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Progress on Drinking Water and Sanitation 2012





Foreword

Since the adoption of the Millennium Development Goals, the WHO/UNICEF Joint Monitoring Programme for Water Supply and Sanitation has reported on progress towards achieving Target 7c: reducing by half the proportion of people without sustainable access to safe drinking water and basic sanitation. This report contains the welcome announcement that, as of 2010, the target for drinking water has been met.

Since 1990, more than 2 billion people have gained access to improved drinking water sources. This achievement is a testament to the commitment of Government leaders, public and private sector entities, communities and individuals who saw the target not as a dream, but as a vital step towards improving health and well-being.

Of course, much work remains to be done. There are still 780 million people without access to an improved drinking water source. And even though 1.8 billion people have gained access to improved sanitation since 1990, the world remains off track for the sanitation target. It is essential to accelerate progress in the remaining time before the MDG deadline, and I commend those who are participating in the Sustainable Sanitation: Five Year Drive to 2015.

This report outlines the challenges that remain. Some regions, particularly sub-Saharan Africa, are lagging behind. Many rural dwellers and the poor often miss out on improvements to drinking water and sanitation. And the burden of poor water supply falls most heavily on girls and women. Reducing these disparities must be a priority.

The recognition by the UN General Assembly, in 2010, of water and sanitation as a human right provides additional political impetus towards the ultimate goal of providing everyone with access to these vital services. Many countries and agencies have joined hands in the Sanitation and Water for All partnership. Such collective efforts offer real promise and I urge all partners to contribute.

I commend this report to all those working towards universal access to safe water and sanitation. Achieving the MDG drinking water target is a major step, but ultimately, only one step on a long journey that we have yet to finish. Let us use this success to invest our mission for sustainable, equitable development with renewed vigour so we can create the future we want.



Ban Ki-moon Secretary-General, United Nations

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Looking Forward, Looking Back



Global Drinking Water Trends 1990-2010

Progress Towards the MDG Target Regional Trends An Alternative Indicator of Progress Urban-Rural Disparities



Global Sanitation Trends 1990-2010

Progress Towards the MDG Target Regional Trends An Alternative Indicator of Progress Urban-Rural Disparities



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Looking Forward, Looking Back

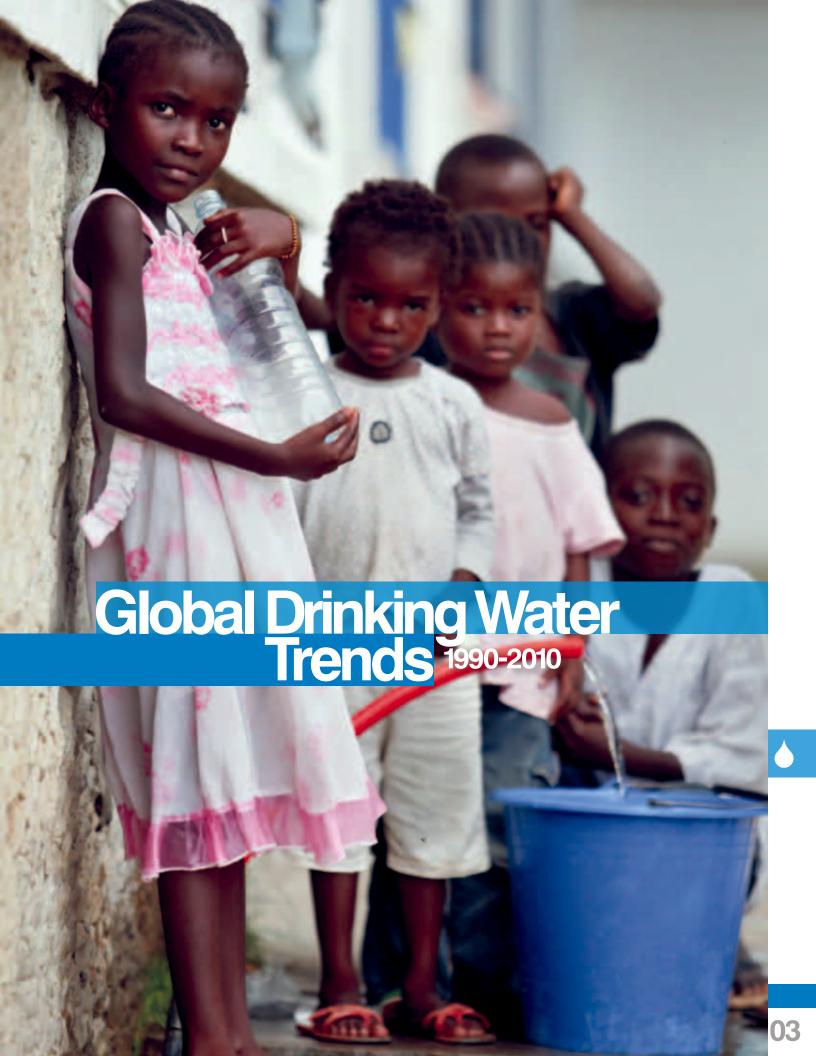
The WHO/UNICEF Joint Monitoring Programme for Water Supply and Sanitation, known as the JMP, reports every

