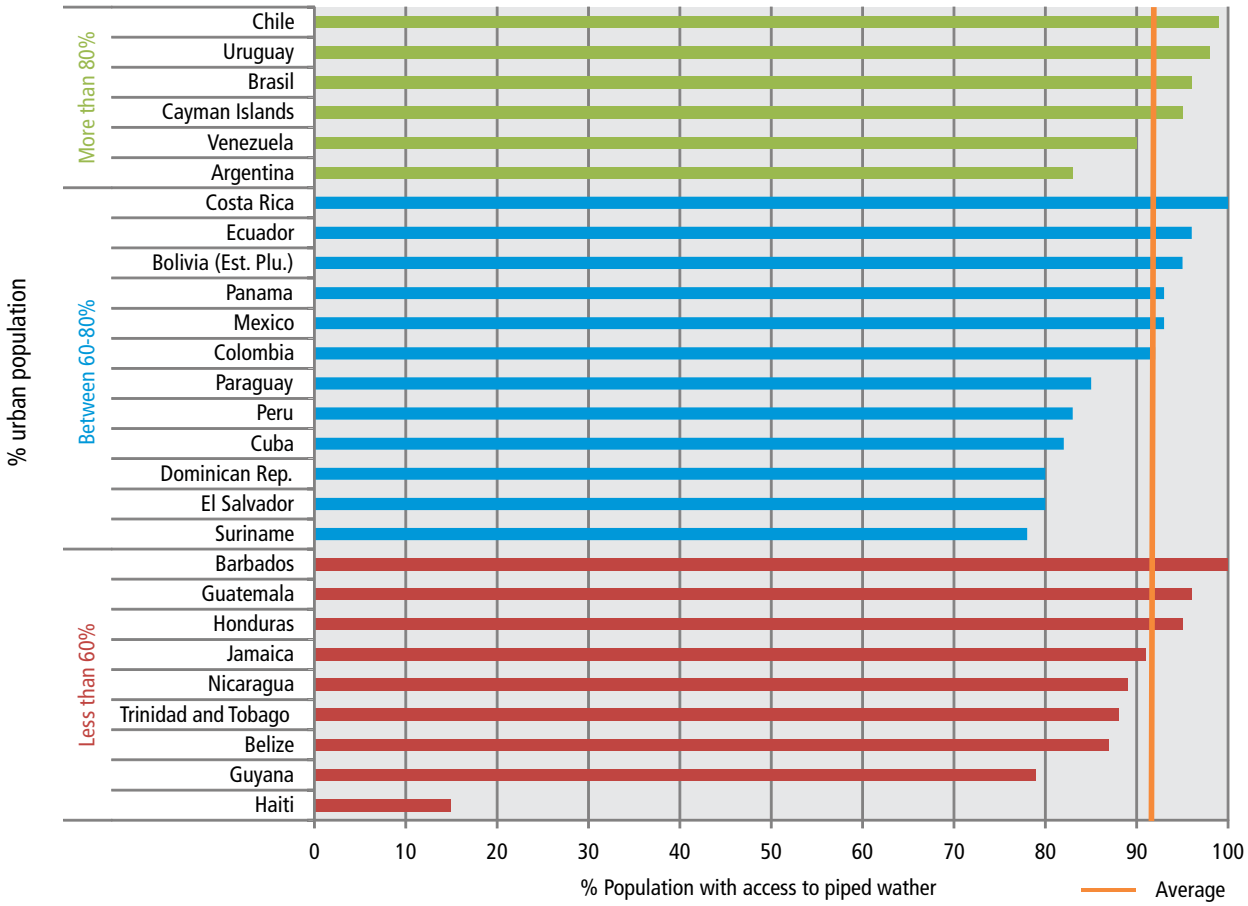
In the case of Haiti[11], 85 per cent of the urban population has access to water, but only 15 per cent receives it by pipes, 70 per cent gets it from other sources, and 15 per cent of the population simply lackes access to improved sources.

Figure 4.2
Changes in Access to Water Sources in Urban Areas, 1990-2010



Source: Compiled with data from the WHO-UNICEF Joint Monitoring Programme (JMP) for water supply and sanitation. Consulted in April, 2012.

Figure 4.3
Degree of Urbanization and the Proportion of Urban Population with Piped Water, 2010[a]



[a] Data from Argentina and Venezuela are for 2007, and 2010 for other countries.

Source: Compiled from UN-DESA data (2010) and JMP (http://www.wssinfo.org). Consulted September 2011 and April 2012.

Access to improved water sources in urban areas is particularly important because nearly 80 per cent of the population of Latin America and the Caribbean lives in cities[12]. While the rate of the urban transition meant increased pressure on service provision, currently there do not seem to be significant differences between countries in relation to their degree of urbanization.

There are no recent statistics at the regional level showing coverage differntials by city size. The latest information available for such analysis corresponds to the census round of 2000 and, although some have later data, they are not comparable with JMP measurements. However, organizing the census data by relative size of cities (following the methodology outlined in Chapter One)[13] yields interesting findings, which will help identify trends when processing data from the 2010 census for comparative use.

Although regional averages indicate that city size has comparatively little impact on access to services, the largest cities had greater access to improved water sources (90 per cent), followed by small ones (88 per cent). Intermediatete agglomerations appeared to be the least favoured (85 per cent), possibly because their higher rates of population growth in the decades previous to the census[14] led to a widening gap. The abundance of cities in Brazil and Mexico influence these averages. In individual analyses, the tardiness of small cities in the Dominican Republic, Ecuador, El Salvador, Nicaragua and Paraguay stood out, if compared to the larger ones, which could be explained by their reduced financial, technical and institutional capacities.

Coverage and Access to Sanitation Services

Sanitation is a cornerstone of public health policy and better quality of life. Lack of basic sanitation creates conditions for the spread of diarrheal and infectious diseases that can lead to higher morbidity and mortality rates. Despite the importance of safe liquid waste disposal, general sanitation measurements focus on private infrastructure rather than whether dwellings have no sanitation or if there is access to shared services by an excessive number of people.

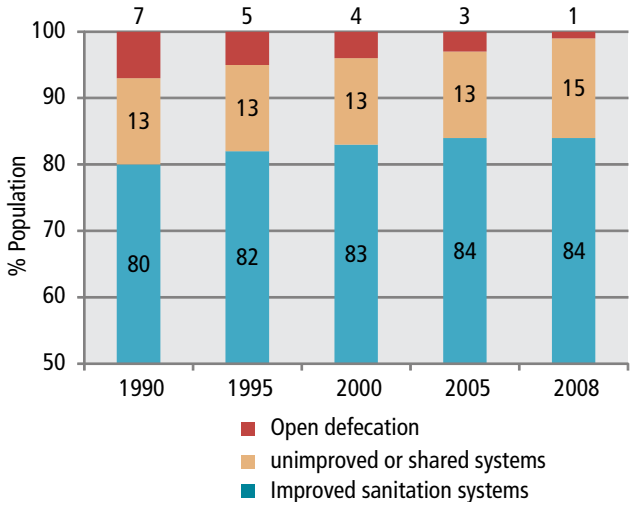
According to the JMP, the urban areas of Latin America and the Caribbean have, on average, shown a positive evolution over the last 20 years (coverage increased from 80 to 84 per cent). Over that period, the percentage of

San Lorenzo, Ecuador. The contrast in coverage and access are seen between cities, and within them. © UN-Habitat

people deprived of all types of health infrastructures has declined by six points although this was not always due to better access to improved sanitation, but rather greater use of shared facilities and services extended to those that did not have improved technology before.

In absolute terms, however, the number of urban dwellers without improved sanitation has increased from 68 million in 1990 to 74 million in 2010, despite increased coverage in relative terms. The most visible laggards are Bolivia, Haiti and Nicaragua, which have improved sanitation systems for 35 per cent, 24 per cent, and 63 per cent of the urban population, respectively[15].

Figure 4.4
Changes in Access to Improved Sanitation in Urban Areas, 1990-2010



Source: Compiled from JMP data. Accessed April, 2012.

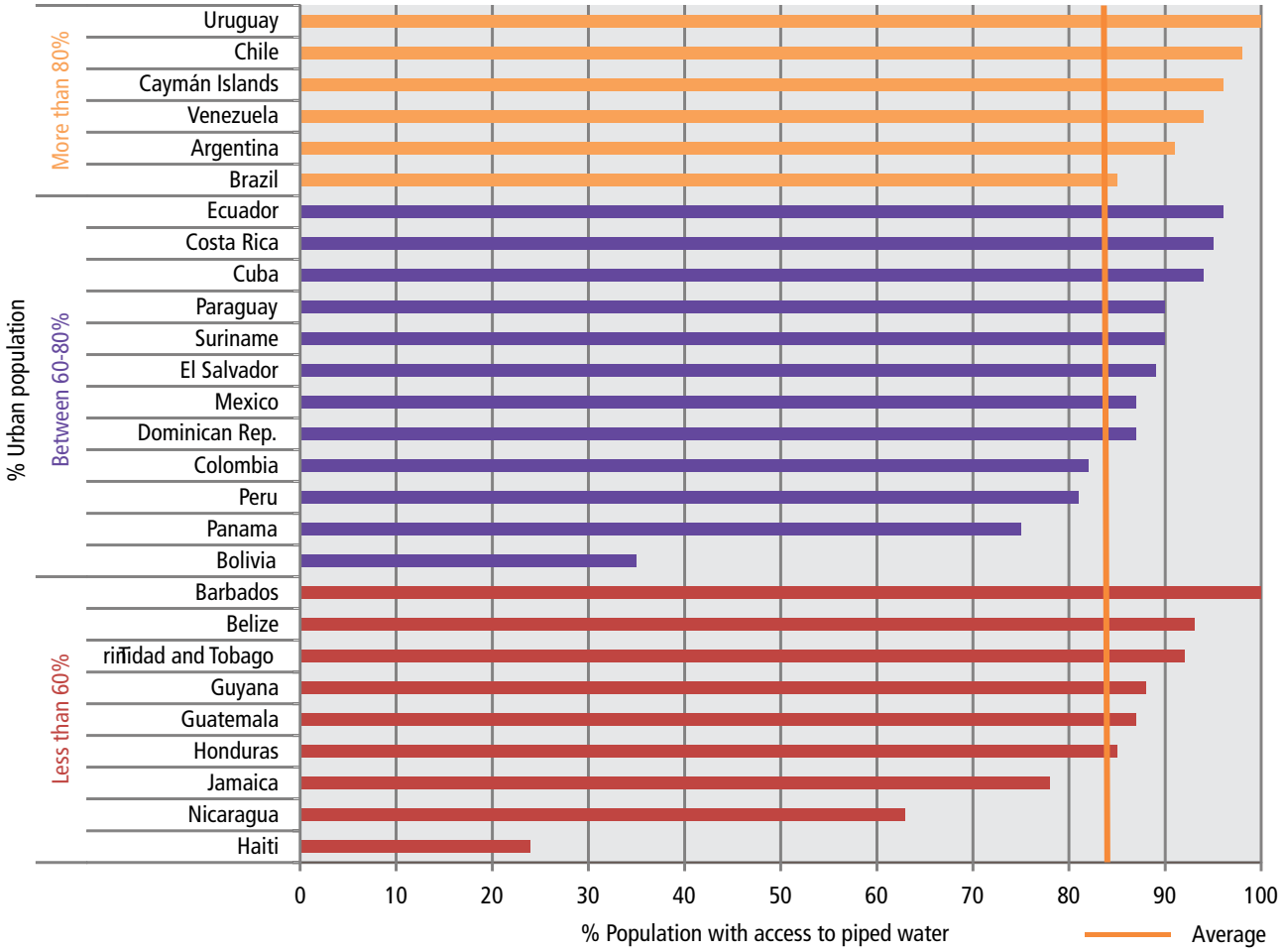
Contrasts are equally common between cities as within them and accentuated in poor and marginal urban areas - a situation reflected by household surveys conducted in 2004, according to which eight out of ten Latin American and Caribbean people were deprived of adequate sanitation in the two quintiles of the population with lowest incomes[16].

National censuses provide a complementary perspective because they restrict criteria to the availability of a toilet and sewage discharge to a public network or a septic tank, and provide information for specific cities, although, as discussed in the case of water, they are not comparable to JMP statistics because they have different criteria and time phases between them.

An analysis conducted for 16 countries[17] in the region showed significant differences, which identify policy needs differentiated by size of cities[18]. On the average, 66 per cent of small-city populations had access to improved sanitation. In Intermediatete cities the figure rose to 69 per cent and to 76 per cent in large cities, according to census data.

Several cases should be highlighted. One is Brazil, because its Intermediatete cities are in a less favourable position; another is Panama where the greatest lags occur in the largest cities, while in Argentina smaller cities saw a very slight increase over the rest. In the Dominican Republic, Nicaragua, and Paraguay differences in access according to city size are remarkable[19] with the population of larger cities having twice better access than the smallest ones, in the last two cases.

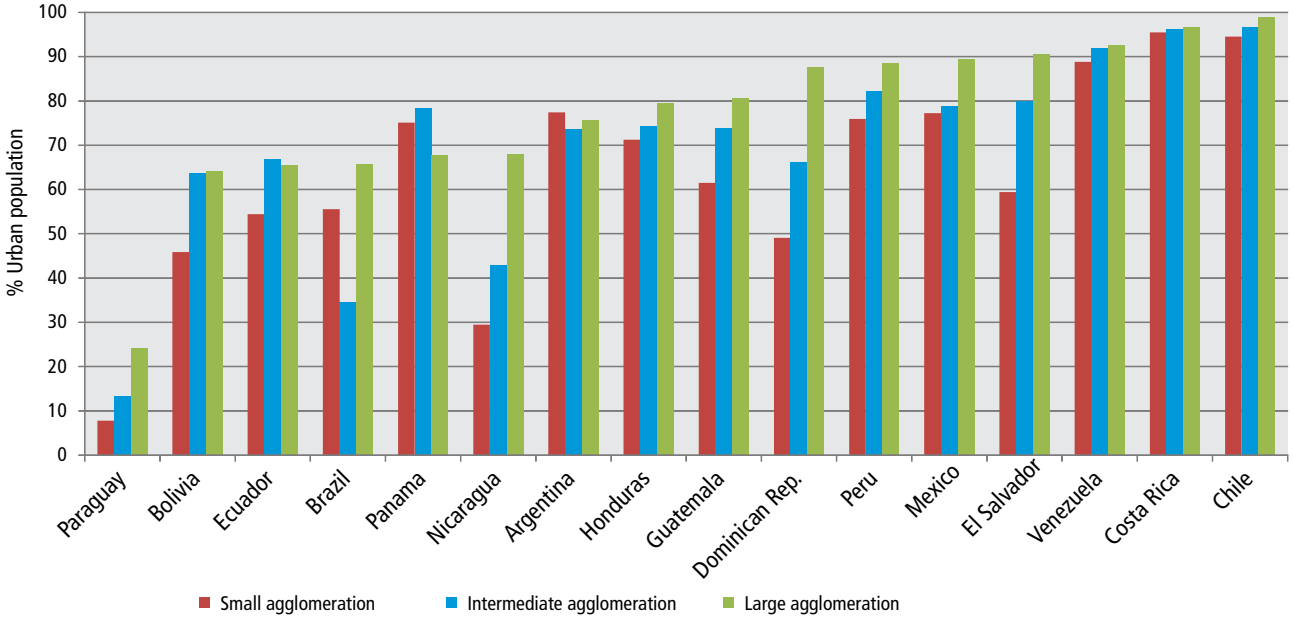
Figure 4.5
Degree of Urbanization and the Proportion of Urban Population with Piped Water, 2010[a]



[a] Data from Argentina and Venezuela are for 2007, and 2010 for other countries.

Source: Compiled from UN-DESA data (2010) and JMP (http://www.wssinfo.org). Consulted September 2011 and April 2012.

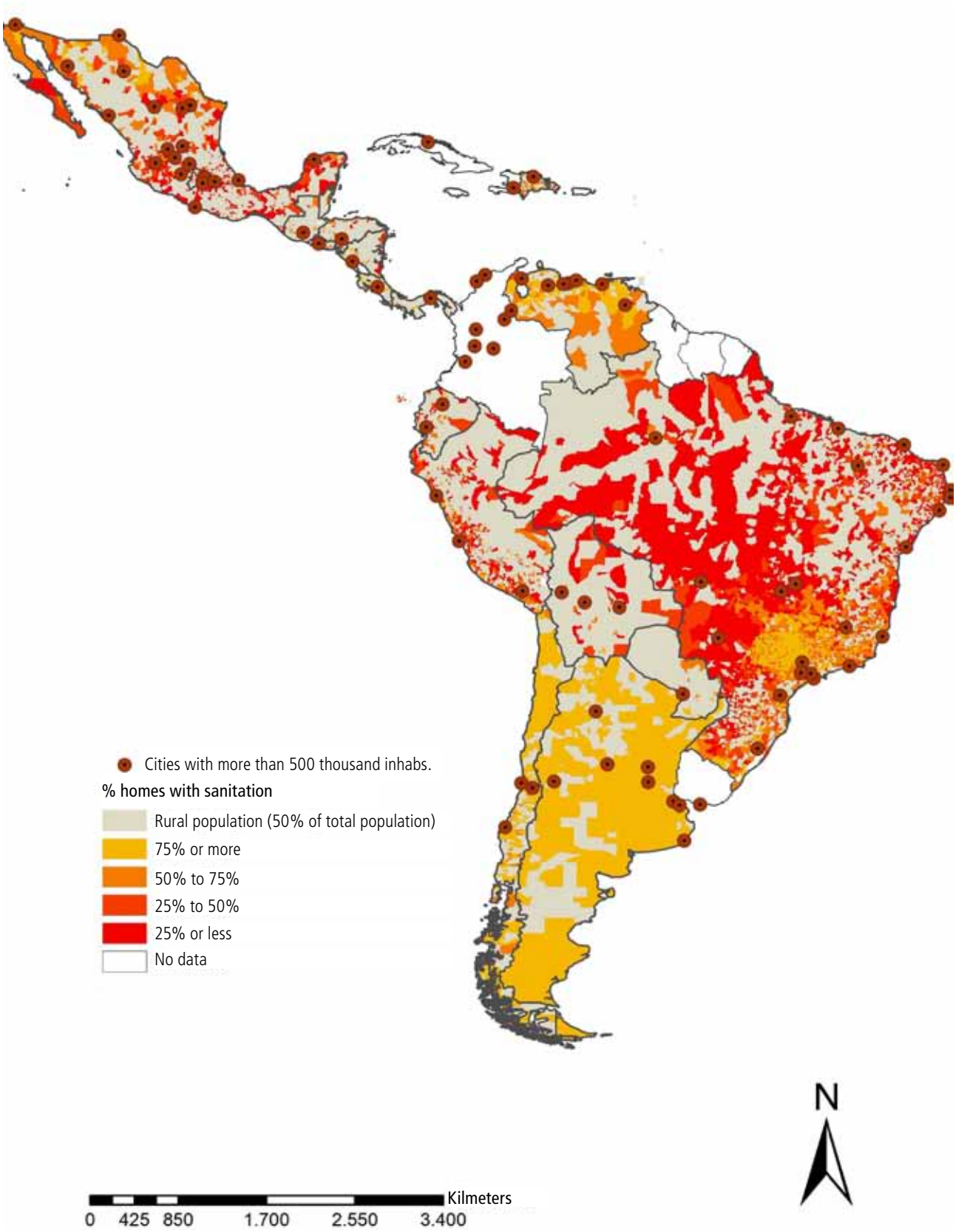
Figure 4.6
Access to Sanitation by City Size in Selected Countries[a]



[a] For more information on the relative size of cities, see annex 3.

Source: Based on DEPUALC data. Accessed July 2011 (last available census for each country).

Map 4.1
Households with Access to Sanitation in Urban Municipalities[a]



[a] The region´s municipalities were divided into rural (less than 50% of urban population) and urban (at least 50% of urban population). The condition of household access to sanitation is broken down for the second group by census date in each country, see annex 4.

Source: Data from CELADE and the latest available national censuses for each country (2000s).

Curitiba, Brazil. This city has an improvement programme for its sewer network. © Sergio Amaral

Conditions of Access to Water and Sanitation

A full diagnosis of water and sanitation services needs to consider, in addition to infrastructure, other elements that can act as barriers to access. This is especially important in a region marked by income inequality, social and spatial segregation, and large differences in economic and institutional capacities between cities and countries.

Knowledge about the conditions of water services depends on the information collected and provided by the operators themselves. There is no accurate record of quality, and water quality criteria range from 'fit for human consumption' to 'contaminated with toxic mining waste' or 'piped water with no prior treatment' which achieves minimum quality standards.

In sanitation, the JMP[20] indicator focuses on the hygienic conditions of the facility, relegating the importance of the discharge destination, a central aspect for the sustainability of human settlements and public health.

There is no accurate data on network coverage of sewage collection. As for treatment, depending on the information source, the few data available show between 15 per cent and 28 per cent of total domestic wastewater from dwellings goes to sewers[21]. For some operators in Argentina, Brazil, Colombia, Costa Rica, Ecuador, Honduras, Mexico, Panama, Peru and Uruguay, the figure could rise to nearly 40 per cent albeit with wide variations among cities: from 100 per cent in Mar del Plata, Argentina, and Guanajuato, Mexico, to figures of around ten per cent in Barranquilla, Colombia, and Santa Fe, Argentina [22].

Lack of treatment is particularly critical in the Caribbean. Estimates by international organizations indicate that 85 per cent of waste water is discharged into the sea untreated and only 17 per cent of all households are connected to a collection system and blackwater treatment[23]. Among the smaller Caribbean islands, less than two per cent of the sewage is being treated.

There are, however, initiatives in the region to improve treatment, such as those undertaken in São Paulo to clean up the Tieté River or the Matanzas-Riachuelo and Reconquista Rivers in Buenos Aires. In Santiago de Chile, a 28.5 km underground collector has been built for sewage previously discharged into the Mapocho River and this is now channelled to treatment plants. These are normally one-off projects that lack the kind of unviversal approach needed for appropriate wastewater management[24].

Water Rates

In many cities two types of areas coexist: one with public investment, economic capacity and high-income populations in a privileged situation with continuity in water services; and poor areas, remote and precarious, subject to water service cuts. This gap in supply is maintained largely by social and spatial segregation and discrimination in network expansion and maintenance investments.

From the user side, the consumption of water in the region shows two extreme scenarios: in some cities there is significant water wastage usually associated with homogeneous water rates and measurement problems; and minimum consumption in other areas with problems in service continuity because of real resource scarcity, operational difficulties or economic conditions.

Box 4.1
Connection Costs: a Barrier to Access for the Poor

In Bolivia, the cost of household connection for piped water may be the main obstacle for access to water. Prices for three cities show comparative costs of connection for poor households. Comparing this with the typical amount for a monthly bill shows the importance of this barrier. It could lead to spatial segregation in terms of access and no service expansion in poor area, infringing the right to an affordable service.

Operator / City	SEMAPA (Cochabamba)		EPSAS (La Paz and El Alto)		SAGUAPAC (Santa Cruz)	
	BS	USD	BS	USD	BS	USD
Connection to drinking water[a]	1.689,50	246.29	1.018,08	148.41	800	116.62
Typical Resid. Bill (20m³ per month)[b]		6.55		4.50		12.00

[a] SEMAPA website, EPSAS website and customer services at SAGUAPAC. The connection cost is calculated without replacement of pavements in all three cases.

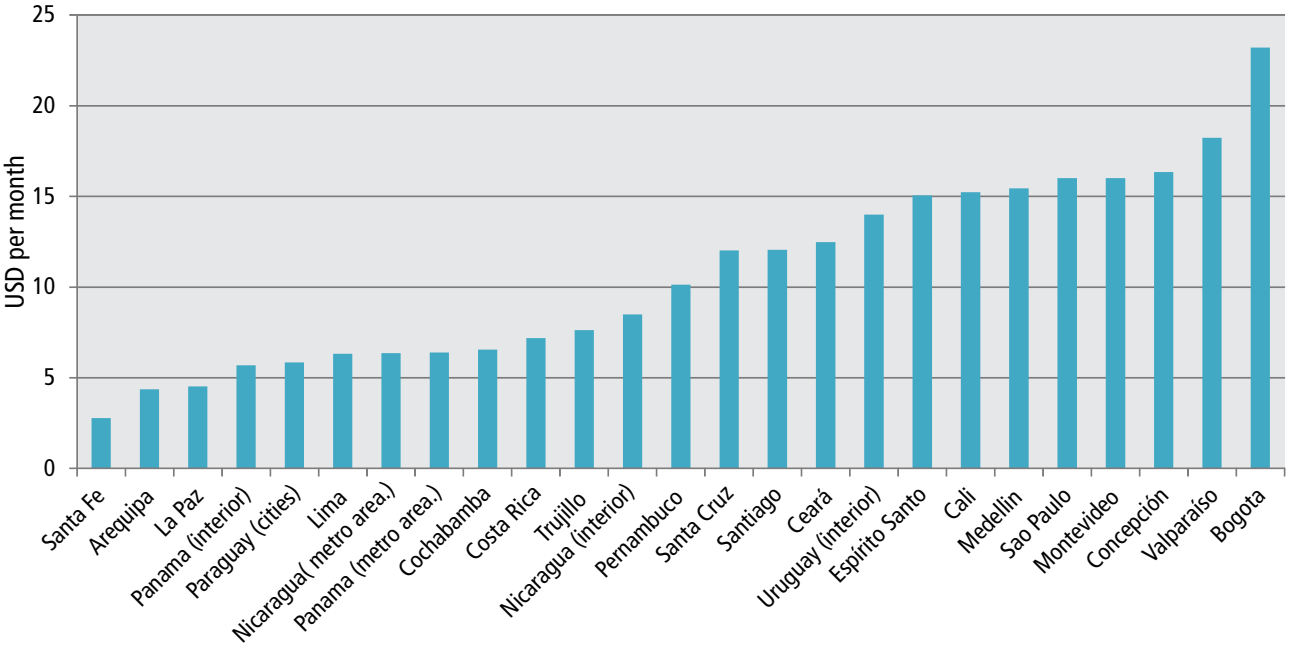
[b] Aderasa (2005). Consulted in September 2011. Rates were calculated with Statistical Information Analysis and Management Database at the World Bank.

Households' ability to pay for water connection and supply costs without compromising other basic needs is often the service's Achilles heel. According to data from household surveys, of every ten people without access to drinking water in the region, seven belonged to the two lowest income quintiles[25]. These obstacles can be overcome with progressive pricing mechanisms, so that those who consume more or even waste water, pay more, thus cross-subsidizing those with fewer resources.

The price of the service is usually directly related to the costs of procurement, which varies widely according to each country and city. In 2005, a typical consumption of 20 m³ of water in Latin America cost an average of USD 11, but the price varies between five and fifteen dollars depending on the location. Bogota was the most expensive city, with prices five times that of Arequipa or La Paz[26].

According to the United Nations Development Programme (UNDP), to guarantee the right to water,

Figure 4.7
Typical Residential Water Bills in Selected Cities, 2005 (USD/20m³/month)[a]



[a] Exchange rates are calculated based on the Statistical Information Management and Analysis Database at the World Bank.

Source: ADERASA (2005)

infrastructure and services costs should not exceed three per cent of the household income[27]. In 2005, water rates represented about 14 per cent of the income of a poor household in Bogota (the first two quintiles of the population) if it did not have access to social rates and over eight per cent for those that did. Within the regional context, this case stands out because of its contradictions: it offers near-universal coverage with high quality standards of drinking water, but proportionally very high prices for the poor[28].

Water, Yes ... but with Cuts

Another problem associated with water supply is lack of continuity. Many urban areas have water for just a few hours a day, and the frequency of supply is usually related to the economic conditions of families. An example is Honduras, where half the population is poor. In Tegucigalpa, nearly 80 per cent of the wealthiest households have water supply for more than eight hours/day, which is the case of just 50 per cent of poor households[29].

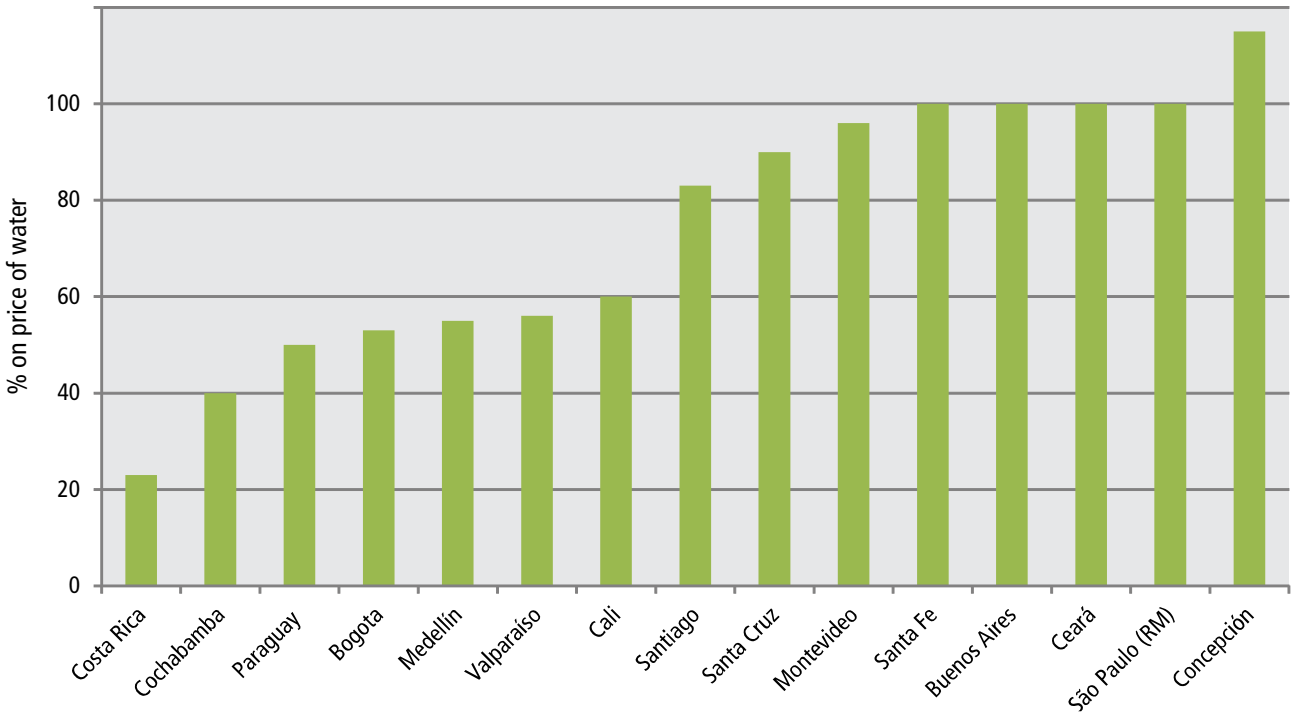
Clearly, while water quality problems tend to affect everyone regardless of economic status, water cuts and shortages, because of a lack of ability to pay, are associated with an income inequality mainly experienced by the poor and primarily in informal settlements.

Those lacking access to improved drinking water consume much less but pay more per cubic metre than those fully served and living in high-income areas of the same city. These major deficiencies have led to the use of informal or other alternative supply systems, such as water tanks, illegal connections and small-scale local vendors, often against significantly higher costs. In the case of Bolivia, for example, mains network water users in Cochabamba pay BOB 3.72/m3 (USD 0.54), and those who purchase from water tanks pay BOB 25 (USD 3.64) for the same amount.

In terms of sanitation, the infrastructure and management situation is even more heterogeneous while the provider is almost always the same as that of water. Although the pricing system is simpler, which has a real impact on funding, invoices do not always separate the two services and sanitation is often calculated as a percentage surcharge on the water rate rather than based on the actual costs. Sewerage rates charged to users in 2005 could be very low, as in Costa Rica (23 per cent of the water bill) or represent a similar amount or more than the water rates, as in the case of Concepción[30].

The socio-spatial component also plays an important central role in this problem. The region's urban peripheries are characterized by low-density urban sprawl, urban voids and lack of connectivity between areas. This creates gaps, spatial ruptures and variability in water and sanitation systems, especially in poor, outlying areas. Furthermore, the dominant paradigm in water treatment remains a single, centralized solution with significant institutional, political and financial complexities because infrastructure is very expensive. This explains why sewage management often does not occupy an important position on government agendas across the region. Another reason

Figure 4.8
Price of Sewerage in Relation to Water Rates, Selected Cities and Countries, 2005



Source: Compiled with data from Aderasa (2005).

is that, to achieve results, commitments have to be made, but these overshoot the mandate of a government and remain politically hidden and unprofitable.

At the same time, there have been cases in Argentina, Brazil, Ecuador, Mexico and Venezuela where beneficiaries have refused home connection to the sewerage system, despite its availability, because they saw no tangible benefit from the increasing cost of service[31].

To acieve further progress in sanitation provision, governments have to include it as a priorities in their budget, while communities themselves have to get involved, and technology needs adapting to the physical, social, cultural and economic realities of each place.

Inequality in access to sanitation services can be reduced by promoting urban densification and preventing urban sprawl that currently makes extending services networks difficult. To do so, urban development control measures can be applied, but also tax and non-tax mechanisms to finance development. Additionally, existing peripheral areas can be equipped with new low-cost sustainable decentralized sanitation systems that are quick to install and easy to operate, as implemented in 2010 on the outskirts of Cochabamba. Such systems are emerging as viable and more energy-efficient alternatives that can contribute to the well-being and equality of the population, while reducing ecological impacts. However, to get to an implementation phase, barriers like ideology, bylaws and financing need to be overcome.

Box 4.2
Sustainable Decentralized Sanitation in Cochabamba

The city of Cochabamba, with 618,000 inhabitants, has recently experienced immigration pressures and new settlements in its peri-urban areas. The Alba Rancho centralized sewage treatment plant does not have the capacity to meet demand, while there are also difficulties extending the sewerage system to these new settlements due to the topography and long distances.

In the neighbourhood of Lomas del Pagador, located in District 14, some 40 minutes from downtown Cochabamba, 150 families defecated outdoors in a creek or, at best, used cesspools. Most families' grey water was discharged directly onto the street, polluting the soil and creating health risks.

One municipal project[a] with participation by the local community and supported by UN-Habitat saw the construction of a sewage system under the first Decentralized Sewage Treatment Plant (PTAR-D) which serves 220 families. The plant, which uses artificial wetlands, not only provides a service that did not exist before but also eases pressure on the city's central plant. It is an easy system to put into place, providing fast access to sanitation, eliminating pollution and odours. This model is a viable option for peri-urban areas where it can be managed by residents, reducing social barriers to the location of such facilities. The treated water is used to irrigate green and reforestation areas in the neighbourhood.

[a] For technical specifications and photographs of this project, see www.aguatuya.watsan.net/page/556

Water Management and Sanitation

Provider data indicate that, in general, the water and sanitation sector has low levels of efficiency. On average, an estimated 40 per cent of treated water in the region is lost due to inefficiencies, malfunctioning of equipment, systemic failures, leaks and spillage. That amount is 20 per cent above the loss deemed acceptable in developing countries[32].

In the case of sewers and drains, data on leaks is almost non-existent. Of the 28 operators surveyed in 2009 by the Association of Regulators of Drinking Water and Sanitation in the Americas (ADERASA), almost half did not provide information in this regard. The scarcity of reliable and complete information means the level of environmental damage and its trend evolution are unknown.

Over the past two decades, the water and sanitation sector in Latin America and the Caribbean has been subject to a series of institutional reforms aimed at increasing service efficiency by separating functions (management, regulation, supervision and operations), decentralization, opening up to private enterprise, and the promotion of environmental policies.

Water and sanitation services are, by nature, monopolistic activities. This characteristic makes it difficult to create incentives that bring service improvements; something that in other markets is achieved through competition. That is why regulation, participation and public awareness on efficiency indicators can be used as tools to achieve substantial progress in coverage, service quality and equality of access.

A regulator helps formulate specifications for operators, bringing greater clarity and a better distribution of responsibilities between different levels and competencies across the sector. Requiring operators to report on indicators that are defined and accurate is essential to ensuring community and government control.

In many cities, regulation only needs to cover rates and companies' financial viability, regardless of the conditions or degree of economic, social and environmental efficiency in which they operate. To improve the situation and set fair rates, regulators need to be extended a more active and independent role, in addition to environmental and social initiatives.

Table 4.1
Characteristics of the Legal and Institutional Framework for Water and Sanitation Services (DW and S), Selected Countries

Country	Regulator	Regulation framework	Main type of provider	Situation
Argentina	*	*	Public companies	Country's main services again provided by the public sector. International litigation with former operators.
Bolivia	*	*	Local public companies	The concession in La Paz in favour of Aguas de Illimani was terminated "amicably".
Brazil	*	*	State public companies	More municipalisation of services is expected in the coming years.
Chile	*		Private regional companies	Private participation by selling shares and concessions. Unique regulation and subsidy characteristics.
Colombia	*		Municipal public companies	Institutional division of control and regulation of the sector.
Ecuador				Progress was made in decentralizing the service and pending a draft framework law.
El Salvador			National autonomous entity	A decentralization unit was created with IDB support.
Honduras	*	*	Public companies national	Establishment of regulation and initiation of a decentralization process based on the 2003 sector law.
Jamaica	*		National entity	Multi-sector regulator created in 1994, working in AP and S since 2002.
Mexico	*		Municipal public entity	Different degrees of support for the principles that come up at the national level.
Nicaragua	*	*	National public companies	Each of the sector's functions has been taken on by autonomous agencies.
Panama	*	*	National public companies	Recent reorganization and process of modernization of the provider.
Paraguay	*	*	National public companies	More developed regulation is expected after the recent consolidation and reorganization of the regulator.
Peru	*	*	Municipal public companies	A law was passed in December, 2008, giving more powers and freedom to providers to optimize their management.
Dominican Republic			Metropolitan public companies	Participation of the private sector (PSP) in the commercial management of the main provider and projects for other public companies.
Uruguay	*		National autonomous public entity	Exit of private concession holders in Maldonado after the constitutional prohibition of PSP in DW and S.
Venezuela	*	*	Regional public companies	Transition to a decentralized delivery at the municipal level

* Indicates the existence of a regulator and a regulatory framework in the country.
Source: BID (2007).

Decentralization is a general trend in the sector across the region, but this process needs to be completed. In nine countries, service provision has become a sub-national legal competence. In another 18 countries, there has also been progress to a greater or lesser extent[33], which has resulted in a transfer of responsibility, but which has not always been accompanied by financial decentralization.

The Operators

In the 1990s, countries in the region prompted international private operators to enter the markets, expecting new funding and service improvements. However, since 2000, many have withdrawn for strategic and financial reasons, policy changes in the country where they operated or social conflicts associated with regulation and tariffs. Most services have been placed under the tutelage of public entities, in many cases without clear economic viability and without appropriate pricing.

In the Caribbean, private sector participation was encouraged by the need to improve supply in a context of increased demand because of progressing urbanization and economic growth. Examples of such experiences include the Cayman Islands, Cuba, Puerto Rico, and Trinidad and Tobago, which have all led to mixed results[34].

Currently, 90 per cent of the population of Latin America and the Caribbean receives water and sanitation services from public operators. The most notable exception is Chile, where private sector involvement only began with concessions prior to public disinvestment. While this is a successful model from the management perspective, it does pose affordability problems.

New forms of public-private partnership are being implemented in the region, under which government maintains control and provides regulation, while a private company is responsible for management and operations, reducing the political and commercial risk. The cases of Saltillo in Mexico and Agua de Puerto Cortés in Honduras are examples. Another alternative lies in water and sewer cooperatives, like SAGUAPAC, which manages both services in Santa Cruz, Bolivia.

Besides large companies, there are smaller-scale operators too. These range from for-profit companies to independent public, municipal and community water providers. They are fixed or mobile operators (usually trucks) filling gaps left by the major operators. An example of small operators includes the *aguateros* of Paraguay, which provide water services in the suburbs of major cities, including Asuncion, Ciudad del Este, and Encarnación.

A study conducted in nine countries[35] showed that, in 2005, small-scale local operators provided services to 40 million people in rural and suburban areas and cities of up to 30,000 inhabitants[36] in Central America and Andean countries (30 per cent of the population).

Regulation, like statistics, focuses on the major operators, which is a serious weakness for both the providers and consumers, since small companies end up marginalized from approaches to the problem and its solution[37].

New technologies – to which smaller operators are more open – do not always conform to standard classical parameters. Together with large companies' lack of

Cochabamba, Bolivia. Water operatives. © UN-Habitat/ Watsan-LAC

Box 4.3
Competition in Paraguay's Water Service

The provision of water services in Paraguay is an exceptional case of competition in the sector. The so-called *aguateros* or water carriers began their businesses with trucks, but ended up creating supply systems, taking advantage of both the abundance of groundwater and inadequate public coverage.

The system consists of drilling deep wells (100 to 180m) and distributing water via pumping systems or raised water tanks with networks of aqueducts.

The *aguateros* pay for the investment and assume the risk involved. Their main income comes from connections paid for by users. When they do not have enough money, the businessman offers deferred payment with high interest rates. The price of water consumed is less than that of the public company and the operator has greater flexibility when users have difficulties paying. While this solution cannot be replicated everywhere, since it requires a particular type of soil condition and a certain institutional context, experience has shown that it is possible to find technical and financial solutions to provide quality water at affordable prices for population groups with low incomes. It also indicates there is need for pricing policies and other innovative and flexible technology options.

Source: UN-Habitat (2004) and
http://habitat.aq.upm.es/dubai/00/bp561.html

interest, these are serious obstacles to the extension and improvement of water and sanitation services. Some of the deficiencies in this area, especially in poor and remote areas that are difficult to connect to mains networks, could be reduced with an increased presence of small companies, provided there is good regulatory, technical and legal support for the development of these activities.

Cost, Financing and Sustainability

One problem for the introduction of services is the high cost of extended networks to reach remote areas. Similarly, public investment is often concentrated in areas that are already better equipped. This reinforces the physical gap between the city and slums, and the inequality of access to urban benefits.

