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World Health Organization

MEETING THE MDG DRINKING WATER AND SANITATION TARGET

A Mid-Term Assessment of Progress

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Foreword

The combination of safe drinking water and hygienic sanitation facilities is a precondition for health and for success in the fight against poverty, hunger, child deaths and gender inequality. It is also central to the human rights and personal dignity of every woman, man and child on earth. Yet 2.6 billion people – half the developing world – lack even a simple 'improved' latrine. One person in six – more than 1 billion of our fellow human beings – has little choice but to use potentially harmful sources of water. The consequences of our collective failure to tackle this problem are dimmed prospects for the billions of people locked in a cycle of poverty and disease.

In adopting the Millennium Development Goals, the countries of the world pledged to reduce by half the proportion of people without access to safe drinking water and basic sanitation. The results so far are mixed. With the exception of sub-Saharan Africa, the world is well on its way to meeting the drinking water target by 2015, but progress in sanitation is stalled in many developing regions.

This report, produced by the WHO/UNICEF Joint Monitoring Programme on Water Supply and Sanitation (JMP), provides the latest estimates and trends on where we stand today. The JMP's estimates are critical for calculating rates of progress towards national goals and for highlighting priorities, especially those that target the underserved.

For those countries in which progress has been slow, the report's finding should provide an incentive to accelerate action in the crucial years ahead. For countries 'on track', they should remind us that our work is not finished until every citizen is served.

LEE Jong-wook
Director-General
World Health Organization

Carol Bellamy
Executive Director
UNICEF

Definitions of Indicators

Access to safe drinking water is estimated by the percentage of the population using improved drinking water sources, as described below. Similarly, access to sanitary means of excreta disposal is estimated by the percentage of the population using improved sanitation facilities. Improved sanitation facilities are those more likely to ensure privacy and hygienic use. Improved drinking water technologies are those more likely to provide safe drinking water than those characterized as unimproved. See page 23 for a discussion of other issues concerning definitions.

Improved drinking water sources

Household connection
Public standpipe
Borehole
Protected dug well
Protected spring
Rainwater collection

Unimproved drinking water sources

Unprotected well
Unprotected spring
Rivers or ponds
Vendor-provided water
Bottled water*
Tanker truck water

Improved sanitation facilities

Connection to a public sewer
Connection to a septic system
Pour-flush latrine
Simple pit latrine**
Ventilated improved pit latrine

Unimproved sanitation facilities

Public or shared latrine
Open pit latrine
Bucket latrine

*Bottled water is not considered improved due to limitations in the potential quantity, not quality, of the water.

**Only a portion of poorly defined categories of latrines are included in sanitation coverage estimates.

The Purpose of this Report

In September 2000, 189 UN Member States adopted the Millennium Development Goals (MDGs), setting clear, time-bound targets for making real progress on the most pressing development issues we face. Achieving these targets will directly affect the lives and future prospects of billions of people around the globe. It will also set the world on a positive course at the start of the 21st century.

Goal 7 is to ensure environmental sustainability. One of its targets is the subject of this report:

Halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation.

Although the MDGs were formulated in 2000, the baseline for most of the MDG targets, including that on water and sanitation, has been set as 1990. Therefore 2002, the last year for which comprehensive data are available, can be considered the halfway mark towards achieving the 2015 MDG deadline.

This report, prepared by the WHO/UNICEF Joint Monitoring Programme (JMP), provides coverage data for 1990 and 2002 at national, regional and global levels and an analysis of trends towards 2015. It also marks a new cycle of more frequent reporting, which can be effectively used for sector capacity-building efforts at the national and sub-national levels.

The report is intended as a 'reality check' for individual countries and the international community on how far we have come, and where we need to focus next, in order to fulfil our commitment.

Why Meeting the Target Matters

Beyond the focus of public attention, an unseen emergency continues to unfold. It doesn't fell dozens all at once, like a bomb, or carry away whole towns in the blink of an eye, like a flood. Rather, it kills its victims – mostly infants and small children – largely unnoticed, spiriting them away one by one from rural villages and urban slums in every corner of the developing world.

Every day, this unremitting but seemingly invisible disaster claims the lives of more than 3,900 children under five, according to WHO. And for every child that dies, countless others, including older children and adults, suffer from poor health, diminished productivity and missed opportunities for education.

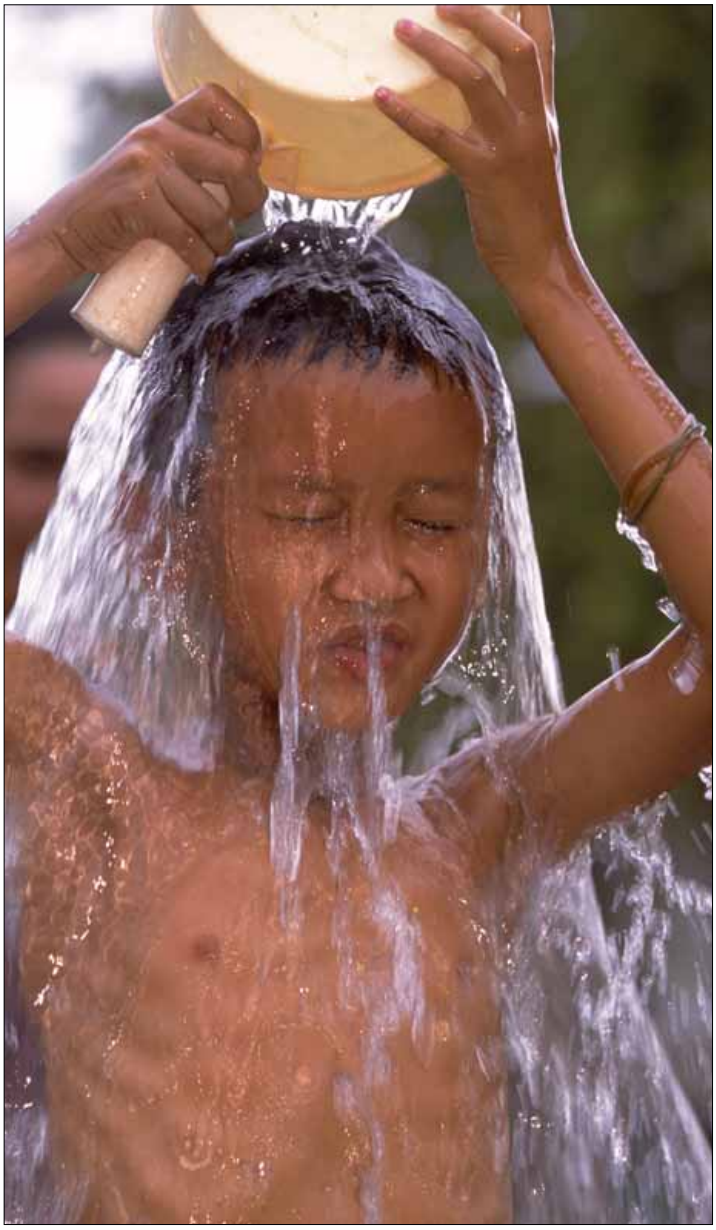
What is behind this wholesale loss of life and potential? It is the absence of something that nearly every reader of this report takes for granted, something basic, unremarkable, commonplace: toilets and other forms of improved sanitation and safe drinking water.

The good news is that, with 83 per cent coverage, the world is on track to meet the MDG target for drinking water. The news is tempered, however, by slow progress in sub-Saharan Africa and stalled action on sanitation in most developing regions. An estimated 2.6 billion people are without improved sanitation facilities. And if the 1990-2002 trend holds, the world will miss the sanitation target by half a billion people.

The figures and trends in this report, based on national surveys and censuses, indicate how far we are from achieving the sanitation target. But they also reveal that a number of low-income countries have made tremendous gains in expanding services, even in the face of rapid population growth and economic stagnation. The lesson that can be drawn from these countries is that rapid progress is indeed possible, and that the goals, while ambitious, are within our grasp.

Meeting the sanitation target will require that an additional 1 billion urban dwellers and almost 900 million people in often remote rural communities are able to use improved sanitation services. Accomplishing this by 2015 will be no small feat. But it will also be a testament to what the world can achieve with a clear vision and with the focused will and determination of every country on earth.

Getting on track to meet the target in both drinking water and sanitation will mean better health, longer lives and greater dignity for billions of the world's poorest people. It will also make a significant contribution to the achievement of other Millennium Development Goals.



Advancing the Millennium Development Goals

MDG goals	Contribution of improved drinking water and sanitation
Goal 1: **Eradicate Extreme Poverty and Hunger**	**• The security of household livelihoods rests on the health of its members; adults who are ill themselves or must care for sick children are less productive.** **• Illnesses caused by unsafe drinking water and inadequate sanitation generate high health costs relative to income for the poor.** **• Healthy people are better able to absorb nutrients in food than those suffering from water-related diseases, particularly helminths, which rob their hosts of calories.** **• The time lost because of long-distance water collection and poor health contributes to poverty and reduced food security.**
Goal 2: **Achieve Universal Primary Education**	**• Improved health and reduced water-carrying burdens improve school attendance, especially among girls.** **• Having separate sanitation facilities for girls and boys in school increases girls' attendance, especially after they enter adolescence.**
Goal 3: **Promote Gender Equality and Empower Women**	**• Reduced time, health and care-giving burdens from improved water services give women more time for productive endeavours, adult education and leisure.** **• Water sources and sanitation facilities closer to home put women and girls at less risk of assault while collecting water or searching for privacy.**
Goal 4: **Reduce Child Mortality**	**• Improved sanitation and drinking water sources reduce infant and child morbidity and mortality.**
Goal 5: **Improve Maternal Health**	**• Accessible sources of water reduce labour burdens and health problems resulting from water portage, reducing maternal mortality risks.** **• Safe drinking water and basic sanitation are needed in health-care facilities to ensure basic hygiene practices following delivery.**
Goal 6: **Combat HIV/AIDS, Malaria and Other Diseases**	**• Safe drinking water and basic sanitation help prevent water-related diseases, including diarrhoeal diseases, schistosomiasis, filariasis, trachoma and helminths.** **• The reliability of drinking water supplies and improved water management in human settlement areas reduce transmission risks of malaria and dengue fever.**
Goal 7: **Ensure Environmental Sustainability**	**• Adequate treatment and disposal of wastewater contributes to better ecosystem conservation and less pressure on scarce freshwater resources. Careful use of water resources prevents contamination of groundwater and helps minimize the cost of water treatment.**
Goal 8: **Develop a Global Partnership for Development**	**• Development agendas and partnerships should recognize the fundamental role that safe drinking water and basic sanitation play in economic and social development.**

DRINKING WATER COVERAGE

In 2002, 83 per cent of the world's population – around 5.2 billion people – used improved drinking water sources. These include piped water connections and standpipes, as described on page 4 (coverage estimates for individual countries can be found in the table starting on page 24).

The good news – gains in all regions since 1990 – is counterbalanced by the fact that 1.1 billion people were still using water from unimproved sources in 2002. In sub-Saharan Africa, 42 per cent of the population is still unserved.

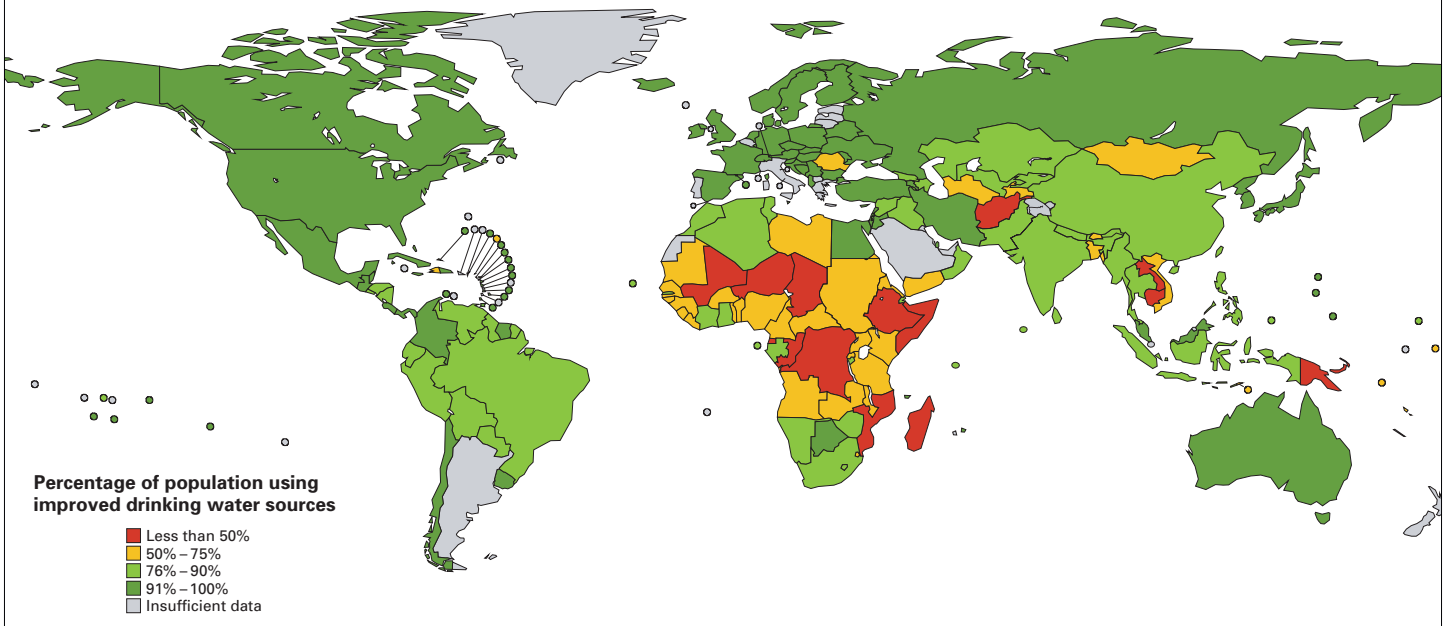
Of the 1.1 billion people using water from unimproved sources, nearly two thirds live in Asia. The number of people without improved water sources in China alone is equal to the number of unserved in all of Africa.