two years on access to drinking water and sanitation worldwide and on progress towards related targets under Millennium Development Goal 7. This 2012 report is based on data gathered from household surveys and censuses, including both recent and older data sets that have come to the attention of the JMP. The estimates presented here describe the situation as of end-2010 and supersede those of the JMP update published in March 2010.

The report brings welcome news: The MDG drinking water target, which calls for halving the proportion of the population without sustainable access to safe drinking water between 1990 and 2015, was met in 2010, five years ahead of schedule. However, the report also shows why the job is far from finished. Many still lack safe drinking water, and the world is unlikely to meet the MDG sanitation target. Continued efforts are needed to reduce urban-rural disparities and inequities associated with poverty; to dramatically increase coverage in countries in sub-Saharan Africa and Oceania; to promote global monitoring of drinking water quality; to bring sanitation 'on track'; and to look beyond the MDG target towards universal coverage.

Still, much has been achieved. As this progress report shows, over 2 billion people gained access to improved water sources and 1.8 billion people gained access to improved sanitation facilities between 1990 and 2010. This is impressive, particularly when the gains of countries that started at a low baseline and faced high population growth are considered. Indeed, much of the progress of the last 20 years has been in the context of rapid population growth, and this is why some of the news in this report is sobering. Over 780 million people are still without access to improved sources of drinking water and 2.5 billion lack improved sanitation. If current trends continue, these numbers will remain unacceptably high in 2015: 605 million people will be without an improved drinking water source and 2.4 billion people will lack access to improved sanitation facilities.

As we approach the 2015 target date for the MDGs, WHO and UNICEF are addressing current monitoring challenges and those that lie ahead. The safety and reliability of drinking water supplies and the sustainability of both water supply sources and sanitation facilities are not addressed by the current set of indicators used to track progress. Accordingly, this report details work under way to refine both indicators and methods of monitoring, as part of the 2010-2015 JMP strategy. It also discusses the beginnings of a process to develop new water, sanitation and hygiene goals, targets and indicators beyond 2015, in alignment with the human right to water and sanitation and the mandate of the UN Special Rapporteur on the Human Right to Water and Sanitation.



While this tremendous achievement should be applauded, a great deal of work remains:

water source in 2010. The drinking

the first MDG targets to be met.