In the region, the water and sanitation sectors are mainly funded from direct resources allocated by the national government to municipalities or channelled through ministries or departments, international aid and cooperation and, to some extent, revenues collected from the pricing system.

Few companies have good performance levels and the vast majority depends on fiscal resources for financing investment and even operating costs. There are clear mismatches between the service charges and actual cost. Often, prices are politically motivated and are not always realistic, differentiable, affordable or fair, which would encourage responsible consumption and efficiency. Many subsidized schemes benefit families with high-purchasing power at the expense of low-income households. There are also problems with late payment of invoices.

The coverage ratio of operating costs can be very low, as in the Mexican city of Oaxaca (below 15 per cent), or extremely high, as in Bolivia's Santa Cruz de la Sierra (142 per cent)[38]. The rate of consumption recovery through water bill payments also varies greatly, ranging from 50 per cent of the Colombian city of Los Patios and 57 per cent in Catamarca (Argentina), to 99 per cent in Monterrey, Mexico, and Cartagena, Colombia[39].

In recent years there has been a tendency to increase water and sanitation rates to reduce the gap between revenues and costs. Although this is an option to improve coverage and financial sustainability, it should be implemented with clear criteria on social equality and affordability.

To progress towards a universal right to water and sanitation, it is important to carry out a comprehensive cost-benefit analysis. Besides the direct economic accounting costs, other important advantages should be taken into account, like the positive effects for cities and health systems. Universal access to both services also translates into indirect cost savings, like reductions in school and work absenteeism, decreases in morbidity and mortality, and improved quality of life.

Recent studies show that the region could fill the gap in cities' infrastructure with a total investment of USD 250 billion until 2030[40]. That represents 12.5 billion per annum, a figure equivalent to 0.3 per cent of the regional GDP in 2010. While this amount would triple current investments in the sector, CAF studies say this is feasible, given the current situation in the region[41]. Achieving this would require the implementation of efficiency improvements, a focused review of fees and charges policies, and the adoption of a sense of fairness in the management of fiscal contributions and multilateral credit support, among other measures.

Box 4.4
Financial Mechanisms for Water and Sanitation Access by the Poor

There are several mechanisms that facilitate access to water and sanitation. Among them, is the 'subsidy payment', which uses the different capacities of population groups to pay, charging cost-plus to those with more income, and using that money to offset the below-cost rates charged to the poor. This instrument has a favourable impact on the fight against inequality of income and helps to finance the sector.

Moreover, tax contributions can be applied to general improvements, public works or other shared payment schemes. This sort of tax mechanism helps finance water and sewage network extensions and infrastructure, and large works required by the city too. This usually has a redistributive effect, meaning that poor people who live in benefitting areas are not forced to abandon them, as it reduces the impact of improvements on increased land prices. Examples are found in Colombia, Ecuador and Venezuela.

The application of the principle 'the developer develops' is another possible resource. Through various tax, urban and financial mechanisms, real estate developers can cover the costs of their projects, infrastructure and extensions to the network required in the actual projects. An equitable share of charges and profits built into the urban planning requirements of Colombia and Brazil is based on this principle.

Other classic financing methods include revolving funds for financing through micro-credits, with donor funds set against improved indicators and loans from commercial banks and development loans for investments in poor areas.

Table 4.2
Savings Estimates due to Increased Coverage of Water and Sanitation, 2007 (million USD)

Sources of saving	Implementation of the MDGs		Universal Coverage	
	Water	Sanitation	Water	Sanitation
System Health	7	79	17	65
Other healthcare costs for patients	0	3	2	8
Working days	9	272	161	784
Lives saved	18	226	231	775
Economic value of time	76	7.707	1.086	27.155

Source: Compiled with data from WHO (2007).

Table 4.3
Costs and Proposed Targets for the Water and Sanitation Sector, 2010-2030

Service	Billion USD	Billion USD Average/year	Goal for 2030
Drinking water [a]	45.4	2.27	100% coverage
Sewers [a]	79.4	3.97	94% coverage
Treatment of sewage [a]	33.2	1.66	64% depuration
Drains [a]	33.6	1.68	85% urban area
Water sources [b]	27.1	1.35	100% increased demand
Formalization of connections AP and S	30.5	1.52	50% reduction
Total	**249.2**	**12.45**	

[a] Expansion, rehabilitation and renovation.
[b] New sources of water

Source: CAF (2012).

Achieving the Right to Water and Sanitation

Water and sanitation are a human right. Therefore, services should aim to create access conditions that are adequate, healthy, physically accessible and affordable for personal and domestic use[42]. Addressing the problems described in the previous sections and accomplishing universal water services and sanitation are achievable in the region, but it would require greater commitment from governments. Countries progressing slowly in achieving the MDG targets on water and sanitation need to increase their investments and streamline the share of resources between these sectors. Shortages of funds and expenditure limitations imply a need for new stakeholders and financing mechanisms, which require a favourable environment for investment, legal safeguards and measures to support the economic viability of operating companies.

Overcoming the underdevelopment of sanitation, especially in small cities, requires differentiated policies. There is an urgent need to develop strategies at the micro and macro level, and for investment in infrastructure, decentralized solutions, and human resources.

For Caribbean island states, additional measures are required because of the scarcity of freshwater resources, the size of these countries, their model of economic development, and environmental vulnerability to the effects of climate change and natural disasters.

Governments in the sub-region must find a balance between the need to protect water resources, whilst providing enough affordable water to ensure socio-economic development and quality of life for the population. Given the dependence of several Caribbean countries on rainwater, the need for improving storage systems, protecting fresh water sources and enhancing the efficiency of distribution systems is imperative.

In the smaller island states, there is also an urgent need to increase the coverage of sewage and wastewater treatment. The recent creation of the Regional Fund for Wastewater Management, supported by the IDB and UNEP is an important initiative to establish funding mechanisms and promoting legal and policy reform.

The above is compounded by the need to address the lack of skilled human resources and the loss of existing qualified people due to migration, consumer pressure, increased solid and liquid wastes, as well as addressing pollution pressures linked to tourism.

In general, it is essential to get the support of central or federal institutions to extend networks, plants and the implementation of new technologies. Other programmes, such as improving network efficiency and operations, and greater openness to modern technologies and micro solutions, do not necessarily depend on these.

To develop financing schemes, fair rates and targeted subsidies, the institutional and regulatory framework needs strengthening, generating more control over supply networks and their funding, and greater transparency in management.

Smaller operators and new technologies offer possibilities for extending services, whether for scale, location (peripheral and marginal areas) or cost reasons, as long as they adapt to the specific needs of the community and conform to regulations and controls that ensure service reliability. It is also important to strengthen associated aspects that ensure the continuity and improvement of services delivery and progress towards achieving universal rights.

4.2 Urban solid waste

The Action Plan adopted in 1992 by all countries in Rio de Janeiro[43], known as 'Agenda 21', considers the proper management of solid waste as a central element to improving the quality of life for urban residents and preserving the environment, i.e. urban sustainability.

Twenty years later, observations show there is increased awareness of the importance of proper waste management and increased coverage of street cleaning, waste collection and disposal. However, actions aimed at reduction, recovery, recycling and reuse of wastes are still incipient in Latin America and the Caribbean. In addition, there remain wide differences between countries, cities of different sizes and areas of the same city - a situation that mostly impacts on the poor.

Scarcity of financial, human and technological resources is a common obstacle to good waste management. However, this can greatly improve and contribute to cleaner, healthier and more environmentally sustainable cities through better planning and strategies to cover all aspects of the waste cycle.

Overview of Solid Waste

In all the region's countries, solid waste management is one of the most important issues facing urban areas because of their adverse effects on the quality of life, health, natural resources and economic activities.

Descriptions and definitions of solid waste vary from country to country and even within countries. Not all municipalities distinguish between urban and domestic waste, or agree on the substances that correspond to each. In the context of this report, the term urban solid waste (USW) refers to waste from urban households and domestic-type waste from commercial and industrial areas and public buildings and from the cleaning of urban public spaces[44].

Santa Marta, Colombia. Appropriate solid waste management improves quality of life. © Camilo Mosquera Mejía

Table 4.4
Per Capita Municipal Solid Waste Generation, Selected Caribbean Countries and Territories

Country	Population	Transitory Population (per cent)	Waste per capita[a] (kg/ inhab/day)	Production USW (T/day)
Anguila	12,768	10,0	1,22	17,1
Antigua and Barbuda	75,078	7,5	1,75	141,2
Dominica	71,242	2,2	0,91	66,2
Granada	10,477	2,7	0,85	91,4
British Virgin Islands	20,647	38,0	2,65	75,5
St Kitts	34,930	4,1	2,08	75,6
Nevis	11,181	-	1,52	17,7
Santa Lucía	159,133	4,0	1,18	195,2
San Vicente	106,916	1,2	0,79	85,5
Granadines	9,896	41,6	0,79	11,1
Trinidad and Tobago	1,266,797	23,7	1,59	2,0

[a] The figure takes into account the influence of long-term tourism. *Source: PAHO (2005).*

Table 4,5
Estimated Solid Waste Generation, Selected Cities

	Domestic (kg/cap/year)	Total (kg/cap/year)	Elimination of solid waste (tons /year)	Not collected/ incorrectly eliminated (estimate) (%)	Emissions from landfills (CH4) (tons/year)
Bogota	267	442	1,792,211	2-40	25,200
Buenos Aires	281	606	5,300,000	10-27	
Lima	246	310	2,164,893	14-30	
Mexico	210	438	6,518,900	23	168,240
Santiago	462	949	2,578,697	Aprox, 0	60,000
São Paulo	380	726	5,235,195	10	176,000

Source: ECLAC / Helmholtz Association / GTZ (2010),

In Latin America and the Caribbean, 436,000 tons of urban solid waste[45] (0.93 kg per capita) are generated daily, almost 60 per cent more than in 1995 when the amount of USW was 275,000 tons daily (approximately 0.75 kg per capita)[46]. The amounts vary between half a kilogram per day in Bolivia to 1.25 kg in Chile. The figure is much higher in several Caribbean countries that have tourism-related floating populations. In general, tourists generate a greater volume of waste per capita than resident populations. In Barbados, for example, the resident population is less than 300,000 people, but every year the island receives 800,000 tourists, in addition to 500,000 who arrive by cruise ship.

The amount of solid waste produced depends on several factors. In general, larger cities produce more solid waste per person than smaller ones. There is also a correlation between the amount of waste generated, the country's development level and the level of family income[47]. A low human development index (HDI) is often coupled with less urban waste[48]. Differences within the same city have been observed in large metropolitan areas such as Buenos Aires, where higher-incomes groups produce 0.96 kg of waste per day, which figure decreases as household incomes[49] drop.

Table 4.6
Composition of Municipal[a] Solid Waste Generated in Countries and Selected Cities (Percentages)

Country/City	Cardboard and paper	Metal	Glass	Textiles	Plastics	Organic degradable	Others
Barbados	20,0	…	…	…	9,0	59,0	12,0
Belize	5,0	5,0	5,0	…	5,0	60,0	20,0
Costa Rica	20,7	2,1	2,3	4,1	17,7	49,8	3,3
Ecuador	9,6	0,7	3,7	…	4,5	71,4	…
Guatemala	13,9	1,8	3,2	0,9	8,1	63,3	8,8
Peru	7,5	2,3	3,4	1,5	4,3	54,5	25,9
Mexico D.F	20,9	3,1	7,6	4,5	8,4	44,0	11,5
Caracas (metro.)	22,3	2,9	4,5	4,1	11,7	41,3	11,2
Asunción	10,2	1,3	3,5	1,2	4,2	58,2	19,9

[a] Waste includes residential, commercial, institutional, construction and demolition, municipal sweeping service, incineration residues and non-hazardous industrial waste. *Source: PAHO (2005).*

Increases in solid waste since 1995 are related to population growth, but also to changes in economic activities, new production practices and marketing, increasing purchasing power of families, changes in lifestyle and consumption patterns with more packaged products, and a lack of educational campaigns and programmes to promote more environmentally-friendly behaviour. The above factors also influence a progressive change in the composition of solid waste. As in other developing regions, waste generated in Latin America and the Caribbean is predominantly organic (56 per cent), according to available data from 2005[50], but a growing presence of paper, glass, plastics and other recyclable or reusable items has been detected[51].

Collection and Disposal

A management system that addresses the complete cycle of solid waste from collection and transportation to final disposal, treatment and eventual reuse, has clear benefits to human health, because it reduces the risk of the transmission of diseases from contaminated water, mammals and insects, and the environment.

Refuse and waste collection coverage in the region is high (93 per cent of the urban population has a service available), although there are variations between countries, as seen in Figure 4.9.

There are differences in coverage adversely affecting certain areas, especially the poorest ones, which increase their vulnerability to disease and disaster. Inequality of

Box 4.5
Community-based Cleaning Services in Puerto Lempira, Honduras

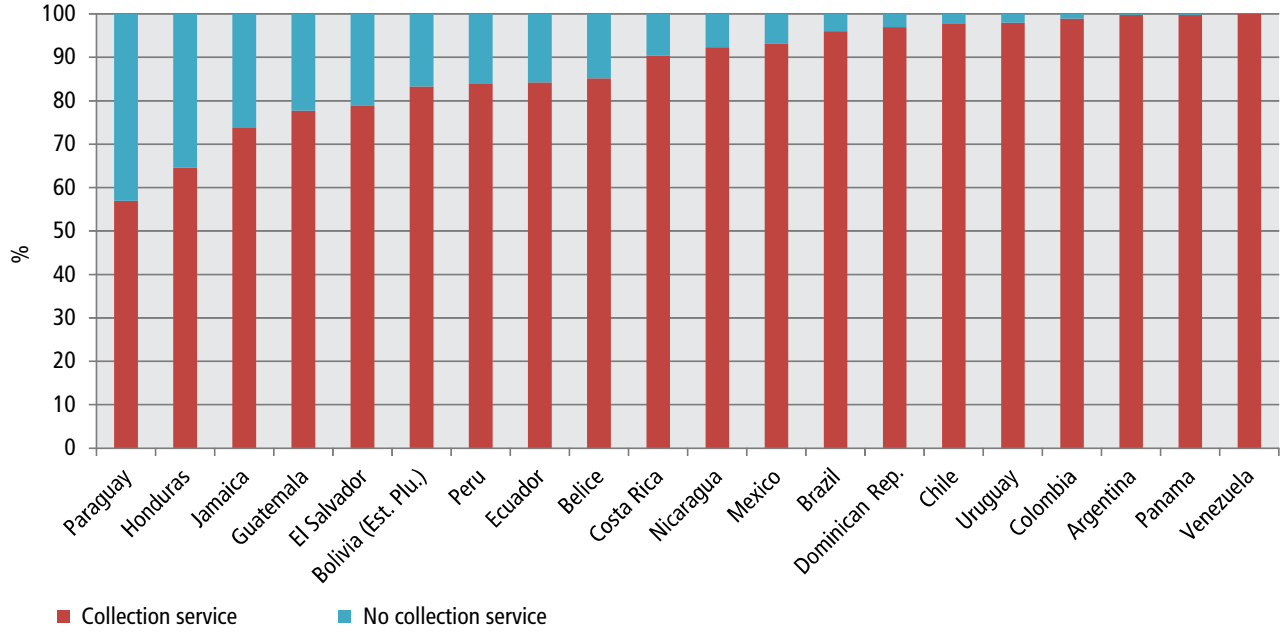
Puerto Lempira is an urban community of 15,000 inhabitants on the banks of Laguna Caratasca, part of a coastal wetland biological reserve. Puerto Lempira, made up of indigenous Miskitos and Ladinos, has experienced significant urban sprawl and the amount of household, trade and healthcare waste has increased. Waste was burned or dumped in the fields or in the lake, which also received maritime waste (fuel, oil and plastics).

Given the seriousness of the problem, the Indigenous Miskito Women's Association on the Atlantic Coast of Honduras (MIMAT) proposed a project to classify waste and clean up the centre of town and the lake. The municipality agreed. The initiative not only created jobs for indigenous women but also reduced malaria and dengue haemorrhagic fever incidence. Since the commencement in 2006, the association has expanded its activities to include recycling and awareness-building campaigns, providing a good example of what community-based work can achieve.

The project, which received financial support from multilateral and bilateral donors, managed to get the local community working with public institutions. MIMAT has been recognized internationally and wants to extend its services to all neighbourhoods in the community between 2011 and 2013.

Source: Small Donations Program: http://sgp.undp.org/web/projects/12611/ per centE2 per cent80 per cent9sistema_arataska_tawahka_klin_ unankaisa_manejo_de_desechos_toxicos_en_el_sistema_lagunario_de_kar.html

Figure 4.9
Coverage of Urban Solid Waste Collection Service, Selected Countries, 2008



Source: Data from PAHO-AIDIS-BID. Consulted in October 2011

services may be extreme, as in Guatemala and Haiti, or reduced as in Colombia[52]. In the absence a public service, or a partially delivered one, informal private solutions are often organised, operating with inadequate facilities and, in many cases, with significant social and economic vulnerabilities especially affecting women and children.

To reach full collection coverage across the region, services need extending to include poor urban areas, cities that do not have the financial capacity, and lesser-developed countries. To achieve this it is necessary to start with analyses of local conditions and considering small-scale innovative schemes where necessary. This may involve adjustments to waste collection equipments (for example, smaller trucks or non-motorized and manual mechanisms for areas that are difficult to reach), decentralized transfer plants, and associative systems based on the recognition and integration of those already actively involved in developing these activities, but who remain so far without official recognition.

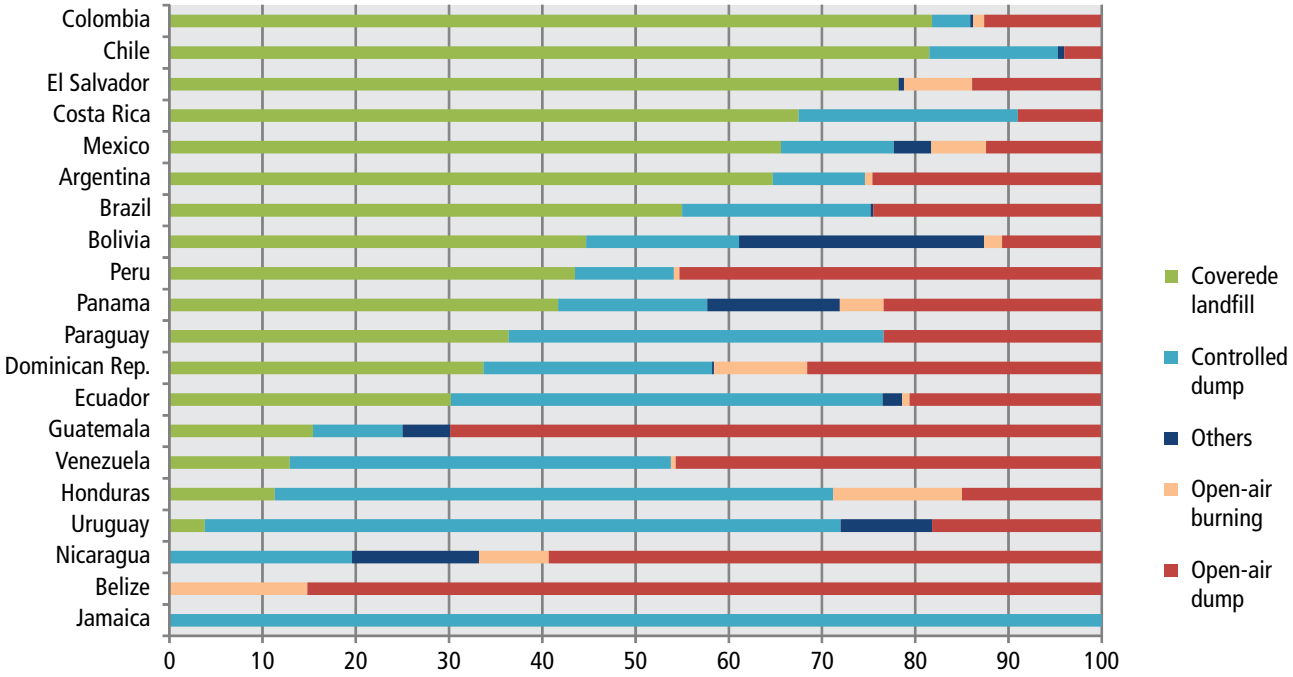
New experiences that increase coverage and protect public health can be seen in Managua, Nicaragua, with cooperative refuse collection and city transfer stations, and in small towns, like Puerto Lempira, Honduras.

An important step in the process is the separation of wastes at source and re-use, but these are under-utilised management tools. In the region, waste generated by 54 per cent of the urban population is deposited in covered landfill sites, which is more sustainable and environmentally-friendly. Wastes from 18 per cent of the citizens ends up in controlled dumps which, although not ideal, helps preventing illegal dumping. Open-air dumps receive the waste of 25 per cent of the population, resulting in enormous health risks and adverse environmental impacts. In some countries the practice of open-air waste burning continues[53].

Colombia and Chile offer the best picture because 80 per cent of solid wastes collected goes to covered landfills. In countries with more recent urban transitions, such as Belize, Honduras and the Dominican Republic, environmentally harmful open-air burning occurs to a considerable extent. Jamaica does not seem to have covered landfill operations, but all its waste is sent to controlled dumps. These figures reflect a significant deficit in infrastructure, and a lack of control of waste disposal.

Changes in institutional, legal and financial frameworks have a direct impact on improving final disposal. In El Salvador, for example, a breakthrough in landfill disposal was due to a combination of legal and strict enforcement measures, including the development of associations that regionalized the infrastructure. Cooperation between municipalities is vital when considering economies of scale, urban sprawl patterns and conurbation tendencies. This is the strategy in the Dominican Republic, Guatemala, Mexico and Venezuela. In the latter, for example, eight municipalities in northern Guerrero teamed up to develop infrastructure and reduce capital and operating costs.

Figure 4.10
Forms of Disposal of Municipal Solid Waste (percentage of the total disposed)



Source: Based on data from AIDIS-OPS-BID 2010. Consulted in October, 2011.

Recycling and Reuse

Latin American and the Caribbean countries have still not overcome their traditional view of collecting, transporting and disposing of wastes outside the city centre. Actions to reduce, reuse and recycle are poorly integrated into processes. Reducing the amount of solid waste requires a change in behaviour for everyone and can be achieved with indirect tax policies, incentives and the promotion of responsible consumption, which is yet to be tackled.

Very few countries have formal plants for segregating and recycling waste. Formal recycling represents just over two per cent of municipal waste[54], but this activity is very much linked to the informal sector and health risks, based primarily on the economic value of materials (paper, cardboard, cans and glass).

According to estimates by the Pan American Health Organization (PAHO), approximately 400,000 people in the region work in the informal waste sector[55], mostly people living in extreme poverty. In some countries there are initiatives aimed at the inclusion of the informal sector, as in Brazil, Colombia, and Peru, or at an incipient stage in Costa Rica and Nicaragua. There are also public-private partnership recovery and recycling projects, as in the case of Belo Horizonte, Brazil, Cuenca, Ecuador, and Lima, Peru, but more initiatives involving informal stakeholders are needed, as well as those that harness the economic potential of this activity.

Box 4.6
The Value of Waste in Curitiba (Brazil)

Curitiba is often cited for its solid waste management model[a]. The city was one of the first to collecte segregated waste for recycling (in 1990). Since then, educational campaigns have been developed to encourage families and businesses to separate waste. The authorities set up further agreements with supermarkets and large producers of waste to reduce the amounts generated and to make their customers and suppliers aware of the issue.

Subsequently, the city created a programme called 'Garbage Purchase'[b] to help meet the needs of the poor. For each bag of between eight and ten kgs of waste handed over, citizens receive a transport voucher. The mechanism also includes payment of a percentage of the value of the collected products to the neighbourhood residents' association to invest in public works or common-interest services.

More recently, both mechanisms were complemented with the so-called 'Green Exchange'[c] programme in partnership with farmers, by which low-income families receive food in exchange for recyclable waste.

[a] More information at: http://geocoletalixo.curitiba.pr.gov.br/reciclavel.aspx

[b] http://www.curitiba.pr.gov.br/conteudo/cambio-verde-smab-secretaria-municipal-do-abastecimento/246

[c] http://www.curitiba.pr.gov.br/conteudo/compra-de-lixo-smma-secretaria-municipal-do-meio-ambiente/343

In Central America, between 40 and 70 per cent of waste is biodegradable organic material and between 20 and 40 per cent is inorganic and organic dry recyclables. That means that 88 per cent of household waste in these countries may be recovered through recycling, composting and other treatment technologies[56]. Making use of this can strengthen the agricultural value chain, as compostable waste is a source of soil nutrients, and important for food security.

Institutional Framework, Service Delivery and Financial Sustainability

Since 2000, the region has made considerable progress on policies and regulations related to solid waste management. Many countries have adopted laws or national action plans on solid waste, including criteria for financial and environmental sustainability. However, planning and control systems still show weaknesses and compliance frequently comes up against limited resources[57].

Municipalities are normally responsible for the management of USW, although the main exception is the Caribbean where it is a national government responsibility, with different entities at different levels of government, having responsibilities that relate to the sector. Lack of clarity in ministerial responsibilities and those of other institutions is common, resulting in divergent perspectives and priorities.

A regional assessment of solid waste management in cities in the region, conducted in 2010[58], showed that only 20 per cent of the municipalities had a plan for solid waste management. Serious deficiencies were observed in municipalities with fewer than 15,000 inhabitants. An additional problem is that a plan does not always imply significant improvements if the municipality has insufficient capacity to implement its strategy.

Formulas for services delivery in the region's cities are varied and often depend on the type of activity. In general, street sweeping, refuse collection and transportation of waste which do not require a high-level of specialization are performed by municipalities, while disposal and reuse require equipment and modern technologies and therefore tend to be undertaken by private companies.

Few countries have systematic information to carry out financial analyses of services. The average cost of refuse collection, transfer and treatment of garbage in the region has been estimated at almost USD 67 per ton[59]. This average hides heterogeneous situations, with very low values in the case of Guatemala and Paraguay, and high ones for Argentina and Brazil.

Calculations show that urban cleaning consumes between 15 and 20 per cent of municipal budgets in the region[60]. One problem is that the culture of charges is very weak and the number of municipalities that bill the service is

Brasilia, Brazil. Solid waste. © João Guilherme Barbosa

less than 65 per cent[61]. Municipalities recover between 40 and 50 per cent of the costs[62], covering the rest with property taxes and transfers from national or sub-national governments[63]. There is neither a clear budget allocated, nor control over the use of proceeds. Except for Peru where revenues from this service are exclusively and by law set aside to finance this sector.

These conditions make creating a service plan, allocating resources, setting service rates, and establishing a breakeven point almost impossible. One of the priorities should be, therefore, the development of appropriate pricing systems and the promotion of a culture of collection charges. Collection services, transfer and transport, infrastructure development, landfill operations and reuse of wastes are activities that normally require economies of scale to be financially viable. There are ways to increase viability, like forming associations of municipalities, public-private partnerships and implementing clean development project mechanisms[64].

Social participation is central to improving waste management and this can be extended with an appropriate national and local legal framework. Solid waste services currently rely on stakeholders operating in the formal and informal sector, some are organized while others act individually. Due to their extreme vulnerability, it is essential to integrate informal workers with criteria of social and economic inclusion.

For appropriate management, it is also necessary to take a holistic approach and adapt existing administrative models and technology, taking advantage of the circumstances of each local context. This requires a thorough understanding of the situation in municipalities by developing a system of indicators.

4.3 Urban Mobility

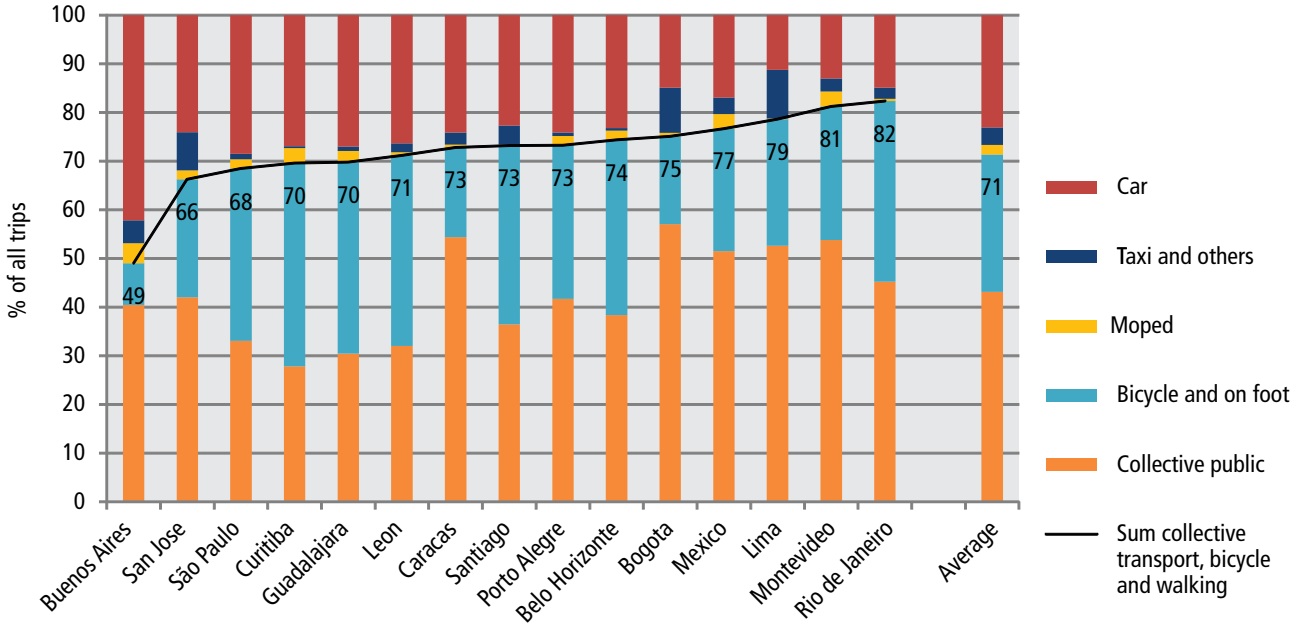
Urban mobility is essential for social and economic development as it allows people to access services, employment opportunities, education, social relations and fully enjoy the city. As in other aspects of urban development, mobility systems in the region show a certain degree of maturity in terms of organization, infrastructure, coverage and service quality. However, there are still challenges. The region is nowhere close to having the sort of efficient mobility system that would promote a more sustainable city model.

Two features define urban mobility in Latin America and the Caribbean: firstly, the importance of public transport, walking and cycling; and secondly, the fact the region is not immune to global trends regarding significant increases in motorization and congestion.

Predominance of Pedestrians, Cyclists and Collective Transport Users

Every day millions of people travel in cities. They do so actively moving (walking or cycling), on public transport (buses, trains etc.) or with private vehicles (car or motorcycle). Understanding and managing urban mobility is a challenge for authorities, particularly considering that most cities do not have systematic statistics. Despite the limited scope of any analysis based on the scant information available, work done by the Urban Mobility Observatory[65] (OMU) clearly shows some of the problems and challenges.

Figure 4.11
Distribution of Urban Travel by Means of Transport, 2007



Source: CAF, Observatory on Urban Mobility, accessed September, 2011.

According to a 2007 study of fifteen cities in nine Latin American countries, with a total of 113 million inhabitants[66], over two thirds of trips (71 per cent) were made by public transport, walking or cycling. This distribution differs from other regions with higher levels of development, where the proportion of all trips using these modes of transport is much lower (reduced to 50 per cent in Western Europe and 14 per cent in the U.S.A.)[67].

Public Transport and Informality

Buses and minibuses are the main means of transport in the region's cities, accounting for 85 per cent of the total[68]. They generally run on diesel, while those powered by electricity (metros or trains) are a minority. Despite the importance of public transport in the region in recent decades, its relative share of passengers has fallen in some of the cities studied (Montevideo, Quito, Santiago and São Paulo).

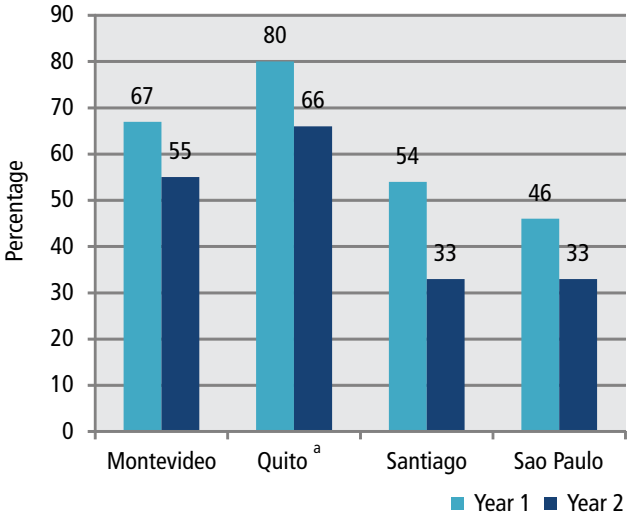
Public transport systems in the region have different organizational and regulatory settings. In most of the cities studied by OMU[69], the public transport network is run by private operators who operate routes assigned through licenses and permits issued by the authorities. Public operators also exist, mainly the railways and subways. In other aspects, related to the level of service, operating modes and the number of operators vary greatly. In Buenos Aires there are 231 companies, in Montevideo and Santiago there are just 5 and 6, respectively.

In general, investment in the initial transport infrastructure benefits from public subsidies, which are sometimes very high, while operations are usually financed by ticket prices.

Another feature of the mobility sector in Latin America and the Caribbean is the importance of public transport. This partially or fully escapes the control of the regulatory authority, so organization, characteristics and quality of the service rely heavily on the judgment and ability of operators.

In many cities, there are informal sector transit buses, minibuses, taxis and motorcycle taxis. One of the main advantages of informal transport is its ability to adapt to demand and fill the gaps left by organized State transport

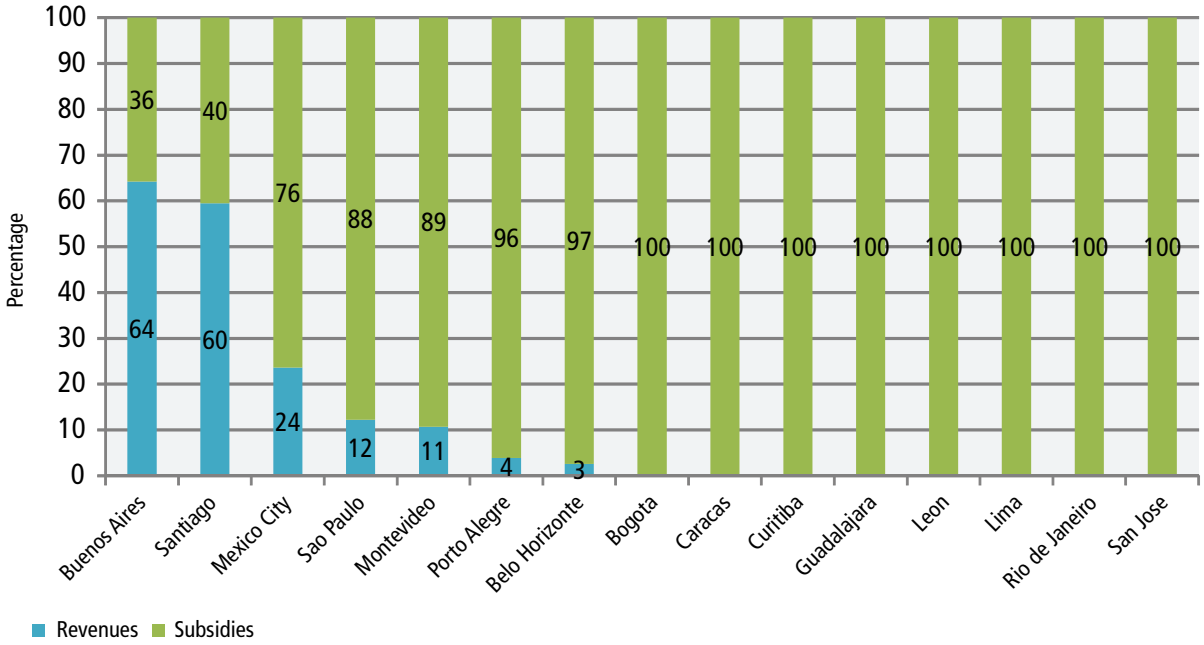
Figure 4.12
Changes in the share of public transport in selected cities



[a] The percentage of trips by public transport over all motorized trips.

Sources: Urse and Márquez 2009; Metropolitan District of Quito et al. 2008, and CAF, Observatory of Urban Mobility.

Figure 4.13
Revenue and Operating Subsidies for Public Transport, Selected Cities, 2007



Source: CAF, Observatory on Urban Mobility, accessed September 2011.

systems[70]. Informal transport is often the only option available to residents of unplanned urban development, remote areas or areas that are difficult to reach[71]. It is important to recognize their social utility, because they provide a pragmatic solution to mobility demands not served by traditional public operators. However, informality also has negative aspects such as oversupply of services, contribution to traffic congestion, and a possible lack of minimum safety and comfort standards for passengers[72]. More importantly, informality makes it impossible to create cross-subsidy schemes in which more profitable routes or times can help finance the less profitable ones[73]. Stakeholders who do not respond to official regulations exert economic pressure on the formal system and make it difficult to implement pricing policies, generate more efficiency, or introduce clean technology, organization of brokers, and the creation of multimodal integration devices.

Making mobility systems more efficient, inclusive and sustainable requires greater integration of all transport modes to provide real solutions that facilitate accessibility. To do so, authorities need to take a proactive, leading role in organizing the mobility system which, in many cities, exceeds current capabilities. At the metropolitan level, the challenge requires even greater coordination and requires adapted institutional structures capable of influencing mobility and urban life in general over very large territories.

Measures to improve mass transit systems include building new subway lines and extending existing networks, like in Buenos Aires and Santiago. One system that stands out for its extensive use is the Bus Rapid Transit (BRT). Although these vary in terms of stations, integration and

Box 4.7
The 'Robots' of Kingston

The transport service in the metropolitan area of Kingston is a clear case of informality. The crisis in urban public transport favoured the emergence of illegal operators, known as 'robots', which ended up occupying a dominant position in the sector.

In the 1950s, users had an organized, centrally managed, decent and affordable system operated by a private company, the Jamaica Omnibus Services (JOS). A decade afterwards, the fall in passengers and revenues, together with the Government's refusal to raise prices, led to cuts in services and a rapid deterioration of the fleet. In 1974, the authorities took control of the service, but improvements were insufficient.

Since then, authorities have tried various reforms to regulate urban transport, using franchises, tenders and even legitimizing informal operators. Offering a good quality service at reasonable rates initially brought about a reduction in the number of 'robots'. However, the problem resurface because of breached agreements (on routes and schedules, for example), lack of institutional capacity, and financially weak operators[a].

In 2008, there were nearly 2,500 illegal operators in the metropolitan area of Kingston, which represented a loss of about 150,000 passengers per day for the public transport company (JUTC)[b]. The city is still suffering from problems associated with informal operators and excessive competition, such as congestion and insecurity when travelling.

[a] Cervero (2000), pp. 121.

[b] Report of the Committee on Public Administration and Appropriations of the House of Representatives on deliberations on March 27, 2008 relating to the Jamaica Urban Transit Company.

form of payment, they share a rationalization of urban road space, reserving the central lanes on the main access routes for buses[74]. This reduces public transport congestion, substantially improving speed and carrying capacity, like underground networks (metro), but at lower costs.

BRT systems have existed since the 1970s, with the first in the city of Curitiba. In the 2000s, there was an explosion of such systems, especially in Latin American cities[75]. The key to the success was that implementation had gone hand in hand with spatial planning aimed at making areas denser along these transport corridors and creating spaces conducive to active mobility. The city of Curitiba is a successful example of planned urban densification with the public transport network at the basis.[76]

With different levels of coverage and scope, there are several cities that have implemented BRT-inspired forms of mass transit or at least some features of these systems. These include Bogota (TransMilenio), Buenos Aires (Metrobus via Juan B. Justo), Guatemala City (Transmetro), Guayaquil (Metrovía), Mérida (Trolmerida), Mexico City (Metrobus), Montevideo (pending Mobility Plan), Quito (Trole), Santiago, Chile (Transantiago), São Paulo (Interligado)[77]. As with other modes of transport, heterogeneity in the region is immense and classification in one form or another is not easy.

Rio de Janeiro, Brazil. UN-Habitat's "I'm a City Changer"
© Mariana Nissen

Initiatives for Cyclists and Pedestrians

Active mobility modes are valuable options in terms of public health, pollution prevention and efficient use of resources. From these perspectives, walking and cycling are clearly the most sustainable travel options, though they do not always offer the best of conditions.

For the vast majority of citizens, the decision to use one mode of transport or another is not an ideological, but simply an economic one. That is why the lower-class neighbourhoods depend most on active modes. As illustrated in the case of Santiago de Chile (in the following section), active modes may represent more than half of all journeys made by this population group.

The region is dominated by a culture that values motorized traffic over walking and cycling, although these are more numerous and more vulnerable when it comes to road safety. In general, cities lack adequate infrastructures for bicycles as well as sidewalks that are wide enough and adapted to all types of pedestrians. Of the 15 cities studied by the OMU, only five had cycle ways that were one per cent as long as road networks in the metropolitan area. The highest percentages were found in Bogota (3.8 per cent), Curitiba (1.8 per cent), and Leon (2.1 per cent)

At the same time, initiatives to promote the development of active mobility modes are emerging. Cities like Bogota and Santiago de Chile have planned the construction of hundreds of kilometres of bicycle lanes[78]. In Buenos Aires, Rio de Janeiro and Mexico City, to name a few, there are safe spaces in subway stations to leave bikes as well as public cycle loan and rental schemes. In addition, measures are being implemented for reducing traffic speeds in the centre and closing off large urban roads over the weekends.

However, progress should not obscure cultural obstacles, where active mobility modes are still often seen as simple leisure activities, regardless of their potential for 'forced' trips (work, school or shopping) or their social and economic importance, including home delivery and transporting small loads. Initiatives such as the creation of bike paths to the detriment of pedestrian space, as has happened in Rio de Janeiro, are measures that do not result in any redistribution of space between motorized and non-motorized vehicles and are, therefore, very limited in scope.

