Urban areas: Latin America and the Caribbean

Latin America and the Caribbean is the most urbanized region in the developing world. Between 1972 and 2000 the urban population rose from 176.4 million to 390.8 million, prompted by better services and job opportunities compared to rural areas. During this period, the percentage of the population living in urban areas increased from 58.9 to 75.3 per cent, accounting for 79.8 per cent of the population in South America, 67.3 per cent in Central America and 63.0 per cent in the Caribbean (compiled from United Nations Population Division 2001). This urban–rural ratio is similar to that seen in highly industrialized countries.

With the exception of Brazil, urbanization patterns typically involve a single, very large city per country. In addition to an expansion of existing urban areas, urbanization has also taken place in some rural districts — 61 per cent of the inhabitants of the Amazon region now live in urban areas. Deep inequalities persist in most of the countries in the region and much poverty is concentrated in urban areas. For example, one-third of the population of São Paulo and 40 per cent of the population of Mexico City live at or below the poverty line. Between 1970 and 2000, the number of urban poor in the region rose from 44 million to 220 million people (UNCHS 2001a).

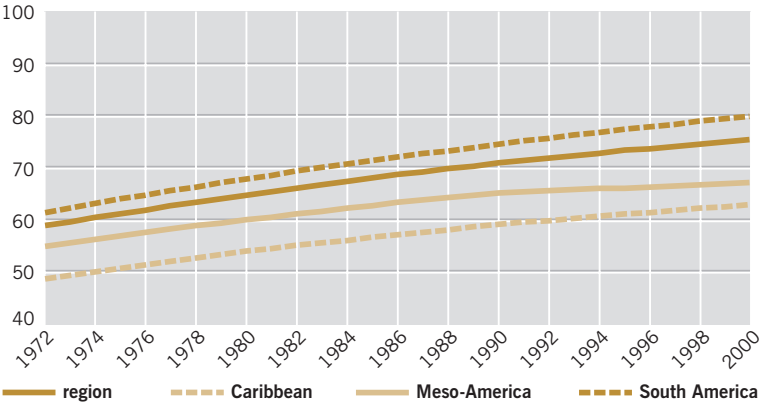
Although environmental problems are not limited to the largest cities, their impact is most evident there. Urban environmental problems include the concentration of domestic and industrial solid wastes, lack of sewage and air pollution.

Solid waste

Three decades ago, solid waste production was 0.2–0.5 kg/day per capita; it is now about 0.92 kg/day per capita. In 1995, the region's urban population generated 330 000 tonnes of solid waste per day (CELADE 1999, Acurio and others 1997). Buenos Aires, Mexico City and São Paulo alone generate approximately 51 000 tonnes of garbage per day (see figure right). Although solid waste collection has almost 90 per cent coverage, there is no adequate disposal mechanism for 43 per cent of this waste (PAHO 1998).

The increase in solid waste cannot be explained by urban growth alone. Changes in lifestyle patterns play a major role and waste generation is significantly higher in the more affluent parts of cities. The problem with urban waste is not only the quantity but also the composition, which has changed from dense and almost completely organic to bulky and increasingly non-biodegradable. Increasing amounts of plastic, aluminium, paper and cardboard are being discarded by households and industries. Hazardous waste such as hospital waste, expired drugs, chemicals, batteries and contaminated sludge pose potential risks to human health and the environment alike when handled improperly. Although some countries have a legal framework for waste control, almost all lack the physical infrastructure and human resources necessary to enforce it (UNEP 2000).

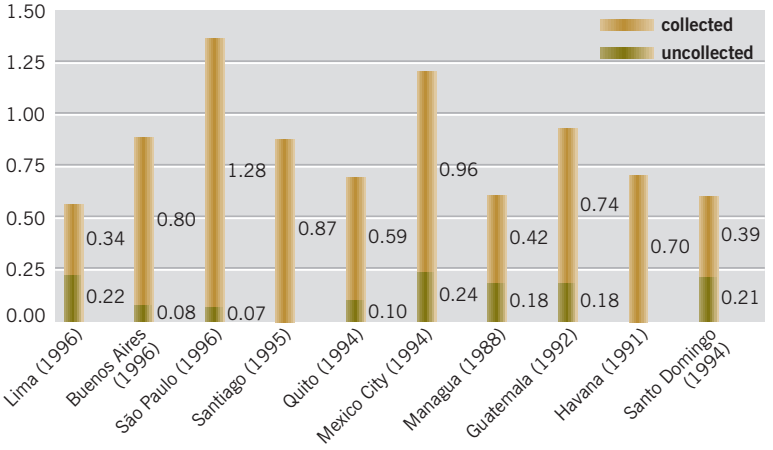
Urban population (percentage of total): Latin America and the Caribbean



Graph shows the high levels of urbanization in the region, particularly in South America

Source: compiled from United Nations Population Division 2001

Waste disposal in selected cities (tonnes/year/person)



Collected and uncollected waste in selected cities in Latin America and the Caribbean; however, much of the collected waste is improperly disposed of. Figures in brackets show year of survey

Source: PAHO and IADB 1997

Water supply and sanitation

Although in the past 30 years the proportion of the urban population with access to drinking water and sewage system services has increased, many people are still affected by a lack of basic services. In the year 2000, 93 per cent of urban households had access to improved water sources and 87 per cent to improved sanitation — ranging from 50 per cent in Haiti to 100 per cent in the British Virgin Islands, Montserrat and Suriname (WHO and UNICEF 2000).