water target has thus become one of

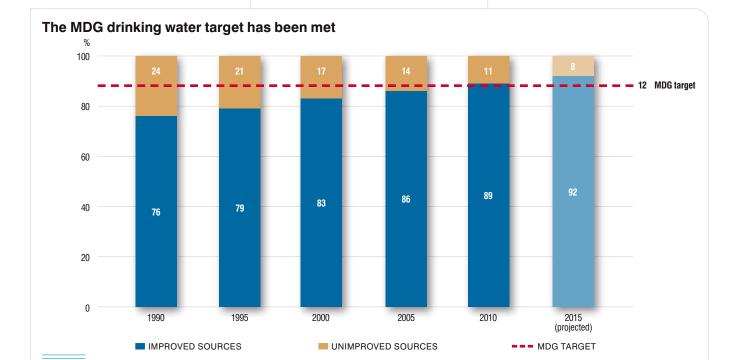
Progress Towards the MDG Target

First, huge disparities exist. While coverage of improved water supply sources is 90 per cent or more in Latin America and the Caribbean, Northern Africa and large parts of Asia, it is only 61 per cent in sub-Saharan Africa. Coverage in the developing world overall stands at 86 per cent, but it is only 63 per cent in countries designated as 'least developed'. Similar disparities are found within countries – between the rich and poor and between those living in rural and urban areas. These inequities are explored

Second, complete information about drinking water safety is not available for global monitoring. Systematically testing the microbial and chemical

later in this report.

quality of water at the national level in all countries is prohibitively expensive and logistically complicated; therefore, a proxy indicator for water quality was agreed upon for MDG monitoring. This proxy measures the proportion of the population using 'improved' drinking water sources, defined as those that, by the nature of their construction, are protected from outside contamination, particularly faecal matter. However, some of these sources may not be adequately maintained and therefore may not actually provide 'safe' drinking water. As a result, it is likely that the number of people using safe water supplies has been over-estimated (see Box 1).



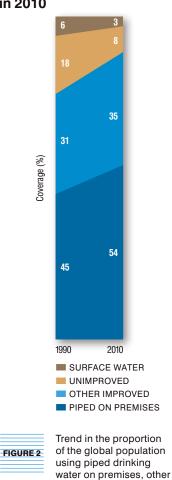
Trends in global drinking water coverage, 1990-2010, projected to 2015

FIGURE 1

Finally, more than 780 million people remain unserved. Although the MDG drinking water target has been met, it only calls for halving the proportion of people without safe drinking water. More than one tenth of the global population still relied on unimproved drinking water sources in 2010.

Figure 2 illustrates the global trend in the use of drinking water sources, disaggregated by category. The last two decades have seen impressive increases in the use of both piped connections to a dwelling, plot or yard and other improved sources, such as protected dug wells, boreholes, rainwater collection and standpipes.

Drinking water coverage increased from 76 per cent in 1990 to 89 per cent in 2010



improved drinking water

sources, unimproved sources and surface water, 1990-2010 BOX 1

Monitoring the global targets for drinking water and sanitation: Challenges and achievements

In the two decades that WHO and UNICEF have been tracking progress in water and sanitation, advances have been made in the availability and quality of data and the methods used to measure them:

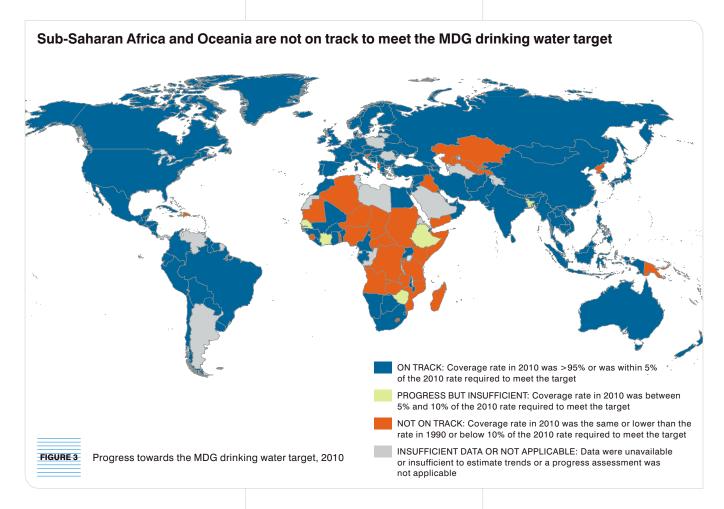
- A shift from provider- to user-based data: Initially the JMP relied almost exclusively on government data, which were largely drawn from water-utility companies and line ministries and were based on the number of facilities constructed. The figures did not reflect facilities that had fallen into disrepair or were constructed by others outside of government-supported programmes. A key improvement in the mid-1990s was a shift to user-based data, collected through household surveys and population censuses, which more accurately reflect actual use of water and sanitation facilities by individual households.
- More standardized data: Lack of comparability of data on drinking water sources and sanitation facilities among countries and over time has posed a huge challenge to global monitoring. In response, WHO and UNICEF assisted the major household surveys to incorporate harmonized questions into their questionnaires, and in 2006 they published 'Core Questions on Drinking Water and Sanitation for Household Surveys' to encourage their more widespread use. This increased standardization has greatly enhanced the comparability of data.
- Increased availability of data: The late 1990s saw an unprecedented increase in the availability of household survey data, largely due to the implementation of the UNICEF-supported Multiple Indicator Cluster Survey (MICS) and the Demographic and Health Survey (DHS), initiated by the United States Agency for International Development (USAID).
- Expanded JMP database: In 2000, some 220 sources of data could be found in the JMP database; this current update reflects more than 1,400 sources.
- **Greater disaggregation of data:** The introduction of drinking water and sanitation 'ladders' has allowed categories such as 'piped drinking water on premises' and 'open defecation' to be highlighted.