In some cities, like Bogota, awareness and education programmes have been set up to reduce vehicle speeds or providing more space for non-motorized users while encouraging more respectful attitudes in the collective use of public space. There are also civil society initiatives, still very much in their infancy, demanding a more equitable distribution of space in streets. These are promising initiatives but which to date, have had little impact.

The promotion of active means of transport involves investments in infrastructure, better coordination with other modes of transport, especially public transport, the development of specific services, the adaptation of traffic laws and attitude changes from drivers, pedestrians and cyclists. It also involves a form of development based on the compact city model, with an appropriate mix of functions in each sector, necessary to reduce trip distances and to make these accessible to pedestrians and cyclists.

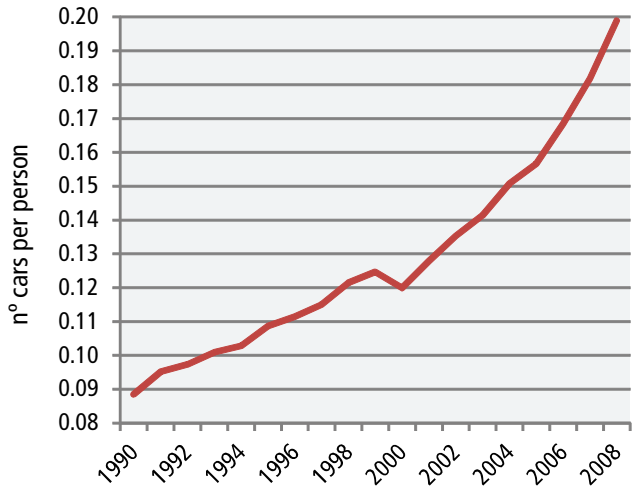
Motorization and Vehicle Congestion

Motorization rates in the region have grown rampantly as a result of economic growth and social progress. The average number of motor vehicles per capita in 1990 was 0.09; by 2008, it had risen to 0.20. If this analysis is limited to the years after 2000, this trend can be seen, to a greater or lesser degree, in all countries with available data.

A new factor that influences the increasing rate of motorization is the accessibility to and multiplication of motorcycles and mopeds among large sectors of the population. According to OMU, mopeds accounted for about a quarter of all vehicles in the cities of Montevideo and San Jose and in six of the 15 cities studied they represented between ten and 16 per cent; in the Dominican Republic, estimates for 2011 show that that figure had risen to 49 per cent of the total[79].

Mopeds are popular because they provide efficient and flexible motorized mobility, but this brings new challenges in terms of public health. The accident rate for this type of transport is significant which, in part, is explained by the very partial implementation of safety standards for vehicles, drivers and passengers. For ten cities on the sub-continent, 42 per cent of deaths from road accidents involved mopeds[80].

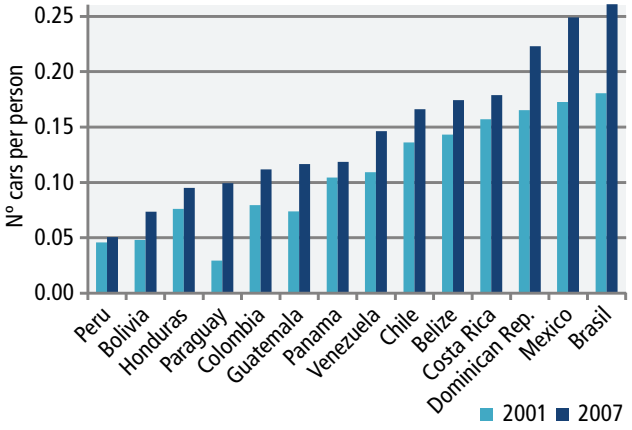
Figure 4.14
Rate of Motorization (cars per person), 1990-2008[a]



[a] Weighted average for ten countries: Bolivia, Brazil, Chile, Colombia, Dominican Republic, Guatemala, Mexico, Panama, Peru, and Venezuela.

Source: ECLAC, Environmental indicators for Latin America and the Caribbean (2009c).

Figure 4.15
Rate of Motorization in Latin America and the Caribbean, 2001 and 2007



Source: ECLAC, Environmental indicators for Latin America and the Caribbean (2009c).

Having a private vehicle has undeniable advantages, like greater route flexibility, comfort, safety and speed. They are also symbolic and social status objects, especially with in the case of cars. If current urban development models and the supply of public transport stay the same, the likelihood is that the rate of motorization will continue to increase to levels that currently exist in most developed countries. Among the effects associated with increased car-intensive use is worsening traffic congestion, already a major problem in the region. It is estimated that each car occupant produces 11 times more congestion than a bus passenger during peak times[81].

Congestion has economic, social and environmental costs, which the whole of society pays regardless of who produces these. Congested roads mean higher emissions of harmful exhaust gases, more noise and more time devoted to travel to the detriment of other activities. In economic terms, the estimated time spent on urban mobility in the region represents three per cent of the GDP for cities with over 100,000 inhabitants[82]. Traffic congestion also affects public transport systems, reducing their attractiveness and profitability. In São Paulo, traffic congestion caused additional operating costs of 15.8 per cent for public transport[83].

However, one should distinguish between the phenomenon of motorization and the effective use of this medium. Efficient public transport that is predictable and of quality may encourage less private vehicle use, particularly for scheduled trips (work, school). Similarly, a compact city, with suitable conditions for pedestrians and bicycle mobility and multi-functional urban spaces would also help to discourage car use.

Bogota, Colombia. The use of cars in the city. © Carlos Andrés Yepes Rodriguez

The number of vehicles does not just represent a challenge when driving in the city; they also need to be parked. More than half the space available for street parking is already occupied by vehicles, reducing driving space and space for productive activities. However, as indicated by Enrique Peñalosa, former Mayor of Bogota at the International Transport Forum, May 2011, no constitution provides the right to park a car, and there is no obligation for cities to offer such spaces.

Expanding the supply of car parking space is not the ideal answer. Whatever the comfort level of public transport, it cannot compete with that of a private vehicle when parking at the origin and destination of a journey is free or almost free. Medium to long term, the creation of parking spaces encourages car use as well as urban sprawl which, in turn, increases both congestion and parking demand itself. By contrast, restricting the supply of car parking to control vehicle pressure and devoting more space to public transport increases coverage, frequency and accessibility to the benefit of all.

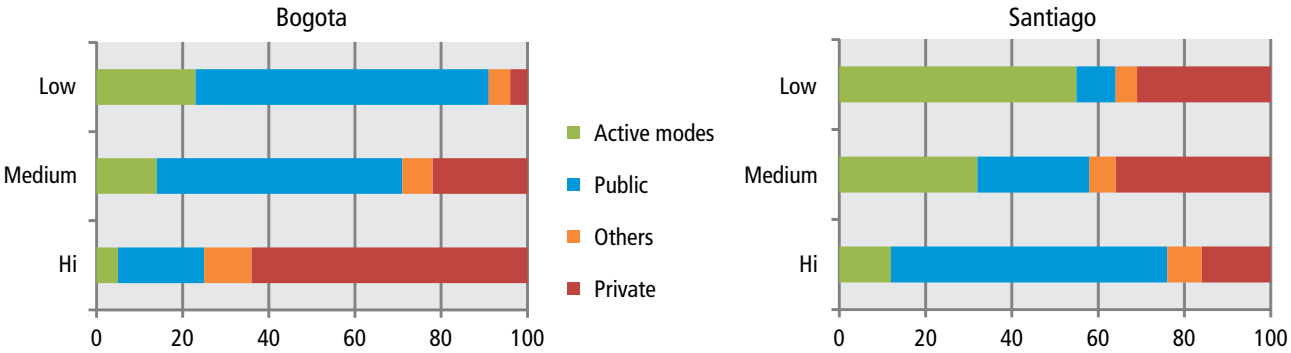
This highlights the need to address the incentives and disincentives of transport policy from an integral perspective. Cities that have taken far-reaching decisions in relation to mobility, have tried to expand their capacity to deal with automobile traffic whilst improving their mass transit systems[84] simultaneously. However, these investments must be analysed carefully, because the effects of contradictory policies can be neutralizing. The challenges of motorization justify addressing the issue in a wider sense and from a sustainable mobility perspective.

Mobility Inequality

In Latin America and the Caribbean, inequality between social groups is also reflected in the ability to move from one place to another. The examples of Bogota and Santiago de Chile illustrate this; the most populous social sectors are more intensive users of public transport than those of higher socio-economic status. In fact, the former depend almost exclusively on public transport for their mobility[85]. In addition, peripheral settlements do not always have basic access roads, so residents face barriers both to reaching the transport network and in terms of the most basic form of mobility: walking. Living in peripheral areas of the city imposes excessive costs in terms of money, time and energy on the very poorest.

Spending on public transport may represent an important part of the household budget. For example, in Bogota, urban transport in 2009 constituted between 11 and 16 per cent of a household's wages in the lowest income

Figure 4.16
Distribution of Transport ,Modes by Socio-economic[a] Group, Bogota and Santiago de Chile (%)



[a] Distinction by socio-economic classification made in local-end reports from the origin destination surveys that provide the information.

Sources: Bogota, 2005 (Mayor's Office, 2009), Santiago, 2007, with SECTRA.

group[86] and eight per cent for the poorest in Montevideo[87]. Buying the basic number of bus or metro tickets means a disbursement of 20 per cent of the income of a households earning minimum wages.

Socio-economic status also influences the cost of mobility in terms of time. Groups of people with lower incomes spend longer travelling on average than the wealthiest strata. For example, studies in Bogota, Montevideo, Rosario and São Paulo show differences in travel time by social groups ranging from 17 to 58 per cent[88]. Excessive time devoted to mobility impairs the quality of life and reduces opportunities. One example is Mexico City, where 20 per cent of the workers spend more than three hours to get to and from work every day[89]. This may even result in the suppression of 'non-productive' travel, like visiting relatives or sports activities, which is what happens to people in the southern outskirts of Santiago de Chile[90], and the cancelling (and consequent loss of

Box 4.8
Men and Women: Different Priorities

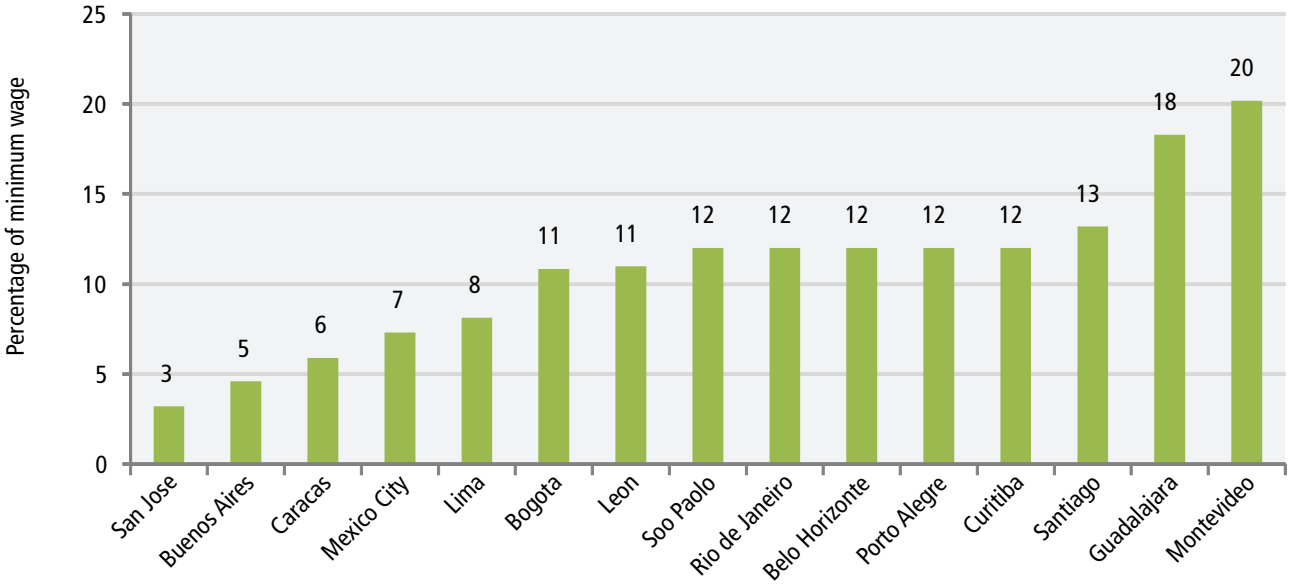
Mobility conditions are not the same for men and women. As a result of work distribution patterns, women tend to make many more fragmented trips and fewer direct journeys, which involves making changes between the origin and destination, for example to accompany children to school before going to work.

The mobility of women is also marked by personal safety issues that affect them to a greater extent than men. Both during the public transportation journey and when walking in the street, women are more vulnerable to attack. A typical case is that of Mexico City, where 39.4 per cent of female subway users reported being subjected to unsolicited touching[a]. In several cities, women-only spaces on buses and metro[b] convoys have been brought in, but these measures address the symptoms rather than the root of the problem.

[a] De Almeida Lobo (2010).

[b] Like the cities of Mexico or Guatemala

Figure 4.17
Bus System Costs, Selected Cities[a], 2007



[a] In Brazilian cities, transport rates for 50 tickets is the rate applied to those earning less than two minimum wages.

Source: CAF, Observatory on Urban Mobility. Accessed September, 2011

shifts) of medical appointments, a problem affecting poor families in the informal settlements of Montevideo[91].

Mobility, Urban Sprawl and Urbanism

As seen in the Chapter One, the region's urban agglomerations have experienced faster urban sprawl and spatial growth than the rate of population growth which results in lower urban density. This type of expansion implies increased demands for transport, significantly compromising the sustainability of the urban development model[92].

The sprawl of suburban residential areas, far away from work places with no nearby services or leisure facilities, makes for long distance journeys and public transport that cannot make a fair return. Boosting the city model for just cars merely deepens the dependence of households on this transport mode, while excluding those that do not have cars.

Widening existing roads or urban highways, which might seem a simple solution to the problem of congestion, often have undesirable effects that go beyond the investment itself to short-term increases in traffic capacity. Buenos Aires, Mexico City, São Paulo and Santiago carried out regional flagship road expansions and modernizations, but the effect was not long lasting[93]. Their experience shows that the construction of infrastructure, without clear criteria for harmonious urban development, can be counterproductive in the medium to long term and actually exacerbate congestion[94].

Any approach to mobility cannot be considered without a debate on urban planning and the urban land market dynamics. It is not enough to design roads and trajectories, because issues like how cities grow, the configuration

Bogota, Colombia. TransMilenio transport system. © Fernando Jaramillo Vélez

Rio de Janeiro, Brazil. Cable car system of favela Complexo do Alemão. © Cuizinaud Philippe

of land use and the location of job opportunities all need consideration. Despite its apparent simplicity, the complexity of the challenge of mobility requires integral policies to respond to the situation of each city. This involves evaluating investments and initiatives according to the urban development model being promoted and establishing the legal, fiscal and administrative mechanisms capable of achieving it. In some cities, this may require closer coordination between municipalities, as well as municipal integration to ensure effective and optimal service delivery.

Investments in mobility, whether public transport or road infrastructures, can have a major impact on land markets, particularly around stations and access areas. In Bogota, studies[95] indicate that property prices have varied according to the distance to TransMilenio stations and prices have risen in areas located within walking distances of stations.

While infrastructure is generally financed by public funds, the value of land and buildings mainly benefits private owners. Beyond finding specific solutions to specific problems of mobility, the challenge of public authorities is to find ways to anticipate and capture these increases in land values to finance new investments that benefit all citizens.

The current widespread use of public transport and active modes is a window of opportunity that cannot be missed. Improving and upgrading public transport services, investing in facilities promoting active mobility means and balancing the distribution of activities in cities is fundamental. Not only is it important for reducing congestion and pollution, but it is also a factor in equality and social integration.

Notes

1. The General Assembly of the United Nations recognized the human right to water and sanitation on 28 July 2010 through Resolution 64/292 available at: http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/64/292&Lang=S
2. Water availability, environmental pressure exerted by the water and sanitation services and their links to climate change are covered in depth in Chapter Five of this document.
3. The problem of waste is discussed in more depth in section 4.2 of this chapter.
4. The urbanization process is analysed in Chapter One of this publication. For details of public housing policies, see Chapter Three.
5. The JMP is a joint programme of the World Health Organization (WHO) and the United Nations Children's Fund (UNICEF).
6. The latest estimates available from JMP correspond to 2010, except for Argentina and Venezuela, dating from 2007, while data from Panama is from 2009.
7. The slow progress made in sanitation in the region follows the global trend. According to the JMP report of 2012, at current rates, in 2015, the world will be eight percentage points below the sanitation MDG target.
8. CAF (2012).
9. Much of the data used to illustrate important aspects of this chapter are taken from the Association of Drinking Water and Sanitation of the Americas (ADERASA), the first initiative of its kind in the region. The Association monitors services provision by certain public and private operators, generally large companies. Information available in www.aderasa.org
10. JMP estimates used in this analysis for their comparability between countries might not match the official statistics of each country as JMP uses criteria that differ from those used by governments and national institutions. In the case of Bolivia, for example, according to the National Sanitation Plan 2008-2015 (updated 2009), the national water coverage in urban areas was 87.5 per cent, which is 6 percentage points below the JMP estimate for that year and, therefore, the actual challenges may be greater. Consultation in September 2011, available at: http://www.mmaya.gob.bo/documentos/pnsb_final.pdf
11. The situation has deteriorated due to the earthquake of January, 2010
12. UNDESA (2010).
13. The calculation is from census data from 16 countries, carried out by the Population Division of the Latin American Demographic Centre, ECLAC. For more details on the classification of cities, see annex 3.
14. The growth of cities is analysed in the first chapter of the report.
15. As in the case of water, the statistics from national agencies may differ from those published by JMP as this programme makes estimates designed for comparisons between countries and the criteria may differ from those used by institutions in each country.
16. Canal Foundation (2011).
17. The same limitations mentioned in the analysis by city size in terms of water can be applied to sanitation. To identify regional trends, it's necessary to wait for 2010 census processing for comparative use.
18. Cities ranges (small or smaller, Intermediatete, and large or larger) are set out in chapter 1, and are determined relative to the total population of each country.
19. The analysis is based on the 2000 censuses, which actually include later dates, but changes may have occurred that will only be known when the 2010 censuses are processed.
20. JMP uses broad criteria which attempt to address international heterogeneity and especially the situation in less developed countries, while the scales of regional or national bodies can adjust to higher standards.
21. IDB (2007). Consulted in September 2011, http://idbdocs.iadb.org/wsdocs/getdocument.aspx?docnum=1090009 y Foundation Canal (2011).
22. ADERASA (2005).
23. UNEP-CEP (2010).
24. CAF (2012).
25. Canal Foundation (2011).
26. ADERASA (2005).
27. Accessed in September 2011, http://www.un.org/spanish/waterforlifedecade/human_right_to_water.shtml
28. Data from ADERASA (2005) and the World Bank, 2005.
29. Data on water supply from Canal Foundation (2011). Poverty data from ECLAC, Division of Statistics and Economic Projections, 2009
30. ADERASA (2005).
31. CAF 2012.
32. ADERASA (2011).
33. Foundation Canal (2011).
34. Schouten, M.A.C., Brdjanovic, D. and van Dijk, M.P. (2008).
35. The countries are Bolivia, Chile, Colombia, Guatemala, Ecuador, El Salvador, Honduras, Nicaragua and Peru. WSP (2008).
36. The Latin American Confederation of Community Organizations for Water and Sanitation Services (CLOCSAS) was founded in 2011 to strengthen these processes and exchange experiences.
37. Pastore, Cesar (2009).
38. OECD (2008). To evaluate effectiveness, other financial data would be needed.
39. OECD (2008).
40. CAF (2012).
41. CAF (2011) and CAF (2012).
42. These characteristics were established in General Comment No. 15 on the right to water and sanitation (2002) developed by Articles 11 and 12 of the International Covenant on Economic, Social and Cultural Rights (ICESCR).
43. The Action Plan adopted at the 'Earth Summit', sought to promote a new development model that takes into account limited natural resources and the requirement to meet current needs without compromising future needs. Chapter Five of this report deals in-depth with aspects of life in cities related to the environment
44. UN-Habitat (2010b).
45. OPS-AIDIS-BID (2011). Both individually and in collaboration with other institutions, PAHO has carried out assessments of solid waste management since 2002. Their results have been reported in reports that provided an important basis for this chapter.
46. OPS (2005).
47. OPS-AIDIS-IDB (2010) and ECLAC / Helmholtz Association / GTZ (2010).
48. The human development index is calculated using three components: life expectancy, educational level and standard of living. PAHO (2005).
49. For 2003. ECLAC / Helmholtz Association / GTZ (2010).
50. OPS (2005).
51. IDB (2009).
52. UN-Habitat (2010b)
53. Open-air burning pollutes the air, water and soil and increases health risks to the population that carry it out and those who live nearby. To a greater or lesser extent, open dumps produce similar impacts.
54. OPS-AIDIS-BID (2011).
55. OPS-AIDIS-BID (2011).
56. Chapter 5 shows some examples of waste utilization for energy purposes.
57. OPS-AIDIS-IDB (2011).
58. Ibid
59. Ibid. Data for Brazil, whose currency has appreciated in recent years against the dollar, influence the high average.
60. UN-Habitat (2010).
61. OPS-AIDIS-IDB (2011).
62. IDB (2009) y OPS-AIDIS-IDB (2011).
63. IDB (2009).
64. More information on clean development mechanisms applied to the waste sector in Chapter 5 of this publication.

65. The Urban Mobility Observatory (OMU) is an initiative of the Andean Development Corporation (CAF), which has an interesting perspective on information systems for transport and mobility.
66. CAF, OMU. Includes Buenos Aires, Belo Horizonte, Bogota, Caracas, Mexico City, Curitiba, Guadalajara, Leon, Lima, Montevideo, Porto Alegre, Rio de Janeiro, San Jose, Santiago y Sao Paulo.
67. Lupano and Sánchez (2009).
68. The figure refers to public transport by vehicles with tires, OMU (2007)
69. Buenos Aires, Belo Horizonte, Bogota, Caracas, Curitiba, Guadalajara, Leon, Lima, Mexico City, Montevideo, Porto Alegre, Rio de Janeiro, San Jose, Santiago and Sao Paulo.
70. Cervero (2000).
71. Figueroa (2005).
72. Cervero (2000).
73. Losses generated by a subsidized service are funded with revenues from others that are not subsidized.
74. Lupano and Sánchez (2009).
75. ECLAC (2008).
76. UITP (2009).
77. Pardo (2009) and UN-Habitat (2011).
78. Examples: 700 km in Santiago de Chile, Bicentennial Master Plan for Bike Paths; 1,000 km in Rio de Janeiro as part of the programme "Río State of Bikes" (http://www.rj.gov.br)
79. National Statistical Office of the Dominican Republic (2011).
80. Vasconcellos (2010).
81. Bull (2003).
82. Ibid.
83. Vasconcellos (2010).
84. ECLAC (2010b).
85. For example, in England nearly four in ten households in the poorest quintile of the population has a car and in Paris, 33 per cent of trips in the poorest quintile of the income distribution are made by car. UK Government, Social Exclusion Unit (2003), and Bureau and Glachant (2011).
86. Mayor's Office, Bogota (2009).
87. Hernández (2011).
88. Vasconcellos (2010), Buenos Aires Transport Project 2011, Kaztman (2009).
89. UN-Habitat (2008).
90. Durán and Hernández (2008).
91. Hernández (2011).
92. ECLAC (2010b).
93. Lupano and Sánchez (2009).
94. Bull (2003).
95. Lincoln Institute. https://www.lincolninst.edu/pubs/dl/1359_680_Bus%20Bogota.pdf

Tacagua, Venezuela.
© Salomón Lerner

CHAPTER 5

The Environment and Risk Management

Summary

1. In Latin America, there is a low occupancy rate across large territories and a high concentration of people in cities. This poses challenges for the protection of the urban environment but also advantages, because this concentration of people means long-lasting technical solutions can be applied at a lower cost.
2. Urban lifestyles are associated with the consumption of goods and services produced in the countryside, in other cities or in other countries, which makes it very difficult to measure the specific contribution of cities to climate change. The main emissions of greenhouse gases associated directly to urban areas are from the burning of fossil fuels for transport (38 per cent), electricity production (21 per cent) and industry (17 per cent).
3. In the region, the frequency and geographical distribution of extreme weather events has begun to change as a result of global climate change. Changes in rainfall patterns, the progressive disappearance of glaciers and rising sea levels have already been verified. Projections indicate that these phenomena will increase in the future, increasing the risks of natural disasters throughout the region.
4. The extent to which cities are vulnerable to the impacts of climate change, epidemics and geological activity depends on external factors such as preparedness. In general, slums are particularly vulnerable because of their location, lack of infrastructure and services, as well as the socio-economic and cultural profile of their inhabitants.

Keys to change

5. Urban sprawl can structurally degrade ecosystems. The close ties between social, economic and environmental aspects of urban growth require integrated policies, something that has begun to happen in some cities in the region. The territorial and spatial approach to interventions promises to generate the basis for more sustainable urban growth models.
6. Some cities already have explicit plans for addressing climate change, like greenhouse gas audits, hazard and vulnerability maps, with associated action plans that have already been approved institutionally. At the local level, city planning departments and urban and transport planning play a particularly important role because they have the capacity to influence the location of housing, mobility demand, energy consumption and the risk reduction of disasters.
7. For less-developed countries, disasters often have particularly severe impacts because they are the least prepared to address such events, while humanitarian support absorbs large amounts of resources that could be devoted to development. Haiti, for instance, a country that has many of the lowest indicators in the region, particularly suffered under the consequences of the 2010 earthquake.
8. Twenty years after the Earth Summit in Rio de Janeiro, Latin America and the Caribbean have a better awareness of urban issues than in the past, but ambitious action plans at the local level are still very much in their infancy, even though cities are taking up more important international roles. For the region to achieve more economic dynamism there has to be better coordination within government and between levels of government and with the private and civil society sectors.

CHAPTER 5

The Environment and Risk Management

Nature is often associated with the countryside and cities with pollution, but the reality is more subtle. On the one hand, cities are heavily dependent on nature for their physical integrity, water supply, food, raw materials and energy, but they exert considerable pressure on natural resources. On the other hand, the concentration of population offers opportunities to apply less-harmful remedial solutions at lower costs than if the same population were scattered.

The demand for natural resources, consumption patterns, cities' preparations for natural disasters and the impact that urban activities have on the environment and the climate are factors that determine the sustainability of urban areas. Not all citizens want the same from their immediate environment or exert the same pressures since this depends largely on the levels of income and development. The negative effects of environmental degradation, natural hazards and climate change have more of an impact on vulnerable population groups and frequently on the most disadvantaged.

5.1 Cities and their Environment

The Latin America and the Caribbean region has the world's highest levels of urbanization, but also low occupancy levels across large territories. The most-urbanized region is also the greenest, due to, among other factors, the presence of forests in the Amazon basin, which constitutes the largest carbon sump in the world and is home to a significant proportion of the global biodiversity.

There are few measurements to assess the interaction between the cities of the region and their immediate surroundings. Nationally, there are some estimates, like the amount of forested area or water consumption, but in most cases they are only approximations. There are almost no city-level estimates, even though about 80 per cent of the population in the region lives in urban areas.

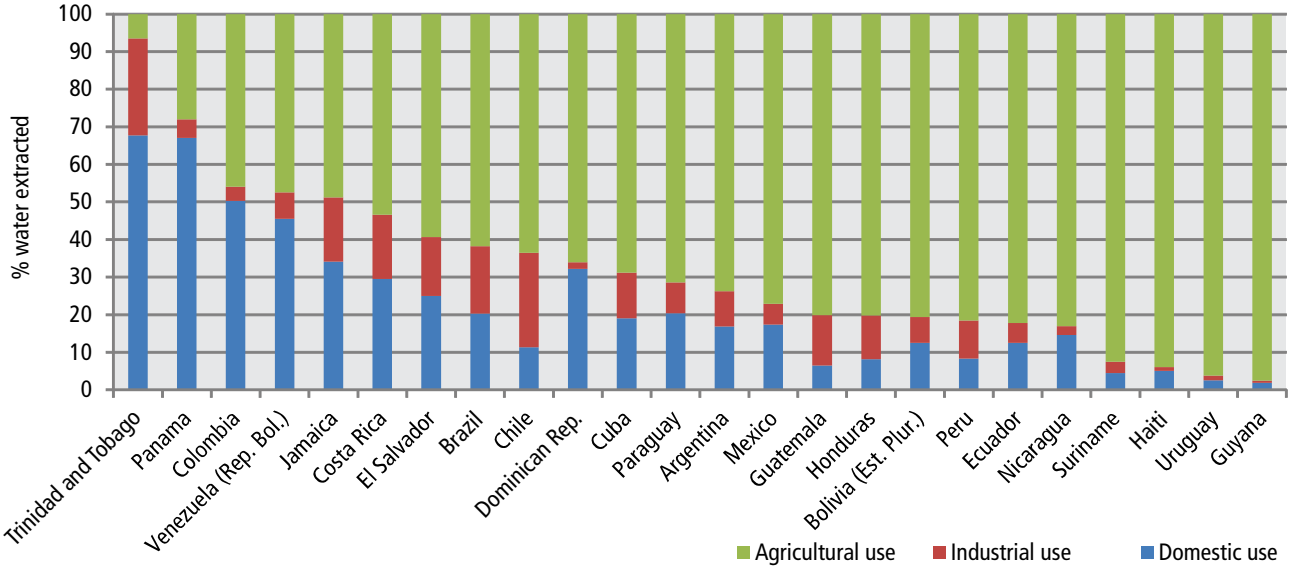
Box 5.1
Development and Environmental Objectives in the City

The MDGs, established in 2000 to achieve better living conditions, include specific targets for ensuring environmental sustainability. This is aimed at satisfying human needs without compromising the ability to meet future needs. They also provide well established indicators to assess progress on achieving goals. Several of these indicators are directly related to living in cities.

Goal	Indicators
7A Integrate the principles of sustainable development into country policies and programmes, and reverse the loss of environmental resources	7.1 Proportion of land area covered by forests 7.2 Carbon dioxide emissions (total, per capita for each dollar PPA of GDP) 7.3 Consumption of substances that deplete the ozone layer 7.4 Proportion of fish stocks within safe biological limits 7.5 Proportion of total water resources used
7B Reduce biodiversity losses, achieving, by 2010, a significant decrease in the rate of loss.	7.6 Proportion of terrestrial and marine protected areas 7.7 Proportion of species threatened with extinction

Source: United Nations, Millennium Development Goal indicators at http://mdgs.un.org/unsd/mdg/Host.aspx?Content=Indicators per cent2fOfficialList.htm

Figure 5.1
Extraction of Water Resources by Economic Sector[a]



[a] Data for latest year available between 1998-2002.

Source: Based on data from ECLAC, Statistics factsheet. Environmental indicators for Latin America and the Caribbean, 2009

Consumption and Pollution of Freshwater

Latin America and the Caribbean as a whole, has abundant fresh water. The region has 39 per cent of all renewable water resources on Earth[1], but water availability[2] is profoundly unequal between regions. Brazil's comfortable position, with volumes of more than 40,000 m^3 of water per capita per year[3], contrasts with the Caribbean where absence of rivers and saline infiltration in many aquifers make these countries heavily dependent on rainfall. The most critical situation occurs on island states like Antigua and Barbuda, Barbados and St. Kitts and Nevis with just 300 to 600 m^3/inhab/year[4].

Although in most countries freshwater withdrawals are primarily for agriculture, cities do demand water for residential, commercial and industrial uses. In some countries, like Panama and Trinidad and Tobago, the household sector represents the highest consumption market[5].

In the region, urban water demands tend to grow as a result of increased population and, in particular, greater per capita consumption. Estimates show demand increasing by 76 per cent over a period of 15 years[6]. Cities often exploit local water resources to the point of creating an imbalance between water availability and demand.

In some cases, the situation reaches critical levels and necessitats water collection from remote areas, with the attendant higher economic and environmental costs. This situation is common in several cities in Mexico and Central America, along the coast of Peru, in north-eastern Brazil, the Bolivian Antiplano, and in the Cuyo area of Argentina, and its southern region, among others. The problem is particularly acute in large urban areas like Lima and Mexico City.

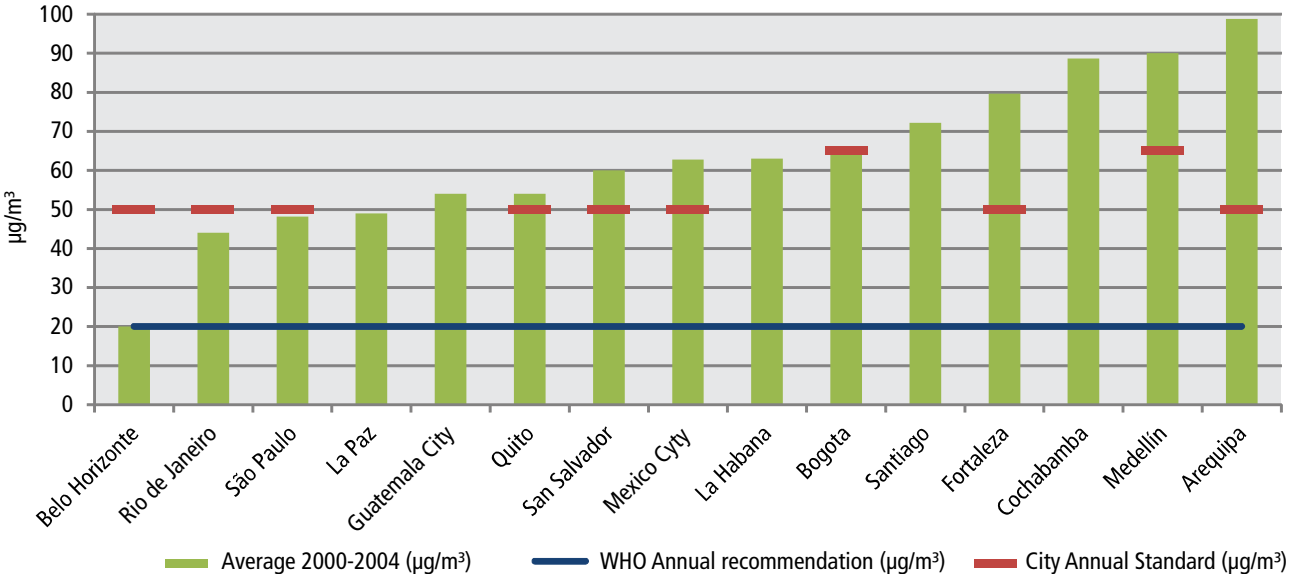
Besides overexploitation of water resources there is also the matter of resource pollution due to sewage which, as discussed in Chapter Four, hardly gets treated. Many urban rivers have become open sewers; a problem that has gained recognition and which some cities are beginning to address through integral recovery projects.

Loss of Air Quality

Air quality in large agglomerations is also a cause for concern. Many cities suffer from air-borne particulates such as pollen, ash, mineral dust, cement and metals. Experts call these 'PM_{10}' because they measure up to 10 micrometres[7]. These have adverse health impacts and scientists have linked high concentrations of PM_{10} with cardiovascular and respiratory diseases, as well as with increased morbidity and mortality[8].

Data available for some cities in the region indicate that, between 2000 and 2004, annual average PM10 levels exceeded the World Health Organization's recommended maximim of 20 micrograms/m^3 in all but Belo Horizonte and, in most cases, the concentrations also exceeded the standard set by the cities themselves (50-65 µg/m^3)[9].

Figure 5.2
Particulate Matter Concentrations (PM^{10}) in the Environment in Selected Cities, 2000-2004 Averages



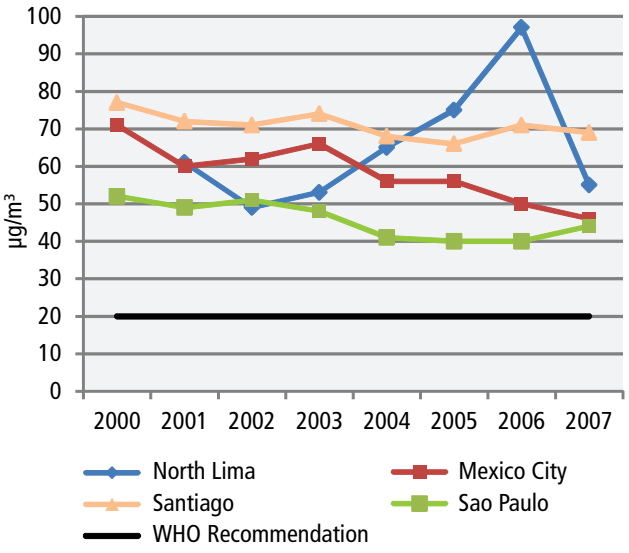
Source: ECLAC. Statistics factsheet. Environmental indicators for Latin America and the Caribbean, 2009

A more recent study by the United Nations Environment Programme (UNEP)[10] in eight cities in the region confirmed the above findings, albeit with a slightly more positive outlook, because in each case the level of PM10 in 2007 was lower than in 2000.

The greatest cause of air pollution in the cities of Latin America and the Caribbean islands is land-based transport[11], but it is not the only one. Others contributing to pollution are coal or heavy oil-fueled power stations and industrial production[12]. Mining towns are often particularly vulnerable to deteriorations in air quality because of extraction activities.

Technological advances and better weather forecasting offer possibilities for accurate air quality predictions, which implies that timely strategies can be put in place to reduce emissions and population exposure. One example is Santiago de Chile, where the mayor has the power to enact restrictions on the movement of motor vehicles when air quality is expected to deteriorate excessively[13]. To get these analyses, it is necessary to have detailed information on emissions, a condition that, for the moment, exceeds the financial and technical capabilities of many cities.

Figure 5.3
Trends in PM_{10} Concentrations Selected Cities and WHO Recommendations, 2000-2007



Source: Compiled with UNEP data (2010).

Green Areas, Coastal Areas and Biodiversity Under Pressure

The Latin America and the Caribbean region only accounts for 15 per cent of the world's total land surface, yet has 23 per cent of the world's forest area, mainly due to the Amazon. However, this favourable condition may be lost, because the region has one of the highest deforestation rates in the world[14]. The growth of cities contributes to deforestation, but their share is insignificant compared to the expansion of agricultural and farming boundaries.

As seen in Chapter One, cities in the region tend to expand territorially at rates that exceed population growth. Locally, occupancy patterns and urban development are far from sustainable. The physical growth of cities brings about a loss of vegetation and the fragmentation of ecosystems which, when added to pollution from waste, does cause irreparable damage to biodiversity.

From an environmental perspective, the soil typologies of occupied land and the method of occupation are just as important as the amount of land taken. Urban forms that preserve and extend ecological structures, weaving biological corridors throughout the territory, reduce the negative impact of urban development on ecosystems and help to preserve biodiversity[15]. With increasing environmental awareness, many cities have adopted conservation, education, and reforestation, but not always

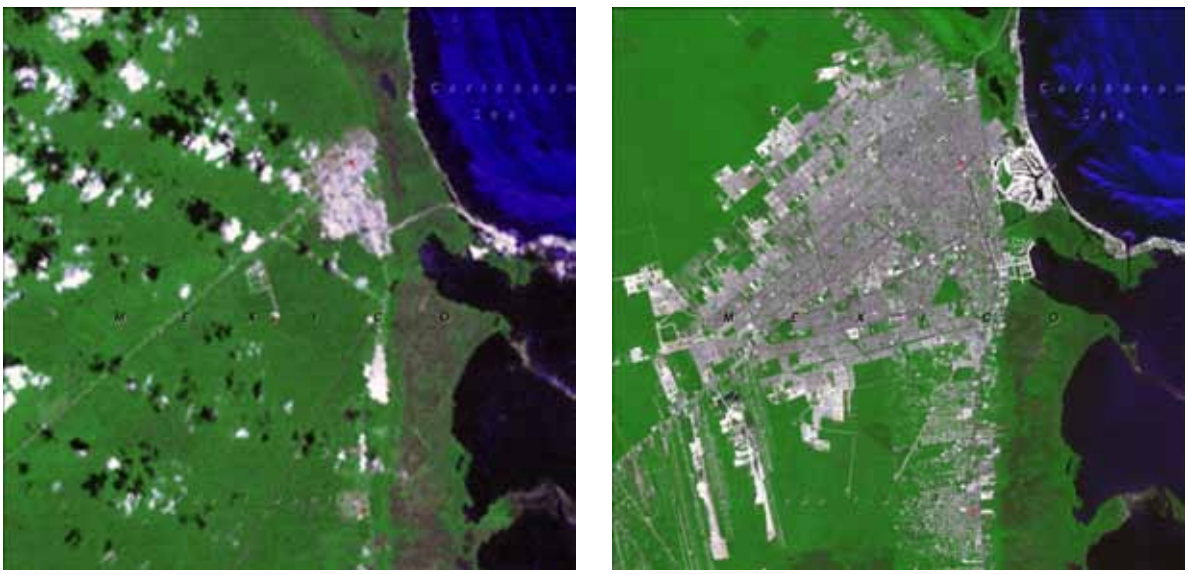
Rio de Janeiro, Brazil. In terms of the environment, the type of ground soil built on is important. © Wolfram Lange

to the same extent. Urban green corridors feature among the most innovative plans, like those set up in Cali[16], where natural bridges were created between eight parks on the south side of the city to preserve the fauna and flora of the urban environment, and enhance their ecological functions.

The World Health Organization recommends cities have at least 9 to 11m^2 of green area per inhabitant[17]. Data collected between 2003 and 2008 on 16 cities in the region show that nearly half of them exceeded the recommendation. However, the variety of criteria for defining green areas and uneven green area distribution within cities complicates the calculation of the actual average. Many cities have grown haphazardly without taking environmental criteria into account. Green areas located in the periphery are often added to the city indicator, yet these areas are not part of the immediate environment, let alone everyday urban life.

