

PUBLIC WATER SUPPLY AND ACCESS TO IMPROVED WATER SOURCES

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Proportion of the population with permanent access to an adequate amount of safe drinking-water at home

This summary is based on data on the proportion of the population with continuous access to an adequate amount of safe drinking-water in the home. It also contains information on the environment and health context and on the policy relevance and context, and an assessment of the situation in the WHO European Region.

The data reflect the proportion of the population supplied by a public system regularly checked for compliance with quality criteria, and to a lesser extent the safety and adequacy of drinking-water available to the population.

The complexity of defining an improved source, combined with the voluntary nature of the reporting, means that care should be taken in interpreting the data.

KEY MESSAGE

☹ There is a clear east–west divide as regards access to safe drinking-water in the European Region. In western Europe, close to 100% of the population have had access to a public water supply since the 1990s. In the eastern part of the Region, access remains low (albeit improving), ranging from 58% to 80%. According to the WHO/UNICEF Joint Monitoring Programme assessment (1), there are important disparities between urban and rural areas: only 30–40% of rural households in eastern Europe have house connections to an improved water source.

RATIONALE

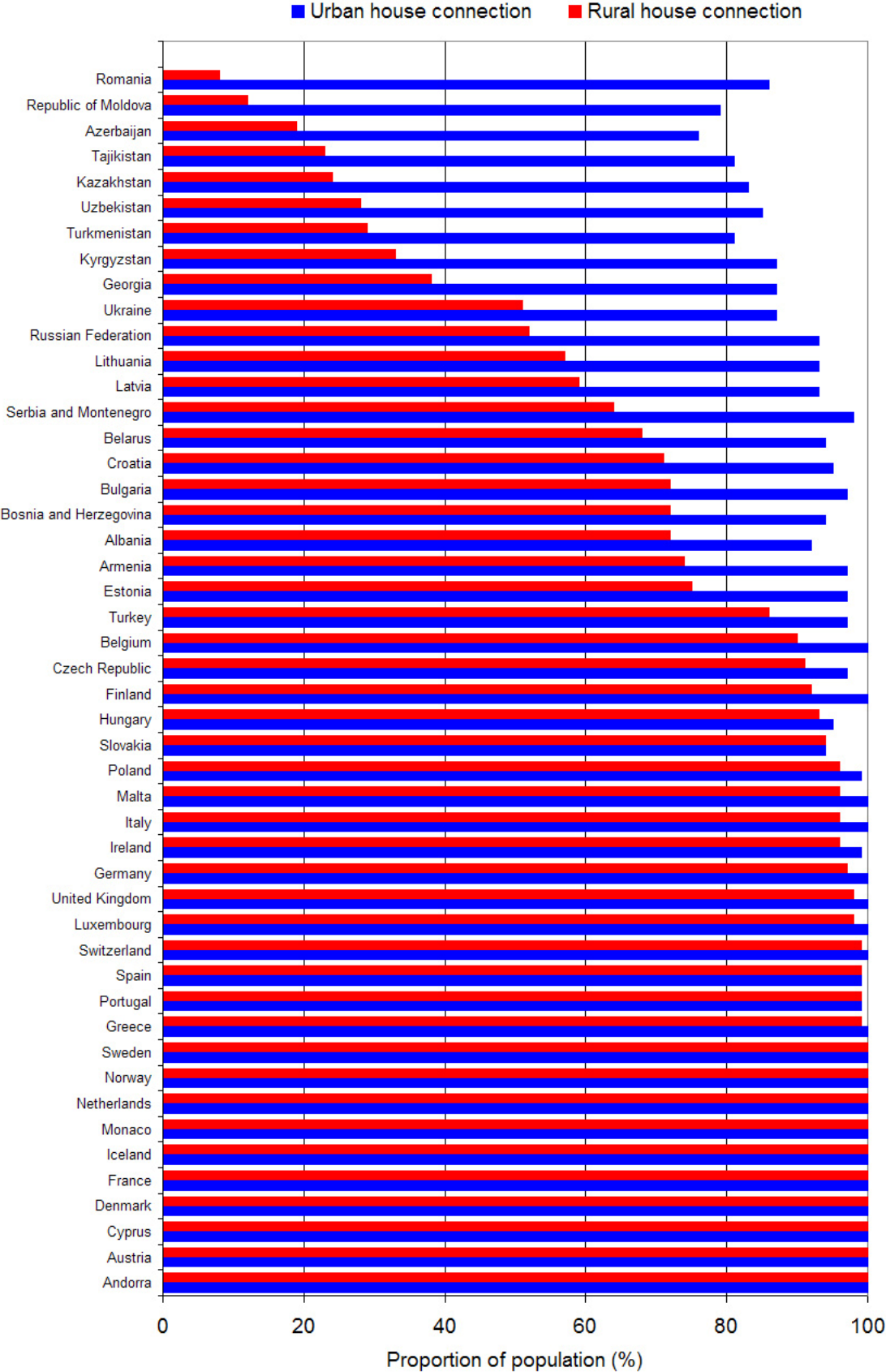
The indicator estimates achievement of the minimum requirements for access to an adequate supply of piped and safe water in the home. It is a core indicator for risks related to water and hygiene.