Still, data limitations abound. One major information gap is the safety of drinking water supplies. Since cost-effective, periodic and standardized water quality testing was not possible on a global scale when the MDG target was formulated, and since nationally representative information on water safety was not available for the period following the baseline year (1990), WHO and UNICEF were obliged to use a proxy for 'sustainable access to safe drinking water', as specified in the MDG target. The agreed proxy was 'use of an improved water source', where 'improved' was determined by the type of technology a household reported as their primary source. An improved source is one that, through technological intervention, increases the likelihood that it provides safe water.

To date it has remained impractical to obtain water quality data at the national level for all countries. The main international household surveys – MICS and DHS – are piloting the inclusion of a water-quality module that will include testing for the presence of *E. coli*. This is made feasible in part by the availability of new, rapid, low-cost water quality testing kits. If successful, it could lead to further evolution in monitoring and pave the way for a future drinking water target that includes a measure of water quality.

Similarly, a proxy for sustainable access to basic sanitation is the use of improved sanitation facilities. Measuring the actual sustainability of both water and sanitation facilities remains an area that could benefit from further attention. For a more detailed discussion of these issues, see section on 'Data Limitations', on page 34.





For the first time, data on the use of unimproved sources have been disaggregated into two categories: surface water and other unimproved sources. The latter includes unprotected dug wells, unprotected springs and water delivered by cart or tanker. Surface water includes water collected directly from rivers, lakes, ponds, irrigation channels and other surface sources. The use of surface water stands at a surprisingly high 3 per cent of the global population, or 187 million people. Most of these people - 94 per cent - are rural inhabitants, and they are concentrated in sub-Saharan Africa. In fact, 19 per cent of rural dwellers in sub-Saharan Africa and 39 per cent of rural residents in Oceania rely on surface water for drinking and cooking.1

The MDGs are global goals with associated global targets. These have been translated into targets at the

national level. The same methodology that is used to determine progress at the global level can be applied to individual countries, using JMP estimates to assess whether a country is on- or off-track in meeting its targets. The results are illustrated in Figure 3, which shows that the majority of countries lagging behind on the drinking water target are in sub-Saharan Africa. In fact, only 19 out of 50 countries in that region are on track to meet the target by 2015.