Urban ecosystems and surrounding areas also suffer from inadequate disposal of urban wastes[18]. The decomposition of solid waste produces leachates that contaminate surface and sources, while their methane emissions degrade air quality. Uncontrolled landfills are also a source of diseases spread by insects, rodents and birds. Wastes can cause flooding, as debris often blocks waterways and drainage channels. The sheer volume of waste generated in cities also represents a major concern.

Along the coast, the development of large tourist resorts has resulted in extensive destruction of ecosystems such as mangroves, dunes and lagoons, and added to uncontrolled dumping of sewage and solid waste into the sea. This is the case of Cancun, a city which, as mentioned in Chapter One, has experienced rapid population growth and receives millions of tourists every year.



Aerial view of Cancun (Mexico) in 1979 and 2009 © . Atlas of our Changing Environment. Cathalac. UNEP..

Box 5.2
Urban Ecological Footprint

Rough measures of the pressures on ecosystems can be obtained by comparing 'ecological footprints' and biological capacities. According to the Global Footprint Network, in 2007 the annual consumption per capita for Latin America amounted to 2.6 global hectares (gha), while its biological capacity was estimated at 5.5 gha[a]. In other words, the region puts less pressure on the environment than it can support. However, the differences within the region were significant. Half of the 22 countries that have such a calculation demand more resources from their ecosystems than these can sustainably provide.

Not many cities in the region have attempted to measure their ecological footprint. The calculation is very complex, and there are other limitations at the city level, since there can be different interpretations according to the method of analysis. To assess the situation accurately, it seems insufficient to just calculate assets generated by cities; an analysis of the products they consume should also be done, since many of these come from the countryside or other cities, some of these from far off, and the conditions of production are quite different.

In 2002, Bogota published an estimate of its average ecological footprint standing at 2.8 gha for 1999. In 2011, Quito said its ecological footprint for 2006 was 2.4 gha per inhabitant. The figures clearly indicate a bio capacity deficit for both cities and footprints that are higher than their own countries'[b].

[a] Global Footprint Network (2010)

[b] Bogota's finance office (2002), and Moore, D. and Stechbart, M. (2011).

Mauá, Brazil. There are not many indicators to calculate GHG emissions for cities. © Carlos César Fracasso

5.2 Climate Change

The contribution of urban areas to changes in global climate conditions is caused by multiple factors including geographic location, the demographic and economic fabric of the city, its design and population density, types of construction, transport, electricity production modes, the way buildings are heated or cooled, as well as inhabitants' consumption patterns, which have significant social and cultural variations.

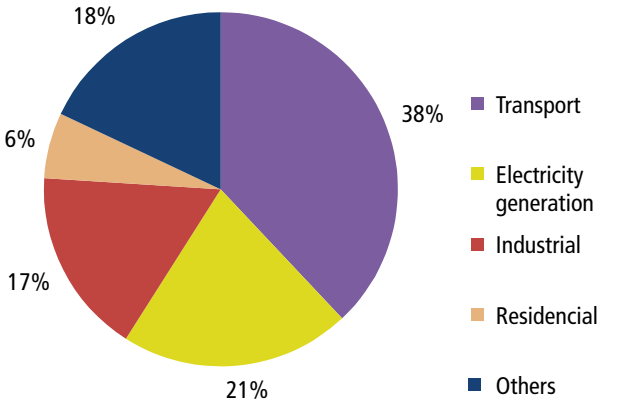
In practice, it is extremely difficult to determine the exact contribution of cities to climate change because, as witn other aspects, measurements are made at national levels and urban analyses are still at an incipient stage[19]. Also, definitions of 'urban area' vary[20], and there is also no internationally agreed methodology for recording greenhouse gas emissions at anything other than national level.

Existing approaches differ greatly depending on whether 'place of production' or 'place of consumption' of goods and services is considered. The calculation is usually based on national production. Applying the same methodology to urban environments gives very low numbers, since almost 70 per cent of the regional GHG emissions come from agriculture and forestry, and is not included in city figures.

However, such an approach at the city level is debatable[21]. Cities mainly use products originating outside of their political and administrative boundaries. In a logical system, emissions of greenhouse gases generated in rural areas or in other countries are not entirely separated from urban areas, because they are closely linked to city lifestyles.

Analysing the problem from the perspective of consumption of goods and services, and considering that 80 per cent of the population lives in cities, it seems reasonable to say that urban populations would be responsible for approximately 80 per cent of GHG emissions in the region.

Figure 5.4
Percentage of Each Sector in Total Emissions of CO_2 by Burning Fossil Fuels



Source: Centre GRID-Arendal. Maps and charts. http://www.grida.no/publications/vg/lac/page/2736.aspx

Box 5.3
Global Climate Change

The climate in each geographic area depends on global and local factors. At the level of the planet, the composition of the atmosphere is of particular importance because of the greenhouse effect it creates, without which the Earth's temperature would be too low.

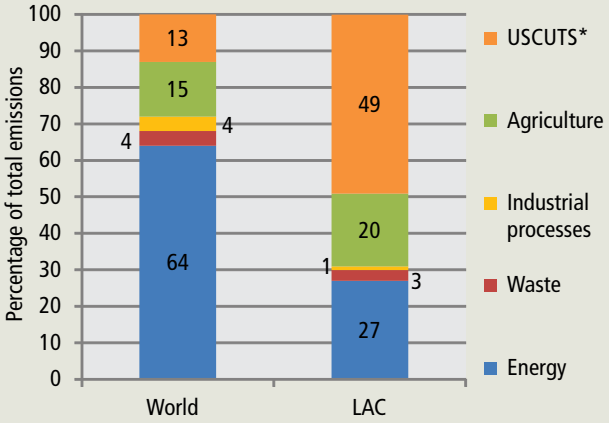
Human activities alter the natural concentration of greenhouse gases (GHGs) in the atmosphere because they release gases such as carbon dioxide (CO_2), causing an increase in global temperatures and changes to other climatic variables.

Latin America and the Caribbean's contribution to global emissions of greenhouse gases is estimated at 12 per cent, a modest figure compared to other geographic areas[a]. However, the region's GHG emissions per capita and per unit of national domestic product[b] are higher than the world average.

GHG emissions by sector show a very different profile to the world average. Almost half of the emissions in Latin America and the Caribbean come from forestry and changes in land use (USCUTS), mainly deforestation to create farmland. Agriculture and livestock contribute 20 per cent[c], while the energy sector is responsible for 27 per cent. The contribution of the solid waste industry is not very significant.

The effects of global climate change have, and will, take different forms. Temperature and rainfall patterns are changing, with regions becoming wetter and others drier, some becoming hotter and others colder. Given the accelerated pace of change, experts anticipate a breakdown of the balance that took millennia to establish, with consequences for the ecosystems that promise to be devastating.

Figure 5.5
Emissions of Greenhouse Gases (GHG). Emissions by sector.



* USCUTS: land use, change in land use and forestry

Source: De la Torre, A., Fajnzylber, P. and Nash, J. (2009)

[a] Participation has declined slightly since 1990 due to the growing contribution of other countries, especially China and India.

[b] Average energy consumed per unit of GDP produced.

[c] De la Torre, A., Fajnzylber, P. and Nash, J. (2009).

Distribution by Sector and Country

The main GHG emissions in urban areas are related to consumption of fossil fuels by transport (38 per cent), electricity production (21 per cent) and industry (17 per cent).

Given the lack of more precise indicators to calculate urban GHG emissions and considering the high rate of urbanization, it is possible to evaluate the distribution of emissions of 'urban GHG' between countries in the region by adding up the national indicators on fossil fuel burning and cement production.

Currently, Brazil and Mexico are responsible for half of the regional GHG generated by these two activities[22]. That amount, when added to those of Argentina, Chile, Colombia and Venezuela, represents 84 per cent of the regional total. Some Caribbean countries also have high emission levels. In Trinidad and Tobago this is related to oil and gas production, while in other island states with smaller populations it would be attributable to the tourism industry[23].

Box 5.4
The Challenge of Measurements at the Urban Level

Few cities in the region have undertaken GHG urban audits. Those with one or more audits differ in scope, frequency, depth and measurement rigor[a], which means regional comparative analyses at the urban scale are not possible.

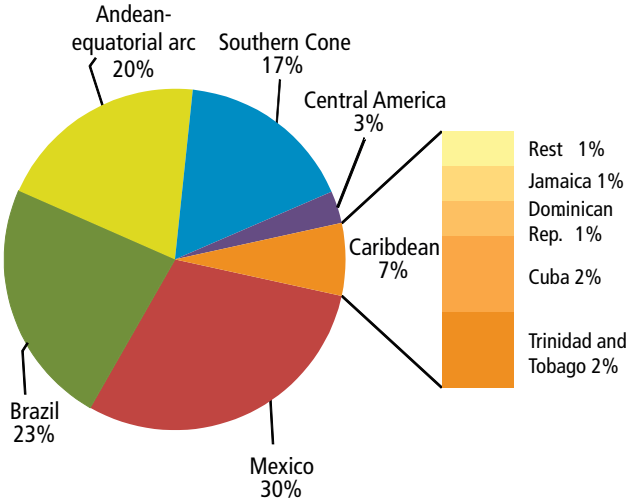
With the above precautions, several cities in the region have made enormous efforts to calculate the volume of GHG emissions. Among them are São Paulo and Mexico City. The estimates were of 1.5 tons of CO2 equivalent per year per capita (measured in 2003) and 3.6 tons (2006)[b], respectively.

By getting a better understanding of the evolution and characteristics of GHG emissions per sector, local authorities can see where they can have a potential impact, but to adopt policy measures and develop specific strategies to reduce emissions, as São Paulo did, it is urgent to obtain and process data faster and in more reliable and comparable ways.

[a] UN-Habitat (2011).

[b] Dubeux, C. and La Rovere, E. (2011) and UN-Habitat (2011c).

Figure 5.6
Domestic Shares in Regional GHG Emissions from Urban Areas (Urban GHG)[a], 2007



[a] This approximation sums contributions from fossil fuel burning and cement production, two activities closely linked to urban areas. For the exact composition of each group, see Chapter One.

Source: Compiled with data from ECLAC. Environmental indicators for Latin America and the Caribbean, 2009. Accessed October, 2011.

More worrying than current volumes is their evolution over recent years. Between 1990 and 2007, cities have increased per capita emissions of CO_2, the most important urban greenhouse gas, by 18 per cent. In many countries, the increase has been dramatic, especially in the Caribbean islands and Central America (in Saint Kitts and Nevis, they grew more than 200 per cent, and Dominica, El Salvador, Honduras, Saint Vincent and the Grenadines, and Trinidad and Tobago increases exceeded 100 per cent). Urban CO_2 emissions have decreased in only five countries.

There is no doubt that, within each city, the contribution of different social groups to climate change differs considerably, because it is related to the consumption patterns of each group. Different household incomes influence the size of house, type of construction material used, demand for heating or cooling, among other factors. By using public and non-motorized modes of transport, the poorest tend to generate fewer emissions per capita because their level of consumption and emissions is lower than for rich sectors, regular users of private vehicles.

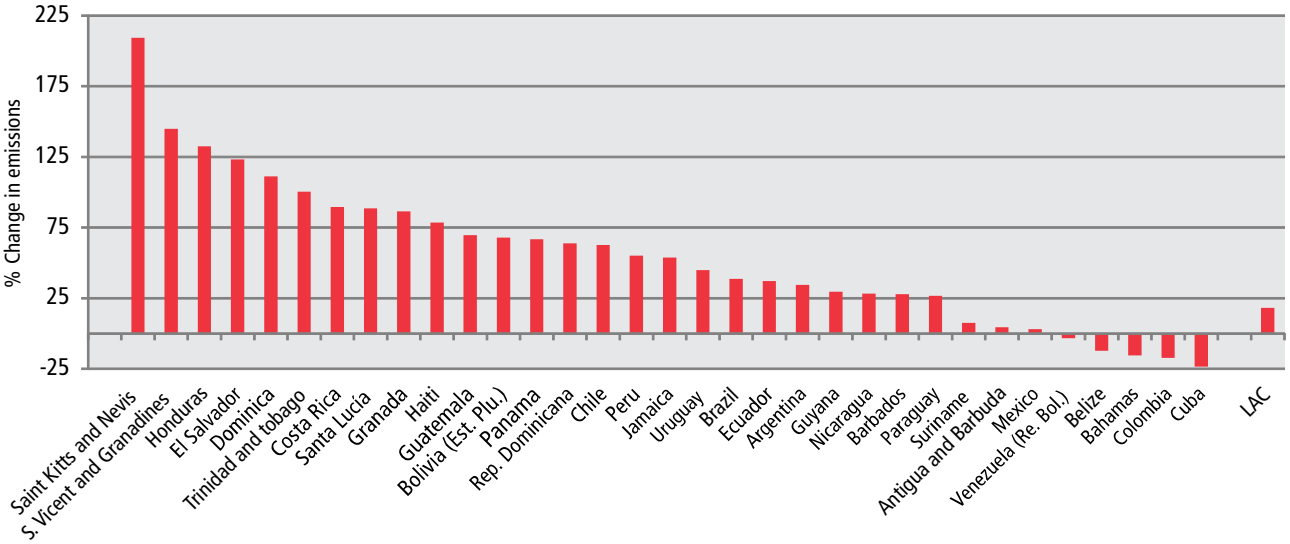
Reducing Emissions in the Transport Sector

Regarding mobility, cities in the region have seen a relatively favourable pattern emerge if compared to other geographical areas of the world, characterised by a high share of non-motorized and collective public transport in urban mobility. However, as discussed in Chapter Four, the rate of motorization is increasing dramatically[24].

This development promises to bring a rapid increase in GHG emissions from vehicles due to urban sprawl and increased automobile use. In fact, the modest decline in total GHG emissions achieved in the region is attributed to higher fuel consumption[25].

Data available for 15 cities in the region indicate large variations in the average energy consumption per capita for transport. These variations are related to more/less use of private vehicles, the energy efficiency of each type of transport, and distances travelled. It is also influenced by geographic conditions and, above all, the spatial configuration of the city.

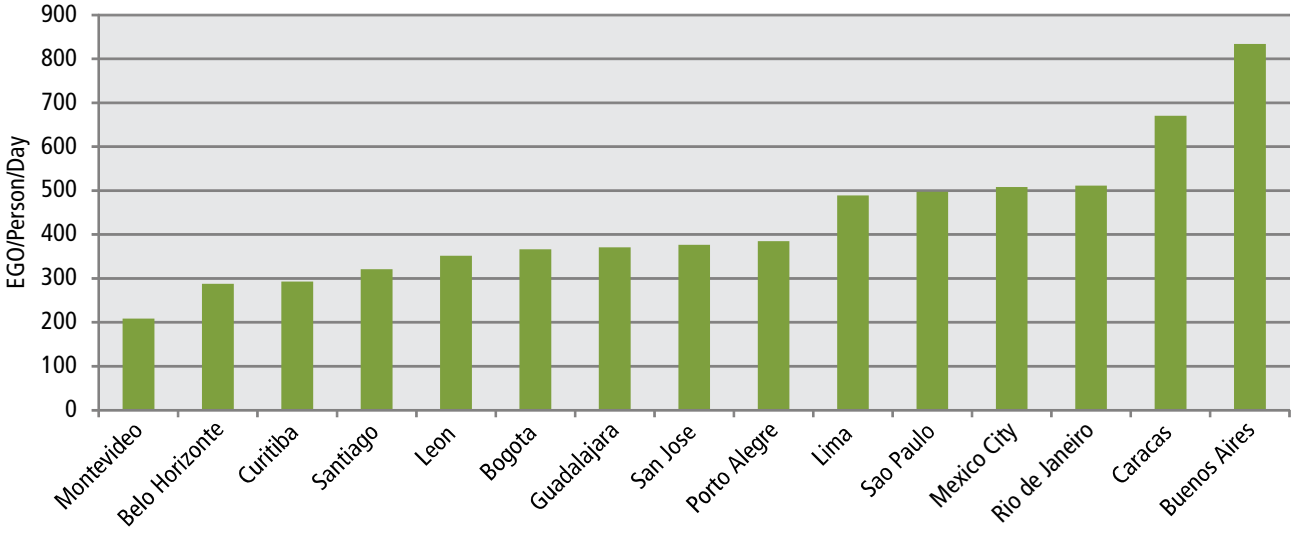
Figure 5.7
Urban Variations[a] in CO_2 Emissions, Selected Countries, 1990-2007 (%)



[a] Calculations based on estimates of emissions (tons per capita) from fossil fuel burning and cement production.

Source: Based on data from ECLAC. Environmental Indicators for Latin America and the Caribbean, 2009.

Figure 5.8
Daily Energy Consumption Per Capita for Transport, 2007 (Equivalent Grams Oil/Person/Day)



Source: Observatory on Urban Mobility, CAF (2009)

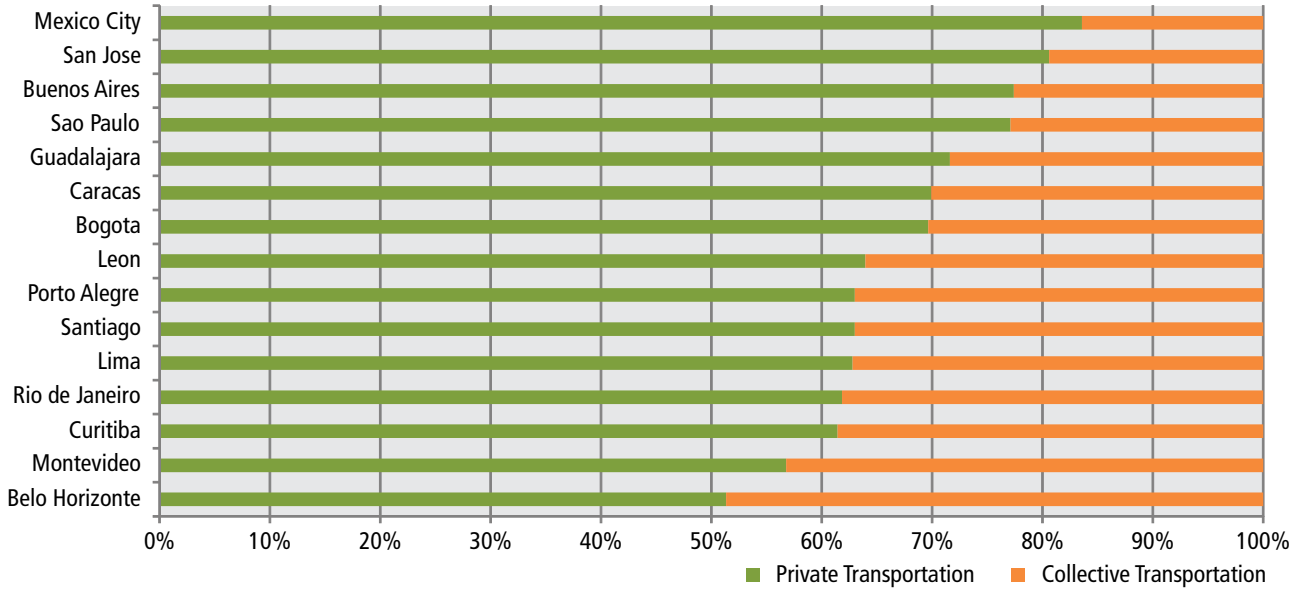
Compact agglomerations with less-dispersed activity areas (less distance between housing, work, school, shops, services and recreational areas) and efficient public transport networks show less demand for private vehicle use than much smaller cities that are less extensive and have land zoning which increases the number and distance of journeys.

Another factor to consider is population density. Research conducted in several cities around the world show car use is predominant in cities that are less dense and that have public transport deficits. There is a better balance between different types of transport in cities that have high population density[26].

Buenos Aires, with its urban sprawl, low density and predominant car use, had the highest rate of energy consumption per capita in 2007, while Montevideo, which is smaller and more compact, had the lowest shares of private vehicle use and consumption.

It seems clear that public transport, due to its lower proportion of energy consumption, is more beneficial for the environment than private transport. Despite a relatively low share of journeys, on the average, private cars accounted for 72 per cent of all CO_2 emissions of the transport sector in 2007[27], while collective transport contributed only 28 per cent.

Figure 5.9
Emissions of CO_2 of Private and Collective Transport, 2007 (Percentage of Tons per Day)



Source: Observatory on Urban Mobility, CAF (2009)

There are other factors that influence the amount and composition of emissions, including the type of energy used and the characteristics of vehicles. There are, for example, significant differences between the railway and underground, which run mainly on electricity, and vehicles that use diesel[28]. In the region, the latter represent 85 per cent of all journeys.

Although the provision of major infrastructure and regulations are generally competencies of central government, local authorities also have a key role[29] in the organization and management of urban transport. Urban planning and urban design departments can play a particularly important role in reducing GHG emissions associated with transportation, as they can influence the demand for private and motorized mobility.

As seen in the Chapter Four, a significant number of cities in the region prioritize dedicated lanes for public transport and integrated transport systems. There are also developments and initiatives regarding efficiency and maintenance standards, control and renewal of public transport fleets and number of private vehicles.

Control of Energy Consumption

The production of electricity and industry are the second and third-most polluting sectors regarding GHGs in cities. Statistics show that between 1970 and 2008, energy consumption in Latin America and the Caribbean[30] tripled, with Brazil, Mexico and the Southern Cone growing fastest in this respect[31]. In per capita terms and average electricity consumption between 1970 and 2006 quadrupled in the region (from 427 to 1,688 kilowatt hours per inhabitant). Importantly, the share of renewable sources in the region is significant, reaching 23 per cent of the total energy supply.

However, energy intensity, meaning the amount of energy consumed in the production of goods and services, fell slightly between 1990 and 2008, from 1.59 to 1.44 thousand barrels of oil equivalent per million dollars GDP[32].

Box 5.5
'Green' Mortgages for Ecological Homes

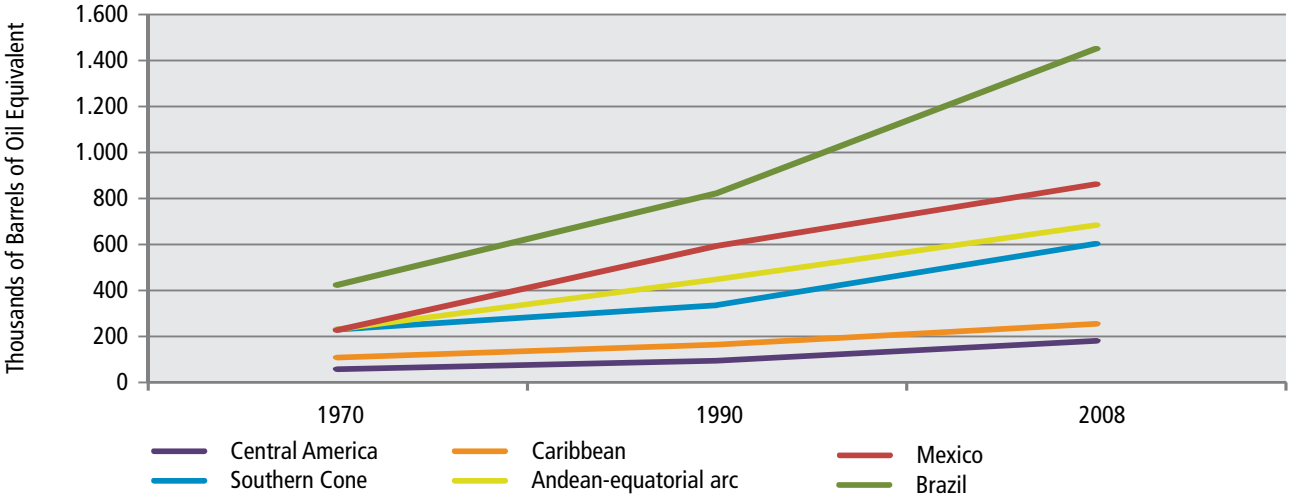
In 2010, Mexico launched a pioneering initiative to promote energy efficiency through the application of environmental criteria in investment projects. The scheme, known as 'green mortgage', began as a pilot programme for new housing for low-income families. The use of environmental technologies in the construction was a requirement for the federal ''This is Your House' grant operated by the National Housing Commission (CONAVI).

Currently, the National Housing Fund for Workers (Infonavit), which provides 60 per cent of all mortgages in Mexico, conditions the use of clean technologies to all loans for purchasing, constructing, repairing, enlarging or renovating housing. The mechanism provides additional amounts up to the original loan amount for purchasing technologies that reduce the consumption of water, gas and electricity, leading to savings in household expenditure and, at the same time, contributing to a more efficient use of natural resources and reducing GHG emissions.

Although the mechanism increases housing costs, the savings generated on electricity and gas bills, estimated at 48 per cent, help amortise the loan. The number of 'green' mortgages granted rose from 121,000 in 2009 to more than 376,000 in 2011, totalling 667,000 in its first three years.

Source: Conavi (www.conavi.gob.mx) and infonavit (www.infonavit.org.mx)

Figure 5.10
Total Energy Consumption by Sub-regions and Large Countries, 1970-1990-2008 (Thousands of Barrels of Oil Equivalent)



Source: Based on data from ECLAC. Environmental indicators for Latin America and the Caribbean, 2009. Accessed October, 2011.

Large-scale energy production options are often decided at the national level, but energy consumption in cities is an area that local governments can have an impact on, besides being an indicator relatively easy to monitor. Technological modernization programmes, the promotion of renewable energy, efficiency incentives to change behaviour, and organizational measures have all been used to control or reduce energy consumption and indirectly decrease the amount of GHG emissions in the region.

Cuba is a good example of the latter. To limit electricity consumption, public administration offices have to turn the air conditioning off at certain times to take advantage of the thermal inertia of buildings and reduce spending on cooling when it is not necessary.

Building design is equally important. The application of 'solar passive' criteria that optimize the use of natural light and solar heat (or protection, depending on the weather) by facing buildings in a certain direction, the design of windows and ventilation systems, among others, reduces energy consumption.

These measures are beginning to be incorporated at the bylaw, institutional and financial level. In Mexico City, for example, the Ministry of Environment established a Sustainable Buildings Certification Programme[33] in 2008, which provides economic incentives for new buildings and those already in operation, based on sustainability criteria. The states of Guanajuato, Jalisco and Nuevo Leon also have initiatives to adopt sustainable construction standards. Another innovative initiative in the housing sector was the creation of a credit system for housing using green technologies.

Renewable energy promotion in cities has focused on the use of solar energy, especially for heating water and for lighting (as in the case of the stations in Quito's public transport) and wind energy (Buenos Aires and Porto Alegre). Other initiatives capture and store landfill methane, which is then converted into biogas. This technology is used mainly in large agglomerations in Argentina, Brazil[34], Mexico and Uruguay, but rarely in smaller cities (Argentina's Olavarria and Uruguay's Maldonado being the exceptions).

Box 5.6
Waste Produces Electricity

A 2005 GHG audit in São Paulo showed that over two-thirds of GHG released into the city came from energy consumption and almost all of the remainder from solid waste[a].

While emissions from waste seem disproportionally high, it is worth noting that the city has two landfills (Bandeirantes and São João) capable of generating electricity to power a city of over 200,000 inhabitants by using the methane produced in the decomposition of waste. These two projects fall within the Clean Development Mechanism and are expected to reduce carbon emissions by about 11 million tons up to 2012[b].

[a] Dubeux, C. y La Rovere, E. (2011).

[b] Siemens (2010). Green Cities Index: A comparative evaluation of the ecological impact of major Latin American cities. Munich, Germany

Rio de Janeiro, Brazil. Local governments can have an impact on energy consumption in cities. © Alain Grimard

Aquidauana, Brazil. Natural disasters affect millions of people in the region. © Marcos Luiz Martines

5.3 Natural Hazards and Risk Management

The cities of the region are exposed to a variety of natural[35] hazards ranging from hurricanes, storms, droughts, floods, heat waves and very cold spells, epidemics, earthquakes, volcanic eruptions and tsunamis. In general terms, these are divided according to natural hazards with meteorological, epidemiological or geophysical origins.

To a greater or lesser extent, all countries in the region are subject to extreme weather events, including non-routine rainfall or periods of drought, as well as the recurrence of the El Niño and La Niña phenomena resulting from the shift of tides from the northern hemisphere to the southern hemisphere in the inter-tropics zone.

Due to global climate change, the frequency and geographical distribution of extreme weather events is changing. The statistics on disasters show an increasing number of climatic events in the region in recent decades[36]. Tropical storms and hurricanes are more frequent and intense than in the past[37]. Since 1990, phenomena of this kind have taken place, on average, every three years, while those recorded since 1950 had a frequency of one in every four years. Furthermore, natural events have occurred in areas where they had never previously been experienced. This was the case with cyclone 'Catarina', the first recorded hurricane system in the South Atlantic, which hit the coast of Brazil in March 2004.

Rainfall patterns have also changed, with increased rainfall in some areas (north-eastern Argentina, southern Brazil, Paraguay, north-western Peru, and Uruguay), and precipitation reductions in other areas (southwest of Argentina, southern Chile, and southern Peru)[38]. The consequence is an increased risk of flooding and droughts, problems that could become more serious in north-eastern Brazil and northern Mexico, among other areas.

Rising global temperatures are also affecting the glaciers[39]. The disappearance of glaciers in the Andes, estimated for the next ten to twenty years, will have an impact on water availability with negative consequences for the population of cities like Arequipa, La Paz or Quito, which depend on snowmelt and moorlands for freshwater supplies[40].

Experts estimate that sea levels have risen 2 to 3 millimetres per year since the early 1980s and will continue to rise, leading to higher saline leakage in aquifers, especially in the islands of Caribbean, and it could cause more frequent flooding in low-lying areas.

It should not be forgotten that 60 of the 77 most-populated cities in Latin America and the Caribbean are located near the coast[41]. In Guyana, more than 90 per cent of the population and major economic activities are located in

the coastal areas which would erode with rising sea levels. Cartagena, Guayaquil and Havana are also vulnerable. In Esmeraldas, Ecuador, estimates show between three and six per cent of the infrastructure could be under water by the end of the century if no remedial action is taken, affecting more than eight per cent of the population of the city (based on demographic data from 2001)[42].

Because of its location on active tectonic plates, Mexico, Central America, the Caribbean, northwest and west South America are all at seismic risk. Earthquakes in Haiti and Chile in 2010 showed how devastating these can be to cities under certain circumstances. Tidal waves are an additional problem facing the region, a phenomenon that mainly affects the Pacific Coast but there are risks on the Atlantic side too.

Volcanic activity, which causes toxic gases and the ejection of solids and sludge, affects the Andean countries, Mexico and Central America. In this sub-region alone there are 27 highly active volcanoes. In 2011, for example, the volcano of Puyehue in Chile erupted, leaving cities like Bariloche and Villa La Angostura on alert for weeks because of volcanic ash that even reached Brazil a year earlier, the Pacaya volvano erupted, raining sand and ash over Guatemala City and forcing the government to declare a state of emergency in two Guatemalan departments.

Geological and meteorological events can cause landslides, often exacerbated by human activities, like those of 2010 in the mountain towns of the State of Rio de Janeiro, including Petrópolis, Teresópolis, New Fribourg and Itaipava.

Box 5.7
Extreme Rains in Trinidad, Quito and Bogota

The city of Trinidad, capital of the Bolivian department of Beni, has suffered from the El Niño and La Niña phenomena in recent years. A series of factors exposed the city to floods: location on flat, clay terrain, the asphalt, unplanned housing construction on the bed of a stream, poor sanitation system, and the obstruction of natural drainage for rain waters.

The lack of sewers and fragile septic tanks caused sewage to overflow in December 2007 and March 2008, exposing people to potential epidemics. The situation forced some 20,000 of Trinidad's population of 100,000 to live in camps on the outskirts of the city for several days. Thousands of people had difficulties accessing clean water and food.

In Quito, the winter of 2010 was the worst in nearly four decades, with 200 per cent more rainfall than the monthly average in some areas of the city[a]. The saturation of the soil, unstable because of its slope and volcanic origins, and deforestation, among other factors, caused the collapse of about 2,000 m^2 of land in a marginal area, killing five people and forcing the relocation of at least 130 families[b].

Between 2010 and 2011, Colombia was hit by La Niña which resulted in very heavy rainfall. Nationally, the cold wave affected 2.3 million people, killing 447. In Bogota, in February 2011, rainfall was 300 per cent higher than normal and triggered the evacuation of 711 buildings. In the department of Atlántico, including its capital, Ottawa, nearly 18,000 properties were affected in urban areas. Rainfall and its consequences hit particularly hard the low-income people located in slums.

[a] Mayor's office, Quito Metropolitan Area (2011).

[b] Lozada, T. (2011).

Vulnerability and Impact of Disasters

Tutunichapa community, El Salvador. There are differences in risk vulnerability to disasters, depending on neighbourhood. © Oscar Armando Payés

St. Lucia, the location of housing can increase vulnerability to disasters. © Alain Grimard

Geological and climatic events do not always translate into disasters. An earthquake in an uninhabited area or in well-prepared cities may produce little or no damage. What makes a natural event a disaster is the degree of vulnerability, meaning the extent to which a geographical area, community or structure is capable of addressing the negative impacts of the event.

Disasters caused by natural events have affected about 160 million people in Latin America and the Caribbean in the last three decades[43]. Between 1970 and 2009, nearly 130,000 people died from disasters in twelve countries in the region[44]. The economic damage was valued at USD 356 billion with 60 per cent associated with extreme climatic events[45].

The situation can change significantly from year to year. In 2010, for example, the region suffered 98 natural disasters of which 81 per cent were climate-related and 13 per cent of an epidemiological nature[46]. Geophysical events constituted only six per cent of all disasters that year, and while they affected relatively few people, they were most serious in terms of fatalities and in monetary terms.

The degree of vulnerability of any city depends on physical, social, economic and environmental factors that a relocation specific[47]. Vulnerability increases when several factors are combined, amongst them, the location of housing, poor management of river basins or the type of soil. Thus, the impact of an earthquake is greater when the agglomeration is built on land with deep layers of clay, sand and gravel which amplify seismic[48] waves, as is the case in Mexico City.

Poorly planned and managed urban growth is also an important factor in disaster vulnerability. In Latin America, over 80 per cent of the recorded disaster-related losses were in urban areas and, although there are variations among countries, between 40 and 70 per cent were in cities of less than 100,000 inhabitants[49]. Statistics suggest that risks are higher in fast-growing small and

Table 5.1
Accumulated Impact of Disasters, by Type of Disaster and Affected Areas, 1970-2009 (USD billions)

	Economic	Social	Infrastructure	Environment	Others	Debris removal and cleaning	Emergency expenses	Total
Climatological	137.064	22.829	49.361	1.582	1.916	649	1.460	214.863
Geophysical	34.363	59.551	33.899	257	2.526	2.587	1.289	134.475
Geophysical Climatological	3.105	1.133	2.996	44	52	0	0.9	7.332
Total	**174.534**	**83.514**	**86.257**	**1.884**	**4.494**	**3.236**	**2.751**	**356.672**
Percentage	**48.9%**	**23.4%**	**24.2%**	**0.5%**	**1.3%**	**0.9%**	**0.8%**	**100%**

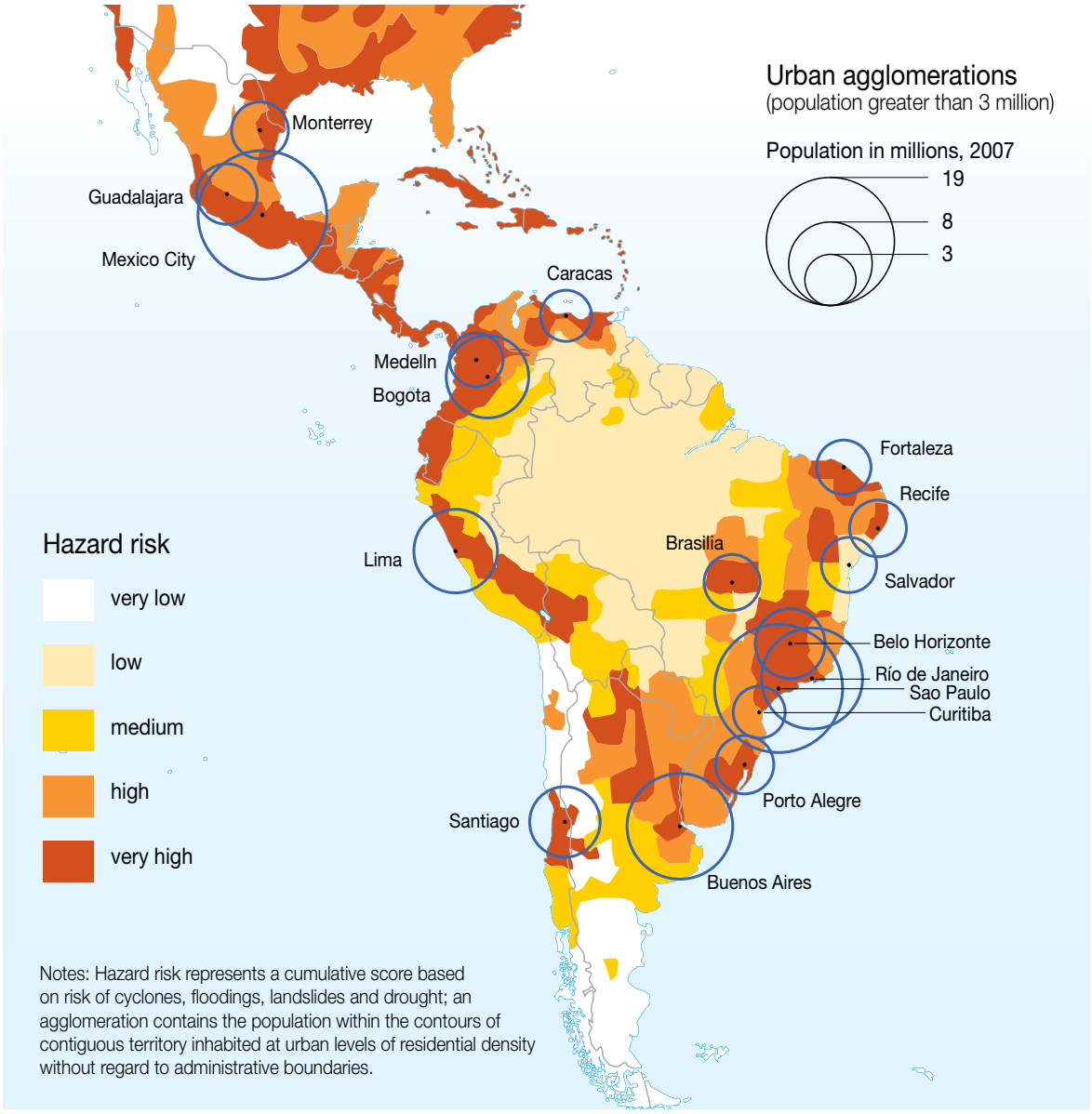
Source: Disaster Impact Assessments carried out by the Unit for Social and Economic Assessment of Disasters ECLAC between 1972 and 2009. Published in Zapata, R. (2010)

Table 5.2
Losses Associated with Disasters (Number of Individuals and Households), 1970-2009

	Muertos	Heridos	Desaparecidos	Hogares destruidos	Hogares dañados	Personas afectadas	Población en 2009
Argentina	3,377	22,470	810	53,973	141,381	23,271,305	40,164,561
Bolivia	1,190	1,133	254	6,249	8,200	832,980	10,187,067
Chile	3,184	6,811	640	101,877	278,087	8,052,836	19,983,720
Colombia	35,898	26,447	2,812	183,106	681,404	22,688,062	45,103,268
Costa Rica	516	51	62	8,796	50,800	32,405	4,509,290
Ecuador	3,019	2,535	1,228	12,074	58,875	1,293,799	14,032,233
El Salvador	4,541	15,087	535	180,227	202,701	343,817	7,124,374
Guatemala	1,953	2,789	1,113	20,941	105,985	3,339,301	14,009,133
Mexico	31,442	2,882,359	9,273	432,812	2,781,635	59,882,327	106,116,969
Panama	339	1,292	39	13,534	70,678	345,782	3,304,461
Peru	40,994	65,675	9,136	438,376	398,237	2,218,035	29,330,481
Venezuela	3,015	379	1,059	56,285	158,288	2,932,101	28,143,584

Source: EIRD (2011).

Mapa 5.1
Vulnerability of Large Cities to Climate Hazards, 2010



Source: Nieves López Izquierdo, associate consultant at UNEP /GRID-Arendal.
Available on-line at http://www.grida.no/graphicslib/detail/vulnerability-of-large-cities-to-climate-hazards_cb5f

Box 5.8
Mobilisation Against the Risk of Disasters in Cuba

Like other Caribbean countries, Cuba is exposed to serious climatic threats. Between 1998 and 2008, the country suffered the effects of 20 tropical cyclones, of which 14 were hurricanes. However, measures taken since the 1970's have substantially reduced the impact of these phenomena. Civil defence measures, including the participation of all stakeholders (the military, government officials, businesses, cooperatives and individual citizens), have contributed to this success.

Early warning systems and preparations made before Hurricane Michelle hit the island in 2004 helped limit the number of victims. Once the threat was identified, evacuation plans were launched in 12 provincial headquarters and 150 municipal civil defence branch offices. The plan mobilized 87,000 people and 5,000 vehicles. In total, 700,000 people were evacuated of which 270,000 were placed in temporary shelters, while 777,000 animals were taken to safer areas.

Winds of 220 kilometres per hour lashed Cuba on the 4th and 5th of November, with a balance of five dead and 12 wounded. The damage was considerable, especially to infrastructure and agriculture, but it would have been much worse had it not been for the mitigation measures taken.

Cuba has continued to improve mechanisms to reduce risks from disasters. In 2005, it set up Centres of Management for Risk Reduction (CGRR), an important prevention and decision-making tool for local governments exposed to hazards, resulting in more effective planning and protection measures.

An audit of preventive operations showed that between 1998 and 2008 more than a million Cuban homes were affected by cyclones, causing losses valued at USD 18 billion. During this period, a total of 11 million people were evacuated which kept the death toll down to 35.

