

World Water Day 2011 coordinated by

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This year on World Water Day, we call attention to the impact of urbanization, industrialization and uncertainties caused by climate change, conflicts and natural disasters on urban water systems.

Water and Cities

Photo © Jonas Kjellstrand

Access to water is vital to the location and growth of cities. We learn from history that great civilizations such as the Roman Empire, Egyptian civilization, the Venetian Empire and the Omayyad Dynasty, among others, were founded on river banks which provided their inhabitants with freshwater. Evidence available has proven that rivers like the Nile, Euphrates, Tigris and Indus enabled agricultural activities and trade to thrive ensuring the development of some of humanity's most recognized civilizations. And today, modern cities like London, Paris, Moscow, Cairo, New Delhi and Stockholm are likewise built on the banks of rivers and lakes.

Historically, the growth of cities and towns has been driven by the concentration of investment and employment opportunities in urban areas. Because productive activities in industry and services cluster in cities it is estimated that almost 80 per cent of the world's gross domestic product is generated by urban areas. As cities attract businesses and jobs, they bring together both the human and the entrepreneurial resources to generate new ideas, innovations and increasingly productive uses of technology.



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Urbanization also brings with it opportunities for more efficient water management as well as for the provision of drinking water supply and sanitation services to many people. As generators of wealth and employment, incubators of innovation and creativity, and providers of the best opportunities to improve livelihoods, cities give great economies of scale and opportunities for efficiency to infrastructure development, including water, sewerage and sanitation services.

Urban Trends

Today, half of the planet's population lives in urban areas and the world's cities and towns are growing at an unprecedented rate. According to the United Nations (*World Urbanization Prospects: The 2009 Revision*), the urban areas of the world are expected to absorb all the population growth expected over the next four decades while at the same time drawing in some of the rural population. Globally, the level of urbanization is expected to rise from 50 per cent in 2009 to 69 per cent in 2050. Furthermore, most of the population growth expected in urban areas will be concentrated in the cities and towns of the less developed regions. Asia, in particular, is projected to see its urban population increase by 1.7 billion, Africa by 0.8 billion, and Latin America and the Caribbean by 0.2 billion. Population growth is therefore becoming largely an urban phenomenon concentrated in the developing world.

Among the less developed regions, Latin America and the Caribbean have an exceptionally high level of urbanization (79 per cent), higher than that of Europe (73 per cent). Africa and Asia, in contrast, remain mostly rural, with 40 per cent and 42 per cent, respectively, of their populations living in urban areas.

Empirical evidence indicates that urbanization has helped reduce overall poverty by providing new opportunities, raising incomes and increasing livelihood options. However, the reverse is true in less developed regions where urban population growth has been matched with the growth of urban poverty. Nearly 40% of global urban growth is concentrated around the unparalleled growth rate of slums. Between 1990-2001 the world's slums increased at a rate of 18 million people a year, but this is projected to increase to 27 million new slum dwellers per year between 2005-2020.

Percentage urban by major area, selected periods, 1950-2050

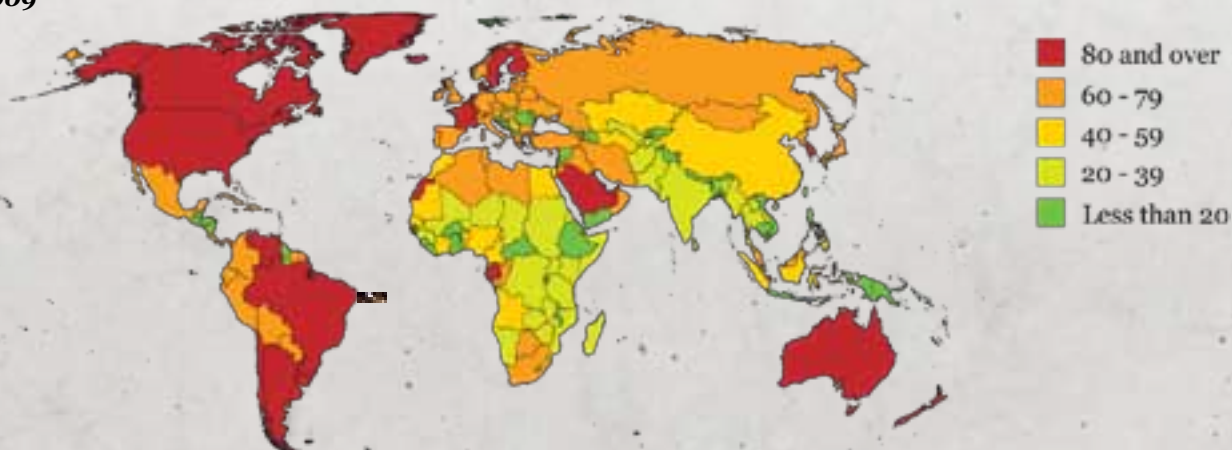
Major area	Percentage urban					Rate of urbanization (percentage)			
	1950	1975	2009	2025	2050	1950-1975	1975-2009	2009-2025	2025-2050
Africa	14.4	25.7	39.6	47.2	61.6	2.32	1.26	1.10	1.07
Asia	16.3	24.0	41.7	49.9	64.7	1.55	1.62	1.13	1.03
Europe	51.3	65.3	72.5	76.9	84.3	0.96	0.31	0.36	0.37
Latin America and the Caribbean	41.4	60.7	79.3	83.8	88.8	1.54	0.78	0.34	0.23
Northern America	63.9	73.8	81.9	85.7	90.1	0.58	0.30	0.28	0.20
Oceania	62.0	71.5	70.2	70.8	74.8	0.57	-0.05	0.05	0.22