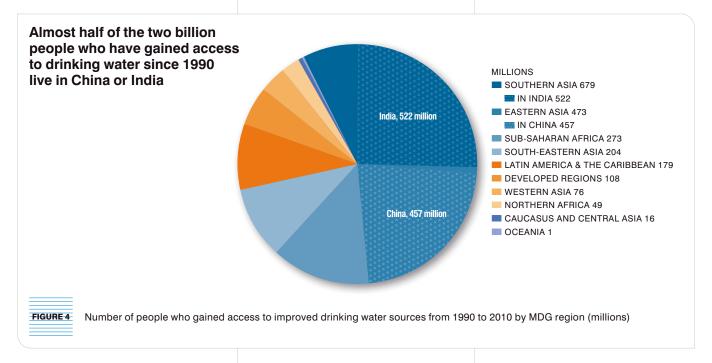
Figure 4 shows the number of people who have gained access to an improved drinking water source since 1990. The progress of India and China not only dominates their respective regions, but represents nearly half of the global progress towards the drinking water target. If only the developing world is considered, China and India represent more than half of the people who have gained access. This is not

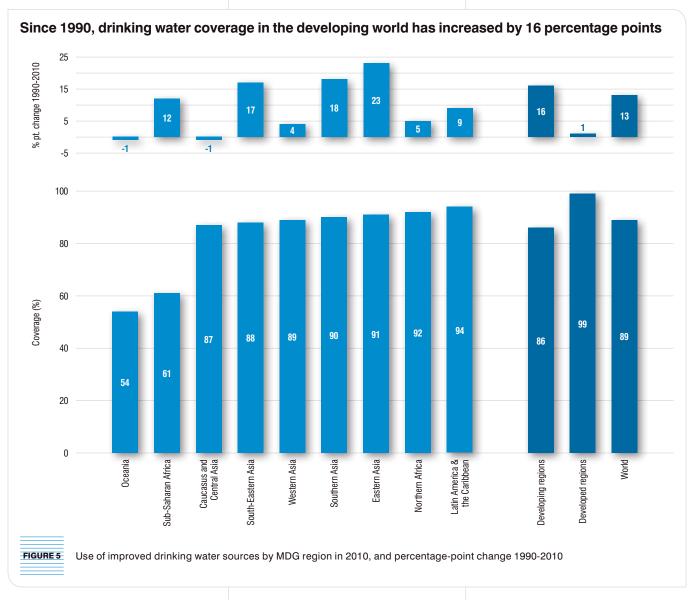
surprising, however, since the inhabitants of these two countries represent 46 per cent of the developing world's population.

Wide variations are found in the rate at which regions have improved coverage. In general, regions in which coverage was already high have made more modest gains, rising by only a few percentage points over 20 years. Of note are the impressive gains in Eastern Asia, which added 23 percentage points, and the small decline in coverage in the Caucasus and Central Asia² and in Oceania (Figure 5).

¹ It should be kept in mind throughout this report that data from Oceania are limited. Each of the small island states in the region has a very small number of data points, many of which date back several years, making it difficult to prepare robust estimates for 2010.

² The Caucasus and Central Asia is a newly formed MDG region, replacing the Commonwealth of Independent States (which included the Russian Federation, Ukraine and Belarus). The new region is composed of Armenia, Azerbaijan, Georgia, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan.







Regional Trends

Figure 6 shows trends in the use of different types of water sources from 1990 to 2010, by MDG regions. Two clear groupings emerge. The first is a set of regions in which the use of piped water to a dwelling, plot or yard is low (30 per cent or less). It includes sub-Saharan Africa, Oceania, Southern Asia and South-Eastern Asia. Although gains in the use of piped water on premises have been made in these regions, progress is mostly in the 'other improved' category of water sources. Of note is the fact that 65 per cent of the population in Southern Asia are using other improved sources rather than piped water on premises.