Source: UNDP (2010b). EIRD/ONU (2004).

medium-sized urban centres than in larger cities or in rural areas. This may be related to the ability to invest in and manage risk reduction, which is usually weaker in smaller cities.

Among cities and within them, there are important differences in the vulnerability of different neighbourhoods. Social and physical-spatial factors are at play here. A good proportion of the settlements in the region, many of them having emerged informally in outlying areas during rapid urban growth, are located in risk areas, either because of their proximity to a volcano; built on a an instable slope or because of the type of soil; proximity to the sea; other low-lying locations; or because they are in flood zones or polluted areas.

The poorest segments of society tend to be more vulnerable to environmental degradation and natural hazards. High percentages of poor live in areas with precarious social and residential infrastructure or in environmentally-degraded surroundings[50], resulting in a disproportionate share of disasters. For instance, in Haiti, in 2010, the combination of threat and vulnerability caused a major tragedy. Gender, age and ethnicity also influence vulnerability and are often found in combination[51].

High concentrations of population, industries and infrastructure in cities imply that these especially suffer the impact of natural phenomena, but this concentration also offers the opportunity for adaptation and to develop strategies to prevent and mitigate their impacts. Local authorities, the urban population and the economic stakeholders of cities have a key role to play in preparedness, reduction and mitigation.

In the same way that human actions can exacerbate the effects of natural phenomena, they can also mitigate them. Vulnerability can be reduced by appropriate land planning, early warning systems, adequate infrastructure and stronger institutions. Construction standards suitable to the characteristics of each environment, or better-designed buildings as Mexico City, may minimize the impacts of an earthquake. Providing information to the public and official recognition of risk can also help prepare communities and governing bodies to prevent human and material losses.

The preservation of ecosystems also contributes to reducing the impacts of disasters. For example, a more adequate use of land and forestry conservation enhances water absorption, reducing the risks of flooding and landslides, while the conservation of mangroves provides a natural barrier against tropical winds and storm waves. In contrast, practices such as deforestation, overexploitation of natural resources and inappropriate urbanization can increase the risk of disasters.

Vulnerability to disaster is greater in countries with low development[52]. The worst is that developing countries are precisely those with less human, financial and technical resources to deal with emergencies and the reconstruction of devastated areas. Extreme events in vulnerable areas often cause cuts to basic services and the discontinuity and inefficiency of economic activities. Not only do they reduce the ability to generate wealth, but they are also forced to allocate development resources to reconstruction. As such, a sequence of disasters can affect development paths[53].

Humanitarian Aid and Sustainable Development

After a disaster strikes, reconstruction is an opportunity to reverse historic legacies and avoid past mistakes, but in many cases the processes are incomplete, generating additional vulnerability that can lead to greater damage and losses at the next event.

In poor countries, the communities provide the essential effort for reconstruction. Generally, the state and the municipalities do not have the ability to finance, guide or coordinate reconstruction effectively, limiting themselves to major infrastructure.

Immediate response to large disasters often includes the installation of temporary shelter which absorbs significant resources without necessarily contributing to reviving the local economy. Unfortunately, such shelter is rarely aimed at gradual consolidation and safety while beneficiaries are sometimes confined for years in those very vulnerable habitats.

An additional problem occurs when there is uneven distribution of resources for reconstruction. The poor not only suffer the impacts most but they also stand to benefit far less from aid. An example is Honduras in 1998, where the proportion of property lost due to 'Hurricane Mitch' exceeded 31 per cent amongst the poorest quartile of the population, while among the richest quartile is was seven per cent[54]. For reconstruction, the latter group received aid averaging USD 320 per household, while the poorest received less than half of that. In the absence of appropriate policies, natural disasters tend to trigger a vicious[55] circle that deepens social and socio-spatial gaps.

One way to combat this is to systematically incorporate risk reduction approaches in the design and implementation of programmes to prepare for emergency response and recovery. Countries have invested significantly in disaster management, focusing on emergency responses, but the reconstruction bill could decrease significantly if part of that investment was rather devoted to prevention.

Verapaz, El Salvador. Reconstruction work after tropical storm 'Ida' in 2009. © Iliana Lemus

Box 5.9
Reconstruction Challenge in Haiti

The situation in Haiti following the earthquake of 2010 is a painful example of the consequences that a natural event can have on vulnerable cities due to poverty, inadequate land management and poor urban planning policies. In this case, there were also political and institutional failures that had been going on for decades.

Haiti is much affected by inequality. Land management would have helped develop basic services and halt rural environmental degradation caused by the exodus from the countryside and unprecedented urban growth. Over the past 10 years, the population of Port-au-Prince has doubled to about 2.5 million people (25 per cent of the total population)[a].

Lack of capacity for planning major urban growth and the inadequacy of planning reguations resulted in a city with many informal settlements, often very dense, nestled on land wuth inappropriate physical characteristics, expensive to develop, and with insufficient and poor quality basic services. These areas represent only 20 per cent of the city's surface area, but are home to 80 per cent of its population.

Popular but unsupervised building practices, carried out by low-skilled workers using inappropriate building materials, led to serious structural defects that amplified vulnerability to the impacts of the earthquake: 220,000 dead, 300,000 injured, 1.3 million people homeless and 15 per cent of the population left stricken.

Towards Reconstruction and Sustainable Urban Development

Of those affected by the earthquake, only a part may return to their homes because risks remain and because of the density of these neighbourhoods. Furthermore, the supply of rental housing, which accounted for between 60 and 70 per cent of homes, will take time to recover.

Haiti's Reconstruction Agency has adopted a strategy to reduce the vulnerability of Port-au-Prince and other cities affected, especially in popular residential areas and stop the continued expansion of settlements.

With the support of the international community, one of the government's objectives is to formulate and implement

Bristout-Bobin, Haiti. UN-Habitat reconstruction project in collaboration with Fondation Architectes de l'Urgence. © UN-Habitat/FAU

Léogâne, Haiti. The challenge of reconstruction in Haiti. © Alain Grimard

long-term strategic plans for Port-au-Prince and the secondary cities affected, involving different Haitian stakeholders (residents and disaster victims, especially women, non-governmental institutions and local and national entities).

The objective is to promote neighbourhood reconstruction planning and re-organize infrastructure, with the progressive development of peri-urban facilities in appropriate urbanization areas, helping to improve the urban fabric and creating centres for services and employment essential for organizing mobility. The plans include relocating families that cannot return to their homes, and protection of risk areas or those that have major agricultural and environmental value.

In parallel, the Agency's strategy is to support families and private sector stakeholders in rebuilding homes by providing information, technical support and training. The reconstruction process in Haiti is a concrete example of what can be achieved with locally adapted solutions that are affordable and connected, and that originate from a process of strategic planning and land management.

In the long term more decentralization will be required; a national long-term management and development plan will need formulating that includes the emergence of secondary centres to balance the attractiveness of Port-au-Prince, and that includes improving access to basic services in villages and small towns to make rural areas more attractive.

However, this will be a fragile strategy if there are insufficient resources, especially considering the cost of humanitarian relief in the camps. Hence the importance of strengthening the capabilities of all stakeholders at all levels.

The challenge of reconstruction in Haiti is immense and there are significant backlogs. However, there is also a hope of rebuilding more equitable and less vulnerable cities, which will contribute to long-term economic and social development.

[a] Haitian Institute of Statistics and Information. Accessed October, 2011. http://www.ihsi.ht

Source: UN-Habitat, Haiti.

The Role of Local Governments

In the region there is growing recognition of the importance of environmental issues in economic and social sustainability, reflected by institutional development, regulatory frameworks and tools for urban environmental management[56]. The number of public and private initiatives has increased and there is more participation from the business sector and civil society. Local governments are also taking on greater responsibility for environmental conservation, the response to climate change and disaster prevention.

The close links between environmental and social matters make establishing integral policies to address the challenges posed by poverty and inequality, environmental degradation, climate change, vulnerability and disaster management absolutely necessary. This is particularly important considering that the consequences of climate change and environmental degradation especially affect poor population groups. While all strata of society depend on goods and services provided by the environment, these are particularly important for low-income populations, and those that depend directly on ecosystems for their livelihoods.

There are many experiences in the region that combine the objectives of environmental sustainability with poverty reduction, social inclusion and the creation of jobs and productive activities. Medellin, Colombia, is internationally recognized for its re-densification planning strategies. In some cities, the commitment is to biofuels (corn or sugar cane for ethanol and various oil crops, like palm, for biodiesel), although it is not clear that its advantages outweigh the disadvantages[57]; Cartagena de Indias, Colombia, is carrying out a climate change pilot project to adapt to rising sea levels, which includes micro-zoning risk studies prior to housing and facilities' construction, including mitigation plans as part of the Integral Neighbourhood Improvement programme.

Buenos Aires, Mexico City, Monteria (Colombia), Quito and São Paulo have all formally adopted specific programmes to mitigate and adapt to climate change with greenhouse gases audits, hazard and vulnerability maps. Mexico City set the target of reducing its emissions by 14 per cent (2008 to 2012), while Buenos Aires is looking to reach almost 33 per cent reduction (between 2008 and 2030), and Monteria seeks drops of 20 per cent (from 2009 and 2019). In Mexico City, mitigation programmes to reach targets amount to nearly USD 4.3 billion[58].

International cooperation is supporting the development of initiatives to mitigate and adapt to climate change in Esmeraldas, Ecuador – a pilot city for the Cities in Climate Change Initiative by UN-Habitat in Latin America and the Caribbean[59]. Other projects include those of Bogota and its region, through the United Nations Development Programme (UNDP), Trujillo, Peru, with the Inter-American Development Bank (IDB), and Santiago de Chile, supported by German cooperation efforts.

To reduce their vulnerability to natural hazards and climate change, several cities in the region have implemented hydro-meteorological monitoring and forecasting systems to identify threats and identify risks of landslides or floods[60]. The information obtained is used to develop remedial implementation measures, especially through the relocation of populations living in high risk areas and, in terms of prevention, making sure new infrastructure is not located in these areas. In Quito, for example, a climate change action plan is looking at relocating more than 1,500 families between 2011 and 2012.

Local authorities and, planning departments in particular, can influence the behaviour and direction of energy consumption patterns through regulation and urban development management. This is especially relevant to the transport sector, but it also applies to other sectors.

Notes

1. UNEP (2010).
2. Chapter Four of this report analyses water as a public service. In this chapter, water is studied as a resource, addressing availability, consumption and pollution.
3. FAO's information system on water and agricultura. (FAOSTATS), estimates for 2009. http://www.fao.org/nr/water/aquastat/main/index.stm
4. FAOSTATS.
5. UNEP (2010).
6. Between 1990 and 2004. UNEP (2010).
7. These are coarse particles with an aerodynamic diameter of 10 micrograms or less per cubic meter (ug/m^3).
8. UNEP (2010).
9. No information is available on the standards set by Cochabamba, Guatemala City, Havana, La Paz, and Santiago. ECLAC, based on the Pan American Health Organization's (PAHO), Evaluation of the effects of air pollution on health in Latin America and the Caribbean, Washington, DC, 2005.
10. Results published by UNEP (2010).
11. UNEP (2010).
12. Ibid.
13. Ibid.
14. ECLAC (2010e).
15. The region boasts six of the 17 most biologically diverse countries in the world UNEP (2010).
16. For more information, see http://fundacionplanetaazul.org/index.php?option=com_content&view=section&layout=blog&id=6&Itemid=29&limitstart=8
17. UNEP (2010).
18. For more details on waste generation and disposal, see section 4.2 of chapter 4
19. Audits are essential to understand the situation, define strategic priorities, assign responsibilities and inter-city comparisons that encourage competition and cooperation. UN-Habitat (2011c).
20. See annex I.
21. UN-Habitat (2011c).
22. Environmental indicators for Latin America and the Caribbean, 2009.
23. UNDP (2004).
24. For details on the evolution of the number of cars in the region and travel by type of transport, see the section on mobility in Chapter Three.
25. ECLAC (2010e).
26. Lefèvrre, Benoit (2009).
27. The combustion of fuel, which powers vehicles, produces greenhouse gases. The main ones are carbon dioxide (CO2), carbon monoxide (CO), hydrocarbons (HC), oxides of nitrogen (NOx) and particulate matter (PM). Of these, the first is different, because it is a greenhouse gas with a global impact and since its impact is not limited on the area of emission like the others, whose effects are more local.
28. CAF (2010)
29. Chapter six analyzes competition in the provision of municipal services
30. UNEP (2010).
31. ECLAC. Environmental indicators for Latin America and the Caribbean, 2009.
32. ECLAC (2010f).
33. Published in the Official Bulletin of the Federal District, on November 25, 2008.
34. See the box on the experience of São Paulo. There are also threats arising from the presence of industries, but are not analyzed in the context of the report.
35. There are also threats arising from the presence of industries, but these are not analysed in the context of the report.
36. Zapata, R. and Madrigal, B. (2009).
37. De la Torre, A., Fajnzylber, P. and Nash, J. (2009).
38. Ibid.
39. ECLAC (2012).
40. ECLAC (2009).
41. Ibid.
42. Sierra, R., Flores, S. and Zamora (2009).
43. International Strategy for Disaster Reduction (EIRD). http://www.eird.org/esp/acerca-eird/unidad_regional_esp.htm
44. EIRD (2011).
45. Zapata, R. (2010).
46. ECLAC (2010f).
47. BENDER, S. (2009).
48. OPS (1994).
49. EIRD/ONU (2011).
50. UNDP (2011).
51. UN-Habitat (2011c).
52. UNDP, Fact Sheet Bureau for Crisis Prevention and Recovery. Disaster Risk Reduction and Recovery. http://www.undp.org/content/dam/undp/library/crisis per cent20prevention/disaster/Reducci per centC3 per centB3n per cent20del per cent20Riesgo per cent20de per cent20Desastres per cent20y per cent20Recuperaci per centC3 per centB3n per cent20- per cent20Introducci per centC3 per centB3n.pdf
53. In the Caribbean there is evidence that disasters exacerbate macroeconomic problems, affecting the volume of external debt, fiscal balances, balance of payments and exchange rates. Zapata, R. and Madrigal, B. (2009). ECLAC (2009c).
54. UNDP (2007).
55. Zapata, R. and Madrigal, B. (2009).
56. UNEP (2010).
57. De la Torre, A., Fajnzylber, P. and Nash, J. (2009).
58. Ministry of the Environment (2008).
59. Esmeraldas is the pilot city. The strategies are constructed in a participatory manner, currently being translated into public policy instruments. Lozada, T. (2011). Sierra, R., Flores, S. and Zamora, G. (2009). Lozada, T. (2011).
60. The region has a number of intergovernmental cooperation agencies and analysis in this area, including the Caribbean Disaster Emergency Response Agency (CDERA), the Andean Committee for Prevention and Relief (CAPRADE) and the Coordination Center for Natural Disaster Prevention in Central America (CEPREDENAC).

Port-au-Prince, Haiti.
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CHAPTER 6

Urban Governance

Summary

1. The region has about 16,000 local governments that all have adopted a variety of approaches to urban planning and management. Many were overwhelmed by the rapid urbanization of the second half of the 20th century, a situation that is today reflected in urban inequalities and social and spatial segregation.
2. Significant progress has been made in terms of governance, mainly democratization and decentralization. Election of mayors by universal suffrage is widespread, while mechanisms and initiatives to ensure citizen participation in government affairs have been strengthened, including mandate revocation, participatory budgets and neighbourhood commissions. Furthermore, greater accountability in the management of resources has been achieved, both by local authorities and contributing citizens.
3. Women's participation in politics has gained ground but, as elsewhere, the gender gap is far from closed. At the level of local legislative bodies, the number of female councillors has increased to 22 per cent of all elected officials, but in municipalities women represent just 10 per cent.
4. In recent years there has been an increase in regulatory activity regarding laws related to land planning and city management, which seems to indicate a renewed political interest in these issues.

Keys to change

5. Decentralization of competencies has not always been accompanied by the transfer of resources and capabilities. Only the largest municipalities manage to be self-financing while the others continue to depend heavily on central government fund transfers. Progress has been limited In building local government capacities, a pending matter in the region.
6. Land and property taxation remains underdeveloped. There are some examples of taxing land value increases resulting from planning decisions or public investments – a mechanism with huge potential for municipal financing if systemized.
7. Of concern are illegal groups that by violent and coercive means control territories and populations, and who have a growing influence on the functioning of public institutions. Traditional corruption and the 'capture of state' by such groups constitutes a threat to the consolidation of democracy and requires coordinated action from all levels of government.
8. In the region, the debate about devolved and redistributive functions of economic transfers and competences between different levels of government is still on-going. Considering the vast differences between countries and within them, the promotion of harmonization and territorial cohesion policies is crucial to ensuring an equitable development of all cities.
9. New urban configurations such as metropolitan areas and urban development corridors pose additional governance challenges that require institutions to adapt to the new territorial realities. The regions are also strengthening their international role, which, if well designed, can contribute to prosperity.

CHAPTER 6

Urban Governance

In the region, there are over 16,000 municipalities, districts, cantons and communes[1], many predominantly rural and many others mostly urban. At the same time, the urban fabric of many cities includes areas of other municipalities or political-administrative units.

Having or not having social housing, water services, sanitation, solid waste management, transport, access roads, public spaces, safety, the right conditions for living together and other aspects of urban life, depends largely on the quality of management provided by local authorities.

Local government conditions have changed significantly over the past three decades due to democratization and decentralization. These processes began in the 1980s and included reforms to governance structures, principles and finance, and local level participation. Albeit with large differences in orientation, depth and complexity between countries, reforms included the relationships between governors and governed, as well as between different levels of government.

The decentralization process is based on the principle of subsidiarity, whereby decisions should be made at the level closest to the citizens[2]. This has brought with it spaces for local democracy and a central position for the municipality in urban governance. However, it has also meant, in many local settings, new responsibilities that are not always accompanied by the necessary financial or decision-making capacities from political, administrative or fiscal perspectives.

Social demands are changing in all the region's countries and, with them, the challenges of city management and governance. There is no simple single approach to guarantee good governance but to achieve it the legal, administrative, political and financial conditions are critical, as well as citizens' control and participation, and the way leadership is exercised by government at its various levels.

6.1 Democratic Consolidation

In recent decades, there have been changes in some countries whereby cities have ceased to be a stage for central governments to exercise power and to become forums for democratic dialogue and government proposals and innovative management.

Local governance has made significant progress due to democratization of its institutions, as well as the creation of municipal and neighbourhood committees and associations. At the same time, these local government changes have also emerged in the constitutions and laws of these countries with mechanisms to improve citizen participation, transparency and the control of representatives elected by popular vote.

Election of Mayors, Target Plans and Mandate Revocation

The political autonomy of municipalities has been established progressively. The election of mayors, while existing before in many countries in the region (in some cases since independence), had long been restricted and conditional. Since the 1980s, the election of mayors by direct universal suffrage has been generalized as a civil right in virtually every city and this is now considered one of the most accomplished aspects of decentralization in the region[3].

'Recall of elected office' is one of the mechanisms created to control abuses and misconduct in the exercise of power. Recall is built into the law in some countries in the region. However, in only a few countries voters themselves actually decide whether to revoke a mandate given to a questionable authority - an option under the constitutions of Bolivia, Colombia, Ecuador, Peru and Venezuela[4].

Recall is a citizens' control and participation mechanism that reverses the traditional relationship in the region between governors and governed allowing voters to ensure that elected authorities behave responsibly. This legal tool principally operates in two spheres of power: the legislative and elected local functionaries.

Table 6.1
Countries that Provide for Mandate Revocation by Voters

Country	Constitutionally recognised	Revocable posts
Bolivia (2009)	Art. 240	All elected officials except the judiciary.
Colombia (1991)	Art. 103 and Art. 259	Governors and mayors.
Ecuador (2008)	Art. 105	All elected officials without distinction, including mayors, deputies, and members of parish councils.
Peru (1993)	Art. 31	President, vice president, regional councillors, mayors, aldermen and justices of peace (not lawyers).
Venezuela (2009)	Art. 72	All magistrates and other posts elected by popular vote.

Source: National Constitutions.

Despite cultural, political and procedural differences, the recall of elected office has gone from theory to practice in several countries. Examples are found in Peru, where, in November 2009, a referendum was held to re-elect a third of the members of municipal councils in 88 districts whose term had been revoked a year before and, at the same time, to decide on the recall of 67 mayors and 271 councillors[5].

In Ecuador, after the 2008 Constitution, the removal of officials by voters has also been used effectively. Between 2010 and August 2011, more than 250 applications were submitted against local authorities that had been in office for more than a year, mainly in small local jurisdictions. The Electoral Tribunals approved 78 processes[6]. Of all the recall submissions against mayors, municipal councillors and members of parish councils to date, the population voted to revoke in 28 per cent of the cases[7].

In Ecuador, the effectiveness of recall for improving conditions in the real exercise of democracy, control of governors by citizens, and the fulfilment of political programmes proposed by representatives cannot be established because of the short amount of time it has been operational. However, there is no doubt that this mechanism is changing relationships and constraints between governors and governed.

The concept that governors are legally bound to a programme and politically responsible to the voters for compliance is fundamental so that democracy does not just come down to voting and cronyism. The formalization of a government plan with specific goals is also central if citizens are to exercise control. In countries where there are no specific obligations for governors such as arising from manifestos, citizen initiatives have emerged aimed at achieving this goal. During election campaigns, candidates are required to present a formal public document with specific goals, while periodic progress assessments are organized to review compliance with election promises.

Nevertheless, the region remains a long way from an electoral culture and system in which programmes are the central issue in campaigns and at the ballot box, and where there is a 'programmatic vote' with a legal obligation of putting campaign manifesto promises into practise, if elected.

Box 6.1
Citizens Control Management and Implementation of Local Government Goals

In the last decade, citizen movements have emerged in favour of the right to the 'programmatic vote' and the monitoring and measuring of progress made on objectives set for the city. In several cases, these movements have resulted in political commitment to establishing target plans to ensure greater transparency and efficiency in public sector management.

Argentina, Cordoba, Maipu, Mendoza[a] and San Martin de los Andes now have target plan ordinances for planning, scheduling, monitoring and evaluating. Due to these ordinances, programmes and proposals made during the election campaign become specific plans with measurable and verifiable quantitative and qualitative targets.

In Brazil, the citizens of São Paulo recorded a historic victory in 2008, winning approval in the City Council (Vereadores) for a legislative amendment that requires the mayor to present a programme with specific quantitative and qualitative targets for each area of city administration which are monitored periodically[b]. Since then, 'Target Programmes' have emerged in various cities, including Rio de Janeiro and Belo Horizonte[c], while many others are expected when mayors will be elected at the end of 2012.

In the future, it is hoped that this initiative, now subject to approval by the municipal legislative in each city, will become part of the federal constitution (an initiative was introduced in Congress with the support of 174 MPs and 83 social organizations in October 2011). Network Nossa São Paulo and the Brazilian Social Network for Fair and Sustainable Cities, among others, support this initiative[d].

[a] http://www.nuestramendoza.org.ar/index.php
[b] http://www.nossasaopaulo.org.br/portal
[c] http://www.bhmetaseresultados.com.br/content/bh-metas-e-resultados
[d] http://rededecidades.ning.com/page/programa-de-metas

Citizen Participation and Responsibility

Beyond its complexities, nuances and incomplete processes, decentralization has generated favourable forums for citizen participation and the emergence of local leaders.

Brazil is perhaps the most advanced country in social participation, with participatory budgeting that has become well-known throughout the world, especially the experience of Porto Alegre for involving the public in municipal investment decisions.

Another form of participation is the organization of neighbourhood associations or sectorial committees that can formulate specific requests, undertake projects and provide services. In Ecuador, a classic case of citizen participation in municipal management is Cotacachi - a town of 7,300 inhabitants with an additional 5,000 living in the outskirts - where democratization and sustainable development processes have been developed based on mechanisms that take into account different social groups (60 per cent of the inhabitants of the canton is indigenous)[8].

Decentralization has also facilitated the development of more policies targeting disadvantaged groups and minorities or those who have been traditionally ignored[9]. In addition, local participation has been encouraged by legal reforms that include new social control and organization of tools at local and neighbourhood levels that facilitate debates about budgets and planning, promoting greater political pluralism[10].

Despite progress, experience shows that these processes have limitations arising mainly from mismatches with national policies, inadequate resourcing and gaps between theory and practical application.

Good governance requires local authorities to exercise their functions with efficiency, equality and effectiveness besides accountability and transparency in the management of public finances. But to achieve these objectives it is also necessary to establish a taxation culture, and that citizens comply with their responsibility of contributing according to their abilities, to financing the public sector.

Citizen participation is needed to develop and strengthen better-informed governance processes that are more transparent and legitimate, but is not necessarily sufficient to achieve good governance results. Another key component to the better running of a city is leadership that takes appropriate decisions.

An evaluation of urban development strategies carried out by the United Cities and Local Governments (UCLG)[11], a worldwide organization of local and regional governments, has shown similarities in strategic urban planning in different regions of the world, and that good leadership

Box 6.2
Participatory Budgeting and the Experience of Porto Alegre (Brazil)

Participatory budgeting, by which citizens and civil society organizations are directly involved in the various stages of preparing and monitoring the public budget, provides citizens with an opportunity to exercise direct democracy and learn about the workings and complexities of public administration.

This resulted in higher societal quality demands on government and reduced cronyism and corruption, leading to better local governance. However, without adequate protection, participatory budgeting can become a forum for legitimatising special interest groups (usually, the elites), strengthening inequalities and, paradoxically, reducing opportunities for debating public budgets. An important limitation of participatory budgeting is that it is only applied to a small proportion of the municipal budget. Although it is a process to achieve greater citizen capacity, transparency and efficiency, it is not in itself a tool for managing local resources.

Porto Alegre's participatory budgetting is one of the best-known examples of exercising 'citizenship'. Established in the late 1980s by the Workers' Party, and part of the constitutional change framework (1998) and a move towards democracy, participatory budgeting offers citizens the greatest room for direct participation and deliberation.

In Brazil, the phenomenon of participatory budgeting has grown significantly, from being implemented in 13 municipalities in the period 1989-92 to 177 between 2001 and 2004. For this group of municipalities, observers report a clear improvement in the efficiency of public education services.

Other participatory budgeting experiences are found in Bolivia, Ecuador, Guatemala, Nicaragua and Peru. Greater political and cultural openness to this mechanism has met with several obstacles, such as legal frameworks created with different objectives, lack of political will by governors and political parties, lack of administrative and fiscal capacities, and a fragmented civil society in conflict.

Source: World Bank (2007), World Bank (2008) and Biderman, Ciro (2007).

Porto Alegre, Brasil. Orçamento Participativo (OP) / Participatory Budgeting. © Ricardo Stricher PMPA

Rio de Janeiro, Brazil. The fight against violence requires organized community networks and social cohesion. © Domingos Peixoto

Box 6.3
Violence and Capture of the State

In the region, it is not just the lack of resources, technical capacity or leadership that hinders good governance. One of the main local development vulnerabilities comes from the capture of territories and institutions themselves: the co-optation or capture of state functions by interest groups and organized crime.

Corruption, an old problem in the region, has traditionally been used by private agents to manipulate public decisions for their own interests and benefits. Groups with economic interests influence the state to obtain regulations in their favour, often against the public interest. Governance that regulates in favour of trade monopolies and unfair competition, rather combating these because of their negative impacts on the majority, are classic examples of the damaging effects of corruption.

But, besides traditional corruption, countries in Latin America and the Caribbean face another blight affecting regulatory decisions and, in extreme cases, democratic process, known as 'state capture'. The phenomenon is related to groups that take control of routes and territories to ensure different forms of trafficking, in particular of drugs, weapons and people. Such groups take the place of the state, holding territorial power and inflicting violence on the population.

Criminal gangs associated with illicit trades, particularly drug trafficking and youth gangs, such as Maras Salvatrucha, are involved in urban warfare and because of these, population groups in cities like San Salvador, Guatemala City and Tegucigalpa, especially in poor areas, live in terror and fear of rape, execution and kidnapping[a].

A sad example of the extreme violence used to capture urban territories and economic activities by illegal groups occurred in El Salvador. In June, 2010, in Mejicanos, a poor town located in the northern suburbs of San Salvador, one of several violent acts designed to put pressure on transport companies saw several passengers killed after a minibus was set alight, allowing none of the occupants to escape. This action was attributed to underage minors, members of the Maras gang, in a dispute over territory and revenues[b].

For these groups, state capture is the way to achieve social benefits, favourable 'judicial' treatment, and economic benefits. With this strategy, the state stops being a threat and ends up providing support for these activities[c].

In the region, these agents can achieve even more local power than the state itself as they do not hesitate to resort to violent and coercive practices to obatain and hold on to territorial control. These practices, along with bribery, fall upon public officials with decision-making power, although they are also becoming institutionalized to the point that people linked to illegal groups may hold elected office and act as agents to defend illegitimate[d] interests.

Countries have faced these challenges in different ways. In all cases, they require coordinated action from several sectors over relatively large territories and for a continued period of time. Isolated police or military interventions are insufficient to contain the problem, especially when institutions are vulnerable to capture. Citizens are left with few options besides condemning the acts socially, and ensuring that people are prosecuted and punished judicially and economically, which is only possible with community networks, organized civil society and strong social cohesion.

[a] Irazábal, 2009.

[b] Information published in El nuevo Diario, on-line editions of June, 21, 2010 and June, 23, 2010; BBC on-line edition of June, 21, 2010.

[c] Garay et al. (2008).

[d] Ibid.

Box 6.4
Campaign "110 per cent with Bogota" Exercise in Civic Culture, Tax Liability and Political Orientation

In 2002, former Mayor of Bogota, Antanas Mockus, suggested a way for city inhabitants to participate that was different from the political tradition of the region. He proposed an additional voluntary contribution of 10 per cent on the amount of tax citizens paid (on property, industry, commerce and vehicles) to be spent on a priority social investment chosen by the taxpayers, called '110 per cent with Bogota'.

The '110 per cent with Bogota' campaign had two important precedents. In the 1990s, as part of decentralization, a new tax law allowed the city to strengthen its fiscal position through own-resources generation. In 1993, taxpayers updated the cadastral values of their properties by self-declaration which brought about an impressive revenue increase, a vote of confidence from the citizens, and a sign that change was possible for a city until then plunged in chaos.

During the election campaign, the then mayoral candidate defended increased tax revenues to maintain investments the city needed. Once in office, he proposed voluntary taxation and tax reform. Following rejection of both, he asked citizens for a voluntary contribution which they replied favourably to.

After the first request, and without the need for classic pressure (fine or penalty), about 66,000 people made voluntary additional tax payments of 10 per cent. After three administrations, '110 per cent with Bogota' continues and, although it has lost its initial impetus, it still reflects changes in public perceptions about local level government in the area of taxation, and charges for public works by way of value contributions.

Source: Pinilla and Florian (2011).

by either a mayor or government is key to the success of urban planning. Experience shows that the effectiveness of a local strategy also depends on stakeholder cooperation, the promotion of citizens' action, focus on objectives and necessary resources - aspects that depend to a large degree on the vision, style, and quality of political leadership.

Women and Local Power

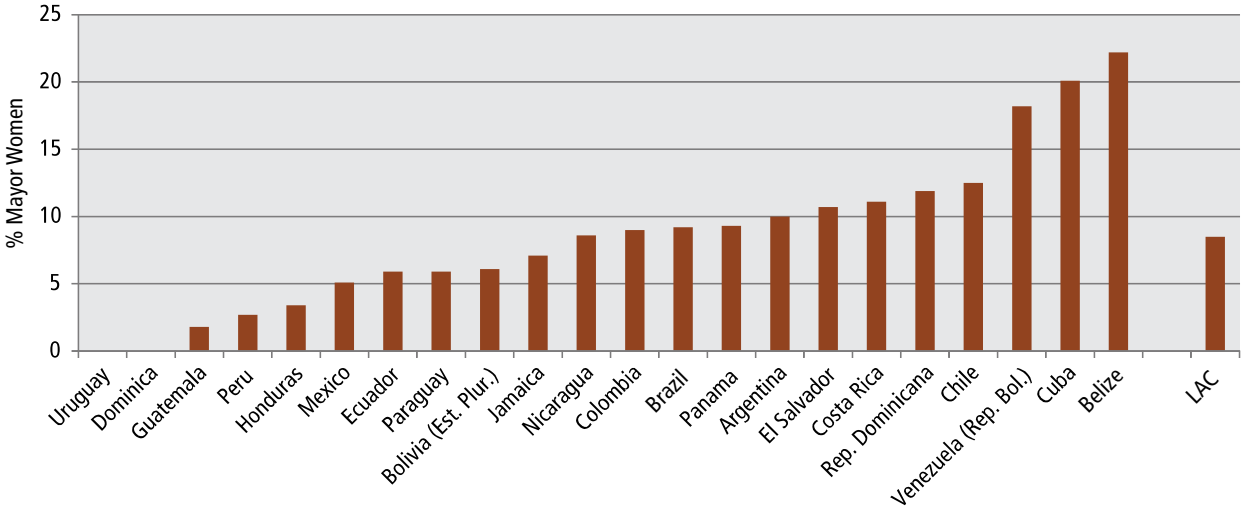
Just like female participation in the labour market has increased over recent decades, women have gradually also gained space in national, regional and local governance bodies. The fact that Argentina, Brazil and Costa Rica have female Heads of State is a clear indication of progress in political participation by women.

Nevertheless, the gender gap in political participation is still huge, with the large variations among countries mainly explained by differences in political and cultural processes[12]. There has been progressive change over the past three decades mainly in countries that promoted female participation through affirmative action and quota laws. Those that did not follow this gender parity policy in politics lagged behind ever since.

Quota laws emerged in the midst of debate and controversy. In countries that adopted measures to make them effective the positive impacts have exceeded initial opposition, meaning that today they are recognized as necessary. Prejudice about female inferiority, lack of worth, or fear of confrontation with men seem to have been overcome, at least by the elite and opinion leaders in the region. Moreover, gender parity is now considered to strengthen democracy[13].

Niterói, Brazil. Women leaders representing the municipalities of CONLESTE. © Guina Ramos

Figure 6.1
Percentage of Mayoresses, 2009



Fuente: Elaborado con datos de CEPAL. División de Estadística y Proyecciones Económicas, 2010. Consultado en octubre de 2011.

In terms of political space, local legislative bodies (usually municipal councils) have the better balances in terms of female participation. Women represented 14 per cent of all councillors in 1999 and, ten years later, that figure had reached 22 per cent. In 2009, Costa Rica stood out in the region with the highest percentage of female councillors (43 per cent), while Trinidad and Tobago had reached 31 per cent and Peru almost 30 per cent. More than 20 per cent of municipal councillors were women in Belize, the Dominican Republic, Cuba, Chile, Ecuador, El Salvador, Mexico, Nicaragua, and Paraguay.

However, in terms of mayors, female representation is still very low, averaging less than 10 per cent in 2009[14]. In that year, the best score was in Belize, with 22 per cent female mayors; Cuba 20 per cent; and Venezuela 18 per cent.

Women presidents and ministers have opened up space within the political elites for greater female participation at all decision-making levels so that, today, political leaders see this as irreversible progress[15]. The existence and participation of women's movements and organizations has been, and remains, central to the debate on gender parity in the political arena, to achieve social and institutional changes also at the constitution level[16].

6.2 Fiscal and Administrative Decentralization

Consistent with the principle of subsidiarity and that every decision should be taken at its most efficient level, local competencies have increased. Traditionally, municipal entities have been in charge of services like solid waste management, street cleaning, services and maintenance of public space and pavements. Additionally, many municipalities have important responsibilities for urban management, including water supply and sanitation, mobility, street lighting, building permits and land use, road construction and other competencies related to urban networks and their expansion[17].

Recently, local governments have taken on compliance responsibilities through social and environmental commitments, although the latter require a scale and technical and financial capacity associated with higher-level administrations, especially in the case of the smaller municipalities.

In Brazil and Chile, health and education competencies have been transferred to the municipalities. In others, powers between different levels of government are shared, including culture and sport[18] which requires major coordination and clarity of responsibilities.

Despite the variety of allocation of responsibilities, a common feature in the region has been that increases in responsibilities have neither been accompanied by corresponding adjustments in resources nor appropriate reform to public administrations at the different levels of government, at times generating duplication of functions, and with all shortfalls eventually hindering decentralization efficiency[19].

Table 6.2
Structure of Municipal Financing in Selected Countries

Country	Year of information	Structure of Municipal Revenues (percentage)				Total per cent of National GDP
		Own taxes and charges	Transfers Received	Rest	Total	
Mexico	2000	59,5	27,3	13,2	100	1,4
Honduras	2002	59,0	20,7	20,3	100	2,1
Chile	2004	50,2	31,6	18,3	100	2,8
Uruguay	2003	45,0	24,2	30,8	100	3,8
Nicaragua	2004	44,5	38,9	16,6	100	3,7
Colombia	2002	24,7	48,0	27,3	100	7,1
Brazil	1998	21,0	65,0	13,9	100	5,9
Peru	2004	12,6	56,9	30,5	100	2,3
Guatemala	1999	6,7	56,8	36,5	100	1,8
Argentina	2004	2,0	56,8	41,2	100	2,5

Source: Centrágolo, Oscar (2007) with FMI data and case studies.

With municipal responsibilities come the costs of complying with mandates. In the region, municipalities generally cover their costs from three funding sources: transfers from higher levels of government, loans, and own revenues. Typically, large and Intermediatete-sized municipalities with an economic profile or a very dynamic service sector have significant equity. The others usually have a high degree of dependence on resources transferred from other levels of government.

Fiscal dependency and lack of resources and budgets condition the capacity of municipal governments to determine the best funds allocation, delaying any furthering of decentralization[20]. With this theme too, intra-regional and inter-municipal differences mark large contrasts in the conditions of governance.

Municipalities with weak economies, urban dynamics associated with poverty, struggling to cover public expenditure, and requiring significant support from higher levels of government to achieve better conditions for their inhabitants, contrast with municipalities that are buoyant, benefiting from location, natural resources or conditions that facilitate dynamic economies. These scenarios are critical to assessing the true reach of decentralization in relation to strengthening the response capacity of municipalities to social demands.

Transfers Between Levels of Government

Allocations of financial transfers come from general funds (federal or national) to the sub-national levels of government. Generally, they constitute a major source of municipal funding. Depending on the domestic system of public finance and political arrangements, by law, transfers may be direct or conditioned to the fulfilment of certain objectives and are defined according to different criteria which usually include at least a minimum population size.

In general, transfers are intended to offset imbalances in vertical and horizontal sub-national levels. Vertical imbalances occur when responsibilities are transferred from higher authorities to sub-national governments that have no capacity to finance new obligations. Horizontal refers to transfers between municipalities. Usually, the most populous municipalities are mainly financed from own resources, while others have a high dependence on governmental funds. Transfers can function as a redistribution tool to harmonize economic differences between rich and poor municipalities, which explain the introduction of distribution criteria such as poverty indicators and efficiency in public administration.

The dependence on transfers varies greatly among municipalities in the same country, depending on city size. In Bolivia, for example, four of the 327 municipalities hold 37 per cent of the total population and collect 72 per cent of all municipal revenue in the country[21]. In Ecuador, the four largest municipalities account for 38 per cent of the population and 34 per cent of their revenues come from transfers from central government. At the same time, transfers represent on average 94 per cent of revenues[22] in the 101 smallest municipalities.

Distribution has important economic effects in the region. In many cases, transfers cause imbalances due to horizontal institutional design faults. In the case of Peru, the transfer of revenues from levies, additional levies and royalties from the exploitation of natural resources are distributed among municipalities in the regions where the industry is located. This system generates significant inequality between regions with or without natural resources. The Peruvian government has attempted to address this through a clearing system at the regional 'FONCOR' level so that distribution is proportional, taking into account regional expenditure needs, subtracting the amount received from the levy, additional levies and royalties. However, there is no compensation system at the municipal level[23].

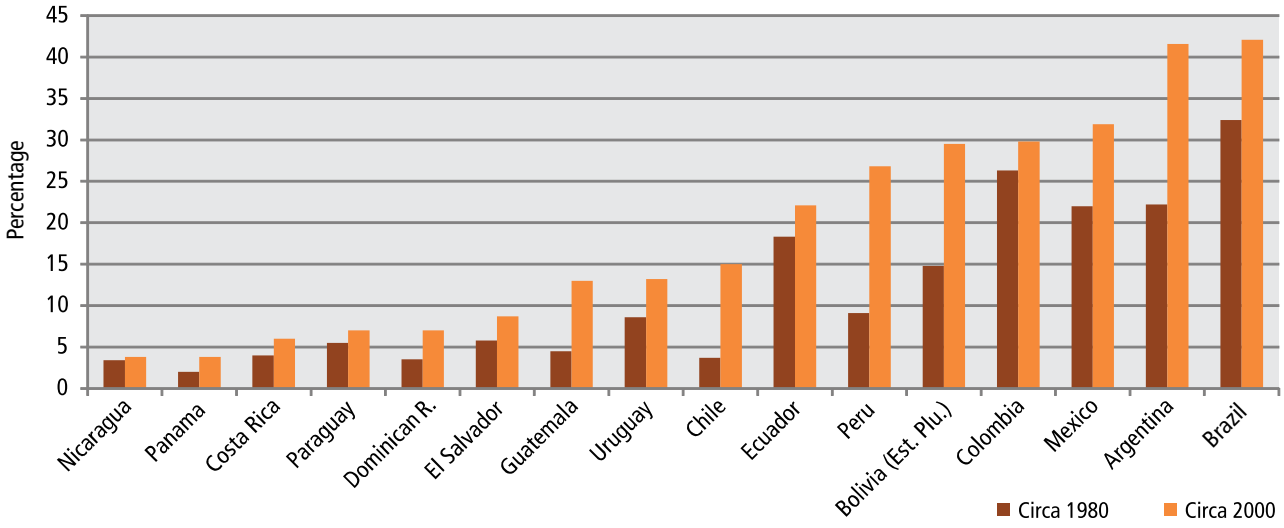
Table 6.3
Main State Transfer Systems to Sub-national Governments

Country	District	System	Distribution	Conditions	Level of conditioning
Argentina	Provinces	Federal Co-Participation regime	Population and, to a less extent, poverty	Not conditioned	0%
Brazil	Municipalities	Municipalities Participation Fund	Population (86.4% with more than 156,000 inhab., 13.6% if lower), ten per cent to capitals of states	Maximum 50% personnel, 25% education and 15% healthcare*	40%[a]
Bolivia (Est. Plu.)	Municipalities	Co-participation Taxation	Population	Maximum 25% operational needs, 7.5% healthcare (85% investment)	32.5%
Colombia	Departments and Municipalities	General Participation System	40% population, 40% UBN, 10% own revenues, 10% administrative efficiency	41% water and sanitation, 7% sport, 3% culture, 49% other specific concepts	100%
Chile	Regions	National Funds for Regional Development	90% socio-economic and territorial conditions, 5% efficiency and 5% emergency	Semi-conditioned; public investment	NA
Peru	Departments	FONCOR	Population, UBN, performance and incomes from levies, additional levies and royalties (compensate disequilibrium on tax horizontal)	Regional investment projects	NA
Peru	Municipalities and Departments	FONCOMUN	20% from provincial municipality, 80% (85% poverty [rurality and UBN], 10% municipal management and 5% territorial extension)	Not conditioned	0%
Peru	Municipalities y Departments	Levy, additional levy and royalty	10% to the municipality from industry (equal distr.), 25% to mun. from the prov. from industry. (pop. and UBN), 40% to the mun. from the reg. from ind. (pop. and UBN), 25% (80% to gov. reg. and 20% to uni from the reg.)	Regional investment	NA
Ecuador	Provinces and municipalities	Distribution Law	50% population, 50% UBN	Conditioned, public investment, and no current expenses	100%

[a] Sub-national spending limited to the constitution, not only corresponding to the transfer system
NA: Not available.