Source: United Nations, Department of Economic and Social Affairs, Population Division: *World Population Prospects DEMOBASE extract. 2009.*

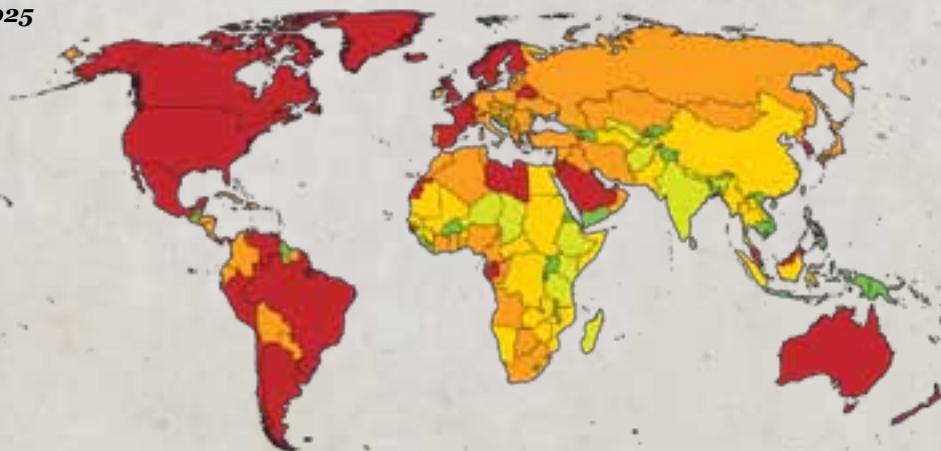


Percentage of the population in urban areas, 2009, 2025 and 2050

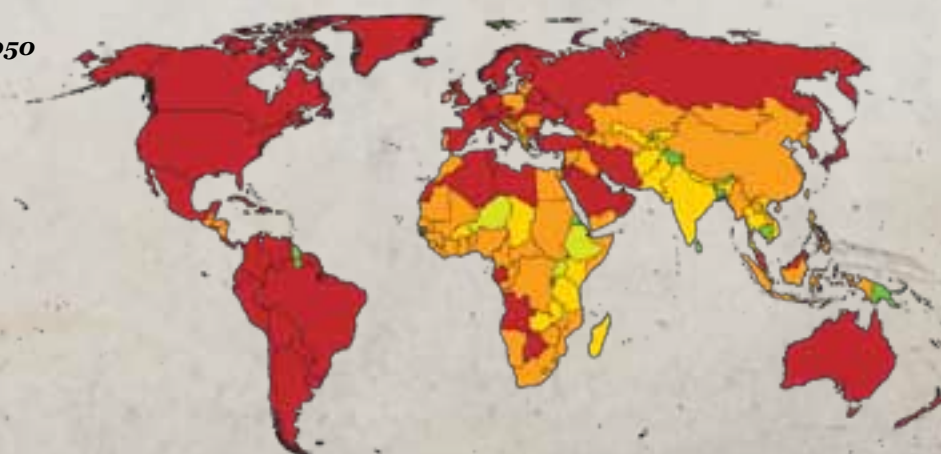
2009



2025



2050

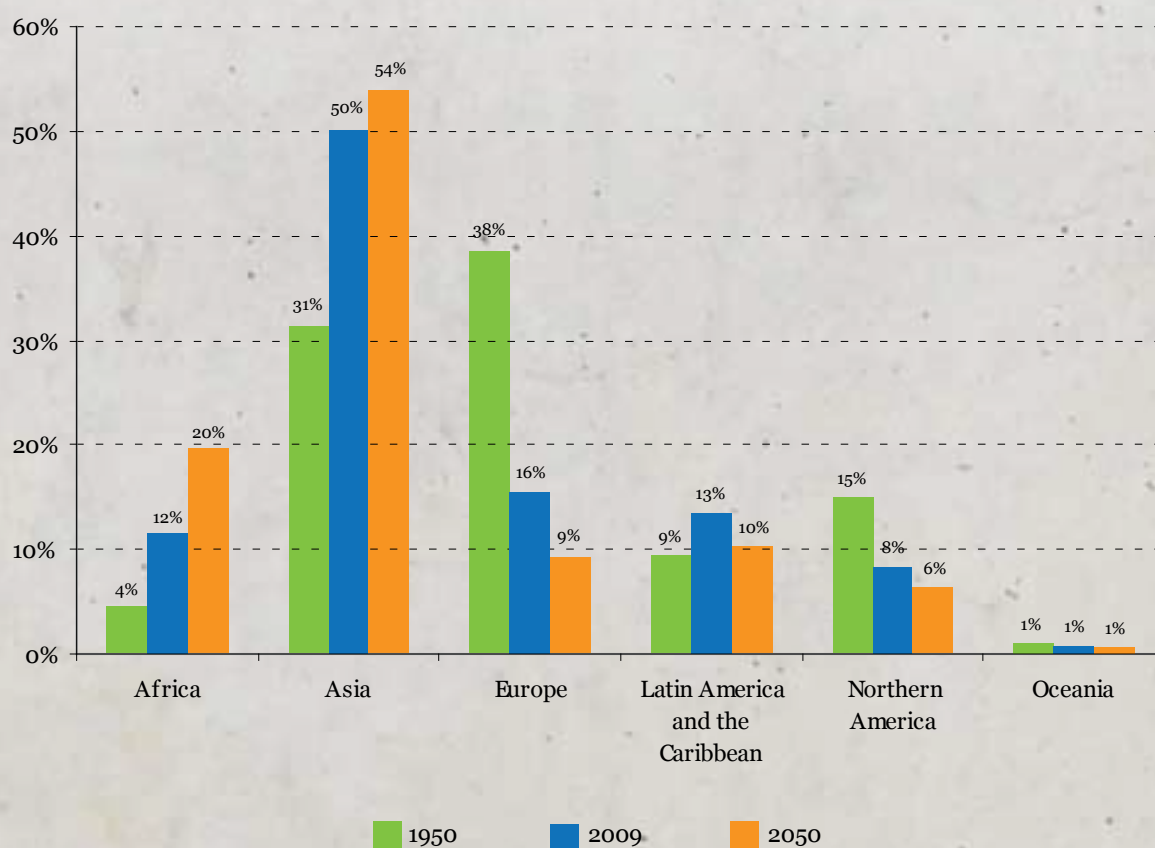


Source: United Nations, Department of Economic and Social Affairs, Population Division: World Population Prospects DEMOBASE extract. 2009.

NOTE: The boundaries shown on this map do not imply official endorsement or acceptance by the United Nations.



Distribution of the world urban population by major area, 1950, 2009, 2050



Source: United Nations, Department of Economic and Social Affairs, Population Division: *World Population Prospects DEMOBASE extract, 2009.*



The Challenge

As cities and towns grow and their populations increase, their demand for water increases too which creates a need to make more water available. Therefore water scarcity and the inability to develop resources and systems sufficiently and quickly are becoming increasing constraints to urban development.

Public policies for water and sanitation provision are being outpaced by rapid urbanization. Between 2000 and 2008, the world population increased by 635 million people. Of these, 511 million (80%) live in urban areas where, in spite access to water or sanitation services, the existing policies have been unable to prevent the situation worsening. Comparing the latest 2008 figures with 2000, a clear deterioration is observed. Some 114 million more people are

without access to tap water at home or in the immediate vicinity while an extra 134 million more people lack access to private sanitary toilets (basic sanitation). In both cases, this means an increase of 20% in the number of city dwellers who lack access to these services.