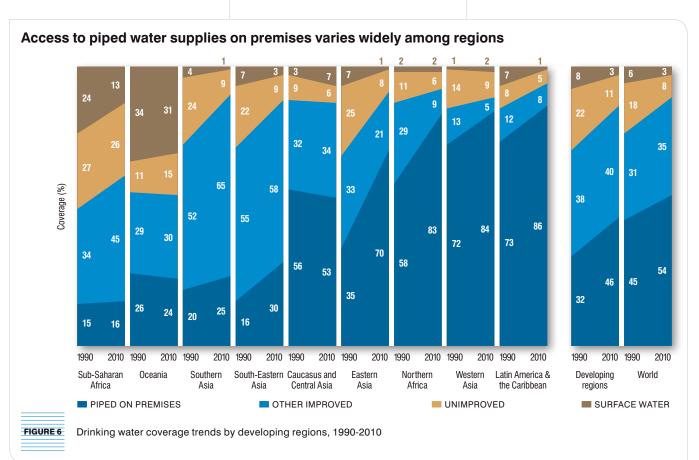
The second group consists of Eastern Asia, Northern Africa, Western Asia and Latin America and the Caribbean, where at least 70 per cent of the population are using piped water on premises. Eastern Asia (dominated by China) has seen a dramatic increase in piped water supplies since 1990, gaining 35 percentage points in coverage in this category in 20 years; 562 million new users have been added during a period in which the world as a whole added only 9 percentage points. Eastern Asia is also the region with the most dramatic increase in the use of improved drinking water sources overall, starting at 68 per cent

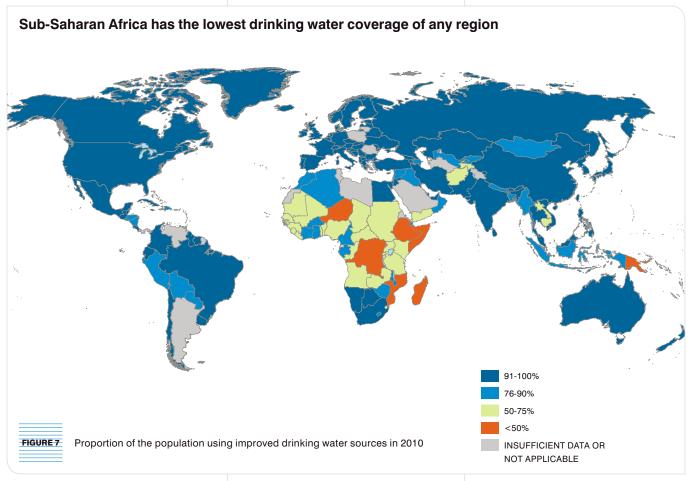
in 1990 and moving to 91 per cent coverage in 2010. This represents a 23 percentage-point increase, far higher than any other region.

Significant proportions of the population in Oceania and sub-Saharan Africa are still using surface water.

Countries that still have less than 50 per cent coverage in water supply are almost all in sub-Saharan Africa (Figure 7).

Figure 8 shows the number of people without improved water sources in the 10 countries with the largest unserved populations. Though they are on track to reach the target, China and India

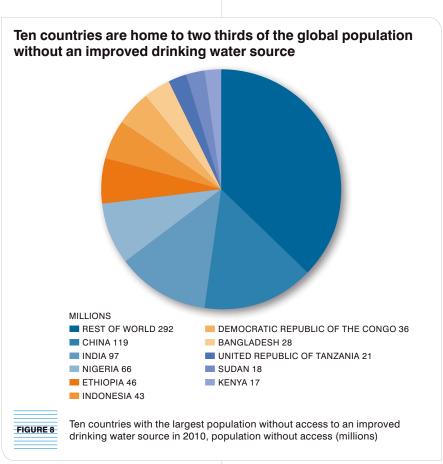




combined are still home to 216 million people without access to improved water supplies. This represents 28 per cent of the global population that remains unserved.

The last two decades have seen major shifts in the proportion of the global population using various types of drinking water sources (Tables 1 and 2).3 The biggest change has been the increase in piped water supplies on premises, which were used by 54 per cent of people worldwide in 2010 – up from 45 per cent in 1990. In rural areas, the use of piped water on premises grew even faster – from 18 per cent in 1990 to 29 per cent in 2010. Over the same period, reliance on surface water was halved, from 10 per cent to 5 per cent in rural areas and from 6 per cent to 3 per cent for

³ This is discussed in more detail in the 2011 UNICEF and WHO thematic report entitled *Drinking Water:* Equity, Safety and Sustainability.





the total population. In urban areas, the proportion of people using piped water on premises remained almost the same in percentage terms, but the massive increases in urban populations during this time meant that the absolute number of urban dwellers using water piped to their homes grew by a billion, from 1.8 billion to 2.8 billion.