Source: UN-Habitat analyses compiled with data from FINOT, (2005); UCLG, (2008); IDB, (2012); Barros, (1997); Ministry of Economy and Finance of Peru, (2012).

Figure 6.2
Percentage Expenditure of Intermediate and Local Governments in Total Government Spending, 1980-2005[a]



[a] Sub-national expenditures as an indicator of municipal decentralization combine municipal expenditure with federal entities' expenditure.

Source: Compiled with data from CGLU (2008), Rosales, M. with data from the Finance Yearbook FMI, World Bank, Central Banks, National Data.

Santo Andre, Brazil. One obstacle to using property tax is deficient information systems. © Edinilson Ferreira dos Santos

Due to decentralization of responsibilities to sub-national governments, transfers have grown in size and importance over the past 30 years. As a result, sub-national expenditure as a percentage of total public expenditure has increased from a regional average of some 11 per cent by 1980 to 19 per cent between 2002 and 2005[24]. However, the term 'sub-national expenditures' includes both municipal and Intermediatete-level entities so that a greater overall percentage does not always imply more municipal spending power.

Administrative-territorial differences between countries makes comparison of fiscal decentralization, measured in terms of transfers, complex if not misleading. Country size, which varies greatly within the region, is an important factor in the distribution of public resources. In countries, for example, like Jamaica or St. Lucia, decentralization of powers is less necessary, as is the distribution of resources because of practical issues and scale.

Finally, the nature of this recourse is the focus of political discussion, that is, whether transfers are a form of repayment or redistribution. The serious disparities between regions and municipalities within states[25], as well as between citizens require a review of the criteria and objectives of this important source of municipal revenue.

Municipal Finance and Taxation

After many bitter experiences of irresponsible management, the region has understood the need to control public debt, including at the municipal level. Consequently, fiscal health is now gaining ground, either by way of social control or development of regulatory frameworks and transfer conditions from the national or federal level. One of the most famous and successful regulations is the Fiscal Responsibility Law, enacted in 2000 in Brazil, which imposes controls on the borrowing capacities at different government levels and balancing of public accounts to prohibit accumulation of deficits from one government to another. However, there are still many aspects that require social and political control to maintain fiscal balance. While virtually all municipalities in the region have their own sources of financing to one extent or the other, constitutionally and legally this remains an underdeveloped aspect of the decentralization process.

Differences in tax raising powers and access to credit clearly show that expenditure decentralization is not politically and administratively decentralized in the region. Sub-national governments in Bolivia, Colombia and Peru, with a high degree of decentralized spending, do not have the power to introduce new local taxes.

Table 6.4
Municipal Tax and Credit Capacity

	Taxation Powers and Access to Credit by Local Governments		Responsibility for Collection	
	Power to Introduce New Taxes	Authority to Define the Level of Duties and Taxes, as Determined by Legal Limits	Rates	Taxes
Argentina	Yes	Yes	Local	Local
Bolivia (Est. Plu.)	No	No	Central /Regional	Central
Brazil	Yes	Yes	Local	Local
Chile	No	Yes	Local	Central/Local
Colombia	No	Yes	Local	Central
Costa Rica	No	No	NA*	NA*
R. Dominicana	No	No	Central	Central
Ecuador	Yes	Yes	Local	Local
El Salvador	Yes	Yes	Local	Local
Guatemala	No	Yes	Local	Central /Local
Honduras	No	Yes	Local	Local
Mexico	No	No	Local	Local
Nicaragua	No	Yes	Local	Local
Panama	No	Yes	Local	Central /Local
Paraguay	No	No	Local	Central /Local
Peru	No	No	Local	Local
Uruguay	Yes	Yes	Local	Local
Venezuela (Rep. Bol.)	Yes	Yes	Local	Local

*NA: Not Available.

Source: Martínez-Vázquez, J., World Report GOLD 2, CGLU, in Rosales, M., (2012).

Taxation associated with land is also underdeveloped, whether because of technical, political, or management complexities or the dependence on transfers from the national or federal level. Property tax is, from an economic point of view the main source of municipal tax[26]. It includes the so-called predial property tax, contributions to public infrastructure and service charges, and other obligations associated with real estate projects. Property tax is very local by nature and often decentralized in terms of billing, collection and use in much of the region, but it is also quite restricted in its calculation criteria.

These criteria are generally set by the national legislature. Information gaps represent a major obstacle since many municipalities in the region lack an updated, reliable and transparent cadastral system based on the commercial values of properties. This creates a vicious circle: if there is no updated database the appropriate charges cannot be billed and, since there are no resources, municipalities cannot pay for cadastral updates.

Despite its legitimacy as a tax and its number of years in existence, property tax traditionally has low collection rates, which reflects a major obstacle in municipal financing. Taking into account exemptions, amnesties, discounts and other inefficiencies, property tax represents an annual average of less than USD 14 per capita, and only one per cent of the total taxation in the region[27].

Another important source of municipal finance is associated with decisions regarding land use and investments in public works and infrastructure. When correctly planned and managed, such decisions and investments generate value on the land and buildings located in the catchment area of the project and this can be captured through taxation, at least partially, by public authorities to finance other investments. In the region, there are some experiences whereby the beneficiaries of public works contribute to covering their costs. Colombia has the longest tradition in using this approach and it is accepted politically and socially because it makes cities' public works viable. Other countries that have used this include Brazil, Ecuador, Peru and Venezuela.

Table 6.5
Distribution of Property Tax Revenue

Country	Distribution of Property Tax Revenue
Argentina	There is no single overriding rule in the country. In general, tax is incorporated into the co-participation line between the provinces and municipalities
Bolivia (Est. Plu.)	Municipalities
Brazil (Urbano)	Municipalities
Colombia	Municipalities, except ten per cent dedicated to the social interest housing fund
Costa Rica	Municipalities, except one per cent for the Technical Standardisation Office (ONT), three per cent for the national cadastral, and ten per cent for education boards
Chile	Municipalities. 40% for the county where the tax has been generated and 60% for the Common Municipal Fund by which income is redistributed to municipalities, according to a factor that considers exemptions and poverty
Ecuador	Municipalities
Guatemala	Municipalities and state. All income goes to those municipalities responsible for the administration and collection of tax.
Honduras	Municipalities
Mexico	Municipalities
Nicaragua	Municipalities
Paraguay	Municipalities and departments: 70% for municipalities that generate income, 15% for the department and 15% is distributed between the municipalities with least resources
Peru	Municipalities, except the 5% that goes to maintaining the district cadastre records and 0.3% is transferred to the National Council of Appraisals for determining the value of land and buildings
Dominican Republic	80% of income goes to states to finance housing programmes and to streamline functions at the land registry. The remainder is allocated to municipalities
Uruguay	Departments
Venezuel (Rep. Bol.)	Municipalities

Source: De Cesare, Claudia (2012). Overview of property tax in Latin America.

Ciudad Bolivar, Colombia. Not all cities are planned in the same way. © Fernando Jaramillo Vélez

Box 6.5
Contribution to the Financing of Investments in Colombia

In Colombia, lack of direct municipal resources has strengthened a healthy tradition of using valuation contributions to fund major municipal development works. Applied since the early 1930s[a], this contribution is collected by different government levels that carry out works, including municipalities, and is charged in advance to finance investments. This is a tradition in large cities (Bogota and Medellin), Intermediate, and even small cities. Local success depends on technical factors, especially up-to-date land value registries and an earnest application by government and compliance with works commitments. This instrument is vitally important to local governments. The last seven mayors of Bogota have all used this tax.

Barranquilla, where the 2006-2010 government financed many of its key works in this manner, is now presenting delivery of works to citizens[b] documented on video as an exercise in public accountability. This financing method is still being used, with eight Colombian cities expected to fund approximately USD 2.4 billion of urban development works[c] via valuation contribution between 2012 and 2014.

Charging property owners' contributions based on economic benefits generated by public works is not just a tax option, it is also a requirement for sustainability, equitable improvements to and funding for cities, while it discourages urban land speculation.

[a] Hernández, 2007

[b] Véase en: http://www.barranquilla.gov.co.

[c] Consulta directa a Oscar Borrero, experto en el tema en Colombia.

Beyond funding from the direct beneficiaries of works, land surplus values have enormous potential to finance urban expansion and the provision of services throughout the city. Territorial harmonization schemes can be set up when valuations are handled by public authorities, with higher return valuations (in principle, in the richest areas) contributing to the infrastructure in less-wealthy areas where people are less able to pay.

Other taxes, like urban planning charges such as transfers of land for roads and public facilities are not often carried out in the region, with some exceptions (Brazil, Colombia and Mexico). In many cases, these taxes are limited by legal and technical issues and even expediency due to the political machine, despite their financing potential and favourable impact on the land markets[28].

Finally, while decentralized financing schemes strengthen municipalities, municipal investment decisions are a critical issue in the fight against inequality. The vast disparities between municipalities, particularly in terms of human resources, technology and finance, are serious obstacles to the implementation of policies to improve the distribution of public goods and opportunities[29].

Urban Management and Planning

Not all cities are planned and managed in the same way. Each city has its own administrative culture, resulting from historic processes and affected by social, political and economic conditions, as well as the pace of urbanization and societal demands. All the same, some trends in public management are identifiable.

Given a situation of rigidity, reduced capacity to compete, poor organization, weak human resources and insufficient financial resources, the increasing demand for social and other services exceeded the capacity of local governments. Provision of roads, infrastructure, housing, public facilities and other services fell behind demand and sidelined any overall vision, giving rise to highly-divided cities, both socially and spatially.

This duality has become one of the most recognised features of Latin American and Caribbean cities. It highlights the contrasts between formal and informal neighbourhoods, legal and illegal construction, segregation of rich and poor, privilege of private over public, and sacrifice of public goods such as mobility, public space and environmental issues.

In the process, cities stopped being the subject of public life and urban governance became reduced to deficit management. However, the new demographic, social and economic conditions demanded change in public management and the region has seen various urban government trends with different preferences for public or private planning and management models.

Planning Approaches

In line with global trends, the dominant urban planning model until the late-1908s was based on physical planning and territorial order implemented through three basic tools: land zoning, control of densities, and extension of basic services networks.

Planning objectives were applied rigidly and almost oblivious to the realities of territorial occupation, in particular with regard to popular neighbourhood occupation, with a tendency towards reproducing housing market logic in patterns of segregation and inequity. The government ignored the informal parts of the city, excluding their residents from the benefits of public investments and the provision of basic services, or even appearing on general and city maps.

This model was in crisis as from the 1990s due to accumulated deficits in services and urban infrastructure. It was abandoned because of policy guidelines advocating for reduction in public intervention, including urban land markets. Thereafter, and hand-in-hand with decentralization, urban planning led to various practises, some of which are still linked to the physical planning

Antigua and Barbuda. The current trend in 'public management' places greater emphasis on citizens as subjects with rights. © Alain Grimard

movement, others with more strategic planning linked to the business world, and a third group based on specific urban projects for particular areas of the city[30].

Brazil and Colombia are leading a second wave of commitment to physical planning from a local perspective. They have the most developed legal frameworks in the region. In Colombia this is due to central government's own initiatives; in Brazil it is more associated with pressure from social movements[31]. With many implementation examples - some more successful than others - social, political, and technocratic movements have returned debates about territorial government to the local political arena, demanding State attention with purposeful policies for informal settlements. Bogota, Medellin and Bucaramanga in Colombia, and Curitiba, Porto Alegre and Diadema in Brazil, stand out because of their land planning exercises with strong focus on improving living conditions in slums areas.

With models focused on strategic planning, urban development is based on central lines agreed with social and economic urban stakeholders in dialogue with the public sector. Illustrative cases include the models of Rosario, Argentina; Guatemala City, Guatemala; Puebla, Mexico; and Santiago, Chile[32].

Large-scale one-off projects are often associated with planning in specific areas[33]. With a spatially limited impact these projects are managed by local authorities but developed with the support of private investment. The State often provides resources (land or road and transport infrastructure), flexible regulations and an operational framework for areas of high interest or with real estate potential. In successful cases, these projects often have a notable impact, sometimes structural, on the dynamics of urban development. However, these interventions do not usually have far reaching impacts on wealth redistribution which may actually be negative for those who occupied the area prior to the project, unless the social dimension is strongly defined as a target from the project's beginning.

A flagship project of this type is Puerto Madero[34] in Buenos Aires, an abandonned port area that has been converted to intense tertiary sector activity, bringing together businesses, restaurants, hotels, conference and trade fair facilitiess and others. The project strongly focused on land management, as did the urban regeneration programme of the North Bank Bio Bio River in Concepción[35], Chile. In the latter case, the objective was to recover the river bank and reintegrate it into the city, solving social problems that went back several decades through

a project reconciling the development and rehabilitation of infrastructure (motorways, railways and facilities for services) with housing construction.

Regardless of current trends' nuances and hybrids, a common challenge in planning is to establish rules and regulations for the real estate sector. But coordination with urban financing, the application of taxation and regulatory mechanisms have not been sufficiently explored.

Low municipal capacity to plan and regulate urban development and its financing is further linked to lack of up-to-date policy tools. There were few countries in the region with legislation on human settlements less than 30-40 years old. However, there seems to be a renewed interest in updating laws, directly or via constitutional changes.

Between 2006 and 2009, El Salvador, Honduras, Panama and Uruguay, for instance, adopted new national planning legislation. In Bolivia, the Dominican Republic and Ecuador recent constitutional changes included urban themes and the social function of property. There are also on-going discussions to change the urban planning law in Costa Rica, Guatemala, Peru and Venezuela. Mexico has made changes to state laws (Querétaro, for example).

While regulation does not guarantee results, recent legislative activity shows that the issue has returned to political and social agendas. Ultimately, the challenge is to adopt plans that promote sustainable development, which favours densification, quality spaces, an integral focus, and that covers all urban areas and sectors.

Management Approaches

In the region there is a wide range of urban management experiences. Local governments are implementing a variety of modalities which are basically variations of two models: the 'business management' of the municipality and the 'public management model.

The more business-oriented option has a greater commitment to markets and consumers to achieve development and internalization of private sector principles and practices. The services approach is a priority with financing structures based on fees rather than taxes. With varying degrees, this type of management is associated with more economically dynamic local settings and more delegation in favour of private sector implementation. Recently, cities like Guayaquil, Monterrey, Santiago and Lima[36] have been identified with this type of management.

Under the public management model there is emphasis on the citizen as the subject of 'rights' and more social participation and less focus on sectors. The model is often strengthened by public institutions and competencies, but without turning away from business world tools like delegation of activities to the private sector and public-private partnerships. Bogota, Mexico City, Montevideo, and Porto Alegre are all representative of this model[37]. The public management model has also created forums for social debate featuring public interests which, in some cases, can generate real opposition between the governing and the governed, especially when an urban project involves large amounts of resources, population displacement or affects environmental issues.

Box 6.6
Public-Private Partnerships

Public-private partnerships (PPPs) for managing basic services are diverse and cover different areas in the region. Peru has used PPPs for sanitation services with the private sector actively participating with new business opportunities, which began as a 2003 pilot project set in Lima's peri-urban areas. Private companies create business models and participate, along with public institutions, in searches for public and private sector partners to expand integrated sanitation solutions (including goods, services, finance and information) from a market perspective. The market is largely dominated and operated by micro firms[a].

In Chile, urban motorways in the metropolitan region of Santiago, airports, prisons, public buildings, recreational and cultural facilities, public parking and public transport infrastructure have all been built under a PPP model developed since 1993 through concession schemes.

Building infrastructure is a private sector business (including foreign firms) with a requirement for competitiveness and a central element of development. PPP frees up fiscal resources in the public sector. PPPs in transport and infrastructure[b] are considered exemplary in Latin America and the Caribbean because of their success and potential for replication.

[a] International Finance Corporation (2011).

[b] Government of Chile, Ministry of Public Works (2009); Vieitez Martínez, Daniel (2010).

Box 6.7
Defenders and Detractors of the Superhighway in Mexico City

Mexico City is constructing a series of highways to provide greater mobility and accessibility of difficult-to-reach areas. Some of these projects saw confrontations between the Federal District Government and the affected population, as in the case of the urban toll road 'Western Superhighway'. The project aimed to connect the west of Santa Fe - the location of major real estate developments and the main offices of national and international corporations - with the southern part of the city. The conflict was about the superhighway's route through residential urban areas affecting working class neighbourhoods, and through part of the 'Conservation Land' important to replenishing the aquifers of Mexico Valley.

Government action had focused on compliance with current regulations when implementing urban projects of this stature: justification of the public utility of the South-West Superhighway, publication of the expropriation of 33.6 acres and payment of compensation to people affected. It had also launched a campaign to publicize the benefits of the project, requesting the capital's residents to accept the construction of the superhighway as a necessity and an asset for the entire urban community, arguing that the project would provide mobility to four million people, reducing travel time and pollution levels, and creating 65,000 new jobs.

Some of the population affected by the project got together to demand the cancellation of what they considered unnecessary road works. The movement claimed that the project would destroy the environmental heritage, produce an environmental disaster in the city, destroy green areas, stop aquifers' replenishment and bring about the end of the only 'living' river in the city.

To get heard and present alternative projects, the opposition movement used a full repertoire of both institutional and non-institutional actions, including alliances, street demonstrations, the creation of a civil commission to report on the works, a permanent protest camp in the popular district of La Malinche, citizen assemblies, a complaint to the Human Rights Commission of Mexico City, and a letter to the Office of the High Commissioner for Human Rights of the UN, among others.

The above shows how easily tensions can erupt between communities and local interests and the government's vision of the greater needs of urban development.

Source: Luis Patiño. Candidate for a doctorate in Urban Studies and the Environment at El Colegio de México, 2012

6.3 New Forms of Urban Governance

Trends towards urban population stability and new economic and spatial configurations are shifting citizens' demands and urban governance into new areas and challenges. Demands are not only for more services and infrastructure, but also for improvements to the quality of urban life and the guarantee of rights like safety, mobility, environmental protection and overcoming social inequalities.

Diversification of the urban system and the growing importance of Intermediatete cities have changed the relations and hierarchies between cities within countries, *vis-à-vis* national powers and internationally. Decentralization[38] has redistributed competences and powers to sub-national authorities who now tend to play increasingly strategic roles. This has resulted in new ways of relating to cities, whilst opening up debate about the diminishing role of national powers[39].

Inter-Municipal Cooperation and Governance of Metropolitan Areas

New methods have been developed to overcome the complexities of holistic management and service delivery through inter-municipal cooperation, supra-municipal integration and association, either by local initiatives or centrally stimulated[40]. In many cases, association is created because of small municipalities' limited budgets for services provision, public works and other functions that need economies of scale. Inter-municipal cooperation is common in solid waste management and cadastral databases.

Argentina has 72 inter-municipal bodies, Bolivia has more than 70 associations, Ecuador has 20, and Chile more than 60 while there are 44 municipal associations in Colombia[41].

Diversification of urban systems, now more polycentric and diverse, opens up both new relationships and confrontations between traditional governance and the new incumbents as relationships, control mechanisms and territorial government are undergoing profound transformations. These changes imply that local issues need articulation around supra-municipal axes, whether they are environmental, economic or cultural.

The region faces major challenges in the management of new urban frameworks, conurbations, metropolitan areas, urban development corridors, city-regions and mega urban regions. These new territorial-urban expressions do not obey the logic of traditional municipal power divisions and require new relationships and stakeholders to perform the functions of local governance, particularly regarding water and sanitation supply, solid waste management, protection of watersheds, mobility, and other sectors that require intensive supra-municipal coordination.

Without adequate planning, land management can become a major problem when a continuous urban area is governed as different parts. Without supra-municipal coordination it will be impossible to ensure basic equilibrium in the location of facilities, service delivery and distribution of wealth, with the risk of contributing to physical and social polarization of urban areas.

The region's large conglomerates exemplify these administrative complexities. Such cities generally comprise several units of local government and, in cases like Mexico City and Buenos Aires, more than one government agency at the Intermediatete level[42]. Examples of constituted metropolitan areas include, among others, Caracas, Lima, and Quito.

While at the national or federal level there are initiatives in some countries that promote metropolitan government, one of the most complex issues is precisely the definition of the formation and spatial limitation criteria of metropolitan areas. For example, in Brazil, due to a Ministry of Cities' initiative, federal government created a fund to finance joint-investments in metropolitan areas. The absence of criteria to define 'metropolitan' at the federal level, along with the attractiveness, at least theoretically, that this fund represents to peripheral municipalities of metropolitan areas, has led to horizontal growth of municipalities, in some cases incorporating municipalities far away from the conurbation.

On the other hand, at the heart of the governance problem in continuous urban areas is the new distribution of power and autonomy, which can imply limited autonomy for municipal governments when considered individually. This partly explains why coordination in metropolitan areas is generally low-impact and restricted to specific issues[43]. This is the case of the Corporation of Greater San Salvador (COAMSS) and the Federation of Municipalities of Metropolitan San Jose (FEMETROM), which basically limits itself to the coordination of territorial planning.

An interesting case is the metropolitan area around Medellin, Colombia. Designated the Valle de Aburrá metropolitan area, this entity was created thirty years ago and includes nine of the ten municipalities in the valley. Currently, it controls territorial planning functions, urban environmental matters in the municipalities that form part of it, metropolitan collective transport and the execution of urban building projects of metropolitan interest. The entity has its own legal framework, plans, schedules, budgets, targets and indicators, as well as an active and dynamic role in the metropolitan area, which includes the Metropolitan Information Observatory[44].

Añatuya, Argentina. The twinning of cities in different countries has become common practice to strengthen all kinds ties. © Roxana Rihos

While progress has been made in understanding the challenges of multi-municipal continuous urban areas, links between local governments continue to figure as a pending subject in the region. In the case of metropolitan areas, the challenge is to create integrated inter-municipal and supra-municipal management, including the establishment and management of links with higher levels of government, whether provincial, state or national. The demographic and economic weight of the major conurbations also makes them political entities with the potential of taking up opposition to central government[45].

International Projection of Cities

The current context of increasing connectivity, competitiveness and globalization strengthen the important relationships that cities establish between themselves and with the rest of the world. Since decentralization started, the region has seen the emergence of institutions that bring together municipal governments in a variety of forms but whose representation and institutional capacity is not the same[46]. There are sub-regional associations, like the Federation of Municipalities of Central America or the Mercocities Network (181 associations linking Mercosur countries) and regional associations that bring together national institutions (FLACMA). In addition, there are municipal women's and indigenous associations which work more like a guild and defend local autonomy in relation to national governments rather than inter-urban linkages.

The twinning of cities in different countries has become common practice to strengthen all sorts of bonds (mostly commercial, cultural and political), cooperation in areas of common interest, and various exchanges. This path was chosen by four border towns, Iquitos, Peru; Leticia, Colombia; Manaus, Brazil; and Nueva Loja, Ecuador, that twinned to address drug trafficking and support each other on infrastructural matters.

In some cases, territorial continuity leads to situations that require overcoming national differences, adopting forms of governance that are both inter-city and international. This is what happens when cities in different countries establish associations as the best response to meeting the provision of basic services, for example in Tulcán, Ecuador and Ipiales, Colombia, who cooperate in solid waste and environmental protection management[47].

In addition to changes in the relationships among local governments, a new and differentiated trend has been detected: direct international promotion of cities as individual stakeholders. This is seen in global city partnerships, like Metropolis, whose mission is to represent and defend large cities' interests and concerns in international forums[48], especially when dealing with organizations like the United Nations, the Cities Alliance, the World Bank or the United States Conference of Mayors. The C40 group of cities and Leadership on Climate Change, involving some of the largest metropolises in the region, is another example of an entity formed directly by cities to promote activities related to a global problem and whose commitments, in some cases, go beyond those undertaken by central governments.

With globalization, states are losing some of their international influence to their largest cities. This is particularly evident in discussions on climate change for which many measures require local actions. However, the trend towards greater international presence of local governments has not yet resulted in direct and active involvement of sub-national actors in the negotiation of international agreements and conventions affecting them.

Countries are undergoing a social, economic and political revolution that should be considered in institutional arrangements. This changing reality requires greater coordination between different levels of government and a permanent adaptation to new governance issues.

Notes

1. UCLG (2008). The names of administrative divisions differ between countries.
2. UCLG (2008).
3. Vega, N. and Peña, D. (2010).
4. The ability to revoke an elected representative is subject to specific conditions in each country, for example, a certain amount of time has to pass by since election, or that the proposal is supported by a minimum number of voters in a constituency.
5. For information about results, consult the website of the National Electoral Office in Peru at http://www.web.onpe.gob.pe/modElecciones/elecciones/resultados2009/indexrev.php.
6. Páez Moreno, Amanda (2011).
7. Ibidem.
8. For more information, see http://habitat.aq.upm.es/dubai/00/bp763.html y http://www.asambleacotacachi.org/pagina.php?varmenu=127
9. UCLG (2008).
10. Ibidem.
11. UCLG (2010).
12. Parity has been the subject of a thorough study by ECLAC, which also discusses the quota law, affirmative action and cultural changes, as discussed in the following paragraphs. ECLAC
13. ECLAC (2011c).
14. Data from the Observatory for Gender Equality at ECLAC. Consulted in December, 2011.
15. ECLAC (2011c) and Guzmán (2003).
16. Observatory for Gender Equality in Latin America and the Caribbean (2011).
17. Vega, N. and Peña, D. (2010).
18. UCLG (2008).
19. Vega, N. and Peña, D. (2010).
20. Cetrángolo (2007).
21. Teran C., (2007).
22. Ojeda Segovia (2004).
23. Canavire-Bacarreza, and. al. (2012).
24. CGLU (2008).
25. Cetrángolo (2007).
26. Ibidem.
27. De Cesare (2010).
28. Clichevsky, N. (2006).
29. Cetrángolo (2007).
30. Carrión, F. (2011).
31. The Territorial Development Law of Colombia was enacted following an initiative by the national executive in 1997, the City Statute of Brazil was promoted by the national legislature, at the behest of social movements.
32. Carrión, F. (2011).
33. Ibidem.
34. http://www.puertomadero.com/
35. http://www.minvu.cl/opensite_20070307160114.aspx
36. Carrión, F. (2001).
37. Ibidem.
38. Chapter one of this report.
39. Carrión, F. (2011).
40. UCLG (2008).
41. Ibidem.
42. Ibidem
43. Ibidem.
44. Information on the Metropolitan Area of Valle de Aburrá available at : http://www.areadigital.gov.co/Pages/Inicio.aspx
45. Carrión, F. (2011).
46. UCLG (2008).
47. Carrión, F. (2011).
48. For more information on these associations, see: http://www.metropolis.org/es/mision

Abbreviations

ADERASA	Association of Regulators of Drinking Water and Sanitation in the Americas
BRT	Bus Rapid Transit
CAF	Andean Development Corporation
CAPRADE	Andean Committee for Disaster Prevention
CARICOM	Caribbean Community and Common Market
CDM	Clean Development Mechanism
CELADE	The Latin American and Caribbean Demographic Centre
CEPAL	Economic Commission for Latin America and the Caribbean (ECLAC)
CEPALSTATS	Statistics and Economic Projections Division, Social Statistic Unit. ECLAC
CEPREDENAC	Coordination Centre for the Prevention of Natural Disasters in Central America
DEPUALC	Population and Urbanization Spatial Distribution in Latin America and the Caribbean
EAP	Economically Active Population
FIIC	Inter-American Construction Industry Federation
GHG	Greenhouse Gases
GIRS	Integrated Solid Waste Management
HDI	Human Development Index
IBRD	The International Bank for Reconstruction and Development
IDB	Inter American Development Bank
IFC	Index of Four Cities
IOM	International Organization For Migration
IPCC	Intergovernmental Panel on Climate Change
JMP	Joint Monitoring Programme for Water Supply and Sanitation
MDG	Millennium Development Goals
ILO	International Labor Organization
WHO	World Health Organization
OECD	Organization for Economic Cooperation and Development
OMU	Urban Mobility Observatory
OPS	Pan American Health Organization
PPU	Pacification Police Units
SDO	Substances that Deplete the Ozone Layer
SEDESOL	The Secretary of Social Development (Mexico)
SPPU	Social Pacification Police Units
TPI	Total Population Index
UCLG	United Cities and Local Governments
UNDESA	United Nations Department of Economic and Social Affairs United Nations
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNICEF	United Nations Children's Fund
USW	Urban Solid Waste

Figures, Boxes, Tables, Maps and Annexes

Figures

Boxes

Tables

Maps

Annexes

Annexes

Anex 1
Latin America and the Caribbean. Definition of Urban Areas in National Censuses

The delimitation of an urban area may depend on political, administrative, or numerical issues or a combination of several of these; it may take into account factors such as density of land occupancy, the amount of housing or infrastructure, or be linked to functional criteria, legal issues or the environment. Thus, the 1950 and 1960 censuses in Brazil, 'urban' population was considered those living in cities (in the sense of municipal centres) and towns (district centres), while in the 2000 census population was that registered in cities, towns and urban areas, according to the delimitation of the respective municipalities as of September 1, 1991.

One of the simplest, constant, and straight forward definitions is that of Bolivia, where urban population is that censused in towns with at least 2,000 inhabitants, a figure that rises to 2,500 in Mexico, but in Panama the figure drops to 1,500, although here country the concept 'urban' is linked to the condition of having certain services such as electricity, sewers, water, paved streets, shops, secondary schools and communication facilities, among others.

The table provides definitions of urban areas, according to the census of each country, which is the basis of statistical data presented in this report. However, this list is purely illustrative and may not reflect the criteria actually used for the development of the analysed information in this report. This is because much of the information comes from comparative studies that need correcting for differences over time (between different surveys for the same country) and between spaces (countries).

Country	Year of Definition	Definition of Urban Area
Argentina	2001	Population registered with the authorities on the day of the census in towns of 2,000 inhabitants or more.
Bolivia	2001	Population censused in localities with 2,000 inhabitants or more
Brazil	2000	Population censused in the cities, towns and isolated urban areas, according to the delimitation of the respective municipalities as of August 1, 1996
Chile	2002	Population living in residential areas with more than 2,000 inhabitants, or between 1,001 and 2,000 inhabitants with 50% or more of its economically active population engaged in secondary or tertiary activities, or both. Exceptionally, centres of tourism and entertainment areas that have more than 250 houses, but do not meet the population requirements, are considered urban.
Colombia	2005	Population living in the main municipal centre (populated centres where the mayor's offices are located).
Costa Rica	2000	Population living in the administrative centres of cantons, meaning, some or all of the first-tier districts and adjacent areas. These areas are demarcated by physical and functional criteria, taking into account tangibles like blocks, streets, sidewalks, electric lights, and other urban services.
Cuba	2002	Resident population within the limits of an urban human settlement, defined as having the following characteristics: a) all settlements, declared as such in the 1981 Census of Population and Housing; b) all settlements serving a political-administrative function, meaning, they are the principal municipal centres; and c) settlements that have 2,000 or more permanent residents, provided they meet the following nine characteristics that identify urban living conditions: i) street layout with arrangements of buildings in accordance with the characteristics of the settlement, ii) existence of public spaces represented by parks, squares, pedestrian walkways with places for resting, recreation and on-going social exchange iii) public lighting with a system of lights at least covering the main roads and public spaces of the settlement; iv) existence of water supply to homes areas outside houses; v) sewage treatment system or septic tanks that can be de-sludged and drained; vi) medical care services represented by hospitals, polyclinics or family doctor surgeries vii) education service through educational centres that correspond to the population size of the settlement and the Ministry of Education's policy on schooling ages; viii) retail food services in correspondence with the population size of the settlement, and ix) public telephone and postal services, and radio and television signals.

Ecuador	2001	Population living in provincial capitals and the administrative centres of cantons (densely-concentrated centres), previously defined as urban areas for census purposes. The peripheral population (population dispersed within the legal boundaries of the provincial capitals and cantons) is excluded.
El Salvador	2007	Population living in the main municipal administrative centre, where the civil authorities, religious and military are located, and areas that meet the following characteristics: i) at least 500 homes grouped together in continuous form, and ii) that there is street lighting, schooling for basic education, regular transport services, paved or cobbled streets, public telephone service.
Guatemala	2002	Population living in cities, towns and villages (administrative centres of departments and municipalities) and other populated localities that have residential status and that have more than 2,000 people, provided that in these, 51% or more households have electricity and lighting with piped water services.
Guyana[1]	2002	Administrative regions that have urban centres and the capital (Georgetown).
Haiti	2003	Population living in the cities and the administrative centres of the Republic's communes, in addition to residents in agglomerations that have residential units that are similar to those found in cities, even if these are for just a few hundred people
Honduras	2001	Population living in towns of 2,000 or more inhabitants with the following characteristics: i) piped water service, ii) transportation routes (road or rail) or regular air or maritime service; iii) full primary school education (six grades), iv) post or telephone service, at least one of the following services: electric lighting, sewers or health centre.
Jamaica[1]	2000	Places with a population of 2,000 or more inhabitants with facilities that, in Jamaica, provide a modern lifestyle. They must meet criteria related to land use with commercial, industrial and residential areas.
Mexico	2000	Population living in localities with more than 2,500 inhabitants. Municipal administrative centres and localities with 2,500 or more inhabitants are considered urban.
Nicaragua	2005	Population residing in urban localities, meaning the administrative centres of departments, regions and municipalities and concentrations of population with 1,000 or more inhabitants or with street layouts, electric lighting system, commerce or industrial premises, among others.
Panama	2000	Population living in localities with 1,500 inhabitants or more, with urban characteristics like an electricity service, water and sewers, paved streets, shops, communication facilities, secondary school, and others.
Paraguay	2002	Population living in the administrative centres of official districts, without considering any other special features.
Peru	2007	Population living in the area of a district comprised of urban population centres (towns with a minimum of 100 houses grouped contiguously).
Dominican Republic	2002	Resident population in the administrative centre of municipalities and municipal districts.
Trinidad and Tobago[1]	2000	Areas where population density is 200 inhabitants or more per square kilometre.
Venezuela	2000	Set of populated centres with 2,500 inhabitants or more defined at any level of political-territorial division.

Source: when not otherwise indicated, CELADE-ECLAC (2009), Demographic Observatory No. 8: Urbanization in Perspective.

[1] Source: 2000 Round of Population and Housing Census Data Analysis Sub-project. CARICOM Capacity Development Programme - CCDP. Census National Report of Jamaica, Trinidad and Tobago and Guyana. Available at http://www.caricomstats.org/census2000_VBT&NCR_reports.htm (last accessed in October, 2011).

Annex 2
Methodology for the Classification of Intermediatete Cities

From the perspective of systems or networks of cities, Intermediatete cities are agglomerations that, as the name suggests, perform Intermediatete functions between those of small towns and large metropolitan areas. An Intermediatete Latin American city has some of the social, productive and historic characteristics of the main urban agglomerations, which makes it an access point for public and private services (culture, health and education, trade), but it is also characterised by sub-centrality in the territory. Its role is not related to population size in absolute terms, but the size of the total population of urban agglomerations in a country. Given the variety in sizes of population and territories of countries in the region, the classification of an Intermediatete agglomeration depends on the size of the country and the demographic weight of their populations. For example, an Intermediatete city of a Central American country provides similar functions to those of Intermediatete cities in countries like Mexico or Brazil, but the demographic size of the former is much smaller than the latter. These differences in scale are definitive when comparing cities.

In order to establish adequate comparisons between cities, the range of sizes of Intermediatete cities was determined. For this, the following steps were followed:

1. Countries of Latin America and the Caribbean, as well as some overseas departments and territories dependent on countries outside the region were classified according to size of population, in accordance with the 2000 census or, failing that, the next most recent data.
2. The statistical distribution of the population of urban agglomerations with more than 20,000 inhabitants in each country were analysed (following the CELADE definition) in each group of countries.
3. From the distribution pattern of agglomerations observed in each group, a maximum and minimum population was established to identify the Intermediatete agglomerations. For example, the behaviour of countries with populations of between 2 to 10 million inhabitants explains that for this group, an Intermediatete city was defined as having between 50,000 and 250,000 inhabitants.
4. Graphs were created to show the featured parameters (Figures 1, 2, 3 and 4).

The table summarizes the classification of countries into groups defined by their size and population. The analysis includes countries with 2 million inhabitants and above, with the following ranges:

a) Countries with between 2 and 10 million inhabitants.

b) Countries with between 10 and 20 million inhabitants.

c) Countries with between 20 and 50 million inhabitants.

d) Countries with more than 50 million inhabitants.

Country/Population in 2010	Total Population (thousands)				Largest Agglomerate (UNDESA 2009)	Population Largest Agglomerate (DEPUALC/CARIBE)				Size Criteria For An Intermediatete City
	1980	1990	2000	2010		1980	1990	2000	2010	
Countries with 2 million inhab. or less	2.614	2.792	3.037	3.268		...	...	...	...	
Anguilla	7	9	11	13	The Valley	...	2	2	...	
Antigua and Barbuda	63	63	76	87	Saint John's	...	23	24	...	
Netherlands Antilles	174	191	181	199	Willemstad	...	...	...	123	
Aruba	61	64	90	103	Oranjestad	...	20	26	...	Countries with small territories without an urban system of cities
Bahamas	210	255	301	344	Nassau	135	172	211	249	
Barbados	249	257	266	273	Bridgetown	7	7	8	...	
Belize	144	186	242	296	Belize City	...	...	47	54	
Bermuda	56	60	63	65	Hamilton	12	12	11	...	
Dominica	74	72	78	83	Roseau	...	16	17	17	
Granada	90	96	102	110	St. George	29	32	37	...	
Guyana	761	729	744	751	Georgetown	126	130	134	...	

Country/Population in 2010	Total Population (thousands)				Largest Agglomerate (UNDESA 2009)	Population Largest Agglomerate (DEPUALC/CARIBE)				Size Criteria For An Intermediatete City
	1980	1990	2000	2010		1980	1990	2000	2010	
Cayman Islands	17	26	40	49	George Town	...	...	21	28	Países con baja extensión territorial sin un sistema urbano de ciudades
British Virgin Islands	11	17	21	23	Road Town	2	6	9	...	
U.S. Virgin Islands	98	103	110	111	Charlotte Amalie	...	...	21	19	
Saint Kitts and Nevis	43	41	40	45	Basseterre	...	11	12	13	
Saint Vincent and the Grenadines	100	109	116	122	Kingstown	17	16	14	...	
Santa Lucia	118	138	154	168	Castrie	11	13	18	...	
Suriname	356	402	434	462	Paramaribo	168	208	236	259	
Trinidad and Tobago	1.082	1.215	1.285	1.324	Chaguanas	...	...	62	...	
Turks and Caicos	8	12	19	26	Grand Turk	...	...	...	5	
Countries with between 2 million and 10 million inhabitants	38.526	47.145	57.084	67.519		5.627	7.778	10.223	13.473	
Costa Rica	2.347	3.076	3.925	4.695	San Jose	534	766	1.032	1.350	Aglomeraciones de 50.000 a 250.000 habitantes*
El Salvador	4.586	5.110	6.276	7.441	San Salvador	769	997	1.062	1.359	
Haiti	5.454	6.942	8.357	9.994	Port-au-Prince	683	1.178	1.746	2.484	
Honduras	3.569	4.879	6.485	8.203	Tegucigalpa	388	586	798	1.198	
Jamaica	2.133	2.369	2.585	2.703	Kingston	...	...	...	...	
Nicaragua	3.067	3.960	4.957	6.050	Managua	612	764	827	1.031	
Panama	1.949	2.411	2.948	3.504	Panama City	610	845	1.212	1.506	
Paraguay	3.114	4.219	5.496	6.980	Asunción	777	1.106	1.517	2.207	
Puerto Rico	3.197	3.528	3.834	4.056	San Juan	...	...	...	...	
Dominican Republic	5.697	7.066	8.396	9.791	Santo Domingo	1.255	1.536	2.029	2.338	
Uruguay	2.914	3.106	3.337	3.566	Montevideo	...	...	...	...	
Countries with between 10 and 20 million inhab.	41.213	49.656	58.549	67.601		8.209	10.275	11.915	14.258	
Bolivia (Est. Plu.)	5.355	6.669	8.428	10.426	La Paz	809	1.062	1.390	1.642	Aglomeraciones de 70.000 a 300.000 habitantes*
Guatemala	7.013	8.908	11.225	14.362	Guatemala City	1.148	1.454	2.007	2.427	
Ecuador	7.961	10.272	12.299	14.205	Quito	600	1.101	1.101	1.882	
Cuba	9.710	10.628	11.199	11.514	La Habana	1.916	2.046	2.163	2.223	
Chile	11.174	13.179	15.398	17.094	Santiago	3.735	4.612	5.255	6.084	
Countries with between 20 and 50 million inhab.	88.956	109.039	129.355	148.976		12.564	15.087	14.748	15.913	
Argentina	28.094	32.581	36.784	40.519	Buenos Aires	9.970	12.316	11.967	12.784	
Colombia	28.447	34.970	42.321	49.665	Bogota	...	...	...	...	
Peru	17.324	21.753	25.939	29.958	Lima	...	...	...	...	
Venezuela	15.091	19.735	24.311	28.834	Caracas	2.594	2.772	2.781	3.129	

Country/Population in 2010	Total Population (thousands)				Largest Agglomerate (UNDESA 2009)	Population Largest Agglomerate (DEPUALC/CARIBE)				Size Criteria For An Intermediatete City
	1980	1990	2000	2010		1980	1990	2000	2010	
Countries with 50 million inhab. or more	449.580	550.306	649.408	746.064		26.202	29.738	34.664	39.370	
Brazil	121.672	149.690	174.719	200.019	São Paulo	12.184	14.624	17.076	19.286	
Mexico	67.570	83.226	98.881	112.891	Mexico City	14.018	15.113	17.589	20.083	

*According to the latest population census.