The lowest drinking water coverage levels are found in sub-Saharan Africa and in Oceania.* In contrast, several regions, including Northern Africa, Latin America and the Caribbean, and Western Asia, have achieved coverage levels of close to 90 per cent or more.

*Country distribution by region can be found on the map on page 32.

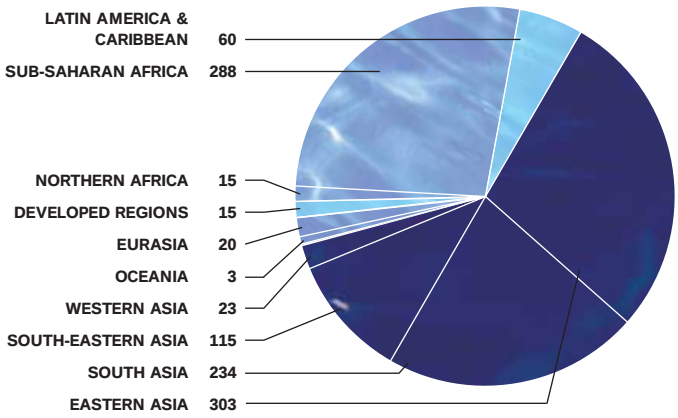
Good water coverage attained in most regions

FIGURE 1 **Coverage with improved drinking water sources in 2002**



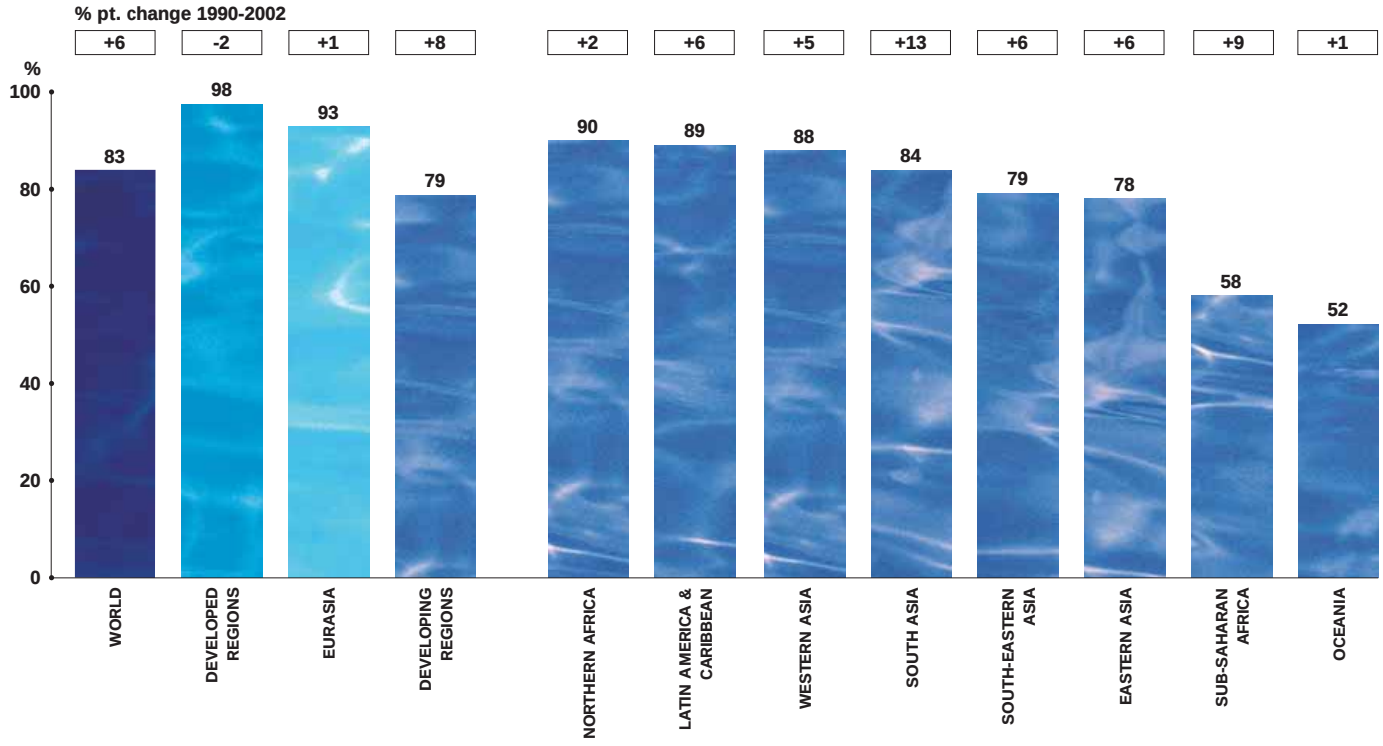
More than one billion people, most of them in Asia, are still without improved drinking water sources

FIGURE 2 Population without improved drinking water sources by region in 2002 (in millions)



More than 80 per cent of the world population use improved drinking water sources

FIGURE 3 Coverage with improved drinking water sources by region in 2002



PROGRESS TOWARDS THE DRINKING WATER TARGET

The world is on track to meet the drinking water target, but sub-Saharan Africa lags behind.

In 1990, 77 per cent of the world's population used improved drinking water sources. Considerable progress was made between 1990 and 2002, with about 1.1 billion people gaining access to improved water sources. Global coverage in 2002 reached 83 per cent, putting the world on track to achieve the MDG target.

The region that made the greatest progress was South Asia, which increased coverage from 71 to 84 per cent between 1990 and 2002. This jump was fuelled primarily by increased use of improved water sources in India, home to over 1 billion people.

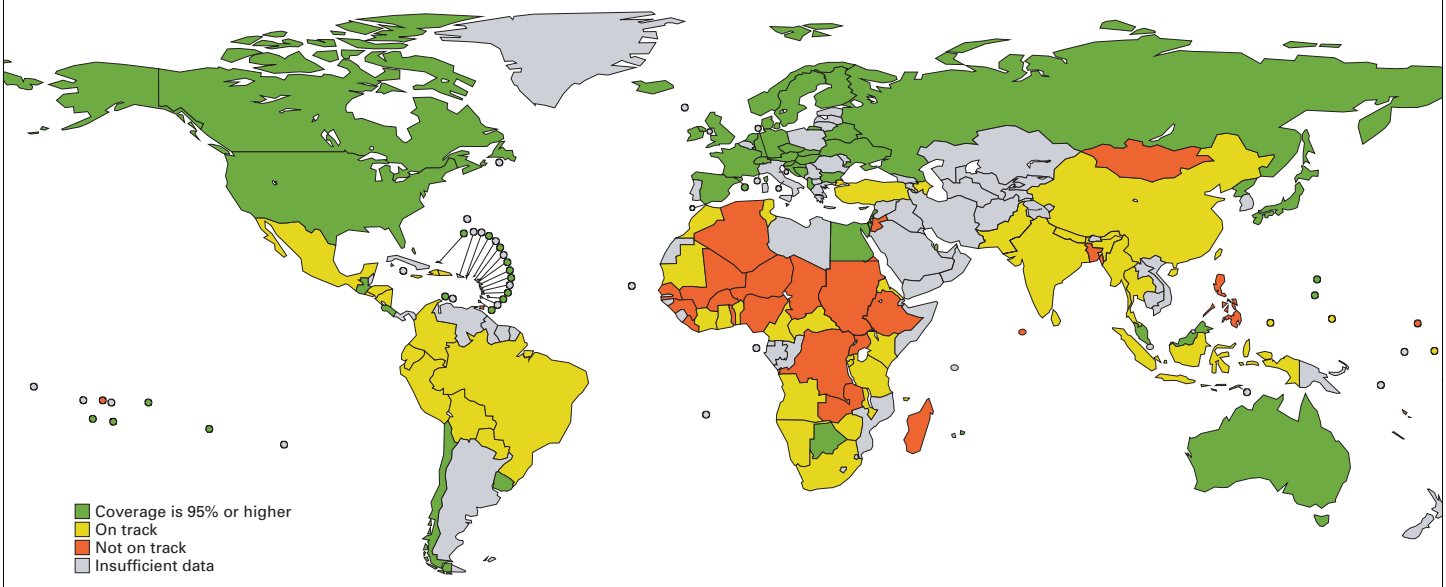
Progress in sub-Saharan Africa was also impressive: coverage increased from 49 to 58 per cent between 1990 and 2002, a nine percentage point increase. But this falls far short of the progress needed to achieve the MDG target of 75 per cent coverage by 2015.

Obstacles to accelerating the rate of progress in sub-Saharan Africa include conflict and political instability, high rates of population growth, and low priority given to water and sanitation. What's more, breakdown rates of water supply systems in rural Africa can be very high. Among the approaches shown to be effective in speeding up progress, despite these obstacles, are decentralizing responsibility and ownership and providing a choice of service levels to communities, based on their ability and willingness to pay.

One recent success in Africa has been steady progress in the eradication of Guinea worm disease. Through improved drinking water and other interventions, the number of people suffering from this disease has been reduced by 99 per cent: from an estimated 3.5 million cases in 1986 to less than 35,000 reported cases in 2003.

If the current trend continues, sub-Saharan Africa will not reach the MDG target

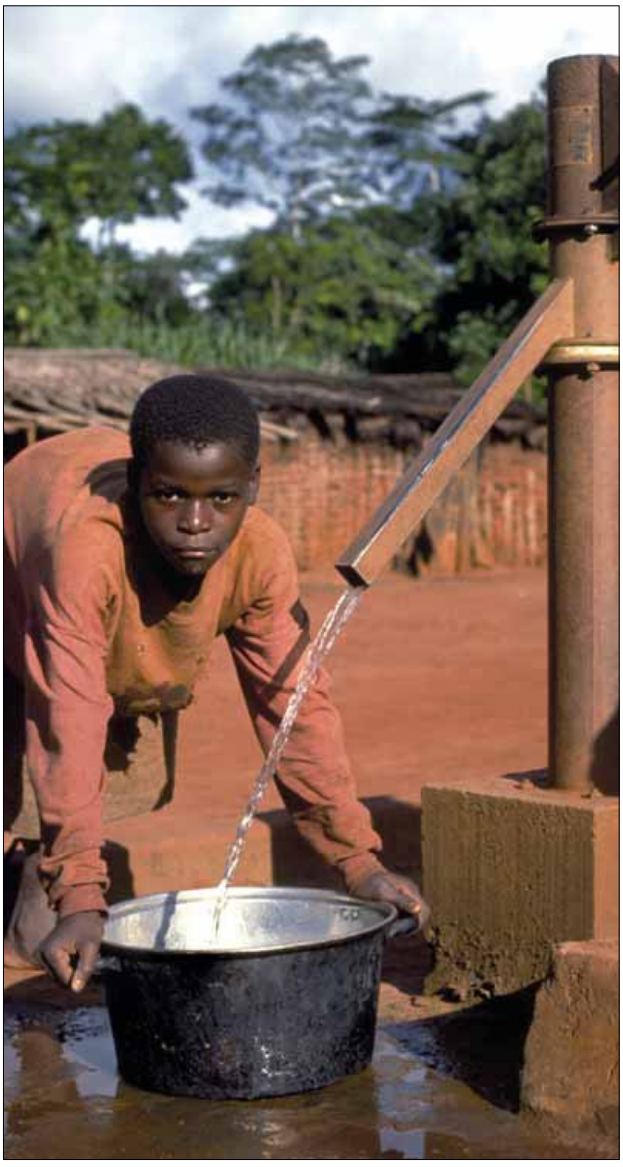
FIGURE 4 **Progress in drinking water coverage, 1990-2002**



THE CHALLENGE OF OUTPACING POPULATION GROWTH

Population growth is a significant factor in the ability of countries, particularly low-income countries, to increase the coverage of drinking water. For example, just to maintain its 1990 coverage level of 74 per cent, Peru would have had to ensure drinking water services to more than 350,000 people a year, on average, over the period 1990 to 2002. In fact, it provided water to more than 480,000 people a year, raising coverage from 74 per cent to 81 per cent.

On a global level, the number of people using improved water sources has increased by more than 90 million people a year since 1990. But because of population growth, the absolute number of people without coverage has only decreased by about 10 million people a year.



African countries making rapid progress in drinking water coverage, 1990–2002

FIGURE 5 **Countries that increased coverage by at least 25% between 1990 and 2002***

	Drinking water coverage (%)		% increase
Country	1990	2002	1990-2002
Tanzania, United Republic of	**38**	**73**	**92**
Chad	**20**	**34**	**70**
Malawi	**41**	**67**	**63**
Angola	**32**	**50**	**56**
Central African Republic	**48**	**75**	**56**
Ghana	**54**	**79**	**46**
Eritrea	**40**	**57**	**43**
Mali	**34**	**48**	**41**
Kenya	**45**	**62**	**38**
Namibia	**58**	**80**	**38**
Mauritania	**41**	**56**	**37**
Burkina Faso	**39**	**51**	**31**
Uganda	**44**	**56**	**27**
Cameroon	**50**	**63**	**26**
Rwanda	**58**	**73**	**26**

* Table includes countries that increased coverage by at least 25% between 1990 and 2002. Countries with coverage higher than 80% in 1990 were not included, even though they may have increased coverage levels significantly. Nor does it include countries that may have made significant progress but for which data were insufficient to estimate a trend.

SANITATION COVERAGE

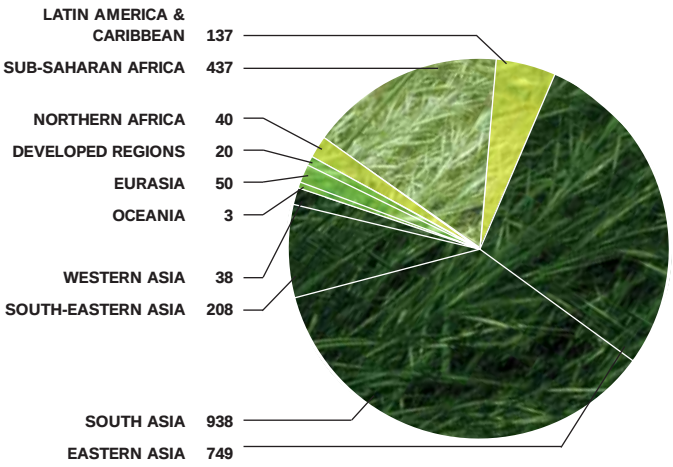
Global sanitation coverage rose from 49 per cent in 1990 to 58 per cent in 2002. Still, some 2.6 billion people – half of the developing world – live without improved sanitation. Sanitation coverage in developing countries (49 per cent) is only half that of the developed world (98 per cent).