The number of people relying on tanker trucks and small vendors for drinking water has almost doubled over the same 20-year period, from 44 million to 85 million (this category does not count as 'improved', due to concerns over water quality). The number of people using bottled water to meet their drinking water needs also increased, rising more than sixfold – from 37 million in 1990 to 228 million in 2010. A large majority of bottled-water users live in urban areas, and most are also users of piped water on premises. Bottled water is considered 'improved' only when the household also uses water

from an improved source for cooking and personal hygiene.

The number of people using boreholes (which are usually handpump-operated) grew from 1 billion in 1990 to 1.3 billion in 2010. Eighty per cent of borehole users, almost a billion people, are in rural areas. While boreholes offer significant advantages over dug wells in terms of water quality, many boreholes with handpumps still impose a considerable burden on users in terms of the time and effort needed to collect the water.

Global trends in the use of different drinking water sources (percentage)							
Facility type	Urban (%)		Rural (%)		Total (%)		
	1990	2010	1990	2010	1990	2010	
Piped on premises	81	80	18	29	45	54	
Public taps	5	6	6	8	5	7	
Boreholes	6	8	29	30	19	18	
Rainwater	0	0	1	2	1	1	
Dug wells	5	4	27	19	18	12	
Springs	1	1	8	6	5	4	
Tanker trucks and small cart with drum	1	1	1	1	1	1	
Surface water	1	0	10	5	6	3	
Bottled water*	1	6	0	1	1	3	

*Survey data show that most people who use bottled water as their main source of drinking water also have piped water on premises as a secondary source. Bottled-water users are counted under the category 'piped on premises' in the table above.



Proportion of the population by types of drinking water sources by urban or rural areas, 1990 and 2010 (per cent)

Global trends in the use of different drinking water sources (population)								
Facility type	Urban (millions)		Rural (millions)		Total (millions)			
	1990	2010	1990	2010	1990	2010		
Piped on premises	1,820	2,763	538	973	2,358	3,737		
Public taps	120	205	168	260	288	465		
Boreholes	138	255	878	996	1,016	1,251		
Rainwater	6	13	41	76	47	89		
Dug wells	111	151	843	656	954	807		
Springs	15	33	235	221	250	254		
Tanker trucks and small cart with drum	24	42	20	43	44	85		
Surface water	17	11	313	175	331	187		
Bottled water*	26	192	11	36	37	228		

*Survey data show that most people who use bottled water as their main source of drinking water also have piped water on premises as a secondary source. Bottled-water users are counted under the category 'piped on premises' in the table above.



World population by types of drinking water sources by urban or rural areas, 1990 and 2010 (millions)



An Alternative Indicator of Progress

Assessing progress towards the MDG target alone creates an incomplete picture, since countries that started out with low baseline coverage have had to work much harder to halve the proportion of the population without water and sanitation. Added to this is the challenge of rapid population growth, which can easily mean that any gains in people served are overtaken by population growth. Moreover, it is the poorest countries that are often characterized by a combination of low baseline coverage and high population growth. This means that countries may be making significant progress in the absolute number of people served, but still be persistently 'off track'.

In response, the JMP has developed an alternative indicator that represents the proportion of the current population that has gained access over the period from 1995 to the most recent update, in this case 2010. It is thus the percentage of people living in a country today who have gained access in the last 15 years. ⁴ This indicator can be used to assess a country's performance irrespective of whether it started out with high or low baseline coverage.

The indicator is expressed as:

the increase since 1995 in the number of people with access as a proportion of the current (2010) population.