Source: Compiled by UN-Habitat from data from UNDESA (2009) and CELADE, national population censuses, Database, Spatial Distribution, DEPUALC. Available at http://www.eclac.cl/celade/depualc/default_2011.asp for Latin American countries and Haiti.

Figure 1 Countries with Populations of Between 2 and 10 Million Inhabitants

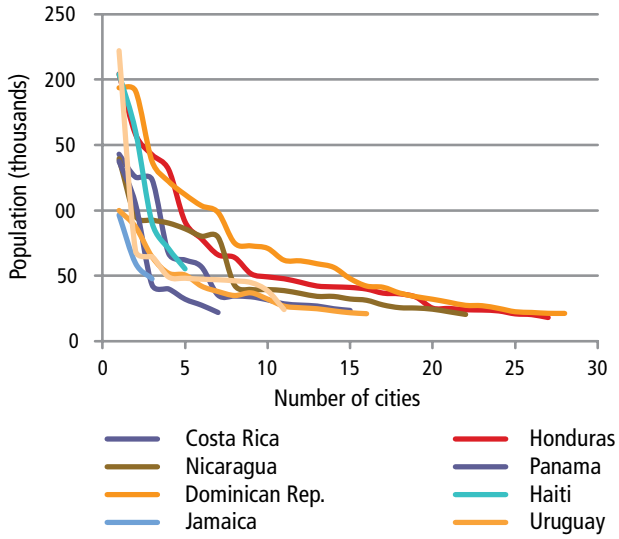


Figure 2 Countries with Populations of Between 10 and 20 Million Inhabitants

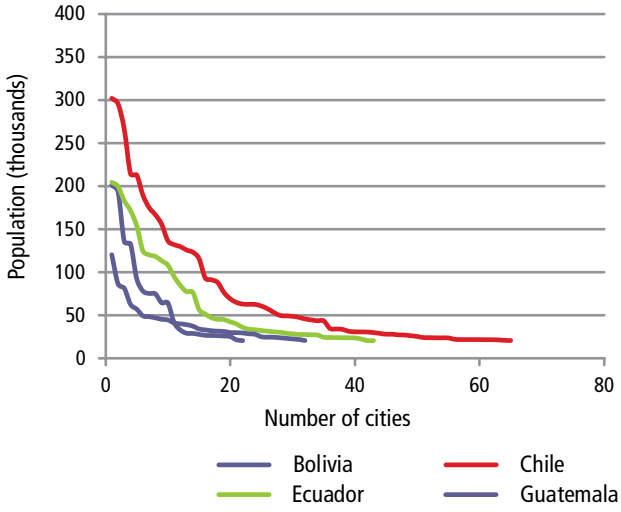


Figure 3 Countries with Populations of Between 20 to 50 Million Inhabitants

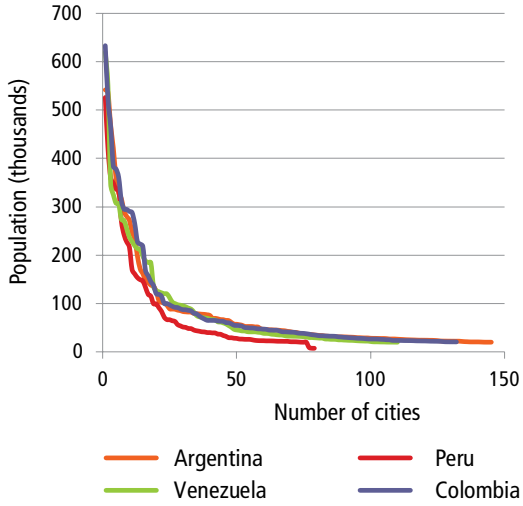
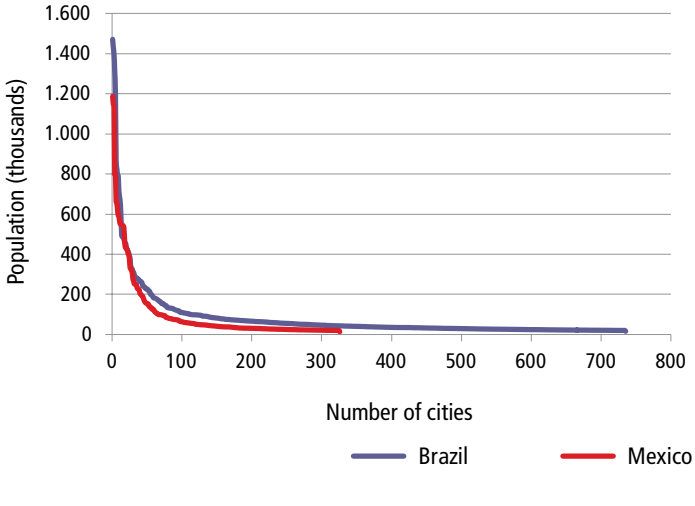


Figure 4 Countries with Populations of 50 Million or More Inhabitants



Source: Compiled by UN-Habitat from CELADE data, National population censuses, Database, Spatial Distribution, DEPUALC.

Annex 3
Populations and Growth Rates of Large, Medium and Small Agglomerations, According to the Size of Countries, 1950-2010

Size of Country	Type of Cities	1950	1960	1970	1980	1990	2000	2010
50 million inhabitants or more	Large	13.732.738	22.709.736	38.547.054	59.853.625	73.560.863	90.633.959	105.980.127
	Intermediate	2.879.430	5.044.464	8.442.528	13.245.247	17.790.941	22.554.639	26.782.953
	Small	7.510.345	12.386.964	19.380.382	30.283.246	42.709.702	55.083.780	62.686.684
20 to 50 million inhabitants	Large	24.122.513	40.141.164	66.369.964	103.382.118	134.061.506	168.272.378	195.449.764
	Intermediate	11.483.845	17.241.317	25.203.280	33.368.983	41.023.711	48.827.360	56.301.011
	Small	1.465.146	2.259.527	3.361.648	4.845.139	6.278.992	7.940.530	9.560.469
10 to 20 million inhabitants	Large	4.705.277	7.128.578	10.602.511	15.489.770	20.825.283	26.588.970	31.124.385
	Intermediate	17.654.268	26.629.422	39.167.439	53.703.893	68.127.986	83.356.859	96.985.865
	Small	4.040.420	5.736.250	7.499.801	9.672.426	12.033.454	14.466.084	16.952.130
2 to 10 million inhabitants	Large	1.629.258	2.261.340	3.082.270	4.059.587	5.321.890	6.550.164	7.532.328
	Intermediate	1.075.676	1.469.460	1.890.893	2.426.394	3.169.335	4.319.510	5.528.884
	Small	6.745.354	9.467.050	12.472.963	16.158.408	20.524.679	25.335.758	30.013.342
Total	Large	1.106.911	3.627.220	5.138.942	7.149.550	9.910.551	12.694.068	16.196.821
	Intermediate	494.338	1.054.307	1.492.646	2.240.497	3.562.793	4.975.936	6.844.344
	Small	315.273	872.525	1.142.973	1.612.154	2.191.565	3.220.544	3.515.559

Size of Country	Type of Cities	1950-1960	1960-1970	1970-1980	1980-1990	1990-2000	2000-2010
50 million inhabitants or more	Large	5,0	5,3	4,4	2,1	2,1	1,6
	Intermediate	5,6	5,1	4,5	3,0	2,4	1,7
	Small	5,0	4,5	4,5	3,4	2,5	1,3
20 to 50 million inhabitants	Large	5,1	5,0	4,4	2,6	2,3	1,5
	Intermediate	4,1	3,8	2,8	2,1	1,7	1,4
	Small	4,3	4,0	3,7	2,6	2,3	1,9
10 to 20 million inhabitants	Large	4,2	4,0	3,8	3,0	2,4	1,6
	Intermediate	4,1	3,9	3,2	2,4	2,0	1,5
	Small	3,5	2,7	2,5	2,2	1,8	1,6
2 to 10 million inhabitants	Large	3,3	3,1	2,8	2,7	2,1	1,4
	Intermediate	3,1	2,5	2,5	2,7	3,1	2,5
	Small	3,4	2,8	2,6	2,4	2,1	1,7
Total	Large	11,9	3,5	3,3	3,3	2,5	2,4
	Intermediate	7,6	3,5	4,1	4,6	3,3	3,2
	Small	10,2	2,7	3,4	3,1	3,8	0,9

Note: Intermediate agglomerations are categorized according to the distribution of agglomerations of more than 20 thousand inhabitants defined by CELADE in LAC countries, in countries with populations of more than 50 million people, the intermediate agglomerations have between 500,000 and 1 million inhabitants; in countries with populations of between 20 and 50 million inhabitants, the intermediate agglomerations have between 300,000 and 550,000 inhabitants; in countries with between 10 and 20 million people, intermediate agglomerations have between 70,000 and 300,000 inhabitants; in countries with populations of between 2 to 10 million inhabitants, intermediate agglomerations have between 50,000 and 250,000 inhabitants.

Source: Compiled by UN-Habitat with data from CELADE, National census population, Database, Spatial Distribution, DEPUALC. Available at http://www.eclac.cl/celade/depualc/default_2011.asp for countries in Latin America and Haiti.

Annex 4
Methodology for Calculating the GDP of Major Cities in the Region, and Estimated GDP of Cities

Introduction

Gross domestic product (GDP) is the monetary value of goods and services produced by an economy in a given period (usually one year), and this is derived from the aggregated values that a country produces. GDP is a widely used indicator of economic growth and the competitiveness of a country's economic activity.

The magnitude of GDP and annual growth can help draw conclusions about whether an economy can really meet the needs of its population and benefit business people, generating higher earnings and more employment, two aspects that help improve a country's production.

GDP is usually calculated at the national level, however, in some countries it is found at sub-national levels, such as at the state, department or municipality level. To calculate GDP, there are different approaches: the expenditure method, the production method, and the factor payments method. The first is used to estimate national GDP, while sub-national levels use the latter two, either individually or in combination.

1. **The expenditure method** is based on the demand for final goods and services at purchasing price (market). The components of demand used in this method are: household consumption, government consumption, changes in inventories, gross fixed capital formation and net exports. Its formula is expressed as follows:

$$GDP = CP + CG + GFCF + E + (x-m)$$

Where:
CP= Household Consumption
CG= Government Spending
GFCF = Gross Fixed Capital Formation
E= Change in Stocks
M= Imports
X= Exports

2. **The production method** consists in finding the gross value of production and intermediate consumption; the calculations of gross production values are at basic prices and intermediate consumption at customer prices. The formula for GDP is:

$$GDP = GPV + IC$$

Where:
GDP = Gross Domestic Product
IC = Intermediate Consumption.
GPV = Gross Production Value

3. **Factor payments model** consists in calculating and adding together the components of added value: compensations, fixed capital consumption and net operating surpluses, including self-employed people's incomes, interest, royalties, profits, and proprietors' incomes, amongst other concepts. The formula for calculating GDP at basic value is:

$$GDP = COE + GOS + \text{other taxes on production}$$

Where:
GDP = Gross Domestic Product
COE = Compensation for employees
GOS = Gross Operating Surplus

Monetary units. GDP is expressed in monetary terms at current prices or constant prices taken at a base year. GDP at constant prices is needed to achieve comparisons over time.

Derived indicators. From GDP, other indicators can be found, like GDP per capita and GDP per person employed. GDP per employee is considered an indicator of the average economic productivity of an economy, so that if a country has a productivity indicator of USD 0.01 million, the average contribution to gross domestic product of each person employed in the economy (employee or self-employed) is USD 0.01 million.

Thanks to the relationship between GDP and employed population, GDP values for sub-national units can be estimated, if this calculation does not exist already. The methodology assumes the average productivity of a geographical entity, in this case a city, has a productivity that is similar to the geographical area to which it belongs.

To apply this methodology, it is necessary to have estimations of the economically active population and employed population for the area (city) being studied and the area to which it belongs (departments, regions etc…). This data can be obtained from household surveys or, failing that, population and housing censuses. Household surveys have been used to estimate the GDP of large cities in Latin America and the Caribbean, with available data from the BADEHOG information system for internal use at ECLAC, and population and housing census data found on ECLAC's Population Division website.

Description of the Methodology

The estimation method involves the following steps:

1. Gather data on GDP at constant prices (in local currency or dollars) for the sub-national entities (GDPst) of interest, meaning those that include 'cities', for which the approximate GDP is being calculated.

2. From the gross domestic product (GDPst) in constant currency, obtained for sub-national territorial units of a country (states, provinces, departments etc..) and the employed population (OTs) for the same sub-unit (s) at different moments in time (t), the average productivity per employee (PRODMst) is calculated, a relationship that is expressed as a ratio of these components, namely:

   PRODMst = GDPst / Ost.

3. The next step is to estimate the employed population (Ocst) for the city in the sub-national geographical unit which provides the annual estimates of GDP. Survey variables that identify the city in question are used to do this. Household surveys in almost all Latin American countries allow good estimates for major metropolitan areas, however, for identification purposes is also advisable to use spatial identification of the main urban agglomerations of countries carried out by the Population and Development Division at ECLAC (CELADE), based on Population and Housing Censuses, which identify the small geographical units that make up the main cities in the countries with census data from the 2000s.

4. Given estimates of the employed population at the sub-national level (Ost) and with estimates of GDP (GDPst) available and those of respective cities (Ocst), GDP for cities (GDPcst) is estimated as follows:

   GDPcst = (PRODMst * Ocst)

Importantly, the countries' base years in currency units of GDP vary from country to country, therefore, to compare the estimates obtained, the currency of GDP estimates (GDPcst) need unifying. The procedure used for this is as follows:

   a. Choose a uniform national GDP data set for all countries, in constant dollars (GDPt USD).

   b. Select the national GDP data series in the same currency (or dollars) and the base year (GDPt) for which estimates have been obtained at the city level.

   c. The relative importance of estimated GDP (RGDPct) for each city (GDPcst) is obtained based on the city's GDP in the currency and base available (GDPcst) compared to total GDP with the same currency and base (GDPt).

      RGDPct = GDPcst/GDPt

   d. Once the relative importance of each city's GDP compared to the national total (RGDPct) is calculated, it is assumed that the relative distribution of GDP in constant dollars is equivalent to the relative importance of each city's GDP compared to GDP in national currency at constant values.

Application of the methodology

Table 1 shows GDP estimates obtained for major cities in each country, and Table 2 shows the criteria and data sources used for calculations in each country.

Estimates of 'city' GDPs in countries that have sub-national GDPs mean this indicator can be calculated for a greater number of cities. In countries that don't have sub-national GDPs, the estimate is only possible for major metropolitan areas.

GDP estimates were obtained for two years, in order to make comparisons at two different moments in time, one close to 2000 and another close to 2010. An important limitation to this comparison is that, from one period to another, the household surveys in some countries vary in their sample designs and the representativeness of estimates of the employed population in cities. In order to correct for this bias, the average number of employed in sample estimates was considered for the most recent two years available. This inconsistency is highlighted, mainly in countries that do not have sub-national GDP estimates, and for some cities in Bolivia and Brazil.

While offering the possibility of obtaining estimates of the main conurbations of the country, estimates from household surveys in some countries do not provide estimations for the employed population of a geographic entity under analysis. In such cases, the closest census data was used to the year in question to estimate the employed population. The method used was to approximate the employed population of the administrative entity and the agglomeration from the census proportion of employed people in each unit with respect to the economically active population (EAP), according to census data, and to expand these proportions, with reference to EAP forecasts made by CELADE. (http://www.eclac.cl/celade/proyecciones/basedatos_BD.htm).

Table 1
Total Gross Domestic Product and Per Inhabitant For All Major Cities in Latin America and the Caribbean, circa 2000

Country	Second level (Dept., Province etc.)	Agglomeration	Year	GDP (Millions of constant USD (2000)[3]	% GDP City to National GDP	Population	GDP/ Population (USD constant 2000)
Argentina[1]			1999	286.607		36.500.000	7.852
	Buenos Aires	Buenos Aires City	1999	73.751	25,7	11.884.875	6.205
	Cordoba	Great Cordoba	1999	8.976	3,1	1.337.954	6.709
	Mendoza	Great Mendoza	1999	6.428	2,2	832.929	7.718
	Tucumán	S. Miguel de Tucumán	1999	2.486	0,9	715.289	3.475
Bolivia[2]			1999	8.192		8.147.000	1.006
	Santa Cruz	Santa Cruz	1999	688	8,4	1.024.789	671
	La Paz	La Paz and el Alto	1999	520	6,3	1.355.169	383
	Cochabamba	Cochabamba	1999	340	4,1	492.647	689
	Oruro	Oruro	1999	130	1,6	196.928	661
Brasil[2]			2002	670.559		179.110.000	3.744
	São Paulo	São Paulo	2002	110.108	16,4	17.792.606	6.188
	Rio de Janeiro	Rio de Janeiro	2002	56.967	8,5	11.466.290	4.968
	Minas Gerais	Belo Horizonte	2002	13.768	2,1	4.141.139	3.325
	Rio Grande do Sul	Porto Alegre	2002	16.247	2,4	3.471.604	4.680
	Bahia	Salvador	2002	6.543	1,0	3.025.983	2.162
	Pernambuco	Recife	2002	6.230	0,9	3.282.434	1.898
	Ceará	Fortaleza	2002	4.921	0,7	2.814.053	1.749
Chile			2003	82.873		15.951.000	5.195
	Metropolitan Area	Santiago	2003	34.228	41,3	5.531.296	6.188
	V Valparaíso Region	Valparaíso	2003	2.811	3,4	836.316	3.362
Colombia				99.876		39.763.000	2.512
	Federal District	Bogota	2000	25.979	26	6.423.939	4.044
	Antioquía	Medellín	2000	9.814	9,8	2.773.155	3.539
	Valle	Cali	2000	9.268	9,3	1.943.170	4.770
	Atlantico	Barranquilla	2000	4.024	4,0	1.524.476	2.639
Costa Rica			1999	15.665		3.841.000	4.078
	San Jose	San Jose	1999	4.192	26,3	1.005.190	4.170
Ecuador[1]			2001	17.057		12.466.000	1.368
	Guayas	Guayaquil	2001	2.338	13,7	2.132.487	1.097
	Pichincha	Quito	2001	1.947	11,4	1.391.247	1.400
El Salvador[2]			1999	12.857		5.908.000	2.176
	San Salvador	San Salvador	1999	4.139	32,2	1.042.274	3.971
Guatemala			1998	15.982		10.715.000	1.492
	Guatemala	Guatemala	1998	4.045	25,3	1.896.504	2.133
Honduras[2]			1999	6.797		6.104.000	1.113
	Francisco Morazán	Tegucigalpa	1999	1.007	14,8	776.747	1.296

Country	Second level (Dept., Province etc.)	Agglomeration	Year	GDP (Millions of constant USD (2000)[3]	% GDP City to National GDP	Population	GDP/ Population (USD constant 2000)
Mexico			2003	650.353		102.672.000	6.334
	Federal District	Mexico City	2003	98.572	15,2	18.692.789	5.273
	Nuevo León	Monterrey	2003	39.761	6,1	3.344.282	11.889
	Jalisco	Guadalajara	2003	29.978	4,6	3.725.078	8.048
	Puebla	Puebla de Zaragoza, Heroica	2003	6.984	1,1	1.636.375	4.268
Nicaragua			2001	4.055		5.177.000	783
	Managua	Managua	2001	926	22,8	942.334	983
Panama			2000	11.621		2.950.000	3.939
	Panama City	Panama	2000	6.649	57,2	1.212.435	5.484
Paraguay[2]			2000	7.095		5.349.000	1.326
	Asunción	Asunción	2000	697	9,8	1.517.181	460
Peru[1]			2001	53.450		26.382.000	2.026
	Lima	Lima	2001	27.105	50,7	7.524.957	3.602
	Arequipa	Arequipa	2001	2.027	3,8	726.104	2.792
	La Libertad	Trujillo	2001	993	1,9	633.947	1.566
Dominican Republic			2002	25.477		8.831.000	2.885
	National District	Santo Domingo	2002	7.603	29,8	1.979.422	3.841
Uruguay[2]			1999	20.901		3.304.000	6.326
	Montevideo	Montevideo	1999	10.228	48,8	1.561.742	6.549
Venezuela[2]			1999	110.863		23.937.000	4.631
	Federal District	Caracas Metropolitan Area	1999	11.444	10,3	2.857.712	4.005

Table 1
Total Gross Domestic Product and Per Inhabitant For All Major Cities in Latin America and the Caribbean, circa 2008

Country	Second level (Dept., Province etc.)	Agglomeration	Year	GDP (Millions of constant USD (2000)[3]	% GDP City to National GDP	Population	GDP/ Population (USD constant 2000)
Argentina[1]			2005	313.783		38.747.000	8.098
	Buenos Aires	Buenos Aires City	2005	84.632	27,0	12.859.882	6.581
	Cordoba	Great Cordoba	2005	11.021	3,5	1.456.843	7.565
	Mendoza	Great Mendoza	2005	7.663	2,4	912.135	8.401
	Tucumán	S. Miguel de Tucumán	2005	3.024	1	768.980	3.933
Bolivia[2]			2007	10.715		9.524.000	1.125
	Santa Cruz	Santa Cruz	2007	899	8,4	1.079.459	833
	La Paz	La Paz and el Alto	2007	680	6,3	1.468.299	463
	Cochabamba	Cochabamba	2007	444	4,1	534.298	831
	Oruro	Oruro	2007	170	1,6	217.202	784

Country	Second level (Dept., Province etc.)	Agglomeration	Year	GDP (Millions of constant USD (2000)[3]	% GDP City to National GDP	Population	GDP/ Population (USD constant 2000)
Brasil[2]			2008	858.286		192.004.000	4.470
	São Paulo	São Paulo	2008	139.130	16,2	19.942.617	6.977
	Rio de Janeiro	Rio de Janeiro	2008	72.043	8,4	12.693.752	5.675
	Minas Gerais	Belo Horizonte	2008	20.358	2,4	4.523.868	4.500
	Rio Grande do Sul	Porto Alegre	2008	19.643	2,3	3.799.260	5.170
	Bahia	Salvador	2008	8.831	1,0	3.274.335	2.697
	Pernambuco	Recife	2008	8.177	1,0	3.584.065	2.282
	Ceará	Fortaleza	2008	6.813	0,8	3.051.513	2.233
Chile			2009	103.620		16.970.000	6.106
	Metropolitan Area	Santiago	2009	43.555	42,0	6.055.671	7.192
	V Valparaíso Region	Valparaíso	2009	4.469	4,3	904.142	4.943
Colombia			2008	139.795		45.011.000	3.106
	Federal District	Bogota	2008	36.624	26,2	7.107.431	5.153
	Antioquía	Medellín	2008	15.875	11,4	3.103.977	5.114
	Valle	Cali	2008	12.325	8,8	2.206.119	5.587
	Atlantico	Barranquilla	2008	5.471	3,9	1.701.780	3.215
Costa Rica			2005	19.483		4.327.000	4.503
	San Jose	San Jose	2005	6.013	30,9	1.081.662	5.559
Ecuador[1]			2007	22.410		13.345.000	1.679
	Guayas	Guayaquil	2007	3.272	14,9	2.302.683	1.421
	Pichincha	Quito	2007	2.569	11,7	1.524.305	1.686
El Salvador[2]			2009	15.812		6.162.000	2.566
	San Salvador	San Salvador	2009	5.091	32,2	1.279.614	3.978
Guatemala			2006	21.034		13.028.000	1.615
	Guatemala	Guatemala	2006	5.237	24,9	2.111.575	2.480
Honduras[2]			2007	10.221		7.181.000	1.423
	Francisco Morazán	Tegucigalpa	2007	1.514,00	14,8	892.647,70	1.696
Mexico			2008	770.643		108.468.000	7.105
	Federal District	Mexico City	2008	116.872	15,2	20.533.181	5.692
	Nuevo León	Monterrey	2008	48.373	6,3	3.606.940	13.411
	Jalisco	Guadalajara	2008	39.483	5,1	4.030.009	9.797
	Puebla	Puebla de Zaragoza, Heroica	2008	10.331	1,3	1.735.199	5.954
Nicaragua			2005	4.600		5.455.000	843
	Managua	Managua	2005	1.041	22,6	1.005.929	1.035
Panama			2005	14.349		3.231.000	4.441
	Panama City	Panama	2005	8.726	60,8	1.255.543	6.950

Country	Second level (Dept., Province etc.)	Agglomeration	Year	GDP (Millions of constant USD (2000)[3]	% GDP City to National GDP	Population	GDP/ Population (USD constant 2000)
Paraguay[2]			2009	9.126		6.349.000	1.437
	Asunción	Asunción	2009	897	9,8	1.621.261	553
Peru[1]			2009	85.030		29.163.000	2.916
	Lima	Lima	2009	44.340	52,1	8.349.996	5.310
	Arequipa	Arequipa	2009	3.393	4,0	810.230	4.187
	La Libertad	Trujillo	2009	1.583	1,9	703.966	2.249
Dominican Republic			2009	36.774		9.770.000	3.764
	National District	Santo Domingo	2009	11.181	30,4	2.173.497	5.144
Uruguay[2]			2009	27.689		3.361.000	8.238
	Montevideo	Montevideo	2009	13.550	48,9	1.637.892	8.273
Venezuela[2]			2008	162.356		28.121.000	5.773
	Federal District	Caracas Metropolitan Area	2008	16.760	10,3	3.473.176	4.825

[1] The employed population is estimated from agglomerations for higher administrative levels which have GDP estimates based on data from the Census of Population and Housing

[2] The employed population of agglomerations is estimated from the average of the two latest available surveys.

[3] Estimations of GDP per country in constant USD obtained from CEPALSTAT-ECLAC (http://websie.eclac.cl/infest/ajax/cepalstat.asp?carpeta=estadisticas).*Fuente: Elaboración propia, sobre la base de datos de Cuentas Económicas Nacionales y Subnacionales, población económicamente activa y población ocupada (Encuestas de Hogares y de los Censos de Población y Vivienda) datos obtenidos de CEPALSTAT y BADEHOG, CEPAL.*

Source: UN-Habitat compilation based on data from National and Sub-National Economic Accounts, economicallyemployed population (Household Survey and the Census of Population and Housing) data obtained from CEPALSTAT and BADEHOG, ECLAC

Table 2
Criteria Used to Estimate GDP For Major Cities in Latin America and the Caribbean

Country	Second level (Dept., Province etc.)	Agglomeration	Year	Estimation Method	Data Source
Argentina	Buenos Aires	Buenos Aires City	1999 and 2005	To estimate the number of employed people in the agglomerations and the departments of Cordoba, Mendoza, Tucumán and the city of Buenos Aires, economically active population forecast references were taken (EAP from CELADE). On the basis of these, the employed population was estimated, assuming the relative importance of the employed population observed in the 2001 Census. Estimates of GDP at the sub-national level were taken from CEPALSTAT's sub-national accounts and national GDP in constant 2000 values. The GDP of the city of Buenos Aires was taken directly from sub-national ECLAC accounts.	1
	Cordoba	Great Cordoba			
	Mendoza	Great Mendoza			
	Tucumán	S. Miguel de Tucumán			
Bolivia	Santa Cruz	Santa Cruz	1999 and 2007	Estimates of GDP at sub-national level were taken from CEPALSTAT's sub-national accounts and national GDP at constant 2000 values. Employed population was estimated for agglomerations and regional departments with known GDPs based on household surveys (HS). For 1999, agglomerations were identified in HS based by the variable 'Context'. In 2007, agglomerations were identified by the variable 'Domain'.	2
	La Paz	La Paz and el Alto			
	Cochabamba	Cochabamba			
	Oruro	Oruro			
Brazil	São Paulo	São Paulo	2002 and 2008	Employed population was estimated for agglomerations and Federal Units (UFs) with known GDPs based on household surveys. GDP estimates are an approximation with their basis in GDP estimates for UFs from the Brazilian Institute of Geography and Statistics (IBGE). For 2002 and 2007, agglomerations were identified in HS based on the variable 'Context'.	2
	Rio de Janeiro	Rio de Janeiro			
	Minas Gerais	Belo Horizonte			
	Rio Grande do Sul	Porto Alegre			
	Bahía	Salvador			
	Pernambuco	Recife			
	Ceará	Fortaleza			
Chile	Metropolitan Area	Santiago	2003 and 2009	Employed population was estimated for agglomerations (Santiago and Valparaiso) and their respective regions with GDP estimates from the household surveys (CASEN). To identify agglomerations, the variables used were 'Areageo' (geographical area) and 'Municipality'. The number of employed for Concepción was not estimated, because of its lack of representation in 2003's CASEN. Estimates of GDP at the sub-national level were taken from CEPALSTAT's Sub-national accounts and national GDP in constant 2000 values	2
	V Valparaíso Region	Valparaíso			
Colombia	Federal District	Bogota	2000 and 2008	Estimates of GDP at the sub-national level were taken from CEPALSTAT's Sub-national accounts and national GDP in constant 2000 values. Employed population was estimated for agglomerations and departments for which GDP was known from household surveys. Survey variables 'Administrative Centre' and 'Department' were used to identify agglomerations.	2
	Antioquía	Medellín			
	Valle	Cali			
	Atlantico	Barranquilla			
Costa Rica	San Jose	San Jose	1999 and 2005	There are no estimates of GDP at the sub-national level. Since this is a country with a high urban concentration in the metropolitan area, GDP was estimated taking national average productivity as a reference point. Household surveys identify and provide estimates of employed population for the major metropolitan area, which is the city of San Jose. Estimates of national GDP (constant 2000 USD) were obtained from CEPALSTAT-Accounts.	2
Ecuador	Guayas	Guayaquil	2001 y 2007	To estimate the number of employed in Guayaquil and Quito, forecasts of economically active population (EAP from CELADE) were taken as a reference point. From this, the employed population was estimated, assuming the relative importance of employed population obtained in the 2001 Census. Estimates of GDP at the sub-national level were taken from CEPALSTAT's Sub-national accounts and national GDP in constant 2000 values	1
	Pichincha	Quito			

Country	Second level (Dept., Province etc.)	Agglomeration	Year	Estimation Method	Data Source
El Salvador	San Salvador	San Salvador	1999 and 2009	There are no estimates of GDP at the sub-national level. Since this is a country with a high urban concentration in the metropolitan area, GDP was estimated taking national average productivity as a reference point. Household surveys identify and provide estimates of employed population for the major metropolitan area, which is the city of San Salvador. Estimates of national GDP (constant 2000 USD) were obtained from CEPALSTAT-Accounts	2
Guatemala	Guatemala	Guatemala	1998 and 2006	There are no estimates of GDP at the sub-national level. Since this is a country with a high urban concentration in the metropolitan area, GDP was estimated taking national average productivity as a reference point. Household surveys identify and provide estimates of employed population for the major metropolitan area, which is the city of Guatemala. Estimates of national GDP (constant 2000 USD) were obtained from CEPALSTAT-Accounts	2
Honduras	Francisco Morazán	Tegucigalpa	1999 and 2007	There are no estimates of GDP at the sub-national level. Since this is a country with a high urban concentration in the metropolitan area, GDP was estimated taking national average productivity as a reference point. Household surveys identify and provide estimates of employed population for the major metropolitan area, which is the city of Tegucigalpa. Estimates of national GDP (constant 2000 USD) were obtained from CEPALSTAT-Accounts	2
Mexico	Federal District	Mexico City	2003 and 2008	To estimate the number of employed in agglomerations, forecasts of economically active population (EAP from CELADE) were taken as a reference point. From this, the employed population was estimated, assuming the relative importance of employed population obtained in the 2001 Census. Estimates of GDP at the sub-national level were taken from CEPALSTAT's Sub-national accounts and national GDP in constant 2000 values.	2
	Nuevo León	Monterrey			
	Jalisco	Guadalajara			
	Puebla	Puebla de Zaragoza, Heroica			
Nicaragua	Managua	Managua	2001 and 2005	There are no estimates of GDP at the sub-national level. Since this is a country with a high urban concentration in the metropolitan area, GDP was estimated taking national average productivity as a reference point. Household surveys identify and provide estimates of employed population for the major metropolitan area, which is the city of Managua. Estimates of national GDP (constant 2000 USD) were obtained from CEPALSTAT-Accounts	2
Panama	Panama City	Panama	2000 and 2005	Estimates of GDP at the sub-national level are from online data from the Ministry of Economy and Finance, Comptroller General of the Republic. Estimates of employed population are estimates obtained from household surveys.	3
Paraguay	Asunción	Asunción	2000 and 2009	There are no estimates of GDP at the sub-national level. Since this is a country with a high urban concentration in the metropolitan area, GDP was estimated taking national average productivity as a reference point. Household surveys identify and provide estimates of employed population for the major metropolitan area, which is the city of Asunción. Estimates of national GDP (constant 2000 USD) were obtained from CEPALSTAT-Accounts	2

Country	Second level (Dept., Province etc.)	Agglomeration	Year	Estimation Method	Data Source
Peru	Lima	Lima	2001 and 2009	To estimate the number of employed in agglomerations, forecasts of economically active population (EAP from CELADE) were taken as a reference point. From this, the employed population was estimated, assuming the relative importance of employed population obtained in the 2001 Census. Estimates of GDP at the sub-national level were taken from CEPALSTAT's Sub-national accounts and national GDP in constant 2000 values.	1
	Arequipa	Arequipa	2001 and 2009		
	La Libertad	Trujillo			
	National District	Santo Domingo			
Uruguay	Montevideo	Montevideo	1999 and 2009	There are no estimates of GDP at the sub-national level. Since this is a country with a high urban concentration in the metropolitan area, GDP was estimated taking national average productivity as a reference point. Household surveys identify and provide estimates of employed population for the major metropolitan area, which is the city of Santo Domingo. Estimates of national GDP (constant 2000 USD) were obtained from CEPALSTAT-Accounts	2
Venezuela (Rep. Bolivariana)	Federal District	Caracas Metropolitan Area	1999 and 2008	There are no estimates of GDP at the sub-national level. Since this is a country with a high urban concentration in the metropolitan area, GDP was estimated taking national average productivity as a reference point. Household surveys identify and provide estimates of employed population for the major metropolitan area, which is the city of Montevideo. Estimates of national GDP (constant 2000 USD) were obtained from CEPALSTAT-Accounts	2

Data sources:

1. *1 National Census of Population and Housing. Projections of Economically Active Population (CELADE). National and sub-national gross domestic product CEPALSTAT, ECLAC.*
2. *2 Household surveys of Latin America and the Caribbean countries, BADEHOG, ECLAC. National and sub-national gross domestic product CEPALSTAT, ECLAC.*
3. *3 Ministry of Economy and Finance, Comptroller General of the Republic. Household surveys of Latin America and the Caribbean countries, BADEHOG, ECLAC. National and sub-national gross domestic product CEPALSTAT, ECLAC.*

Annex 5
Total Population of Latin American and Caribbean Countries, the Proportion of Urban Population and Total Urban Population

Country, territory	Total Population (Thousands)					
	1970	1980	1990	2000	2010	2020
Anguilla	6	7	8	11	15	18
Antigua and Barbuda	69	72	62	77	89	97
Netherlands Antilles	159	174	191	181	201	210
Argentina	24003	28154	32498	36939	40666	44304
Aruba	57	61	63	91	107	111
Bahamas	170	210	256	305	346	384
Barbados	239	249	260	252	257	262
Belize	123	144	190	252	313	375
Bolivia	4212	5356	6671	8317	10031	11638
Brazil	95991	121618	149570	174174	195423	209051
Chile	9574	11181	13191	15419	17135	18639
Colombia	21333	26891	33204	39773	46300	52278
Costa Rica	1822	2349	3078	3931	4640	5250
Cuba	8715	9835	10587	11087	11204	11193
Dominica	65	73	69	68	67	67
Ecuador	5972	7964	10278	12310	13775	15376
El Salvador	3742	4663	5330	5945	6194	6618
Granada	94	89	96	101	104	108
Guadalupe	320	327	386	429	467	484
Guatemala	5420	7016	8910	11231	14377	18091
Guyana	709	776	749	756	761	745
French Guiana	48	68	116	165	231	292
Haiti	4713	5691	7108	8648	10188	11722
Honduras	2691	3634	4901	6230	7616	9136
Cayman Islands	10	17	26	40	57	61
Falkland Islands	2	2	2	3	3	3
Turks and Caicos	6	8	12	19	33	36
British Virgin Islands	10	11	17	21	23	25
U.S. Virgin Islands	64	98	103	109	109	106
Jamaica	1869	2133	2364	2568	2730	2834
Martinique	325	326	359	385	406	415
Mexico	51910	68872	83404	99531	110645	119682
Montserrat	12	12	11	5	6	6
Nicaragua	2400	3250	4138	5101	5822	6682
Panama	1507	1951	2413	2951	3508	4027
Paraguay	2485	3199	4250	5350	6460	7533
Peru	13195	17328	21776	26004	29496	32881
Puerto Rico	2716	3197	3528	3819	3998	4135
Dominican Rep.	4597	5927	7374	8830	10225	11451
Saint Kitts and Nevis	45	43	41	46	52	59
S. Vincent and Grenadines	90	100	107	108	109	110
Saint Lucia	104	118	138	157	174	190
Suriname	372	366	407	467	524	568
Trinidad and Tobago	971	1082	1219	1295	1344	1384
Uruguay	2810	2916	3110	3321	3372	3493
Venezuela	10724	15096	19741	24408	29044	33412
LAC	286472	362655	442310	521228	588649	645543
Caribbean	25426	29860	34384	38650	42312	45470
South America	191430	240916	295562	347407	393221	430212
Central America	69615	91878	112363	135171	153115	169861

Country, territory	Percentage of Urban Population					
	1970	1980	1990	2000	2010	2020
Anguilla	100	100	100	100	100	100
Antigua and Barbuda	33,82	34,62	35,43	32,13	30,34	32,51
Netherlands Antilles	75,94	81,24	85,60	90,17	93,18	94,73
Argentina	78,88	82,89	86,98	90,13	92,39	93,79
Aruba	50,62	50,47	50,32	46,70	46,87	48,78
Bahamas	66,73	73,10	79,84	82,04	84,10	86,06
Barbados	37,54	39,58	32,72	38,35	44,47	51,07
Belize	50,96	49,37	47,47	47,77	52,25	56,92
Bolivia	39,78	45,45	55,58	61,83	66,55	71,02
Brazil	55,91	65,47	73,92	81,19	86,53	89,50
Chile	75,23	81,24	83,27	85,95	89,00	90,98
Colombia	54,82	62,12	68,28	72,08	75,07	78,04
Costa Rica	38,83	43,10	50,68	59,04	64,42	69,40
Cuba	60,27	68,11	73,36	75,60	75,23	75,60
Dominica	46,89	63,41	67,72	67,18	67,24	69,39
Ecuador	39,28	46,96	55,09	60,30	66,95	72,53
El Salvador	39,40	44,06	49,23	58,91	64,31	69,25
Granada	32,21	32,92	33,43	35,87	39,29	44,46
Guadalupe	95,07	97,98	98,59	98,40	98,41	98,48
Guatemala	35,55	37,40	41,12	45,13	49,46	54,68
Guyana	29,43	30,49	29,58	28,69	28,60	31,32
French Guiana	67,43	70,76	74,52	75,08	76,35	78,61
Haiti	19,76	20,54	28,51	35,60	52,09	64,37
Honduras	28,90	34,87	40,46	45,46	51,60	57,60
Cayman Islands	100	100	100	100	100	100
Falkland Islands	54,04	58,70	74,15	67,61	73,64	78,23
Turks and Caicos	51,11	55,26	74,34	84,55	93,26	96,45
British Virgin Islands	16,64	22,74	37,81	39,44	41,00	45,22
U.S. Virgin Islands	69,59	80,15	87,69	92,63	95,27	96,45
Jamaica	41,32	46,74	49,44	51,81	52,01	53,67
Martinique	61,02	79,61	86,28	89,71	89,05	89,10
Mexico	59,02	66,34	71,42	74,72	77,83	80,68
Montserrat	11,43	12,55	12,55	11,02	14,25	16,90
Nicaragua	47,03	49,94	52,34	54,74	57,32	61,01
Panama	33,82	34,62	35,43	32,13	30,34	32,51
Paraguay	75,94	81,24	85,60	90,17	93,18	94,73
Peru	78,88	82,89	86,98	90,13	92,39	93,79
Puerto Rico	50,62	50,47	50,32	46,70	46,87	48,78
Dominican Rep.	66,73	73,10	79,84	82,04	84,10	86,06
Saint Kitts and Nevis	37,54	39,58	32,72	38,35	44,47	51,07
S. Vincent and Grenadines	50,96	49,37	47,47	47,77	52,25	56,92
Saint Lucia	39,78	45,45	55,58	61,83	66,55	71,02
Suriname	55,91	65,47	73,92	81,19	86,53	89,50
Trinidad and Tobago	75,23	81,24	83,27	85,95	89,00	90,98
Uruguay	54,82	62,12	68,28	72,08	75,07	78,04
Venezuela	38,83	43,10	50,68	59,04	64,42	69,40
LAC	60,27	68,11	73,36	75,60	75,23	75,60
Caribbean	46,89	63,41	67,72	67,18	67,24	69,39
South America	59,79	67,40	74,06	79,67	83,98	86,74
Central America	53,77	60,22	64,93	68,76	72,00	75,04