Though major progress was made in South Asia from 1990 to 2002, little more than a third of its population are currently using improved sanitation. In sub-Saharan Africa as well, coverage is a mere 36 per cent.

Over half of those without improved sanitation – nearly 1.5 billion people – live in China and India.

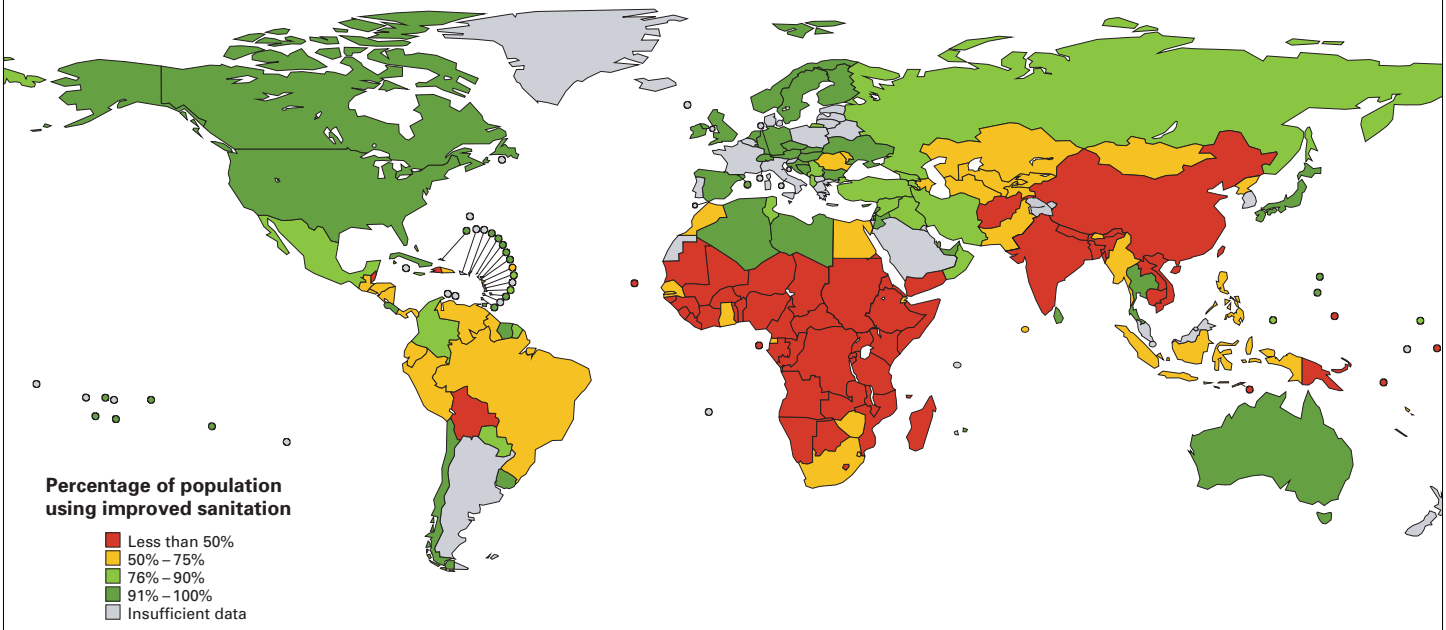
2.6 billion people without improved sanitation

FIGURE 6 **Population without improved sanitation by region in 2002 (in millions)**



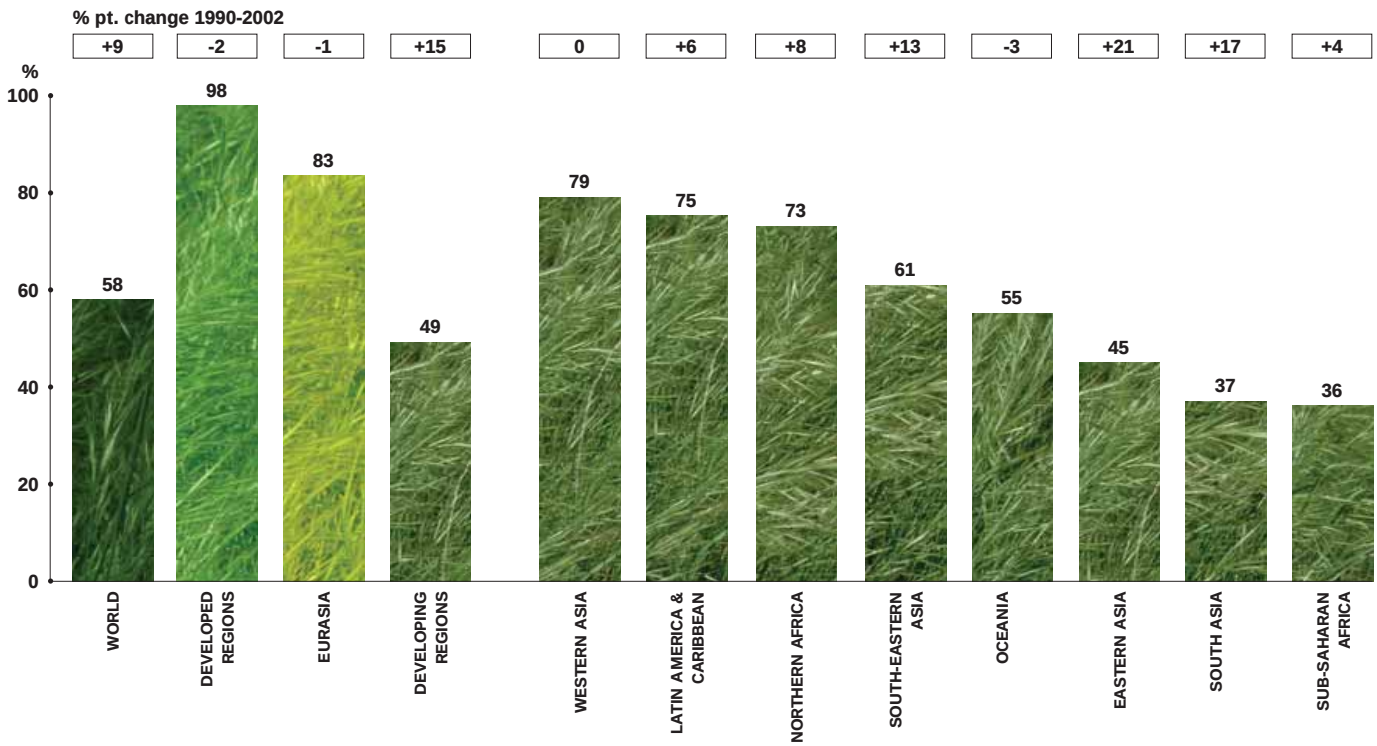
Half the developing world are still without improved sanitation

FIGURE 7 **Sanitation coverage in 2002**



Sanitation coverage lowest in sub-Saharan Africa and South Asia

FIGURE 8 **Coverage with improved sanitation by region in 2002**



Countries with low sanitation coverage

FIGURE 9 **Countries where coverage with improved sanitation was one third or less in 2002**

Country	Sanitation coverage 2002 (%)	Country	Sanitation coverage 2002 (%)
Ethiopia	**6**	**Central African Republic**	**27**
Afghanistan	**8**	**Mozambique**	**27**
Chad	**8**	**Nepal**	**27**
Congo	**9**	**Micronesia (Federated States of)**	**28**
Eritrea	**9**	**Congo, Democratic Republic of the**	**29**
Burkina Faso	**12**	**Angola**	**30**
Niger	**12**	**India**	**30**
Guinea	**13**	**Namibia**	**30**
Cambodia	**16**	**Yemen**	**30**
Comoros	**23**	**Solomon Islands**	**31**
Lao People's Democratic Republic	**24**	**Benin**	**32**
Sao Tome and Principe	**24**	**Madagascar**	**33**
Somalia	**25**	**Timor-Leste**	**33**
Liberia	**26**		

PROGRESS TOWARDS THE SANITATION TARGET

Without a sharp acceleration in the rate of progress, the world will miss the sanitation target by half a billion people.

To halve the proportion of people without improved sanitation, global coverage needs to grow to 75 per cent by 2015, from a starting point of 49 per cent in 1990. However, if the 1990-2002 trend continues, the world will miss the sanitation target by more than half a billion people. In other words, close to 2.4 billion people will be without improved sanitation in 2015, almost as many as there are today.

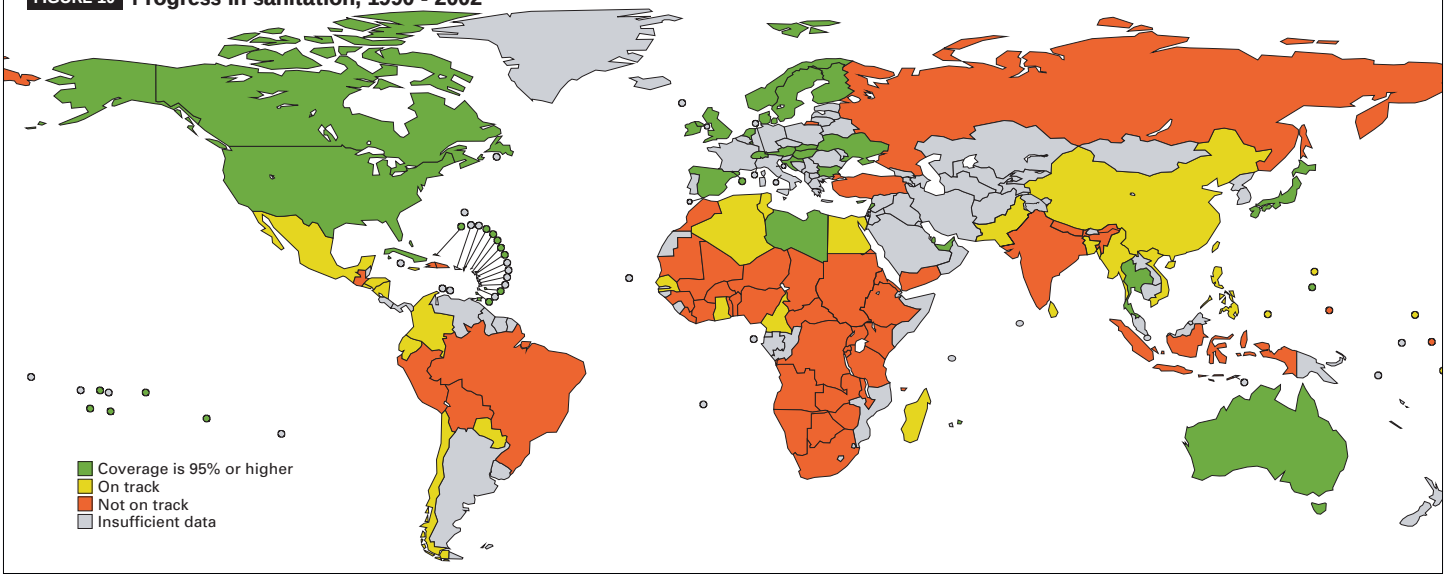
The situation is most serious in South Asia, sub-Saharan Africa, Western Asia, Eurasia and Oceania, none of which are on track for meeting the sanitation target.

Despite disappointing progress overall, a number of regions have made tremendous gains. Eastern Asia's coverage, for example, has almost doubled since 1990. Similarly, South Asia managed to move from 20 per cent to 37 per cent coverage, although it started with the lowest baseline of any region.

The widening gap between progress registered and the target (see Figure 11) signals that the world will meet its sanitation goal only with a dramatic acceleration in the provision of services. The proportion of the world's population with improved sanitation has increased by just 9 percentage points since 1990, a far slower rate than that required to meet the MDG target.

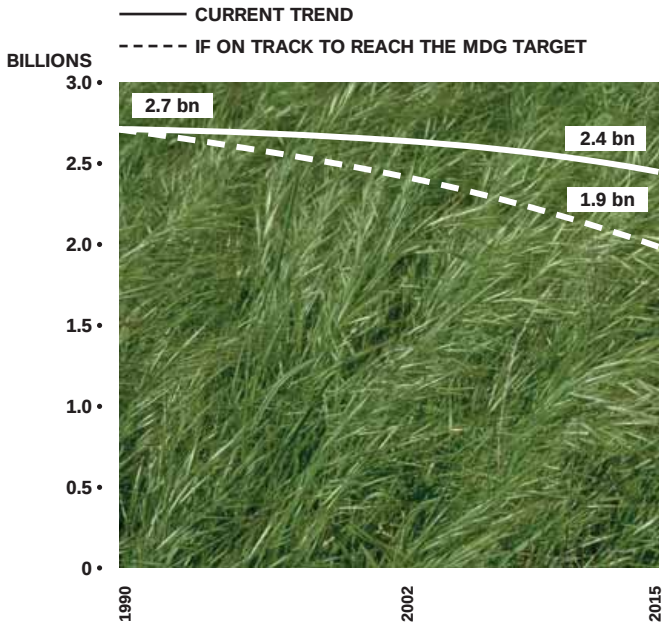
As shown in Figure 12, Eastern and South-eastern Asia are clearly on track to meet the MDG target in sanitation by 2015. Northern Africa and Latin America and the Caribbean are well on their way. However, the remaining regions will not meet the target without a rapid acceleration in progress.

FIGURE 10 **Progress in sanitation, 1990 - 2002**



Accelerate progress or miss the sanitation target by half a billion people

FIGURE 11 **Projected population without improved sanitation 1990-2015**



SANITATION SITUATION WORSE THAN PREVIOUSLY THOUGHT

An analysis of recent household surveys – nearly twice the number available since the last update in 2001 – has prompted the Joint Monitoring Programme to revise its global sanitation figures from 2.4 billion people to 2.6 billion people unserved.