	Population in 2010 (millions)	Water supply coverage in 2010 (%)	Population that gained access to improved sources of drinking water since 1995	MDG progress	Proportion of 2010 population that gained access to improved drinking water sources since 1995 (%)
Malawi	14.9	83	7.2	On track	48.4
Burkina Faso	16.5	79	7.5	On track	45.5
Liberia	4.0	73	1.7	On track	42.8
Ghana	24.4	86	10.3	On track	42.3
Namibia	2.3	93	0.9	On track	40.6
Gambia	1.7	89	0.7	On track	37.7
Rwanda	10.6	65	3.3	Not on track	30.7
Sierra Leone	5.9	55	1.6	Not on track	27.0
Togo	6.0	61	1.6	Not on track	26.1
Sub-Saharan Africa	856	61	221	Not on track	25.8

TABLE 3

Selected countries in sub-Saharan Africa that have performed above the regional average in terms of the proportion of their 2010 population that gained access to improved drinking water sources since 1995

Table 3 shows selected countries in sub-Saharan Africa that have performed above the regional average of nearly 26 per cent. Some countries have made remarkable progress in providing large proportions of their population with access to improved drinking water sources, and this is true even of countries that are off track in terms of MDG progress. Rwanda and Sierra Leone, for instance, both experienced conflict during the period 1995 to 2010, but have nevertheless shown greater progress than that suggested by the regional average. In Rwanda, more than 30 per cent of the population have gained access to improved drinking water sources since 1995; this represents over 3 million people. Even countries that have not reported such good progress are noteworthy in terms of the number of people served.

The Democratic Republic of the Congo has provided improved water sources for only about 16 per cent of its population since 1995; still, this represents more than 10 million people. It is remarkable that sub-Saharan Africa has outstripped Eastern Asia in terms of the proportion of the current population that have gained access in the last 15 years.

Afghanistan also shows stunning progress when viewed in this way. The country has provided almost half its population (more than 15 million people) with access to improved water sources during a turbulent 15-year period, far surpassing the Southern Asian regional average of 30.9 per cent.



⁴ Although using population with access figures for 1990 would be ideal, 1995 is used instead since the JMP had drinking water coverage estimates for 191 countries for 1995, as opposed to only 157 countries for 1990.



Urban-Rural Disparities

In Figure 9, data used to track progress towards the MDG drinking water target are disaggregated by rural and urban areas. The results show stark disparities between urban and rural coverage, illustrating the challenges in equitable achievement of the MDGs.

An estimated 96 per cent of the urban population globally used an improved water supply source in 2010, compared to 81 per cent of the rural population. This means that 653 million rural dwellers lacked improved sources of drinking water.

Similarly, 80 per cent of the world's urban population had piped water connections, compared to only 29 per cent of people in rural areas.

In urban areas, the rate of increase in piped water on premises has stagnated over the last 20 years. The rate of increase has been higher in rural areas, but coverage remains low.

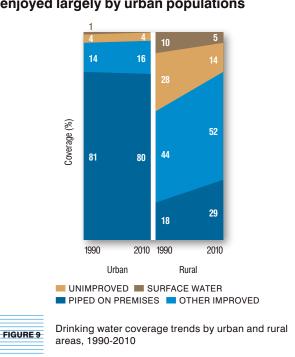
Figure 10 shows the significant increase in the urban population that gained access to improved water sources between 1990 and 2010 – well over a billion people. However, the number of urban dwellers using unimproved sources actually increased, from 109 million to 130 million. This must be viewed in relation to the massive growth in the urban population over the same time period – rising from 2.3 billion to 3.5 billion people. By contrast, in rural areas, the number of people using

unimproved sources decreased from 1.1 billion to 653 million, during a time of more modest population growth. Though the ratio has improved since 1990, the number of people in rural areas using an unimproved water source in 2010 was still five times greater than in urban areas.

Figures 11 and 12 show that while many countries have less than 50 per cent coverage of drinking water in rural areas, no country has less than 50 per cent coverage in urban areas.

The figures in the Annex on page 56 illustrate urban-rural disparities in drinking water coverage in developing regions.

Piped water on premises is a convenience enjoyed largely by urban populations



1.2 billion people in urban areas gained access to an improved drinking water source between 1990 and 2010