Country, territory	Urban population					
	1970	1980	1990	2000	2010	2020
Anguilla	6	7	8	11	15	18
Antigua and Barbuda	23	25	22	25	27	32
Netherlands Antilles	121	141	163	163	187	199
Argentina	18.933	23.336	28.268	33.291	37.572	41.554
Aruba	29	31	32	42	50	54
Bahamas	113	154	204	250	291	331
Barbados	90	99	85	97	114	134
Belize	63	71	90	120	164	213
Bolivia	1.675	2.434	3.707	5.143	6.675	8.265
Brazil	53.667	79.621	110.565	141.416	169.098	187.104
Chile	7.202	9.084	10.984	13.252	15.251	16.958
Colombia	11.694	16.705	22.670	28.666	34.758	40.800
Costa Rica	707	1.012	1.560	2.321	2.989	3.643
Cuba	5.252	6.698	7.767	8.382	8.429	8.462
Dominica	30	46	47	46	45	47
Ecuador	2.346	3.740	5.662	7.423	9.222	11.152
El Salvador	1.474	2.054	2.624	3.503	3.983	4.583
Granada	30	29	32	37	41	48
Guadalupe	304	320	381	422	460	476
Guatemala	1.927	2.624	3.664	5.068	7.111	9.893
Guyana	209	237	222	217	218	233
French Guiana	32	48	87	124	177	229
Haiti	931	1.169	2.026	3.079	5.307	7.546
Honduras	778	1.267	1.983	2.832	3.930	5.263
Cayman Islands	10	17	26	40	57	61
Falkland Islands	1	1	2	2	2	2
Turks and Caicos	3	4	9	16	31	35
British Virgin Islands	2	3	6	8	10	11
U.S. Virgin Islands	45	79	91	101	104	102
Jamaica	772	997	1.169	1.330	1.420	1.521
Martinique	199	260	310	345	362	370
Mexico	30.638	45.689	59.566	74.372	86.113	96.558
Montserrat	1	1	1	1	1	1
Nicaragua	1.129	1.623	2.166	2.792	3.337	4.077
Panama	718	984	1.300	1.941	2.624	3.233
Paraguay	921	1.334	2.069	2.960	3.972	5.051
Peru	7.574	11.190	15.004	18.994	22.688	26.389
Puerto Rico	1.584	2.139	2.546	3.614	3.949	4.112
Dominican Rep.	1.848	3.039	4.072	5.452	7.074	8.560
Saint Kitts and Nevis	15	15	14	15	17	21
S. Vincent and Grenadines	28	36	44	49	54	60
Saint Lucia	25	31	41	44	49	58
Suriname	171	201	244	303	364	418
Trinidad and Tobago	115	118	104	140	186	250
Uruguay	2.315	2.490	2.767	3.033	3.119	3.264
Venezuela	7.706	11.954	16.638	21.940	27.113	31.755
LAC	163.459	233.158	311.042	393.420	468.757	533.147
Caribbean	11.578	15.459	19.201	23.708	28.278	32.510
South America	114.448	162.374	218.889	276.764	330.228	373.175
Central America	37.433	55.325	72.952	92.948	110.251	127.463

Source: United Nations, Department of Economic and Social Affairs, Population Division. World Urbanization Prospects : The 2009 Revision. Available at http://esa.un.org/unpd/wup/index.htm

Annex 6
Annual Average Variation in Urban Population per Country or Territory, 1970-2020

Country/Territorio	1970-1975	1975-1980	1980-1985	1985-1990	1990-1995	1995-2000	2000-2005	2005-2010	2010-2015	2015-2020
Anguila	0,68	0,18	-0,10	4,49	3,25	2,42	4,06	2,47	1,67	1,16
Antigua and Barbuda	2,19	-0,86	-1,07	-1,56	1,07	1,36	0,71	0,91	1,39	1,90
Antillas Neerlandesas	1,59	1,51	1,47	1,43	0,55	-0,58	1,02	1,75	0,81	0,39
Argentina	2,13	2,05	1,93	1,90	1,73	1,54	1,23	1,19	1,07	0,94
Aruba	0,73	0,54	1,14	-0,38	4,16	1,55	2,12	1,33	0,64	0,77
Bahamas	3,09	3,00	3,08	2,61	2,19	1,87	1,57	1,45	1,35	1,23
Barbados	1,13	0,77	-1,48	-1,49	1,49	1,06	1,63	1,72	1,65	1,51
Belize	1,41	1,13	2,37	2,39	2,98	2,77	3,30	2,86	2,73	2,58
Bolivia (Estado Plurinacional)	3,20	4,27	4,27	4,14	3,63	2,91	2,73	2,48	2,25	2,02
Brazil	4,05	3,83	3,56	3,01	2,53	2,39	2,06	1,52	1,14	0,88
Chile	2,51	2,13	1,93	1,86	2,03	1,72	1,50	1,31	1,15	0,97
Colombia	3,64	3,49	3,27	2,84	2,52	2,18	2,00	1,86	1,68	1,52
Costa Rica	3,64	3,53	3,89	4,76	4,36	3,58	2,83	2,23	2,10	1,86
Cuba	2,87	2,00	1,31	1,65	0,85	0,67	0,19	-0,08	0,01	0,07
Dominica	4,28	4,19	0,43	-0,30	-0,06	-0,32	-0,25	-0,19	0,31	0,50
Ecuador	4,43	4,90	4,41	3,89	3,03	2,38	2,26	2,08	2,03	1,78
El Salvador	3,52	3,11	2,53	2,37	3,28	2,50	1,29	1,29	1,37	1,43
Granada	-0,21	-0,46	2,38	-0,59	1,47	1,11	0,92	1,36	1,59	1,65
Guadalupe	0,72	0,31	1,75	1,72	0,90	1,16	1,19	0,51	0,39	0,32
Guatemala	3,36	2,82	3,38	3,29	3,27	3,22	3,37	3,41	3,41	3,20
Guyana	1,04	1,46	-0,44	-0,87	-0,05	-0,37	-0,05	0,12	0,49	0,89
Guyana Francesa	3,55	4,44	5,61	6,09	3,59	3,57	4,16	2,91	2,68	2,54
Haiti	2,39	2,16	4,79	6,22	4,69	3,68	5,97	4,92	3,91	3,13
Honduras	4,98	4,79	4,64	4,31	3,81	3,31	3,38	3,17	3,06	2,78
Cayman Islands	5,39	5,55	3,46	4,68	4,61	4,10	5,27	1,48	0,89	0,74
Islas Malvinas	0,09	0,17	1,84	4,51	1,58	3,78	1,45	1,19	0,93	0,69
Islas Turcos y Caicos	3,75	3,59	8,05	6,46	7,12	5,28	10,80	2,34	1,57	1,08
British Virgin Islands	4,48	4,47	8,79	9,08	3,04	2,16	1,63	1,66	1,75	1,87
U.S. Virgin Islands	7,40	4,01	2,24	0,52	1,34	0,76	0,55	0,15	-0,11	-0,31
Jamaica	2,74	2,36	2,18	1,00	1,31	1,28	0,85	0,45	0,61	0,77
Martinica	3,27	2,09	1,89	1,64	1,09	1,09	0,58	0,33	0,24	0,22
Mexico	4,27	3,72	2,68	2,62	2,42	2,02	1,55	1,38	1,23	1,05
Montserrat	1,21	1,16	-1,02	-1,07	-0,47	-17,59	6,61	2,24	2,37	2,58
Nicaragua	3,78	3,48	3,12	2,65	2,83	2,25	1,78	1,79	2,05	1,95
Panama	3,27	3,03	2,84	2,72	4,20	3,83	3,29	2,74	2,27	1,90
Paraguay	3,43	3,97	4,45	4,34	3,81	3,35	3,08	2,80	2,54	2,27
Peru	4,15	3,66	3,08	2,78	2,48	2,23	1,90	1,66	1,57	1,45
Puerto Rico	3,04	2,96	1,76	1,72	4,73	2,28	1,11	0,66	0,47	0,33
Dominican Republic	5,25	4,69	3,25	2,60	2,78	3,06	2,77	2,44	2,07	1,74
San Kitts y Nevis	0,25	-0,03	-0,91	-0,98	0,62	0,76	0,93	1,41	1,85	2,19
San Vicente y las Granadinas	2,69	2,52	2,24	1,98	1,05	0,78	0,99	1,02	1,03	1,17
Santa Lucía	2,10	2,49	2,40	2,78	1,41	0,16	0,74	1,30	1,64	1,97
Suriname	1,05	2,19	1,45	2,42	2,18	2,14	2,05	1,61	1,45	1,30
Trinidad and Tobago	-0,04	0,42	-0,81	-1,64	3,14	2,85	2,78	2,91	2,97	2,93
Uruguay	0,39	1,07	1,07	1,04	1,07	0,76	0,16	0,40	0,45	0,47
Venezuela (Rep. Bolivariana)	4,51	4,27	3,43	3,18	2,96	2,57	2,26	1,97	1,70	1,46
ALC	3,67	3,43	3,01	2,75	2,49	2,21	1,90	1,60	1,38	1,19
Caribe	3,16	2,62	2,12	2,22	2,32	1,90	1,90	1,63	1,48	1,31
Suramérica	4,16	3,65	2,79	2,74	2,63	2,22	1,78	1,63	1,53	1,37
Centroamérica	3,56	3,43	3,17	2,81	2,46	2,23	1,94	1,59	1,33	1,12

Source: United Nations, Department of Economic and Social Affairs, Population Division. World Urbanization Prospects : The 2009 Revision. Available at http://esa.un.org/unpd/wup/index.htm

Annex 7
Population of Agglomerations Equal to or Larger than 750,000 inhabitants in 2009, per Country. 1970-2020 (Thousands of Inhabitants)

Country	Urban Agglomeration	1970	1980	1990	2000	2010	2020
Argentina	Buenos Aires	8.105	9.422	10.513	11.847	13.074	13.606
	Córdoba	810	1.010	1.200	1.348	1.493	1.601
	Mendoza	473	608	759	838	917	990
	Rosario	816	953	1.084	1.152	1.231	1.322
	San Miguel de Tucumán	365	494	611	722	831	899
Bolivia	La Paz	600	809	1.062	1.390	1.673	2.005
	Santa Cruz	166	324	616	1.054	1.649	2.103
Brazil	Aracaju	183	293	453	606	782	883
	Baixada Santista[1]	625	949	1.184	1.468	1.819	2.014
	Belém	601	827	1.129	1.748	2.191	2.427
	Belo Horizonte	1.485	2.441	3.548	4.659	5.852	6.420
	Brasilia	525	1.293	1.863	2.746	3.905	4.433
	Campinas	540	1.109	1.693	2.264	2.818	3.109
	Cuiabá	100	264	510	686	772	843
	Curitiba	651	1.310	1.829	2.494	3.462	3.913
	Florianópolis	150	326	503	734	1.049	1.210
	Fortaleza	867	1.488	2.226	2.875	3.719	4.130
	Goiânia	375	737	1.132	1.635	2.146	2.405
	Great São Luís	263	445	672	1.066	1.283	1.415
	Great Vitória	339	716	1.052	1.398	1.848	2.078
	João Pessoa	289	453	652	827	1.015	1.129
	Londrina	200	345	491	613	814	925
	Maceió	278	420	660	952	1.192	1.329
	Manaus	281	604	955	1.392	1.775	1.979
	Natal	288	467	692	910	1.316	1.519
	North/N.East Catarinense[2]	205	378	603	815	1.069	1.207
	Porto Alegre	1.398	2.133	2.934	3.505	4.092	4.428
	Recife	1.638	2.122	2.690	3.230	3.871	4.219
	Rio de Janeiro	6.637	8.583	9.595	10.803	11.950	12.617
	Salvador	1.069	1.683	2.331	2.968	3.918	4.370
	São Paulo	7.620	12.089	14.776	17.099	20.262	21.628
	Teresina	195	390	614	789	900	984
Chile	Santiago	2.647	3.721	4.616	5.275	5.952	6.408
	Valparaíso	532	635	733	803	873	946
Colombia	Barranquilla	691	961	1.229	1.531	1.867	2.145
	Bogota	2.383	3.525	4.740	6.356	8.500	10.129
	Bucaramanga	325	473	650	855	1.092	1.303
	Cali	851	1.192	1.552	1.950	2.401	2.800
	Cartagena	274	402	561	737	962	1.158
	Cúcuta	206	342	506	632	774	910
	Medellín	1.260	1.731	2.135	2.724	3.594	4.294
Costa Rica	San Jose	359	526	737	1.032	1.461	1.799
Cuba	La Habana	1.779	1.913	2.108	2.187	2.130	2.095
Dominican Republic	Santo Domingo	687	1.210	1.522	1.813	2.180	2.552
Ecuador	Guayaquil	719	1.120	1.572	2.077	2.690	3.153
	Quito	501	780	1.088	1.357	1.846	2.188
El Salvador	San Salvador	500	701	970	1.248	1.565	1.789
Guatemala	Guatemala City	660	749	803	908	1.104	1.481
Haiti	Port-au-Prince	460	701	1.134	1.693	2.143	2.868
Honduras	Tegucigalpa	223	371	578	793	1.028	1.339

Mexico	Aguascalientes	185	295	552	734	926	1.039
	Chihuahua	287	413	539	683	840	939
	Mexico City	8.769	13.010	15.312	18.022	19.460	20.476
	Juárez City	412	546	809	1.225	1.394	1.528
	Culiacán	172	306	606	749	836	918
	Guadalajara	1.506	2.269	3.011	3.703	4.402	4.796
	Hermosillo	180	298	454	616	781	878
	León de los Aldamas	479	724	961	1.290	1.571	1.739
	Mérida	269	456	664	848	1.015	1.127
	Mexicali	266	343	607	770	934	1.040
	Monterrey	1.267	1.992	2.594	3.266	3.896	4.253
	Puebla	645	1.140	1.686	1.907	2.315	2.551
	Querétaro	116	218	561	795	1.031	1.160
	Saltillo	165	286	491	643	801	897
	San Luis Potosí	303	472	665	858	1.049	1.168
	Tampico	304	470	563	659	761	842
	Tijuana	289	437	760	1.287	1.664	1.861
	Toluca de Lerdo	158	599	835	1.417	1.582	1.725
	Torreón	447	690	882	1.014	1.199	1.325
Nicaragua	Managua	366	525	735	887	944	1.103
Panama	Panama City	455	613	847	1.072	1.378	1.652
Paraguay	Asunción	552	770	1.091	1.507	2.030	2.505
Peru	Arequipa	274	428	564	678	789	903
	Lima	2.980	4.438	5.837	7.294	8.941	10.145
Puerto Rico	San Juan	915	1.244	1.539	2.237	2.743	2.763
Uruguay	Montevideo	1.362	1.454	1.546	1.605	1.635	1.653
Venezuela	Barquisimeto	384	583	742	946	1.180	1.350
	Caracas	2.060	2.575	2.767	2.864	3.090	3.467
	Maracaibo	670	923	1.303	1.724	2.192	2.488
	Maracay	246	456	760	898	1.057	1.208
	Valencia	412	709	1.053	1.392	1.770	2.014

Notes:
(1) Including Santos.
(2) Including Joinville.
Years refer to July, 1st.

Source: United Nations Department of Economic and Social Affairs, Population Division. World Urbanization Prospects : The 2009 Revision. Available at http://esa.un.org/unpd/wup/index.htm

Annex 8
Population in Poverty and Extreme Poverty per Geographical Area (Percentage of Total Population in Each Geographic Area)

Country	Year circa 1990	National poverty	Urban poverty	National indigence	Urban indigence
Argentina[a, b, c]	1994	…	16,1	…	3,4
Bolivia	1989	…	52,6	…	23,0
Brazil	1990	48,0	41,2	23,4	16,7
Chile	1990	38,6	38,5	13,0	12,5
Colombia[d]	1991	56,1	52,7	26,1	20,0
Costa Rica	1990	26,3	24,9	10,1	6,9
Ecuador	1990	…	62,1	…	26,2
El Salvador	1995	54,2	45,8	21,7	14,9
Guatemala	1989	69,4	53,6	42,0	26,4
Honduras	1990	80,8	70,4	60,9	43,6
Mexico	1989	47,7	42,1	18,7	13,1
Nicaragua	1993	73,6	66,3	48,4	36,8
Panama	1991	…	31,0	…	10,8
Paraguay	1994		49,9		18,8
Peru[e,f]	…	…	…	…	…
Dominican Rep.	…	…	…	…	…
Uruguay	1990	…	17,9	…	3,4
Venezuela[g]	1990	39,8	38,6	14,4	13,1
América Latina		48,3	41,4	22,5	15,3

Country	Year circa 1999	National poverty	Urban poverty	National indigence	Urban indigence
Argentina[a, b, c]	1999	…	23,7	…	6,6
Bolivia	1999	60,6	48,7	36,4	19,8
Brazil	2001	37,5	34,1	13,2	10,4
Chile	2000	20,2	19,7	5,6	5,1
Colombia[d]	1999	54,9	50,6	26,8	21,9
Costa Rica	1999	20,3	18,1	7,8	5,4
Ecuador	1999	…	63,5	…	31,3
El Salvador	2002	48,9	39,4	22,1	14,3
Guatemala	1999	60,2	45,3	30,9	18,1
Honduras	1999	79,7	71,7	56,8	42,9
Mexico	2000	41,1	32,3	15,2	6,6
Nicaragua	2001	69,4	63,9	42,5	33,5
Panama	1999	…	19,5	…	5,5
Paraguay	2001	59,7	50,1	31,3	18,3
Peru[e,f]	2001	54,7	42,0	24,4	9,9
Dominican Rep.	2002	47,1	42,4	20,7	16,5
Uruguay	1999	…	9,4	…	1,8
Venezuela[g]	1999	49,4	…	21,7	…
América Latina		43,9	37,2	18,7	12,1

Country	Year circa 2009	National poverty	Urban poverty	National indigence	Urban indigence
Argentina[a, b, c]	2009	...	11,3	...	3,8
Bolivia	2007	54,0	42,4	31,2	16,2
Brazil	2009	24,9	22,1	7,0	5,5
Chile	2009	11,5	11,7	3,6	3,5
Colombia[d]	2009	45,7	39,7	16,5	12,4
Costa Rica	2009	18,9	18,5	6,9	5,4
Ecuador	2009	42,2	40,2	18,1	15,5
El Salvador	2009	47,9	42,3	17,3	12,8
Guatemala	2006	54,8	42,0	29,1	14,8
Honduras	2007	68,9	56,9	45,6	26,2
Mexico	2008	34,8	29,2	11,2	6,4
Nicaragua	2005	61,9	54,4	31,9	20,8
Panama	2009	26,4	16,3	11,1	4,6
Paraguay	2009	56,0	48,2	30,4	19,0
Peru[e,f]	2009	34,8	21,1	11,5	2,8
Dominican Rep.	2009	41,1	39,3	21,0	19,4
Uruguay	2009	10,4	10,7	1,9	2,0
Venezuela[g]	2008	27,6	...	9,9	...
América Latina		33,1	27,8	13,3	8,8

Notes:
[a] Data 1994, 20 urban agglomerations.
[b] Data 1999, 28 urban agglomerations.
[c] Data 2009, 31 urban agglomerations.
[d] After 2002, the survey sample design means the figures for urban and rural areas are not strictly comparable with previous years.
[e] Figures from the National Institute of Statistics and Computing (INEI) of Peru
[f] Figures from 2004 onwards are not strictly comparable with previous figures due to methodological changes made by INEI.
[g] After 1997 the survey's sample design did not distinguish between urban and rural areas. Therefore, the figures refer to the national total.
Data from Belize, Brazil, Costa Rica, Mexico and Panama, data for the year 2000, Argentina, Bolivia, Ecuador, Honduras, Saint Lucia and Venezuela for 2001, Chile, Paraguay and the Dominican Republic for 2002, Nicaragua for 2005, and Peru for 2007.

Source: Economic Commission for Latin America and the Caribbean (ECLAC), Statistics and Economic Projections Division. Social Statistics Unit, on the basis of special tabulations of household surveys in respective countries.

Annex 9
Total Urban Population Relative to Precarious Areas by Country

Countries	Urban Population in Precarious Areas (Thousands)					Proportion of Urban Population (Percentage)				
	1990	1995	2000	2005	2007	1990	1995	2000	2005	2007
Argentina	8.644	9.790	10.940	9.278	8.530	30,5	31,7	32,9	26,2	23,5
Belize				65					47,3	
Bolivia	2.304	2.589	2.794	2.972	3.030	62,2	58,2	54,3	50,4	48,8
Brazil	40.998	42.856	44.601	45.613	45.708	36,7	34,1	31,5	29,0	28,0
Chile				1.285					9,0	
Colombia	7.433	7.224	6.711	5.920	5.520	31,2	26,8	22,3	17,9	16,1
Costa Rica				291					10,9	
Dominican Republic	1.123	1.131	1146	1110	1079	27,9	24,4	21,0	17,6	16,2
Ecuador				1.786					21,5	
El Salvador				1.152					28,9	
French Guyana				15					10,5	
Grenada				2					6,0	
Guadalupe				23					5,4	
Guatemala	2.145	2.300	2.438	2.572	2.619	58,6	53,3	48,1	42,9	40,8
Guyana				70					33,7	
Haiti	1.893	2.385	2.851	2.786	3.065	93,4	93,4	93,4	70,1	70,1
Honduras				1.109					34,9	
Jamaica				855					60,5	
Mexico	13.859	14.484	14.830	11.457	11.801	23,1	21,5	19,9	14,4	14,4
Nicaragua	1.931	1.861	1.678	1.390	1.439	89,1	74,5	60,0	45,5	45,5
Panama				526					23,0	
Paraguay				608					17,6	
Peru	9.958	9.439	8.382	7.001	7.180	66,4	56,3	46,2	36,1	36,1
Santa Lucía				5					11,9	
Suriname				13					3,9	
Trinidad and Tobago				40					24,7	
Venezuela				7896					32,0	

Source: UN-Habitat, calculated from data on households in countries including the four components of precarious areas (improved water, improved sanitation, durable housing and sufficient living space).

Annex 10
Occupied Housing Units by Type of Tenure in Urban Areas (Number of Dwellings)

Countries	Total	Property Owners	Tenants	Other forms	Population in thousands (2000)	Total (every 1000 inhab.).	Owner (every 1000 inhab.)	Tenants (every 1000 inhab.)	Other forms (every 1000 inhab.)
Argentina[a, b, c]	9.099.596	6.927.543	1.086.000	1.086.053	32.963	276	210	33	33
Belize[d]	25.909	13.726	8.992	3.191	120	216	114	75	27
Bolivia	1.210.962	656.636	295.691	258.635	5.209	232	126	57	50
Brazil	37.515.563	28.138.866	6.105.911	3.270.786	141.837	264	198	43	23
Chile	3.359.734	2.444.122	664.213	251.399	13.130	256	186	51	19
Costa Rica	566.019	400.610	121.165	44.244	2.303	246	174	53	19
Ecuador	1.819.389	1.096.119	581.851	141.419	7.426	245	148	78	19
Haiti (2003)	74.390	39.026	17.776	17.588	3.258	23	12	5	5
Honduras[b,f]	597.117	406.533	154.670	35.914	2.820	212	144	55	13
Mexico (2000)	16.615.929	12.063.978	2.791.357	1.760.594	74.553	223	162	37	24
Nicaragua[e]	560.025	476.291	41.226	42.508	2.834	198	168	15	15
Panama (2000)	442.893	254.015	86.722	102.156	1.835	241	138	47	56
Paraguay[e]	643.920	473.863	103.427	66.630	2.960	218	160	35	23
Peru	4.789.588	3.243.530	905.363	640.695	18.439	260	176	49	35
Dominican Rep.	1.398.614	782.755	512.577	103.282	5.392	259	145	95	19
Santa Lucía	13.414	7.996	4.586	832	44	305	182	104	19
Venezuela[b]	4.669.961	3.629.989	631.476	408.496	22.072	212	164	29	19

Notes:
[a] Households living on the streets are excluded from the census.
[b] Total number of households.
[c] Corresponds to an urban population of 2,000 people or more.
[d] Total number of houses.
[e] Includes category "not answered".
[f] Excluding category N.A.
Data from Belize, Brazil, Costa Rica, Mexico and Panama, for the year 2000, Argentina, Bolivia, Ecuador, Honduras, Saint Lucia and Venezuela for 2001, Chile, Paraguay and the Dominican Republic for 2002, Nicaragua for 2005, and Peru for 2007.

Sources: CELADE: Latin American and Caribbean Demographic Centre, Population Division ECLAC: Database Census of Population and Housing. For Argentina, INDEC-Argentina, National Institute of Statistics and Censuses of Argentina: Census Database online.

Annex 11
Urban Populations with Access to Improved Water and Sanitation (% Urban Population)

Countries	Water					Sanitation			
	Improved			Not Improved		Improved	Not Improved		
	Total Improved (%)	Piped in Houses (%)	Other Improved (%)	Surface water (%)	Others Not improved (%)	Improved (%)	Shared (%)	Others Not Improved (%)	Open-air Defecation (%)
Antigua and Barbuda	95	73	22			98			
Argentina	98	83	15	0	2	91			
Aruba	100	100	0						
Bahamas	98					100			
Barbados	100	100	0			100			
Belize	98	87	11	0	2	93	7	0	0
Bolivia (Est. Plu.)	96	95	1	0	4	35	46	11	8
Brazil	100	96	4	0	0	85	1	13	1
Cayman Islands	96	95	1			96			
Chile	99	99	0	0	1	98			0
Colombia	99	92	7	0	1	82	15	1	2
Costa Rica	100	100	0	0	0	95	4	1	0
Cuba	96	82	14	0	4	94	5	1	0
Dominica	96	78	18			80			18
Dominican Rep.	87	80	7	0	13	87	10	1	2
Ecuador	96	93	3	0	4	96	3	0	1
El Salvador	94	80	14	0	6	89	8	1	2
Granada	97					96			
Guatemala	98	96	2	0	2	87	10	1	2
Guyana	98	79	19	0	2	88	8	4	0
Haiti	85	15	70	4	11	24	24	43	9
Honduras	95	95	0	0	5	85	7	7	1
Jamaica	98	91	7	0	2	78	20	1	1
Mexico	97	93	4	0	3	87	11	2	0
Nicaragua	98	89	9	0	2	63	9	24	4
Panama	97	93	4		3	75	11		
Paraguay	99	85	14	0	1	90	4	5	1
Peru	91	83	8	1	8	81	9	9	1
Saint Kitts y Nevis	99					96			
Santa Lucía	98	85	13			71	3	17	9
Suriname	97	78	19	0	3	90	9	1	0
Trinidad and Tobago	98	88	10			92	7		
Islas Turcos y Caicos	100					98			
Uruguay	100	98	2	0	0	100	0	0	0
Venezuela (Rep. Boliv.)	94	90	4	1	5	94			5
Total	**98**	**92**	**6**	**0**	**2**	**84**	**7**	**8**	**1**

Source: Joint Monitoring Programme for Water Supply and Sanitation. Note: Data refer to 2010 except in the case of Antigua and Barbuda, Argentina, Dominica, and Venezuela, which are from 2007, and Panama, dating from 2009.

Annex 12
Urban Information Management: Towards a Cities Information Platform

The State of Latin American and Caribbean Cities 2012 report involved an intense schedule of collection, processing and consolidation of data from diverse sources and fields that were often divergent and fragmented. The experience revealed several limitations (for example, in terms of coverage or level of disaggregation) and pointed to future information needs.

Some of the data collected was used in its original format, others had to be reprocessed, whilst some were used for primary research by the team.

Table 1 shows a list of institutions and agencies that provided comparable information from multiple fields, while Table 2 brings together more specialized sources.

Table 1
'Multi-theme' Data Sources

Source	Institution	Level of disaggregation, Primary Sources, Periodicity and Coverage	Level of disaggregation, Primary Sources, Periodicity and Coverage
CEPALSTATS / Statistical Yearbook Platform	ECLAC	Urban. Various sources	Intensive use in various sections of the report
DEPUALC Database and Associated Cartographic Base	CELADE-CEPAL	Agglomerations, census data	Population, basic services, micro processing and direct geo-referencing
Global Urban Indicators	UN-Habitat	Urban agglomerations (over 750,000 pop.) Several sources, including primary surveys	Inequality (GINI) and informal settlements
Word Urbanization Prospects	UNDESA	Urban agglomerations (over 750,000 pop.). Census and forecasts	Population and urbanization
World Development Indicators	World Bank	Urban. Various sources	Economic data
Caricom Capacity Development Programme – CCDP	CARICOM	Support for national censuses and promotion of results	Defining the urban area
SEDLAC, socio-Economic Data Base for LAC	CEDLAS, Uni. de La Plata and World Bank	Primarily national. Household surveys	Validation
Social Panorama of Latin America (ECLAC)	ECLAC	Urban. Censuses, household surveys, expenditure data	Labour indicators, poverty and indigence
Official site MDGs	UN	National and exceptionally urban	Environment, basic services (validation)
Statistics Bulletin	CENAC	Agglomerations	Housing stock (validation)

Table 2
'Specialized' Data Sources

Source	Institution	Level of Disaggregation, Primary Sources, Periodicity and Coverage	Use in the Report
Observatory of Urban Mobility	CAF	Cities Local offices reports	Urban mobility, the environment and public space
Atlas of Urban Expansion	Lincoln Institute	Selected cities. Primary production of information	Density, urban sprawl
Joint Monitoring Programme (JMP) for Water Supply and Sanitation	WHO - UNICEF	Urban Censuses, household surveys, other surveys (DHS, etc.).	Water and sanitation
Regional Evaluation of Solid Waste Management LAC	PAHO, AIDIS, IDB	Cities. In-house surveys	Solid waste
Environment Outlook, GEO LAC	UNEP	Cities National reports, in-house production	Solid waste, the environment (validation)
Labour Market observatory	ILO	Censuses, household surveys	Validation, labour statistics
UNODC Statistics	UNODC	National and most inhabited city. National judicial systems	Security and coexistence
Data Working Group Rates, Grants and Regulatory Accounting	ADERASA	Centralization of information from operatives	Basic services

Source: UN-Habitat

Content can be classified into the following types:

a) Standardized and comparable information for specific topics, usually from on-going statistical analysis, which have already been published by various agencies and used in this report with the same level of disaggregation (for example, the percentage of people with access to sanitation in urban areas in each country);

b) Information from specific, none-continuous studies, with data normally published in specific reports whose coverage is limited (like data on water and sanitation connection costs that come about from a specific publication);

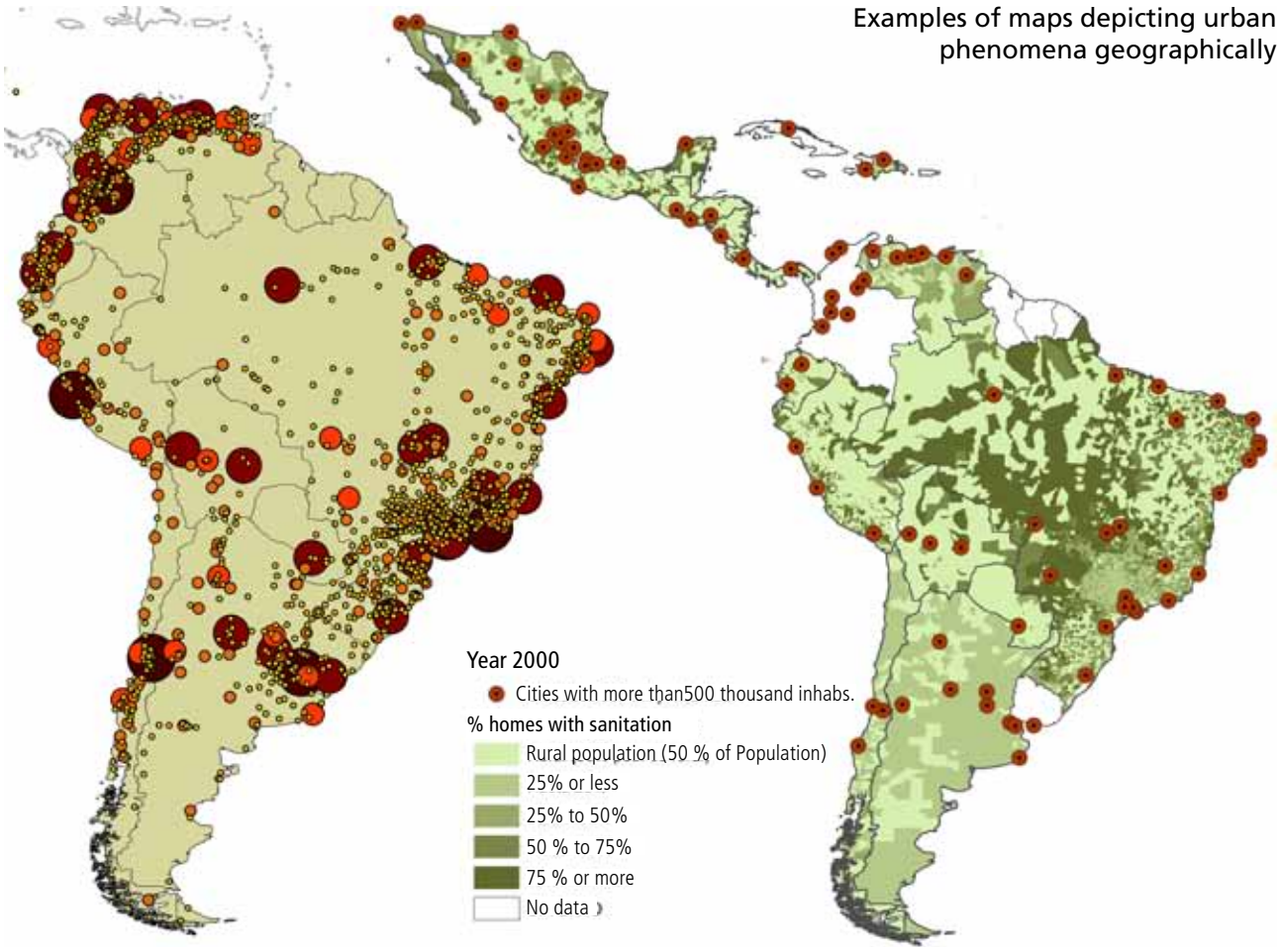
c) New indicators and in-house calculations in some categories with secondary information and an adequate level of disaggregation (a case in point is the construction of GDP for selected cities or classifications of cities by size from a 'functional' perspective), and

d) Information generated from in-house micro-processing, relatively similar to the previous case, although with the difference that there are a larger number of cases organized in a classical database format, which require analysis with a statistics programme.

Regarding the latter, ECLAC's DEPUALC database stands out (spatial distribution and urbanization in Latin America and the Caribbean). This database brings together information on the population census of 2000 for each urban agglomeration. The database includes 1,735 of these data sets with more than 20,000 people in 16 countries and provides data on 68 variables for each city. The topics include population, demographic indicators, indicators related to Millennium Development Goals (education, employment, access to electricity, water, sanitation, housing conditions), access to technology, migration and distance from the sea. Its main limitations are due to the census publication periods, the fact that data isn't available for every variable in every country included, and the notable absence of information on the Caribbean, except Cuba and the Dominican Republic.

To take into account the population of agglomerations with at least 20,000 people, it would be necessary to have more frequently updated census data, which is, of course, unlikely. However, there might be the possibility of having statistically reliable information for cities through household surveys, which in many cases happens annually, updating information through censuses or through specific data generation.

Examples of maps depicting urban phenomena geographically



Another important point when considering information on cities is the ability to represent spatial phenomena and their evolution, which can be achieved through a system of coordinates (x, y), allowing agglomerations to be located spatially.

This means two types of figures can be generated (shown in the illustration). In the first case, each agglomeration is represented by a point in space, scaled according to an attribute (in this case, the population). A drawback of this type of representation is that it does not provide a precise reading for the agglomeration's size in the figure. Polygon maps aren't limited in the way, as agglomerations are the result of the summations of smaller polygons and this method provides an answer to the problem of the definition of urban or rural polygons of some of the local levels.

The important point of both methods is the possibility of spatially representing many of the phenomena that are being described, and the fact that in Latin America and the Caribbean, there is the capacity for this type of geo-referencing.

Data Limits and Research Obstacles

During the management of information for this report, an important set of constraints and obstacles were noted. The list is far from exhaustive, but it does indicate the areas where available information was probably insufficient for showing some of these urban phenomena.

The first restriction is conceptual and methodological-operational. It is about the urban agglomeration as a unit of analysis. The delimitation of the physical boundaries of agglomerations may transcend administrative records that have not necessarily adapted to the processes of territorial expansion and 'metropolisation'. Often, data are available that match the city's original jurisdictions, not including conurbations and metropolitan areas. Moreover, specific information is required about each agglomeration, and not, for example, at the urban level of the country.

Another obstacle is related to the potential for extracting data generated at the national or municipal level (for example, from the websites of national statistical institutes or specific municipalities) and not from the comparative information of consolidating entities. Much of the required information could be collected from national or local sources, but this requires considerable time and resources to process large volumes of information. Furthermore, the lack of standardization of information raises serious concerns about comparability, coverage and other relevant aspects. Something similar happens with the reference to literature, used not for purposes of argument, but as a form of empirical illustration.

The conceptual heart of this type of research is directly impacted by another limitation. Urban studies have offered a very fertile field for conceptual thinking in recent years. But in a report of this nature, definitions and conceptual categories and variables tend to blur. In many cases, the way of measuring phenomena depends on the methodology used to make them comparable and the objectives sought. In others, very rich conceptual developments fall short of empirical illustrations because of insufficient data availability. Additionally, it should be noted that for a number of countries, the degree of detail of some variables (for example, the number of economic sectors that account for the employed population) is conditional on what countries include in the analysis (adjustments always have to be made to the lowest level of disaggregation).

Other limitations natural to any research arise from the subject itself and the instrument. The former is related to how to measure a particular subject, or how to frame questions or make observations from surveys. For example, the variable 'access to drinking water' suggests that water quality is not necessarily being explained. On the issue of secure tenure of housing, depending on the country, the fact that a person claims to have no land ownership documents does not necessarily mean they do not have secure tenure.

Regarding the latter, there are limitations related to the type of survey, which could be described as 'classic' and originate in the tensions between censuses, household surveys and specific surveys. While censuses have the enormous advantage of covering the national population in general, they address fewer topics in less depth, and less frequently (every 10 years). On the other hand, household surveys cover more topics and in more depth, but with much lower levels of disaggregation (especially between agglomerations). In terms of specific studies which provide more accurate information on some issues, even if they are carried out regularly, they only cover a very partial proportion of the population that is not always stable in terms of sample composition and with little capacity for disaggregation.

Finally, there is a geographic limitation because of poor information availability for the Caribbean. This certainly maximizes all the other weaknesses involved in the aforementioned obstacles in reaching conclusions about the whole region.

Towards a Data Platform

Writing a regional report with some regularity could become the backbone of a system of continuous information about cities in Latin America and the Caribbean. Official reports help highlight the limitations and information gaps so they can be corrected for, at least partially. At the same time having robust information systems has a

positive impact on the quality of such publications, and this would mean efforts could be focused on analysis and the depth of topics when the basics are already known.

One of the findings made during the writing of this report is that the degree of accumulation of data is very significant. UN-Habitat has made various efforts to systematize information, and the result, among other things, is a mine of conceptual and methodological information on urban indicators and information systems. Therefore, the starting point for an information platform about cities should be built on the accumulation recorded by UN-Habitat and other regional institutions, especially ECLAC, because of its emphasis on the treatment of cities as a unit of analysis, and other institutions, like CAF and UNEP, that have been interested in cities from specific thematic perspectives.

In the medium and long term, it would be necessary to define those issues identified as priorities for analysis. While at first the possibilities would be limited primarily to census data, household surveys, and others related to geographic location, there are several candidate themes that could be included. These might be water and sanitation in more detail, mobility, land markets, housing deficit and housing quality in general, public spaces, public sector spending at the city level, slums and informality and competitiveness, human capital and wealth creation.

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STATE OF LATIN AMERICAN AND CARIBBEAN CITIES – 2012

Towards a new urban transition

With 80% of its population living in cities, Latin America and the Caribbean is the most urbanized region on the planet. Located here are some of the largest and best-known cities, like Mexico City, São Paulo, Buenos Aires, Rio de Janeiro, Bogota, Lima and Santiago. The region also boasts hundreds of smaller cities that stand out because of their dynamism and creativity.

This edition of State of Latin American and Caribbean cities presents the current situation of the region's urban world, including the demographic, economic, social, environmental, urban and institutional conditions in which cities are developing.

After decades in which governments seemed unable to respond to the challenges of rapid urban growth, the region is now at a crossroads. In principle, the conditions that could enable the transformation of Latin American and Caribbean cities towards a more equitable, more prosperous and more sustainable model are already in place.

However, the speed of urbanization has had a high social, economic and environmental cost. As a whole, the cities of Latin America and the Caribbean remain the most unequal on the planet. They also face challenges related to the speed of urbanization and the models of territorial expansion adopted, including the by-products of limited experience in the management of megacities and their relationship with the rest of territories.

Urban transition, as traditionally conceived, is practically completed in almost all the countries of the region. Cities must now prepare for a second urban transition to ensure a more equitable distribution of welfare and prosperity for all citizens. There is no single formula or miraculous solution, but it is clear that cities in the region have sufficient experience, knowledge and determination to meet the challenges of urban development with the creativity that characterizes this part of the world.

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