Groundwater pollution resulting from inadequate sewage treatment endangers public health (PAHO 1998) and poses a serious challenge to the region's policy-makers. Currently, less than 5 per cent of municipal wastewater in the region is treated (UNEP 2000). There is a clear demand for wastewater treatment systems to reduce water pollution. Pollution of surface and groundwater makes water in urban areas an increasingly contentious issue (Dourojeanni and Jouravlev 1999, PAHO 1998, CEPAL 1994).

The public sector lacks the capacity to operate and maintain existing water and sanitation systems, let alone invest in new ones — especially in the poorest areas where urbanization has occurred most recently. This has led to greater private sector participation since the 1980s and decentralization of the responsibility for providing services to local government (Pirez 2000, CEPAL 1998). However, Latin America still lacks a management model to ensure equity and environmental sustainability in services (Pirez 2000, Idelovitch and Ringskog 1995).

A model for public transport systems

The Mayor of Curitiba, Brazil, describes his city as 'a model for developed and developing countries alike'. Its urban transport system, constructed in the 1970s, encouraged residential and business development, and harmonized with the plans for the city. In 1973, the Research and Urban Planning Institute of Curitiba developed special buses designed for mass transit. Further adapted and enlarged to respond to growing population needs in the 1980s and 1990s, the system now transports two million people per day. The integrated transit network provides four alternate modes of transport, integrated within the 12 municipalities of the metropolitan region. The mass use of Curitiba's transit system has reduced the number of vehicles on the road, thereby reducing air pollution, lowering the incidence of smog and lessening the threat of respiratory illness.

Curitiba became the first city in Brazil to use a special fuel made up of 89.4 per cent diesel, 8 per cent anhydrous alcohol and 2.6 per cent soybean additive. This fuel is less polluting and cuts particle emissions by up to 43 per cent. The mixture of alcohol and soybean additive also brings social and economic benefits, maintaining employment in rural areas: every billion litres of alcohol used generates approximately 50 000 new jobs.

Source: Taniguchi 2001

Air quality

Over the past 30 years, air quality has deteriorated seriously in many urban centres and exposes millions of people to pollutant levels above the limits recommended by the World Health Organization (CEPAL 2000). Air pollution affects the health of more than 80 million inhabitants in the region and results in the annual loss of some 65 million working days. It is the main cause of almost 2.3 million cases a year of respiratory disease in children and more than 100 000 cases of chronic bronchitis in adults (CEPAL 2000).

Two factors have contributed to the increase in urban air pollution: an increase in the number of motor vehicles and an increase in travel time due to road congestion (CEPAL 2000). Motor vehicles produce 80–90 per cent of the lead in the environment, even though unleaded gasoline has been available for some time in most countries in the region (World Bank 2001). Deficient public transport as well as the separation of homes from workplaces in cities, resulting in more frequent and longer journeys, have also contributed to the increase in emissions (CEPAL 2000). The large distance between the home and the workplace stems from the absence of national urban policies combining economic, environmental and social goals. Nevertheless, the region also has some good examples of urban planning since the 1970s (see box). A combination of physical and meteorological factors associated with the location of large cities has also influenced the pollution rate (CEPAL 2000) — for example, the metropolitan area of Mexico City is located in a valley that captures pollutants causing smog.

In the past ten years, there has been substantial progress in air quality management in a number of cities. Air pollution in large cities such as Buenos Aires, Mexico City, Rio de Janeiro, São Paulo and Santiago has been reduced by means of strategies that include emission controls, changes in fuels and contingency controls. However, these programmes have not yet been extended to medium-sized cities in most of which the information needed to implement such measures is not available (ECLAC and UNEP 2001).

Effects of policies

The economic policies predominating in the region during the 1980s made the introduction of environmental measures difficult as a limit was put on social spending on basic services and sanitation. Although the 1990s were marked by the continuation or persistence of environmental problems typical of poverty and the formation of large cities, the decade also saw the introduction of a number of positive changes including greater citizen participation and the development of public and private networks defending the environment and promoting environmental education. These changes contradict the catastrophic projections for the state of the urban environment that were made in the 1970s (CEPAL 1995, Villa and Rodríguez 1994, CEPAL 2000). However, there is a serious need for substantive evolution from sectoral and fragmented management of cities towards comprehensive and multi-sectoral (national) urban policies and strategies where environmental issues are integrated into all the dimensions of urban management.

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