The revisions are based on this additional information, more detailed definitions of sanitation facilities and a more stringent method used to estimate coverage. In previous estimates, certain categories of latrines that were poorly defined were counted as 'improved'. Now, a breakdown of these categories is sought from which correction factors can be derived and applied to surveys from the same country. Where this breakdown is not available, only half the share of the population using undefined latrines (such as traditional, pit or simple latrines) are counted as having access to an improved sanitation facility.

Because traditional latrines are widespread in sub-Saharan Africa, this new method of measuring them has lowered considerably the coverage figures for the region. However, as more surveys are conducted, using more complete definitions and better breakdowns of facilities, sanitation estimates will become even more precise.

PROGRESS TOWARDS THE SANITATION TARGET

CLOSING MAJOR COVERAGE GAPS AND REACHING THE HARD TO REACH

Meeting the MDG target requires that, between 1990 and 2015, the world reduces by half the proportion of the population not using improved drinking water sources and sanitation.

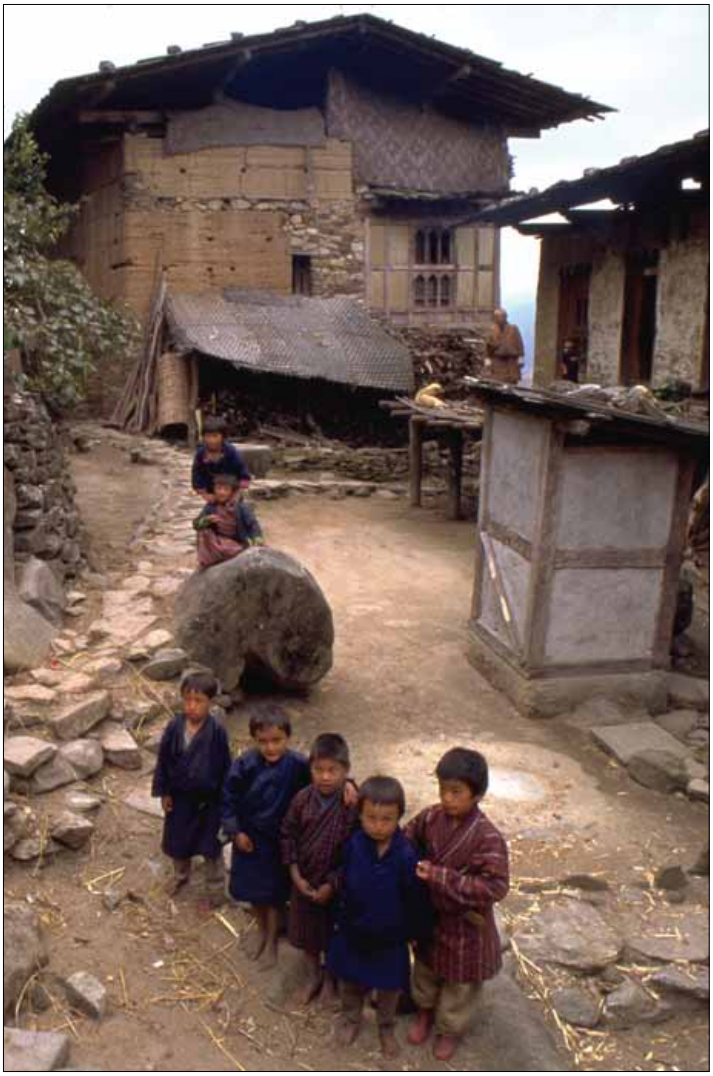
It would seem that countries whose poverty and poor capacity led them to have such low coverage to begin with are charged with the most difficult task. But is achieving a 5 per cent increase when you have high coverage easier than a 20 per cent increase when you have low coverage overall? Not necessarily. Reaching the remaining population without coverage is usually increasingly difficult the higher your overall coverage becomes.

Higher per capita investment costs to reach the remaining few follow the law of diminishing returns. Servicing urban slums, remote rural villages and arid areas may require a much greater effort than reaching a population in more accessible or less arid regions. In large urban areas, for example, it is becoming increasingly difficult to provide drinking water services because of rapid urbanization and the fact that new water sources may be further away. In addition, water treatment plants are more complex due to polluted water sources, because transmission mains have to cross long distances, and because there is often the need for costly pumping stations with sophisticated operations and maintenance.

Five regions are not on track to meet the sanitation target

FIGURE 12 **Regional progress towards the MDG sanitation target**

	Coverage in 1990 (%)	Coverage in 2002 (%)	Coverage needed in 2002 to be on track (%)	Coverage needed by 2015 to achieve the MDG target (%)
Regions on track				
Eastern Asia	**24**	**45**	**43**	**62**
South-eastern Asia	**48**	**61**	**61**	**74**
Regions nearly on track				
Northern Africa	**65**	**73**	**74**	**82**
Latin America and Caribbean	**69**	**75**	**77**	**84**
Regions not on track				
South Asia	**20**	**37**	**40**	**60**
Sub-Saharan Africa	**32**	**36**	**49**	**66**
Western Asia	**79**	**79**	**84**	**90**
Eurasia	**84**	**83**	**88**	**92**
Oceania	**58**	**55**	**68**	**79**
World	49	58	62	75



Countries making rapid progress in sanitation

FIGURE 13 **Countries that increased coverage by at least 25% between 1990 and 2002***

	Sanitation coverage (%)		% increase
Country	1990	2002	1990-2002
Myanmar	**21**	**73**	**248**
Benin	**11**	**32**	**191**
Madagascar	**12**	**33**	**175**
India	**12**	**30**	**150**
Cameroon	**21**	**48**	**129**
Haiti	**15**	**34**	**127**
Nepal	**12**	**27**	**125**
Bangladesh	**23**	**48**	**109**
China	**23**	**44**	**91**
Viet Nam	**22**	**41**	**86**
Congo, Dem. Rep. of the	**18**	**29**	**61**
Kiribati	**25**	**39**	**56**
Mauritania	**28**	**42**	**50**
Senegal	**35**	**52**	**49**
Pakistan	**38**	**54**	**42**
Nicaragua	**47**	**66**	**40**
Honduras	**49**	**68**	**39**
Yemen	**21**	**30**	**38**
Bolivia	**33**	**45**	**36**
Ghana	**43**	**58**	**35**
Philippines	**54**	**73**	**35**
Paraguay	**58**	**78**	**34**
Sri Lanka	**70**	**91**	**30**
Côte d'Ivoire	**31**	**40**	**29**
Ecuador	**56**	**72**	**29**
Malawi	**36**	**46**	**28**
Egypt	**54**	**68**	**26**
Mali	**36**	**45**	**25**
Namibia	**24**	**30**	**25**

*Countries that increased coverage by at least 25% between 1990 and 2002 and that had at least 25% coverage in 2002. Table includes only countries for which data were sufficient to estimate trends.

REDUCING THE RURAL BACKLOG AND TACKLING URBAN GROWTH

Many of the 2.6 billion people without improved sanitation are among those hardest to reach: families living in remote rural areas and urban slums, families displaced by war and famine, and families mired in the poverty-disease trap, for whom improved sanitation and drinking water could offer a way out.

Though more than a billion people gained improved sanitation between 1990 and 2002, the population without coverage declined by only 100 million. The challenge will be seven times greater in the crucial years leading up to the MDG deadline. The population without coverage will need to decrease from 2.6 billion people in 2002 to 1.9 billion in 2015, a total decline of 760 million people. Meeting this target, and reducing rural and urban disparities, will mean providing sanitation services to a billion new urban dwellers and almost 900 million people living in rural communities, where progress has been slower.

DISPARITIES IN COVERAGE

From now until 2015, greater effort must be made to reach the poor and those in rural areas, whose deprivation is hidden behind national averages.

Disparities in drinking water service levels

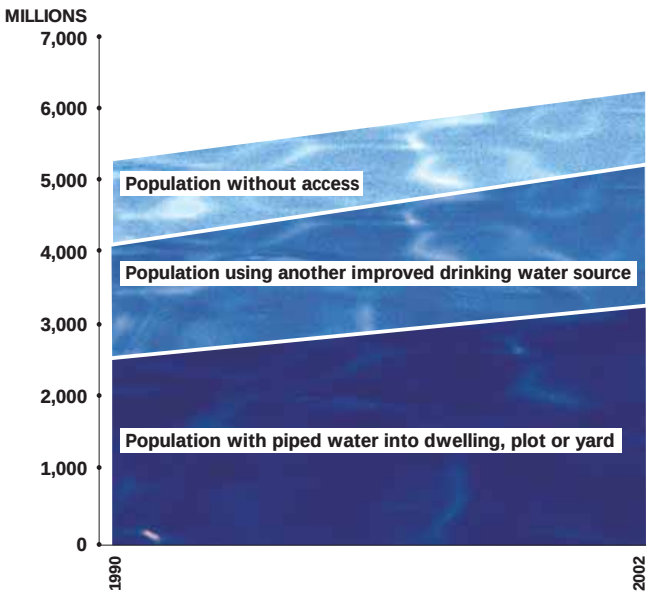
Global coverage figures from 2002 indicate that, of every 10 people, roughly 5 have a connection to a piped water supply at home (in their dwelling, plot or yard); 3 make use of some other sort of improved water supply, such as a protected well or public standpipe; and 2 are unserved, with no choice but to rely on potentially unsafe water from rivers, ponds, unprotected wells or water vendors (see Figure 14).

The way that people secure their drinking water has a direct impact on their health and on the economic status of households. In households using only a remote and unprotected source, health can be jeopardized by water contamination. Moreover, the quantity of water collected is likely to be too small for effective hygiene, even if bathing and laundry are carried out at the source. Using improved water sources, such as a protected spring or well within a reasonable walking distance, provides substantial health benefits. But hygiene may still be compromised and water may be contaminated in transport and storage.

Once water is available at home – through a yard or house tap, for example – then hygienic behaviour and the maintenance of water quality becomes easier. Major improvements in household health usually accompany the use of piped water at home. Similarly, the time saved in not having to collect water may also contribute significantly to improvements in the household economy.

In 2002, more than half the world's population used water from a piped connection at home

FIGURE 14 Trends in service levels for drinking water



Disparities in rural and urban areas

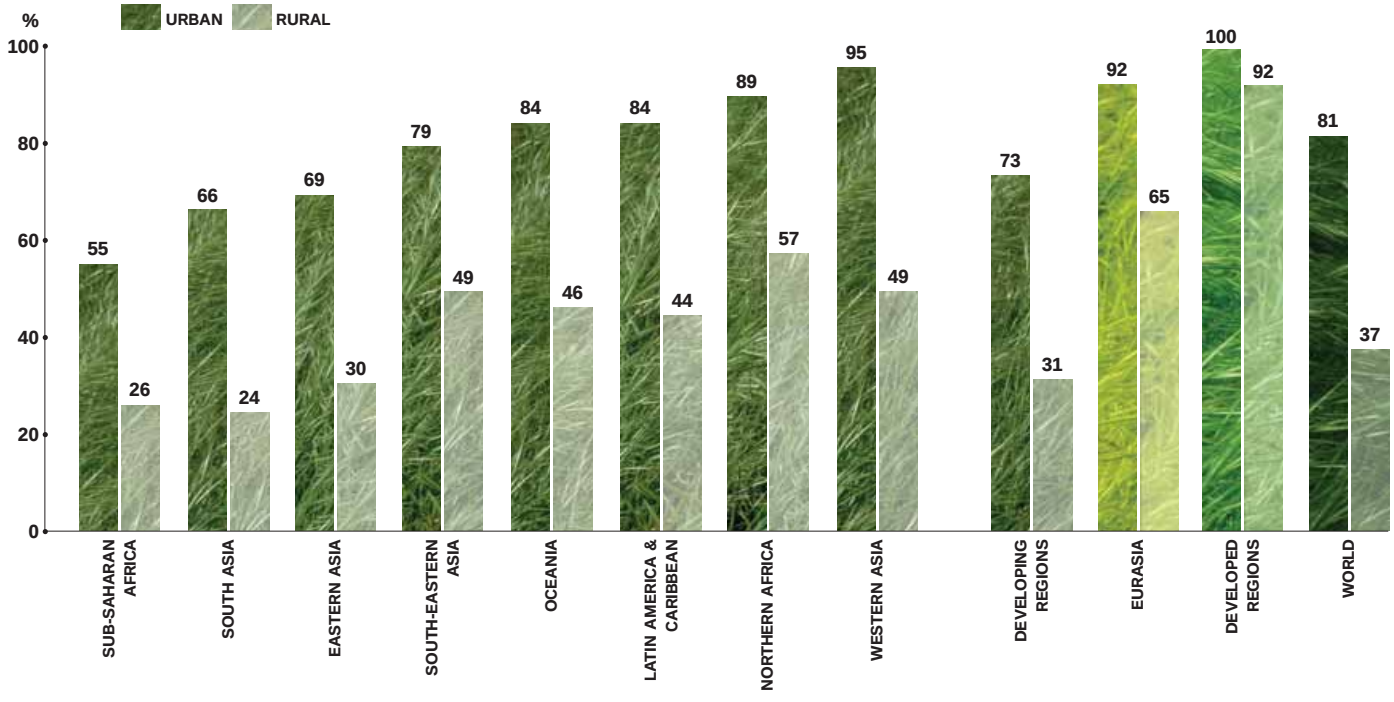
Ninety-two per cent of the urban population and 70 per cent of the rural population in developing countries use improved drinking water sources. That means that for every person without improved drinking water in urban centres, there are six people unserved in rural areas. The disparities are greatest in sub-Saharan Africa, with a difference of 37 percentage points between rural and urban dwellers.

The disparities in urban and rural sanitation are even worse. Only 31 per cent of rural inhabitants in developing regions have access to any type of improved sanitation, as opposed to 73 per cent of urban dwellers. In 2002, the total population in developing regions without improved sanitation was around 560 million in urban areas, compared with a staggering 2 billion in rural areas.