The situation is worse in less developed regions. In urban Sub-Saharan Africa, for example, as many as 50% of the population do not presently have access to adequate water supplies, while 60% lack adequate sanitation caused by lack of investment in water and sanitation services. It is estimated that almost half a billion people who require water and sanitation services will be added to urban population in the Sub-Saharan African countries within the next 25 years.

50%

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The poor who live in urban slums are forced to buy their water from informal water vendors, usually at a price estimated to be between 20% - 100% higher than that charged by public or private utility. In Sub-Saharan Africa, it has been estimated that between 30% - 60% of the urban population is not connected to the public water supply system, and are served by informal providers. Yet, access to water is a human right.

As water demand grows, water scarcity is becoming an increasing constraint to urban water management in many settings. Increasingly, sustainable water management requires cities to plan with the whole river-basin in mind. Lack of treatment of city wastes results in increasingly polluted water bodies downstream. This results in environmental degradation, higher costs in water treatment and negatively affects public health and welfare, agriculture and the prospects of exports.

Investments in urban water infrastructure have not kept up pace with the rate of urbanization. Water and waste services have not been given the priority they deserve, and they show significant underinvestment, in comparison with their economic, social and environmental returns.

Water supply and sanitation services are undervalued in terms of priority and investment and are underpriced. Utilities in most developing countries are also characterised by high unaccounted-for-water, bloated staffing, weak governance and operating at a loss.

Whilst there are some important exceptions and much can be learnt from those who have made good progress, in general, water utilities in less developed regions have a long way to go in improving efficiency and effectiveness to meet state obligations and user's needs.

The poor in cities receive the worst city services, if they receive them at all: piped water coverage is declining in many settings and yet the poor pay the highest water prices, often for poor quality water from alternative sources or the resale of city water. Few urban authorities in developing countries have found a sustainable solution to urban sanitation. Many cities and towns cannot afford to extend sewers to the slums. They can neither treat the volume of sewage already collected nor have they found an acceptable on-site solution to the urban poor. Urban sector institutional arrangements are fragmented, lack effective regulation and their roles are not structured for efficiency or success.

There is growing evidence that the water sector is also significantly affected by climate change, particularly through the impact of floods, droughts, or extreme events. Because of these, water availability is expected to change, both in quantity and quality. Water, storm water and wastewater facilities will face greater risk of damage caused by storms, floods and droughts. The effect of climate change will mean more difficult operations, disrupted services and increased cost for water and wastewater services.



Providing Solutions

There is no single pathway to sustainable urban water management: much depends on context. However, recent studies have identified some generic success factors. A key factor is the ability of the state to take leadership, building strong institutions and developing professional capacity that can implement complex public policies such as regulation and the provision of targeted subsidies. The most effective reforms have been gradual changes built on realistic and pragmatic judgments within the scope of a country's actual capacities, rather than sweeping, "big bang" changes. This includes careful, stepwise institution building, promotion of efficiency and transition to cost recovery tariffs and government discipline concerning effective sector prioritization and criteria for investing fiscal resources. Experiences with centralization and decentralization of service provision appear to show that, rather than a problem of radical alternatives, it is more importantly a question of structuring balanced systems, where legal and political powers are assigned to the appropriate level of government and where decisions are based on technical criteria, considering capacities of respective governments, possibility to take advantage of economies of scale and reducing transaction costs, structure sustainable tariff systems and plan at a river basin level.

Another important critical success factor is to develop a cost recovery system that not only recovers all the costs of service provision related to operation, maintenance and investment, but one that also generates profits for the owners be they the state or private investors. This can take time to develop, and generally requires a careful mix of tariffs, taxes and budget transfers together with some form of social tariff to assist the poorest communities and a regulatory system to control tariff setting.



Building strong institutions and developing professional capacity that can implement complex public policies such as regulation and the provision of targeted subsidies is key.



Cities of the Future

Cities of the future offer the opportunity for integrated urban management. For water management, this could mean adoption of more efficient water treatment technologies, increased re-use of water and wastes, better optimization of the interdependency between water and power generation and improved demand management. Future urban environments can take better advantage of economies of

scale and scope (thereby increasing efficiency and promoting equity through lower costs of provision), reduce the costs of water provision, improve access to services in adjacent rural areas, design sustainable tariff and subsidy schemes and minimize environmental and downstream pollution. These tasks need to be given more priority because the whole society will benefit significantly.

For more information on this year's World Water Day visit the official website:

worldwaterday.unwater.org



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