PRESENTATION OF DATA

Fig. 1 shows data covering 48 countries from the Joint Monitoring Programme database, revealing that a large proportion of the population, especially in the Commonwealth of Independent States, has poorer access to improved water supply sources, particularly in rural areas.

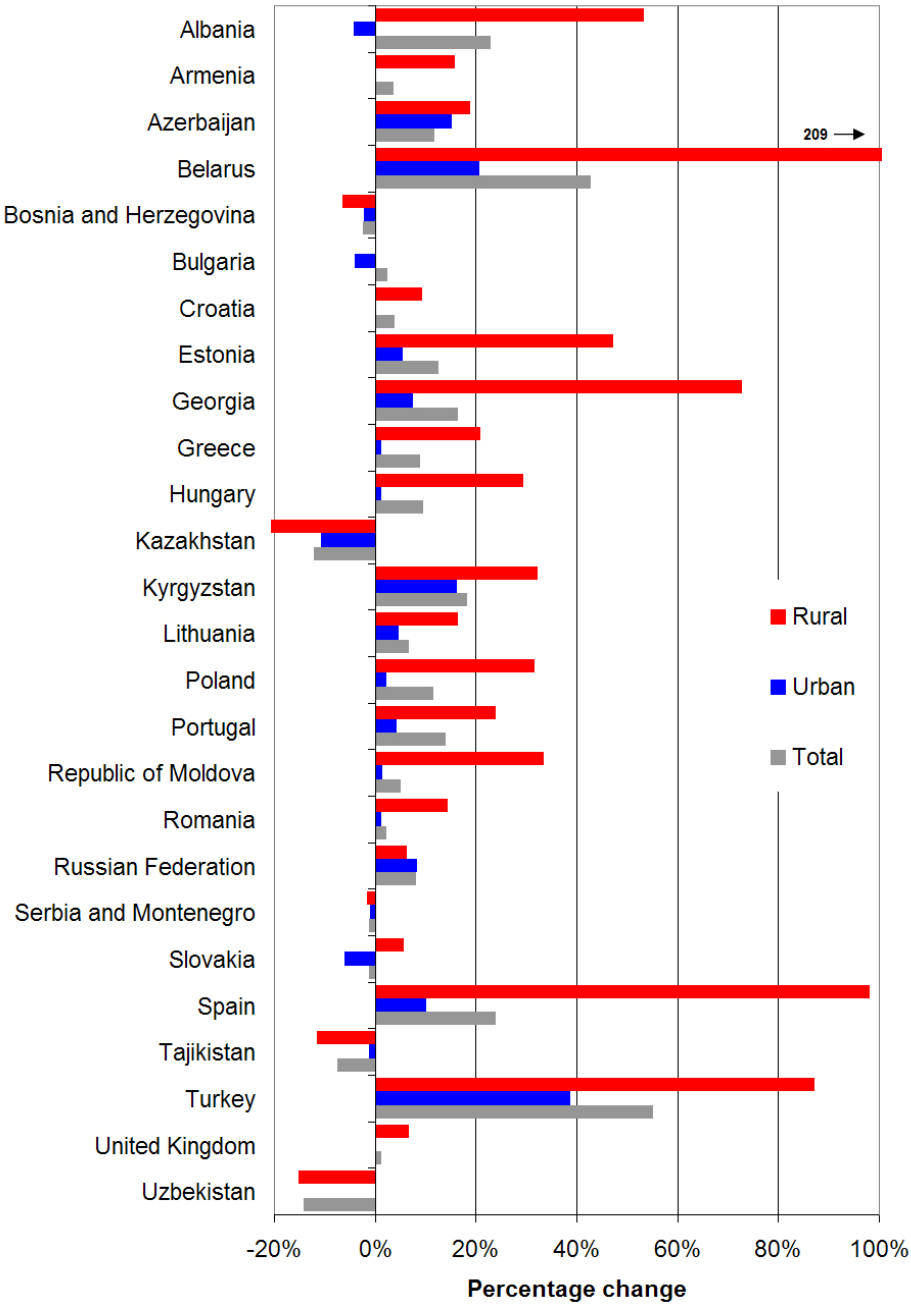
Fig. 2 shows changes in the same countries between 1990 and 2006 in terms of the percentages of the population with house connections to improved water supply in rural and urban areas. (Countries with no change are not shown.)