Currently, estimates of water and sanitation coverage in urban areas include those living in urban slums. As a consequence, the statistics tend to mask the deprivation found in these communities. Calculating separate estimates for slum and other urban dwellers poses formidable technical challenges. However, efforts are under way to improve the statistical methods used so that a more accurate picture of the water and sanitation situation in slum communities can be presented.

Rural communities have less than half the sanitation coverage of urban areas

FIGURE 15 **Urban and rural sanitation coverage by region in 2002**



DISPARITIES IN COVERAGE

Disparities by wealth

Not surprisingly, water and sanitation coverage, as well as levels of service, are higher among the rich than the poor. An analysis of 20 Demographic and Health Surveys from the past five years shows that only about 1 in 6 households in the poorest 20 per cent of the population uses improved sanitation facilities – compared to 3 out of 4 households in the richest 20 per cent. Fewer than 4 in 10 of the poorest households use an improved water source, whereas nearly 9 out of 10 of the richest households do.

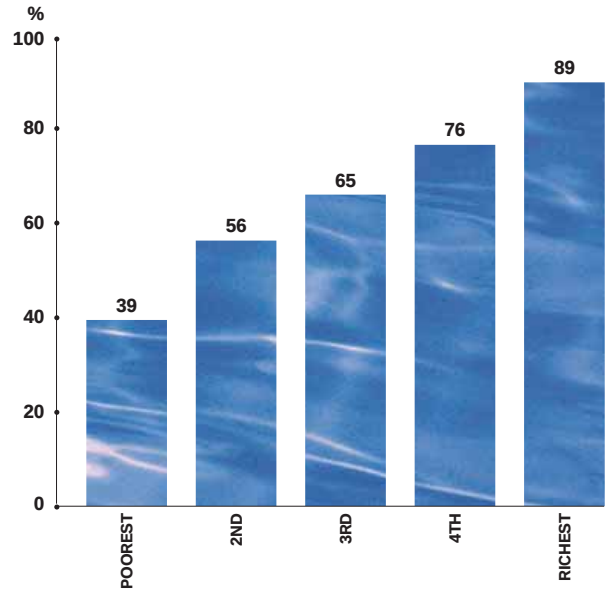
INVESTMENTS IN DRINKING WATER AND SANITATION YIELD HIGH DIVIDENDS

Increased use of improved water and sanitation has many benefits: a significant reduction in disease, especially diarrhoea; averted health-related costs; and time savings associated with having water and sanitation facilities located closer to home. Time saved may translate into higher productivity and school attendance, more leisure time and other, less tangible benefits, such as convenience and well-being, all of which can have an economic impact.

If these benefits are translated into monetary terms, it is possible to compare the total benefits with the costs of a potential intervention. Such an evaluation can often tip the balance in favour of water and sanitation investments. A recent cost-benefit analysis undertaken by WHO found that achieving the MDG target in water and sanitation would bring substantial economic gains: every $1 invested would yield an economic return of between $3 and $34, depending on the region. Globally, meeting the target would require an additional investment of around $11.3 billion per year, over and above current investments. Among the benefits would be an average 10 per cent reduction worldwide in episodes of diarrhoeal diseases.

Richest are twice as likely to use drinking water from an improved source than the poorest

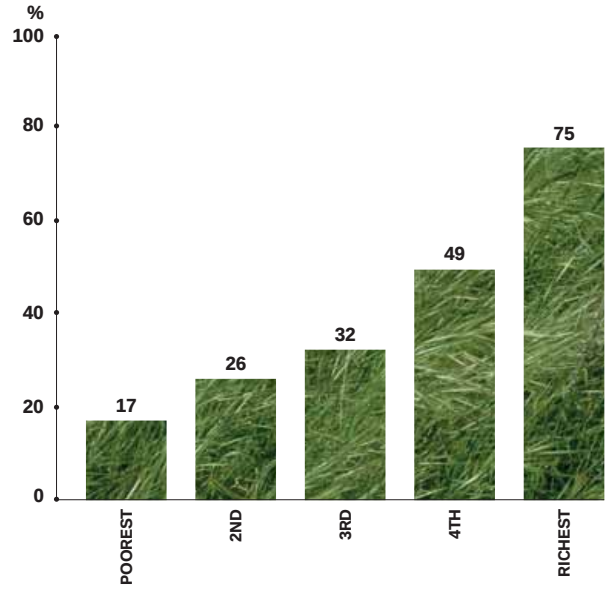
FIGURE 16 Improved drinking water coverage by wealth quintiles



SOURCE: BASED ON DATA FROM SELECTED DHS SURVEYS FOR 20 DEVELOPING COUNTRIES

Richest are four times more likely to use improved sanitation than the poorest

FIGURE 17 Improved sanitation coverage by wealth quintiles



SOURCE: BASED ON DATA FROM SELECTED DHS SURVEYS FOR 20 DEVELOPING COUNTRIES

ADVANCING GENDER EQUALITY THROUGH TOILETS AND TAPS

Ask anyone what it will take to make women's equality a reality and 'toilets' will probably not be the response. Yet it is difficult to exaggerate the impact that access to private, safe and sanitary toilets would have on the daily lives and long-term prospects of the 1.3 billion women and girls that are currently doing without. The burdens of water-hauling are widely understood: this tedious, time-consuming and physically debilitating chore reduces the time available for productive activities and, for girls, to attend school. Less discussed are the blows to health, productivity and dignity that result from poor sanitation.

In some cultural settings where basic sanitation is lacking, women and girls have to rise before dawn, making their way in the darkness to fields, railroad tracks and roadsides to defecate in the open, knowing they may risk rape or other violence in the process. In such circumstances, women and girls often go the whole day without relieving themselves until night affords them the privacy of darkness. Sometimes, they limit their daytime intake of food and water so that they can make it until evening. Without toilets in schools, girls must go in the open – that is, if they are even allowed to attend. For many girls, the onset of adolescence means the end of school.

All who lack adequate sanitation facilities are exposed to unpleasant and unhealthy daily routines. However, the impact on women and girls is greatest. In their household roles, they may more readily transmit disease-causing pathogens from exposed faeces to other family members. And restricted toilet opportunities cause discomfort and increase the likelihood of health problems such as urinary tract infections and chronic constipation as well as causing unnecessary mental stress. Sick, pregnant and postpartum women particularly suffer from lack of sanitation. How can the future be better if today's girls must drop out of school for want of something as basic as a toilet?

THE JOINT MONITORING PROGRAMME

Since 1990, WHO and UNICEF have teamed up to track progress on global water and sanitation goals through the Joint Monitoring Programme for Water Supply and Sanitation. The JMP monitors trends in coverage; helps build national monitoring capacity in developing countries; develops and harmonizes questionnaires, indicators and definitions to ensure comparability of data over time and among countries; and informs policy makers of the status of the water supply and sanitation sector worldwide through publications such as this one. The JMP draws guidance from a technical advisory group of leading experts in water supply, sanitation and hygiene, and from institutions involved in data collection and sector monitoring.

Further information about the JMP and its methodology can be found at: **www.wssinfo.org**.

The JMP database

The JMP database is the source for WHO and UNICEF's estimates on the use of drinking water and sanitation facilities. The database currently draws upon more than 350 nationally representative household surveys and censuses, double the amount of data that was available for the 2000 monitoring report. The surveys include the UNICEF-supported Multiple Indicator Cluster Surveys, the USAID-supported Demographic and Health Surveys, the World Bank's Living Standard Measurement Surveys and, most recently, WHO's World Health Surveys.

The JMP assembles, reviews and assesses household survey and census data. A rigorous review process, based on a set of objective criteria, ensures that only reliable data are included in the database.

The shift from provider-based to user-based data

Prior to 2000, coverage data were based on information from service providers, such as utilities, ministries and water agencies, rather than on household surveys. The quality of the information varied considerably. Provider-based data, for example, often did not include facilities built by householders themselves, such as private wells or pit latrines, or even systems installed by local communities. Governments had their own definitions of improved water supply and sanitation, which would change over time. Therefore comparisons could not be made among countries or for the same country over time. The shift in 2000 to the use of household surveys, and the clarification of definitions, provide a more accurate picture by monitoring the type of services and facilities that people actually use.

Household surveys are usually conducted by national institutes of statistics, carried out by trained national staff who collect information on a wide range of health and living conditions through face-to-face interviews.

Survey and census data are plotted on a time scale from 1980 to the present. Four graphs for each country show both urban and rural coverage for water and for sanitation. A linear trend line, based on the least-squares method, is drawn through these data points to estimate coverage for 1990 and 2002.

THE JOINT MONITORING PROGRAMME

Challenges and responses

The MDG target refers to "access to safe drinking water and basic sanitation." Though it sounds straightforward, monitoring such a target can be complex. How is drinking water defined, for example, and how is an interviewer to determine whether a household's water is safe? In order to standardize data collection, the JMP defines drinking water as the water used for normal domestic purposes, including consumption and hygiene.

Extensive research in rural areas found that people satisfy their basic needs for water if the source can be reached in a round trip of 30 minutes or less. When it takes more than 30 minutes to get to the water source and back, people typically haul less water than they need to meet their basic requirements. These requirements are determined locally, depending upon water availability, local customs, and the amount of water required to prepare food staples.

Measuring 'basic sanitation' is equally complicated. Ideally, the definition of this term would encompass critical components of what sanitation services should aim for: privacy, dignity, cleanliness and a healthy environment. From a monitoring point of view, however, such characteristics are difficult to measure.

To resolve these issues, the JMP classifies sanitation facilities and water supply sources as either 'improved' or 'unimproved', as defined on page 4 of this report. In doing so, it makes the assumption that those classified as 'improved' are likely to be more sanitary than 'unimproved' ones.

Not all people that have access to improved facilities or sources actually use them. Consequently, the JMP has adopted 'use' as the primary indicator for monitoring progress in both water and sanitation.

Current coverage estimates from the JMP are expressed as the percentage of the population using improved drinking water sources and improved sanitation facilities.

Other issues

The use of household surveys has significantly increased the quality and comparability of information on improved drinking water sources and sanitation. Making this data even more useful to policy makers means tackling additional challenges:

• *Harmonizing indicators and survey questions.* Surveys use different indicators and methodologies, making it difficult to compare information. A guide harmonizing questions and response categories for drinking water supply and sanitation is being prepared and discussions are under way on incorporating them in major household survey programmes and population censuses.

• *Measuring gender disparities.* Data on water and sanitation are collected at the household level. Therefore gender-specific data cannot be calculated. However, who bears the main responsibility for water collection and how long it takes can be ascertained. Questions along these lines are being reflected in the design of new surveys.

• *Safety and water quality.* Existing surveys do not provide information on the quality of water, either at the source or in households. Improved sources may still contain harmful substances, and water can be contaminated during transport and storage. Although 'improved drinking water sources' provides a good indicator for progress, it is not a direct measure of it. Dangerous levels of chemicals, such as the arsenic and flouride that are increasingly found in groundwater in South and South-eastern Asia, are of growing concern, along with infectious or other toxic substances. The proportion of the population using safe drinking water is therefore likely to be lower than that using improved drinking water sources.

In response, WHO and UNICEF are conducting a pilot study to develop procedures for assessing drinking water quality at the household level. The study is being carried out in China, Ethiopia, Jordan, Nicaragua, Nigeria and Tajikistan with the support of the British Government.

COUNTRY, REGIONAL AND GLOBAL ESTIMATES ON WATER & SANITATION

Countries, areas and territories	Year	Population			Improved Drinking Water Coverage						Improved Sanitation Coverage		
					Total		Urban		Rural				
		Total (thousands)	Urban %	Rural %	Total %	Household Connection %	Total %	Household Connection %	Total %	Household Connection %	Total %	Urban %	Rural %
Afghanistan	1990	13,799	18	82	-	-	-	-	-	0	-	-	5
	2002	22,930	23	77	13	2	19	8	11	0	8	16	5
Albania	1990	3,289	36	64	97	-	99	96	95	-	-	99	-
	2002	3,141	43	57	97	68	99	96	95	46	89	99	81
Algeria	1990	25,017	51	49	95	62	99	83	92	39	88	99	76
	2002	31,266	58	42	87	76	92	87	80	60	92	99	82
American Samoa	1990	47	81	19	-	-	-	-	-	-	-	-	-
	2002	60	90	10	-	-	-	-	-	-	-	-	-
Andorra	1990	53	94	6	100	-	100	100	100	-	100	100	100
	2002	69	92	8	100	-	100	100	100	-	100	100	100
Angola	1990	9,340	26	74	32	1	11	1	40	0	30	62	19
	2002	13,184	35	65	50	5	70	13	40	1	30	56	16
Anguilla	1990	9	100	0	-	-	-	-	-	-	99	99	99
	2002	12	100	0	60	45	60	45	60	45	99	99	99
Antigua and Barbuda	1990	63	35	65	-	-	95	-	-	-	-	98	-
	2002	73	37	63	91	83	95	90	89	79	95	98	94
Argentina	1990	32,527	87	13	94	69	97	76	73	23	82	87	47
	2002	37,981	90	10	-	-	97	-	-	-	-	-	-
Armenia	1990	3,545	67	33	-	-	99	97	-	-	-	96	-
	2002	3,072	65	35	92	85	99	97	80	64	84	96	61
Aruba	1990	66	50	50	100	100	100	100	100	100	-	-	-
	2002	98	46	54	100	100	100	100	100	100	-	-	-
Australia	1990	16,888	85	15	100	-	100	-	100	-	100	100	100
	2002	19,544	92	8	100	-	100	-	100	-	100	100	100
Austria	1990	7,729	66	34	100	100	100	100	100	100	100	100	100
	2002	8,111	66	34	100	100	100	100	100	100	100	100	100
Azerbaijan	1990	7,192	54	46	66	41	80	63	49	16	-	-	-
	2002	8,297	50	50	77	47	95	76	59	19	55	73	36
Bahamas	1990	255	84	16	-	-	98	-	-	-	100	100	100
	2002	310	89	11	97	70	98	69	86	80	100	100	100
Bahrain	1990	490	88	12	-	-	100	100	-	-	-	100	-
	2002	709	90	10	-	-	100	100	-	-	-	100	-
Bangladesh*	1990	109,402	20	80	71	6	83	28	68	0	23	71	11
	2002	143,809	24	76	75	6	82	26	72	0	48	75	39
Barbados	1990	257	45	55	100	-	100	98	100	-	100	99	100
	2002	269	51	49	100	-	100	100	100	-	99	99	100
Belarus	1990	10,266	66	34	100	-	100	-	100	-	-	-	-
	2002	9,940	71	29	100	61	100	78	100	22	-	-	-
Belgium	1990	9,967	96	4	-	100	100	100	-	90	-	-	-
	2002	10,296	97	3	-	-	100	100	-	-	-	-	-
Belize	1990	186	48	52	-	-	100	92	-	-	-	-	-
	2002	251	48	52	91	80	100	99	82	63	47	71	25
Benin	1990	4,650	34	66	60	6	71	17	54	1	11	31	1
	2002	6,558	44	56	68	12	79	26	60	1	32	58	12
Bermuda	1990	74	100	0	-	-	-	-	-	-	-	-	-
	2002	81	100	0	-	-	-	-	-	-	-	-	-
Bhutan	1990	1,696	5	95	-	-	-	-	-	-	-	-	-
	2002	2,190	8	92	62	-	86	81	60	-	70	65	70
Bolivia	1990	6,669	56	44	72	53	91	76	48	23	33	49	13
	2002	8,645	63	37	85	75	95	92	68	47	45	58	23

*The figures for Bangladesh have been adjusted for arsenic contamination levels on the basis of national surveys conducted and approved by the Government.