Fig. 1. Percentage of the population with house connections to improved water sources in urban and rural areas, WHO European Region, 2006 or latest available year



Notes. Data for Belgium are for 1995; data for Bulgaria, Finland and Turkmenistan are for 2004. Serbia and Montenegro became two separate Member States of WHO in September 2006. In this fact sheet the data refer to the then single country of Serbia and Montenegro. Source: WHO/UNICEF Joint Monitoring Programme (1).

Fig. 2. Percentage change in population with house connections to improved water sources between 1990 and 2006 in the WHO European Region



Notes. For Azerbaijan, the Republic of Moldova, Tajikistan and Turkmenistan, changes are between 2000 and 2006. Countries with no change are not displayed. Serbia and Montenegro became two separate Member States of WHO in September 2006. In this fact sheet, the data refer to the then single country of Serbia and Montenegro. *Source:* WHO/UNICEF Joint Monitoring Programme (1).

HEALTH AND ENVIRONMENT CONTEXT

Access to safe drinking-water is strongly connected to basic health benefits. Hence, from a public health point of view, the proportion of the population with access to safe drinking-water is an indicator of the extent to which basic needs (as defined by the United Nations in recognition of water as a fundamental human right) are met (2,3).

Outbreaks of disease related to contaminated drinking-water continue to occur even in the economically developed European countries. They can severely affect human health, with infants and young children at highest risk. According to WHO estimates, poor-quality drinking-water causes over 13 000 deaths from diarrhoea in children aged 0–14 years in the European Region (5.3% of all deaths in that age group) (4). Countries with an effective surveillance system (e.g. Finland, Norway, Sweden and the

United Kingdom) record and are able to manage such outbreaks, which occur mostly in small agglomerations (5).

While the vast majority of outbreaks of waterborne diseases result from bacteriological, viral, protozoan or other biological contamination, serious health concerns may also arise as a result of chemical contamination of drinking-water. These considerations explain the need to achieve high common standards for drinking-water so as to reduce the burden of diseases attributable to poor-quality water, sanitation and hygiene.

POLICY RELEVANCE AND CONTEXT

At present, there is no specific European Union (EU) legislation on the compulsory reporting of access to safe drinking-water.

The Protocol on Water and Health drawn up by WHO and the United Nations Economic Commission for Europe (UNECE), which entered into force in August 2005, is the first legally binding instrument for the prevention and control of water-related diseases through improved and harmonized water supply and management. Article 4 of the Protocol requires parties to provide adequate supplies of wholesome drinking-water free from any microorganisms, parasites and substances which, owing to their numbers or concentration, constitute a potential danger to human health. To this end, parties are required to set targets and report on progress (6).

Millennium Development Goal No. 7, target 10, is to “halve by 2015, the proportion of people without sustainable access to safe drinking-water and basic sanitation”. Millennium Development Goal No. 4 (reduction of child mortality) is also relevant: 90% of the circa 1.8 million deaths that occur every year from diarrhoeal diseases are in children aged under five years, mostly in developing countries (7). Target 5 is “to reduce by two thirds the under-five mortality rate between 1990 and 2015”.

In the European Region, a lack of safe water and adequate sanitation has been recognized as a major cause of child mortality and morbidity, especially in eastern European countries. One of the four strands of the Children’s Environment and Health Action Plan for Europe (CEHAPE), Regional Priority Goal 1, focuses on specific action “to increase the proportion of households with access to safe water and adequate sanitation, thereby ensuring that the proportion of children without access to clean water and sanitation is halved by 2015” (8).

Implementation of the Protocol on Water and Health supports the achievement of the Millennium Development Goals as well as of CEHAPE.