Countries, areas and territories	Year	Population			Improved Drinking Water Coverage						Improved Sanitation Coverage		
					Total		Urban		Rural				
		Total (thousands)	Urban %	Rural %	Total %	Household Connection %	Total %	Household Connection %	Total %	Household Connection %	Total %	Urban %	Rural %
Bosnia and Herzegovina	1990	4,308	39	61	98	-	100	98	96	-	-	99	-
	2002	4,126	44	56	98	82	100	98	96	69	93	99	88
Botswana	1990	1,354	42	58	93	25	100	40	88	13	38	61	21
	2002	1,770	51	49	95	46	100	62	90	28	41	57	25
Brazil	1990	148,809	75	25	83	74	93	90	55	28	70	82	37
	2002	176,257	82	18	89	78	96	91	58	17	75	83	35
British Virgin Islands	1990	17	50	50	98	97	98	97	98	97	100	100	100
	2002	21	63	37	98	97	98	97	98	97	100	100	100
Brunei Darussalam	1990	257	66	34	-	-	-	-	-	-	-	-	-
	2002	350	75	25	-	-	-	-	-	-	-	-	-
Bulgaria	1990	8,718	66	34	100	98	100	100	100	94	100	100	100
	2002	7,965	69	31	100	-	100	100	100	-	100	100	100
Burkina Faso	1990	8,921	14	86	39	4	63	25	35	1	13	47	8
	2002	12,624	17	83	51	4	82	23	44	0	12	45	5
Burundi	1990	5,609	6	94	69	3	96	31	67	1	44	42	44
	2002	6,602	10	90	79	4	90	41	78	1	36	47	35
Cambodia	1990	9,744	13	87	-	-	-	-	-	1	-	-	-
	2002	13,810	18	82	34	6	58	31	29	1	16	53	8
Cameroon	1990	11,661	40	60	50	11	77	25	32	2	21	43	7
	2002	15,729	51	49	63	15	84	28	41	2	48	63	33
Canada	1990	27,701	77	23	100	-	100	100	99	-	100	100	99
	2002	31,271	80	20	100	88	100	100	99	-	100	100	99
Cape Verde	1990	349	44	56	-	-	-	-	-	4	-	-	-
	2002	454	55	45	80	24	86	41	73	4	42	61	19
Cayman Islands	1990	26	100	0	-	-	-	-	-	-	-	-	-
	2002	39	100	0	-	-	-	-	-	-	-	-	-
Central African Republic	1990	2,943	37	63	48	1	70	2	35	0	23	32	18
	2002	3,819	42	58	75	4	93	9	61	0	27	47	12
Chad	1990	5,822	21	79	20	1	45	6	13	0	6	27	1
	2002	8,348	25	75	34	5	40	19	32	0	8	30	0
Channel Islands	1990	142	31	69	-	-	-	-	-	-	-	-	-
	2002	145	30	70	-	-	-	-	-	-	-	-	-
Chile	1990	13,100	83	17	90	86	98	98	49	25	85	91	52
	2002	15,613	87	13	95	92	100	99	59	40	92	96	64
China	1990	1,155,305	27	73	70	49	100	80	59	37	23	64	7
	2002	1,294,867	38	62	77	59	92	91	68	40	44	69	29
China, Hong Kong (SAR)	1990	5,704	100	0	-	-	-	-	-	-	-	-	-
	2002	6,981	100	0	-	-	-	-	-	-	-	-	-
China, Macao (SAR)	1990	372	99	1	-	-	-	-	-	-	-	-	-
	2002	460	99	1	-	-	-	-	-	-	-	-	-
Colombia	1990	34,970	69	31	92	78	98	94	78	41	82	95	52
	2002	43,526	76	24	92	85	99	96	71	51	86	96	54
Comoros	1990	527	28	72	89	18	99	32	85	12	23	41	16
	2002	747	34	66	94	25	90	47	96	14	23	38	15
Congo	1990	2,494	48	52	-	-	-	-	-	5	-	-	2
	2002	3,633	53	47	46	33	72	58	17	5	9	14	2
Congo, Democratic Republic of the	1990	37,370	28	72	43	25	92	89	24	0	18	56	3
	2002	51,201	31	69	46	10	83	32	29	1	29	43	23
Cook Islands	1990	18	58	42	94	-	99	-	87	-	95	100	88
	2002	18	69	31	95	-	98	-	88	-	100	100	100
Costa Rica	1990	3,076	54	46	-	-	100	99	-	-	-	-	97
	2002	4,094	60	40	97	92	100	99	92	81	92	89	97
Côte d'Ivoire	1990	12,505	40	60	69	24	74	52	66	5	31	52	16
	2002	16,365	44	56	84	33	98	65	74	9	40	61	23
Croatia	1990	4,842	54	46	-	-	-	-	-	-	-	-	-
	2002	4,439	59	41	-	-	-	-	-	-	-	-	-
Cuba	1990	10,628	74	26	-	65	95	77	-	31	98	99	95
	2002	11,271	75	25	91	74	95	82	78	49	98	99	95
Cyprus	1990	681	65	35	100	100	100	100	100	100	100	100	100
	2002	796	69	31	100	100	100	100	100	100	100	100	100

Countries, areas and territories	Year	Population			Improved Drinking Water Coverage						Improved Sanitation Coverage		
					Total		Urban		Rural				
		Total (thousands)	Urban %	Rural %	Total %	Household Connection %	Total %	Household Connection %	Total %	Household Connection %	Total %	Urban %	Rural %
Czech Republic	1990	10,306	75	25	-	-	-	-	-	-	-	-	-
	2002	10,246	74	26	-	-	-	-	-	-	-	-	-
Denmark	1990	5,140	85	15	100	100	100	100	100	100	-	-	-
	2002	5,351	85	15	100	100	100	100	100	100	-	-	-
Djibouti	1990	528	75	25	78	32	82	40	67	11	48	55	27
	2002	693	83	17	80	35	82	40	67	11	50	55	27
Dominica	1990	72	68	32	-	-	100	98	-	-	-	-	-
	2002	78	72	28	97	87	100	98	90	58	83	86	75
Dominican Republic	1990	7,058	55	45	86	54	97	70	72	35	48	60	33
	2002	8,616	59	41	93	35	98	37	85	31	57	67	43
Ecuador	1990	10,264	55	45	69	55	81	74	54	32	56	73	36
	2002	12,810	61	39	86	59	92	77	77	32	72	80	59
Egypt	1990	55,768	43	57	94	61	97	89	92	40	54	70	42
	2002	70,507	42	58	98	80	100	98	97	67	68	84	56
El Salvador	1990	5,110	49	51	67	45	88	74	47	16	51	70	33
	2002	6,415	59	41	82	60	91	78	68	34	63	78	40
Equatorial Guinea	1990	354	35	65	-	4	-	12	-	0	-	-	-
	2002	481	47	53	44	8	45	17	42	0	53	60	46
Eritrea	1990	3,103	16	84	40	6	60	40	36	0	8	46	0
	2002	3,991	20	80	57	8	72	42	54	0	9	34	3
Estonia	1990	1,584	71	29	-	-	-	96	-	-	-	-	-
	2002	1,338	69	31	-	87	-	96	-	67	-	93	-
Ethiopia	1990	48,856	13	87	25	1	80	4	16	0	4	14	2
	2002	68,961	15	85	22	4	81	23	11	0	6	19	4
Faroe Islands	1990	48	33	67	-	-	-	-	-	-	-	-	-
	2002	47	38	62	-	-	-	-	-	-	-	-	-
Falkland Islands (Malvinas)	1990	2	68	32	-	-	-	-	-	-	-	-	-
	2002	3	81	19	-	-	-	-	-	-	-	-	-
Fiji	1990	724	42	58	-	-	-	-	-	-	98	99	98
	2002	831	51	49	-	-	-	-	-	-	98	99	98
Finland	1990	4,986	61	39	100	92	100	96	100	85	100	100	100
	2002	5,197	61	39	100	97	100	100	100	93	100	100	100
France	1990	56,735	74	26	-	99	100	100	-	95	-	-	-
	2002	59,850	76	24	-	99	100	100	-	95	-	-	-
French Guiana	1990	116	75	25	-	-	-	-	-	-	-	-	-
	2002	174	75	25	84	79	88	83	71	65	78	85	57
French Polynesia	1990	195	56	44	100	98	100	99	100	96	98	99	97
	2002	241	52	48	100	98	100	99	100	96	98	99	97
Gabon	1990	953	68	32	-	-	95	-	-	-	-	-	-
	2002	1,306	83	17	87	45	95	52	47	8	36	37	30
Gambia	1990	936	25	75	-	-	95	-	-	3	-	-	-
	2002	1,388	26	74	82	12	95	39	77	3	53	72	46
Georgia	1990	5,460	55	45	-	-	-	-	-	-	-	96	-
	2002	5,177	52	48	76	58	90	83	61	30	83	96	69
Germany	1990	79,433	85	15	100	100	100	100	100	97	-	-	-
	2002	82,414	88	12	100	100	100	100	100	97	-	-	-
Ghana	1990	15,277	36	64	54	14	85	35	36	2	43	54	37
	2002	20,471	45	55	79	24	93	50	68	3	58	74	46
Greece	1990	10,160	59	41	-	84	-	91	-	73	-	-	-
	2002	10,970	61	39	-	-	-	-	-	-	-	-	-
Grenada	1990	85	32	68	-	-	97	-	-	-	97	96	97
	2002	80	40	60	95	82	97	93	93	75	97	96	97
Guadeloupe	1990	391	98	2	-	-	98	98	-	-	-	-	-
	2002	436	100	0	98	98	98	98	93	75	64	64	61
Guam	1990	134	91	9	100	-	100	-	100	-	99	99	98
	2002	160	94	6	100	-	100	-	100	-	99	99	98
Guatemala	1990	8,749	41	59	77	48	88	67	69	34	50	71	35
	2002	12,036	46	54	95	55	99	58	92	53	61	72	52
Guinea	1990	6,122	25	75	42	10	70	37	32	2	17	27	13
	2002	8,359	34	66	51	8	78	23	38	1	13	25	6

Countries, areas and territories	Year	Population			Improved Drinking Water Coverage						Improved Sanitation Coverage		
					Total		Urban		Rural				
		Total (thousands)	Urban %	Rural %	Total %	Household Connection %	Total %	Household Connection %	Total %	Household Connection %	Total %	Urban %	Rural %
Guinea-Bissau	1990	1,016	24	76	-	-	-	-	-	0	-	-	-
	2002	1,449	33	67	59	5	79	15	49	0	34	57	23
Guyana	1990	731	33	67	-	-	-	-	-	-	-	-	-
	2002	764	37	63	83	53	83	66	83	45	70	86	60
Haiti	1990	6,914	29	71	53	10	77	27	43	2	15	27	11
	2002	8,218	37	63	71	11	91	24	59	3	34	52	23
Honduras	1990	4,868	40	60	83	59	89	82	78	43	49	77	31
	2002	6,781	45	55	90	72	99	92	82	55	68	89	52
Hungary	1990	10,365	62	38	99	85	100	92	98	74	-	100	-
	2002	9,923	65	35	99	84	100	93	98	67	95	100	85
Iceland	1990	255	91	9	100	100	100	100	100	100	-	-	-
	2002	287	93	7	100	100	100	100	100	100	-	-	-
India	1990	846,418	26	74	68	17	88	51	61	5	12	43	1
	2002	1,049,549	28	72	86	24	96	51	82	13	30	58	18
Indonesia	1990	182,117	31	69	71	10	92	26	62	3	46	66	38
	2002	217,131	44	56	78	17	89	31	69	5	52	71	38
Iran (Islamic Republic of)	1990	56,703	56	44	91	84	98	96	83	69	83	86	78
	2002	68,070	66	34	93	87	98	96	83	69	84	86	78
Iraq	1990	17,341	70	30	83	76	97	94	50	33	81	95	48
	2002	24,510	67	33	81	74	97	94	50	33	80	95	48
Ireland	1990	3,515	57	43	-	91	100	99	-	81	-	-	-
	2002	3,911	60	40	-	-	100	99	-	-	-	-	-
Isle of Man	1990	69	52	48	-	-	-	-	-	-	-	-	-
	2002	74	52	48	-	-	-	-	-	-	-	-	-
Israel	1990	4,514	90	10	100	100	100	100	100	98	-	100	-
	2002	6,304	92	8	100	100	100	100	100	98	-	100	-
Italy	1990	56,719	67	33	-	99	100	100	-	96	-	-	-
	2002	57,482	67	33	-	99	100	100	-	96	-	-	-
Jamaica	1990	2,369	51	49	92	60	97	87	86	32	75	85	64
	2002	2,627	52	48	93	70	98	93	87	45	80	90	68
Japan	1990	123,537	63	37	100	95	100	98	100	91	100	100	100
	2002	127,478	65	35	100	96	100	98	100	91	100	100	100
Jordan	1990	3,254	72	28	98	95	100	99	91	87	-	97	-
	2002	5,329	79	21	91	87	91	89	91	81	93	94	85
Kazakhstan	1990	16,809	57	43	86	62	96	88	72	27	72	87	52
	2002	15,469	56	44	86	61	96	88	72	27	72	87	52
Kenya	1990	23,585	25	75	45	22	91	58	30	11	42	49	40
	2002	31,540	38	62	62	29	89	56	46	12	48	56	43
Kiribati	1990	72	35	65	48	24	76	46	33	13	25	33	21
	2002	87	46	54	64	34	77	49	53	22	39	59	22
Korea, Democratic People's Republic of	1990	19,956	58	42	100	-	100	-	100	-	-	-	-
	2002	22,541	61	39	100	77	100	81	100	71	59	58	60
Korea, Republic of	1990	42,869	74	26	-	-	97	96	-	-	-	-	-
	2002	47,430	80	20	92	84	97	96	71	39	-	-	-
Kuwait	1990	2,143	95	5	-	-	-	-	-	-	-	-	-
	2002	2,443	96	4	-	-	-	-	-	-	-	-	-
Kyrgyzstan	1990	4,395	38	62	-	-	98	-	-	-	-	-	-
	2002	5,067	34	66	76	48	98	87	66	28	60	75	51
Lao People's Democratic Republic	1990	4,132	15	85	-	-	-	-	-	4	-	-	-
	2002	5,529	20	80	43	8	66	25	38	4	24	61	14
Latvia	1990	2,713	70	30	-	-	-	-	-	-	-	-	-
	2002	2,329	66	34	-	-	-	93	-	-	-	-	-
Lebanon	1990	2,712	83	17	100	-	100	100	100	-	-	100	-
	2002	3,596	87	13	100	98	100	100	100	85	98	100	87
Lesotho	1990	1,570	17	83	-	7	-	31	-	2	37	61	32
	2002	1,800	18	82	76	7	88	31	74	2	37	61	32
Liberia	1990	2,135	42	58	56	11	85	21	34	3	38	59	24
	2002	3,239	46	54	62	1	72	1	52	0	26	49	7
Libyan Arab Jamahiriya	1990	4,306	80	20	71	54	72	54	68	55	97	97	96
	2002	5,445	86	14	72	54	72	54	68	55	97	97	96

Countries, areas and territories	Year	Population			Improved Drinking Water Coverage						Improved Sanitation Coverage		
					Total		Urban		Rural				
		Total (thousands)	Urban %	Rural %	Total %	Household Connection %	Total %	Household Connection %	Total %	Household Connection %	Total %	Urban %	Rural %
Liechtenstein	1990	29	21	79	-	-	-	-	-	-	-	-	-
	2002	33	22	78	-	-	-	-	-	-	-	-	-
Lithuania	1990	3,739	68	32	-	-	-	-	-	-	-	-	-
	2002	3,465	67	33	-	-	-	-	-	-	-	-	-
Luxembourg	1990	378	86	14	100	100	100	100	100	98	-	-	-
	2002	447	92	8	100	100	100	100	100	98	-	-	-
Madagascar	1990	11,956	24	76	40	8	82	30	27	1	12	25	8
	2002	16,916	26	74	45	5	75	14	34	1	33	49	27
Malawi	1990	9,456	12	88	41	6	90	33	34	2	36	52	34
	2002	11,871	16	84	67	9	96	45	62	2	46	66	42
Malaysia	1990	17,845	50	50	-	-	96	-	-	-	96	94	98
	2002	23,965	63	37	95	-	96	-	94	64	-	-	98
Maldives	1990	216	26	74	99	20	100	78	99	0	-	100	-
	2002	309	28	72	84	22	99	76	78	0	58	100	42
Mali	1990	9,046	24	76	34	2	50	8	29	0	36	50	32
	2002	12,623	32	68	48	10	76	27	35	1	45	59	38
Malta	1990	360	88	12	100	100	100	100	100	96	-	100	-
	2002	393	91	9	100	100	100	100	100	96	-	100	-
Marshall Islands	1990	44	65	35	96	-	95	-	97	-	75	88	51
	2002	52	66	34	85	-	80	-	95	-	82	93	59
Martinique	1990	360	90	10	-	-	-	-	-	-	-	-	-
	2002	390	96	4	-	-	-	-	-	-	-	-	-
Mauritania	1990	2,030	44	56	41	9	19	18	57	3	28	31	26
	2002	2,807	60	40	56	22	63	29	45	11	42	64	9
Mauritius	1990	1,057	40	60	100	-	100	98	100	-	99	100	99
	2002	1,210	43	57	100	78	100	74	100	82	99	100	99
Mayotte	1990	0	-	-	-	-	-	-	-	-	-	-	-
	2002	0	-	-	-	-	-	-	-	-	-	-	-
Mexico	1990	83,225	72	28	80	78	90	89	54	50	66	84	20
	2002	101,965	75	25	91	89	97	96	72	71	77	90	39
Micronesia (Federated States of)	1990	96	26	74	87	-	93	-	85	-	30	53	21
	2002	108	29	71	94	-	95	-	94	-	28	61	14
Moldova, Republic of	1990	4,364	47	53	-	-	97	-	-	-	-	-	-
	2002	4,270	46	54	92	41	97	78	88	9	68	86	52
Monaco	1990	30	100	0	-	-	100	100	-	-	-	100	-
	2002	34	100	0	-	-	100	100	-	-	-	100	-
Mongolia	1990	2,216	57	43	62	28	87	49	30	1	-	-	-
	2002	2,559	57	43	62	28	87	49	30	1	59	75	37
Montserrat	1990	11	12	88	100	-	100	98	100	-	96	96	96
	2002	3	13	87	100	-	100	98	100	-	96	96	96
Morocco	1990	24,564	48	52	75	41	94	75	58	9	57	87	28
	2002	30,072	57	43	80	57	99	92	56	12	61	83	31
Mozambique	1990	13,465	21	79	-	-	-	-	-	2	-	-	14
	2002	18,537	34	66	42	11	76	28	24	2	27	51	14
Myanmar	1990	40,506	25	75	48	3	73	11	40	1	21	39	15
	2002	48,852	29	71	80	8	95	23	74	2	73	96	63
Namibia	1990	1,409	27	73	58	31	99	83	43	12	24	68	8
	2002	1,961	32	68	80	39	98	76	72	21	30	66	14
Nauru	1990	9	100	0	-	-	-	-	-	-	-	-	-
	2002	13	100	0	-	-	-	-	-	-	-	-	-
Nepal	1990	18,625	9	91	69	6	94	42	67	3	12	62	7
	2002	24,609	15	85	84	14	93	48	82	8	27	68	20
Netherlands	1990	14,952	60	40	100	98	100	100	99	95	100	100	100
	2002	16,067	65	35	100	98	100	100	99	95	100	100	100
Netherlands Antilles	1990	188	68	32	-	-	-	-	-	-	-	-	-
	2002	219	70	30	-	-	-	-	-	-	-	-	-
New Caledonia	1990	171	60	40	-	-	-	-	-	-	-	-	-
	2002	224	61	39	-	-	-	-	-	-	-	-	-
New Zealand	1990	3,360	85	15	97	-	100	100	82	-	-	-	88
	2002	3,846	86	14	-	-	100	100	-	-	-	-	-

Countries, areas and territories	Year	Population			Improved Drinking Water Coverage						Improved Sanitation Coverage		
					Total		Urban		Rural				
		Total (thousands)	Urban %	Rural %	Total %	Household Connection %	Total %	Household Connection %	Total %	Household Connection %	Total %	Urban %	Rural %
Nicaragua	1990	3,824	53	47	69	54	92	89	42	15	47	64	27
	2002	5,335	57	43	81	62	93	86	65	31	66	78	51
Niger	1990	7,650	16	84	40	3	62	19	35	0	7	35	2
	2002	11,544	22	78	46	8	80	35	36	0	12	43	4
Nigeria	1990	86,018	35	65	49	13	78	31	33	3	39	50	33
	2002	120,911	46	54	60	11	72	20	49	3	38	48	30
Niue	1990	2	31	69	100	-	100	100	100	-	100	100	100
	2002	2	35	65	100	87	100	100	100	80	100	100	100
Northern Mariana Islands	1990	44	89	11	98	-	98	93	100	-	84	85	78
	2002	76	94	6	98	-	98	-	97	35	94	94	96
Norway	1990	4,241	72	28	100	100	100	100	100	100	-	-	-
	2002	4,514	78	22	100	100	100	100	100	100	-	-	-
Occupied Palestinian Territory	1990	2,154	66	34	-	-	97	-	-	-	-	-	-
	2002	3,433	71	29	94	83	97	91	86	63	76	78	70
Oman	1990	1,845	62	38	77	21	81	30	72	7	83	97	61
	2002	2,768	77	23	79	25	81	30	72	7	89	97	61
Pakistan	1990	110,901	31	69	83	28	95	61	78	13	38	81	19
	2002	149,911	34	66	90	23	95	50	87	9	54	92	35
Palau	1990	15	70	30	80	-	71	-	99	-	66	72	54
	2002	20	69	31	84	-	79	-	94	10	83	96	52
Panama	1990	2,411	54	46	-	-	99	96	-	-	-	-	-
	2002	3,064	57	43	91	85	99	96	79	72	72	89	51
Papua New Guinea	1990	4,114	13	87	39	11	88	61	32	4	45	67	41
	2002	5,586	13	87	39	11	88	61	32	4	45	67	41
Paraguay	1990	4,219	49	51	62	30	80	59	46	2	58	71	46
	2002	5,740	57	43	83	54	100	82	62	18	78	94	58
Peru	1990	21,753	69	31	74	56	88	74	42	16	52	68	15
	2002	26,767	74	26	81	72	87	84	66	40	62	72	33
Philippines	1990	61,104	49	51	87	21	93	37	82	6	54	63	46
	2002	78,580	60	40	85	44	90	60	77	22	73	81	61
Poland	1990	38,111	61	39	-	78	100	93	-	56	-	-	-
	2002	38,622	62	38	-	95	100	99	-	89	-	-	-
Portugal	1990	9,899	47	53	-	72	-	97	-	50	-	-	-
	2002	10,049	54	46	-	-	-	97	-	-	-	-	-
Puerto Rico	1990	3,528	72	28	-	-	-	-	-	-	-	-	-
	2002	3,859	96	4	-	-	-	-	-	-	-	-	-
Qatar	1990	467	89	11	100	-	100	100	100	-	100	100	100
	2002	601	92	8	100	-	100	100	100	-	100	100	100
Réunion	1990	604	81	19	-	-	-	-	-	-	-	-	-
	2002	745	91	9	-	-	-	-	-	-	-	-	-
Romania	1990	23,207	53	47	-	-	-	-	-	-	-	-	-
	2002	22,387	55	45	57	49	91	79	16	13	51	86	10
Russian Federation	1990	148,292	73	27	94	77	97	87	86	49	87	93	70
	2002	144,082	73	27	96	81	99	92	88	52	87	93	70
Rwanda	1990	6,775	5	95	58	1	88	24	57	0	37	49	36
	2002	8,272	16	84	73	6	92	34	69	1	41	56	38
Saint Kitts and Nevis	1990	41	35	65	99	-	99	-	99	-	96	96	96
	2002	42	32	68	99	72	99	72	99	72	96	96	96
Saint Lucia	1990	131	27	73	98	-	98	-	98	-	-	-	-
	2002	148	30	70	98	75	98	75	98	75	89	89	89
Saint Vincent and the Grenadines	1990	110	41	59	-	-	-	-	-	-	-	-	96
	2002	119	57	43	-	-	-	-	93	73	-	-	96
Samoa	1990	160	21	79	91	-	99	-	89	-	98	100	98
	2002	176	22	78	88	57	91	74	88	52	100	100	100
San Marino	1990	23	90	10	-	-	-	-	-	-	-	-	-
	2002	27	89	11	-	-	-	-	-	-	-	-	-
Sao Tome and Principe	1990	116	37	63	-	-	-	-	-	-	-	-	-
	2002	157	38	62	79	25	89	34	73	19	24	32	20
Saudi Arabia	1990	16,554	78	22	90	89	97	97	63	60	-	100	-
	2002	23,520	87	13	-	-	97	97	-	-	-	100	-