The main legal framework for the control of the quality of drinking-water in the EU is Drinking Water Directive 98/83/EC (9). The Directive sets standards for the most common substances that can be found in drinking-water. The European Commission assesses the results of water quality monitoring after each reporting cycle and produces a synthesis report, summarizing the quality of drinking-water and its improvement at European level. The EU is required to review the standards in the Directive every five years.

The concept of risk assessment and risk management during the production and distribution of drinking-water was introduced by WHO in the 2004 guidelines for drinking-water quality in the context of water safety plans (10). Following the recommendations of a review carried out by WHO during 2005 on behalf of the European Commission and the recommendations of a stakeholder workshop in October 2007, the Commission is currently preparing a revision of the Directive in order to incorporate notions of risk assessment and risk management. Most importantly, by following this approach, surveillance of drinking-water quality would shift from the current control at the tap to quality management along the entire production and distribution cycle.

ASSESSMENT

By integrating data from EUROSTAT and the WHO/UNICEF Joint Monitoring Programme, the indicator provides a description of the water and health situation both from a source-oriented and from a population-centred perspective.

By estimating the proportion of the general population connected to a public water supply, the indicator also provides an estimate of the number of people without such access who are potentially exposed to water-related health risks. With very few exceptions, accessibility is close to 100% for many western European countries, but several hot spots can be detected. Based on the data reported by 22 countries, four countries (the Czech Republic, Poland, Portugal and Turkey) improved their access to a

public water supply by 15–20% between 1990 and 2007 and two of them – the Czech Republic and Portugal – now provide such access to more than 90% of the population served.

The large urban–rural disparities in water and sanitation coverage are in the countries grouped in the WHO Eur-B sub-region (Albania, Armenia, Azerbaijan, Bosnia and Herzegovina, Bulgaria, Georgia, Kyrgyzstan, Poland, Romania, Serbia and Montenegro, Slovakia, Tajikistan, the former Yugoslav Republic of Macedonia, Turkey, Turkmenistan and Uzbekistan). In 2002, 87% of the population of these countries had access to an improved water source but only 63% had a household drinking-water connection. This accounts for the significant contribution of this region to the total burden of disease. The situation still remains unsatisfactory in rural areas, where only 54% of the population had a household drinking-water connection in 2006.

Nevertheless, progress is being made in the EUR-B sub-region. On average, the percentage of the population with access to an improved water source increased from 87% in 2002 to 94% in 2006, with 73% of the population having a household drinking-water connection. As shown in Fig. 2, Turkey and Belarus showed the highest percentage increase in those with house connections to improved water sources between 1990 and 2006: over 55% and 42%, respectively. Albania, Azerbaijan, Estonia, Georgia, Hungary and Poland also showed an increase of between 10% and 20% in the same period. The greater progress has been made in rural areas. Belarus is a striking example, the rural population with house connections to an improved water source increasing from 22% to 90% between 2002 and 2006, an increase of over 200%.

In some countries of the sub-region, such as Bosnia and Herzegovina, Kazakhstan, Serbia, Slovakia, Tajikistan, Turkmenistan and Uzbekistan, the situation deteriorated in the same period, a fact that can be attributed to worsened financial conditions following the sociopolitical and economic transition.

Although data are available only for the general population, they could be considered a good estimate for the child population as well, an indicator of progress in achieving the goals and a good indicator for countries where action should be taken to increase the proportion of the (child) population with access to safe drinking-water.

DATA UNDERLYING THE INDICATOR

Data source

1. EUROSTAT (11)
2. WHO/UNICEF Joint Monitoring Programme (1).

Description of data

Data on the total population with access to safe drinking-water are collected by questionnaire, either from national statistics institutes (for EUROSTAT) or by WHO/UNICEF country representatives (for the Joint Monitoring Programme).

EUROSTAT data provide information on the proportion of the population connected to a public water supply.

Joint Monitoring Programme data are derived from the following datasets:

- percentage of the population with house connections to an improved water supply – total (“wat_tot_hc”);
- percentage of the population with house connections to an improved water supply in urban areas (“wat_urb_hc”); and
- percentage of the population with house connections to an improved water supply in rural areas (“wat_rur_hc”).

Improved water sources as defined by the Joint Monitoring Programme include piped water into dwellings, plots or yards, public taps or standpipes, a borehole, a protected dug well, a protected spring, or rainwater collection, which are likely to provide safer drinking-water than those characterized as unimproved. For this indicator only the population with house connections to improved water sources are considered.