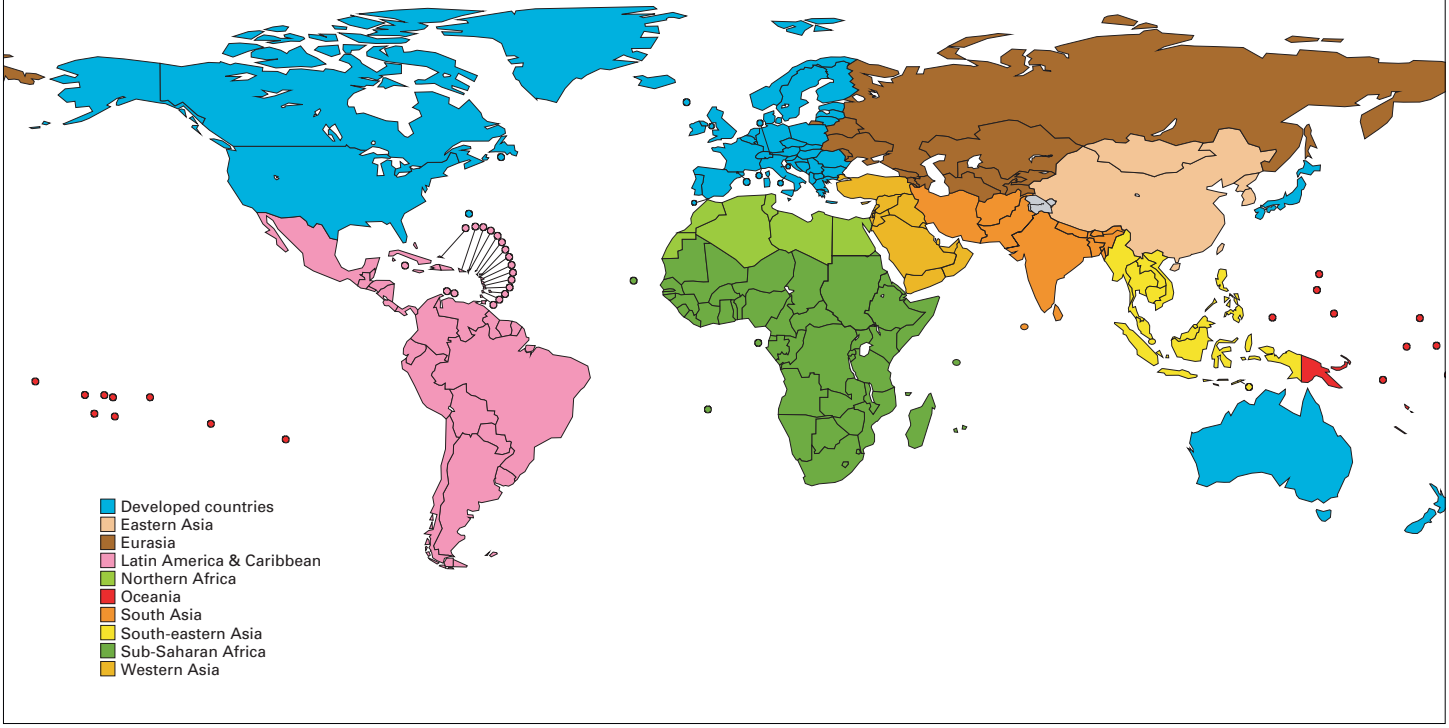
Countries, areas and territories	Year	Population			Improved Drinking Water Coverage						Improved Sanitation Coverage		
					Total		Urban		Rural				
		Total (thousands)	Urban %	Rural %	Total %	Household Connection %	Total %	Household Connection %	Total %	Household Connection %	Total %	Urban %	Rural %
Senegal	1990	7,345	40	60	66	22	90	50	50	4	35	52	23
	2002	9,855	49	51	72	40	90	71	54	11	52	70	34
Serbia and Montenegro	1990	10,156	51	49	93	82	99	98	86	64	87	97	77
	2002	10,535	52	48	93	82	99	98	86	64	87	97	77
Seychelles	1990	71	50	50	-	-	100	100	-	-	-	-	100
	2002	80	50	50	87	87	100	100	75	75	-	-	100
Sierra Leone	1990	4,054	30	70	-	-	-	-	-	1	-	-	-
	2002	4,764	38	62	57	12	75	30	46	1	39	53	30
Singapore	1990	3,016	100	0	-	-	100	100	-	-	-	100	-
	2002	4,183	100	0	-	-	100	100	-	-	-	100	-
Slovakia	1990	5,256	56	44	100	-	100	-	100	-	100	100	100
	2002	5,398	57	43	100	-	100	80	100	-	100	100	100
Slovenia	1990	1,918	51	49	-	-	-	-	-	-	-	-	-
	2002	1,986	51	49	-	-	-	-	-	-	-	-	-
Solomon Islands	1990	319	14	86	-	11	-	76	-	1	-	98	-
	2002	463	16	84	70	13	94	76	65	1	31	98	18
Somalia	1990	7,163	29	71	-	1	-	3	-	0	-	-	-
	2002	9,480	34	66	29	1	32	3	27	0	25	47	14
South Africa	1990	36,848	49	51	83	58	99	94	67	23	63	85	42
	2002	44,759	56	44	87	60	98	82	73	31	67	86	44
Spain	1990	39,303	75	25	-	80	-	90	-	50	-	-	-
	2002	40,977	76	24	-	-	-	-	-	-	-	-	-
Sri Lanka	1990	16,830	21	79	68	11	91	37	62	4	70	89	64
	2002	18,910	21	79	78	10	99	35	72	4	91	98	89
Sudan	1990	24,927	27	73	64	34	85	75	57	19	33	53	26
	2002	32,878	38	62	69	26	78	46	64	13	34	50	24
Suriname	1990	402	65	35	-	-	98	-	-	-	-	99	-
	2002	432	75	25	92	80	98	91	73	48	93	99	76
Swaziland	1990	847	23	77	-	-	-	-	-	-	-	-	-
	2002	1,069	23	77	52	26	87	67	42	13	52	78	44
Sweden	1990	8,559	83	17	100	100	100	100	100	100	100	100	100
	2002	8,867	83	17	100	100	100	100	100	100	100	100	100
Switzerland	1990	6,834	68	32	100	100	100	100	100	99	100	100	100
	2002	7,171	68	32	100	100	100	100	100	99	100	100	100
Syrian Arab Republic	1990	12,717	49	51	79	-	94	-	64	-	76	97	56
	2002	17,381	50	50	79	-	94	-	64	-	77	97	56
Tajikistan	1990	5,303	32	68	-	-	-	-	-	-	-	-	-
	2002	6,195	25	75	58	40	93	82	47	26	53	71	47
Tanzania, United Republic of	1990	26,068	22	78	38	10	79	30	27	4	47	51	45
	2002	36,276	34	66	73	16	92	44	62	2	46	54	41
Thailand	1990	54,389	29	71	81	28	87	69	78	11	80	95	74
	2002	62,193	32	68	85	34	95	80	80	12	99	97	100
The former Yugoslav Republic of Macedonia	1990	1,909	58	42	-	-	-	-	-	-	-	-	-
	2002	2,046	59	41	-	-	-	-	-	-	-	-	-
Timor-Leste	1990	740	8	92	-	-	-	-	-	-	-	-	-
	2002	739	8	92	52	9	73	26	51	8	33	65	30
Togo	1990	3,455	29	71	49	4	81	14	37	0	37	71	24
	2002	4,801	35	65	51	4	80	12	36	0	34	71	15
Tokelau	1990	2	0	100	-	-	-	-	96	0	-	-	30
	2002	2	0	100	-	-	-	-	89	0	-	-	74
Tonga	1990	99	31	69	100	-	100	-	100	-	97	98	96
	2002	103	33	67	100	75	100	72	100	76	97	98	96
Trinidad and Tobago	1990	1,215	69	31	92	77	93	81	89	68	100	100	100
	2002	1,298	75	25	91	77	92	80	88	67	100	100	100
Tunisia	1990	8,207	58	42	77	64	93	91	57	28	75	95	47
	2002	9,728	63	37	82	70	94	93	60	30	80	90	62
Turkey	1990	57,593	59	41	81	50	92	64	65	30	84	96	67
	2002	70,318	66	34	93	52	96	64	87	30	83	94	62
Turkmenistan	1990	3,668	45	55	-	-	-	-	-	-	-	-	-
	2002	4,794	45	55	71	52	93	81	54	29	62	77	50

Countries, areas and territories	Year	Population			Improved Drinking Water Coverage						Improved Sanitation Coverage		
					Total		Urban		Rural				
		Total (thousands)	Urban %	Rural %	Total %	Household Connection %	Total %	Household Connection %	Total %	Household Connection %	Total %	Urban %	Rural %
Turks and Caicos Islands	1990	12	43	57	100	-	100	-	100	-	-	98	-
	2002	20	46	54	100	68	100	78	100	60	96	98	94
Tuvalu	1990	9	41	59	91	-	92	-	89	-	78	83	74
	2002	10	54	46	93	-	94	-	92	-	88	92	83
Uganda	1990	17,359	11	89	44	3	79	24	40	0	43	54	41
	2002	25,004	12	88	56	1	87	8	52	0	41	53	39
Ukraine	1990	51,891	67	33	-	-	100	-	-	-	99	100	97
	2002	48,902	67	33	98	78	100	93	94	49	99	100	97
United Arab Emirates	1990	2,035	83	17	-	-	-	-	-	-	100	100	100
	2002	2,937	85	15	-	-	-	-	-	-	100	100	100
United Kingdom	1990	56,761	89	11	-	99	100	100	-	92	-	-	-
	2002	59,068	89	11	-	-	100	100	-	-	-	-	-
United States of America	1990	255,712	75	25	100	100	100	100	100	100	100	100	100
	2002	291,038	80	20	100	100	100	100	100	100	100	100	100
United States Virgin Islands	1990	101	88	12	-	-	-	-	-	-	-	-	-
	2002	110	93	7	-	-	-	-	-	-	-	-	-
Uruguay	1990	3,106	89	11	-	-	98	95	-	-	-	95	-
	2002	3,391	92	8	98	91	98	94	93	56	94	95	85
Uzbekistan	1990	20,515	40	60	89	54	97	85	84	33	58	73	48
	2002	25,705	37	63	89	53	97	85	84	33	57	73	48
Vanuatu	1990	149	19	81	60	38	93	80	53	28	-	-	-
	2002	207	22	78	60	38	85	73	52	28	50	78	42
Venezuela	1990	19,502	84	16	-	-	-	79	-	-	-	-	-
	2002	25,226	87	13	83	81	85	84	70	61	68	71	48
Viet Nam	1990	66,074	20	80	72	11	93	51	67	1	22	46	16
	2002	80,278	25	75	73	14	93	51	67	1	41	84	26
Western Sahara	1990	207	88	12	-	-	-	-	-	-	-	-	-
	2002	301	93	7	-	-	-	-	-	-	-	-	-
Yemen	1990	11,944	21	79	69	31	74	64	68	22	21	59	11
	2002	19,315	25	75	69	33	74	64	68	22	30	76	14
Zambia	1990	8,200	39	61	50	22	86	51	27	2	41	64	26
	2002	10,698	35	65	55	18	90	47	36	2	45	68	32
Zimbabwe	1990	10,467	29	71	77	33	99	95	69	8	49	69	40
	2002	12,835	34	66	83	35	100	91	74	5	57	69	51
WORLD	1990	5,263,484	43	57	77	48	95	79	63	25	49	79	25
	2002	6,224,874	48	52	83	52	95	79	72	27	58	81	37
DEVELOPED regions	1990	934,014	72	28	100	96	100	99	99	89	100	100	99
	2002	993,055	75	25	98	96	100	99	94	88	98	100	92
EURASIA	1990	281,700	65	35	92	71	97	86	83	42	84	93	68
	2002	280,970	64	36	93	72	99	90	82	41	83	92	65
DEVELOPING regions	1990	4,047,770	35	65	71	36	93	69	59	18	34	68	16
	2002	4,950,850	42	58	79	42	92	71	70	21	49	73	31
Northern Africa	1990	118,068	49	51	88	57	95	83	82	33	65	84	47
	2002	147,319	52	48	90	73	96	91	84	54	73	89	57
Sub-Saharan Africa	1990	504,369	28	72	49	16	82	47	36	4	32	54	24
	2002	684,768	35	65	58	16	82	39	45	4	36	55	26
Latin America & the Caribbean	1990	441,525	71	29	83	70	93	86	58	32	69	82	35
	2002	535,626	76	24	89	78	95	89	69	42	75	84	44
Eastern Asia	1990	1,226,424	30	70	72	50	99	82	60	37	24	64	7
	2002	1,374,838	40	60	78	61	93	91	68	40	45	69	30
South Asia	1990	1,174,590	27	73	71	20	90	55	64	7	20	54	7
	2002	1,480,287	30	70	84	24	94	53	80	12	37	66	24
South-eastern Asia	1990	439,926	32	68	73	14	91	37	65	3	48	67	39
	2002	535,611	41	59	79	23	91	45	70	8	61	79	49
Western Asia	1990	136,444	62	38	83	62	94	79	65	33	79	96	52
	2002	183,961	66	34	88	63	95	79	74	31	79	95	49
Oceania	1990	6,425	23	77	51	21	92	69	39	6	58	83	50
	2002	8,440	24	76	52	22	91	67	40	8	55	84	46

Millennium Development Goals: Regional Groupings

In charting progress towards the Millennium Development Goals, the United Nations has classified the world's countries into three regions: developed regions, developing regions and Eurasia (countries in the Commonwealth of Independent States). The developing regions are further divided into the subregions shown on the map below. A complete listing of countries included in these subregions can be found at: www.wssinfo.org

FIGURE 18 Millennium Development Goals: Regional Groupings



WHO/UNICEF JOINT MONITORING PROGRAMME FOR WATER SUPPLY AND SANITATION

Established: In 1990, at the end of the International Drinking Water Supply and Sanitation Decade

Executing Agencies: WHO and UNICEF

Technical Advisory Group: Individual experts from academic institutions and civil society, plus representatives of organizations involved in water and sanitation and data collection, including UN-Habitat, ORC Macro, United Nations Environment Programme, the Environmental Health Project of the United States Agency for International Development, the World Bank, the Water Supply and Sanitation Collaborative Council and the Millennium Project

Funding Support: United Kingdom's Department for International Development and the Swiss Agency for Development and Cooperation

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HIGHLIGHTS

The world is on track to meet the drinking water target, but sub-Saharan Africa lags behind.

• Eighty-three per cent of the world's population are using improved drinking water sources, but 1.1 billion people are still without coverage.

• Progress in sub-Saharan Africa was impressive, moving from 49 per cent coverage in 1990 to 58 per cent in 2002. But at this rate it will not meet the MDG target by 2015.

• More than half the world's population use water piped to their homes, which frees them from the drudgery of water collection and protects their health.

Without a sharp acceleration in the rate of progress, the world will miss the sanitation target by half a billion people.

• An estimated 2.6 billion people – half of the developing world – lack improved sanitation.

• Despite major progress in South Asia, little more than a third of its population use improved sanitation; coverage in sub-Saharan Africa is only 36 per cent.

• Global population growth is cancelling many of the gains already made. Though more than a billion people gained improved sanitation between 1990 and 2002, the population without coverage declined by only 100 million.

From now until 2015, greater effort must be made to reach the poor and those in rural areas, whose deprivation is hidden behind national averages.

• For every person in urban areas, there are six people in rural areas without improved drinking water sources.

• An estimated 560 million people lack improved sanitation in urban areas of the developing world, compared with a staggering 2 billion in rural communities.

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