Method of calculating the indicator

The indicator was computed as: connected population/total population × 100.

Geographical coverage

The EUROSTAT database covers the 27 EU Member States plus Iceland, Norway and Turkey.

The Joint Monitoring Programme database covers the 53 Member States of the WHO European Region, including those in the Commonwealth of Independent States.

Period of coverage

The EUROSTAT database provides data from 1980 to 2007, with annual reporting.

The Joint Monitoring Programme database offers data for six time points: 1990, 1995, 2000, 2002, 2004 and 2006.

Frequency of update

Annually for the EUROSTAT database.

Data quality

Owing to the voluntary nature of the data collection, the data sets obtained by both EUROSTAT and the Joint Monitoring Programme are incomplete and do not relate to the child population. Because of the relevance of those data in relation to the quality of the water supplied and, consequently, to water-related risks for children, there is a need for further improvement. The data reported should be in accordance with the standardized definition of the terms "accessibility", "safe" and "adequate" in order to reflect the real dimensions of the problem and its potential implications for health.

The collected data are useful in a policy context to identify areas where there is a need to focus on improving the water supply. For the future, however, there is a need for standardized, regular and clearly defined reporting on the proportion of the population with access to safe water, to allow for the estimation of water-related risks for children (in schools and kindergartens).

References

1. WHO/UNICEF Joint Monitoring Programme for Water Supply and Sanitation [web site]. Geneva, World Health Organization and New York, United Nations Children's Fund, 2006 (<http://www.wssinfo.org/en>, accessed 1 August 2009).
2. *The right to water*. Geneva, World Health Organization, 2003 (WHO Health and Human Rights Publication Series, No. 3) (http://www.who.int/water_sanitation_health/rtwrev.pdf, accessed 1 August 2009).
3. Committee on Economic, Social and Cultural Rights. General Comment No. 15 (2002). *The right to water (arts. 11 and 12 of the International Covenant on Economic, Social and Cultural Rights)*. Geneva, United Nations Economic and Social Council, 2003 (E/C.12/2002/11) ([http://www.unhcr.ch/tbs/doc.nsf/0/a5458d1d1bbd713fc1256cc400389e94/\\$FILE/G0340229.pdf](http://www.unhcr.ch/tbs/doc.nsf/0/a5458d1d1bbd713fc1256cc400389e94/$FILE/G0340229.pdf), accessed 1 August 2009).
4. Valent F et al. *Burden of disease attributable to selected environmental factors and injuries among Europe's children and adolescents*. Geneva, World Health Organization, 2004 (Environmental Burden of Disease Series, No. 8) (http://www.who.int/quantifying_ehimpacts/publications/en/ebd8web.pdf, accessed 1 August 2009).
5. *Outbreaks of waterborne diseases*. Copenhagen, WHO Regional Office for Europe, 2009 (ENHIS fact sheet 1.1) <http://www.euro.who.int/ENHIS>
6. *Protocol on Water and Health to the 1992 Convention on the Protection and Use of Transboundary Water-courses and International Lakes*. Geneva, United Nations Economic Commission for Europe and Copenhagen, WHO Regional Office for Europe, 2006 (<http://www.euro.who.int/Document/Peh-ehp/ProtocolWater.pdf>, accessed 1 August 2009).
7. *Health and the millennium development goals*. Geneva, World Health Organization, 2005 (http://www.who.int/hdp/publications/mdg_en.pdf, accessed 1 August 2009).
8. *Children's Environment and Health Action Plan for Europe. Declaration. Fourth Ministerial Conference on Environment and Health, Budapest, Hungary, 23–25 June 2004*. Copenhagen, WHO Regional Office for Europe, 2004 (<http://www.euro.who.int/document/e83335.pdf>, accessed 1 August 2009).
9. *Water Information System for Europe. The Drinking Water Directive 98/83/EC*. Brussels, European Commission (http://ec.europa.eu/environment/water/water-drink/index_en.html, accessed 1 August 2009).
10. Davison A et al. *Water safety plans. Managing drinking-water quality from catchment to consumer*. Geneva, World Health Organization, 2005 (http://www.who.int/water_sanitation_health/dwq/wsp170805.pdf, accessed 5 August 2009).
11. EUROSTAT [web site]. Brussels, Statistical Office of the European Communities, 2009 (<http://epp.eurostat.ec.europa.eu/portal/page/portal/eurostat/home/>, accessed 1 August 2009).

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