



The Protocol  
on Water and Health:  
*making a difference*

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## Foreword



The entry into force of the Protocol on Water and Health in the WHO European Region is a new milestone for public health. As the world's first legal treaty designed to reduce water-related deaths and diseases, it gives countries an effective international mechanism for curbing the harm caused by unsafe water and sanitation.

Adoption of the Protocol is a demonstration of governments' commitment to protect millions of people from the damaging impact of water ill health. I share the pleasure of all contributors to this achievement, and express my appreciation for the common effort of WHO Regional Office for Europe and the United Nations Economic Commission for Europe (UNECE).

Water has been recognized as a basic human right. Nowhere else in the world is the difference between poor and wealthy countries' access to safe water and sanitation as great as in the European Region. Although nearly all Europeans are estimated to receive household connection, in many of Europe's new economies the infrastructure of water and sanitation still need to be developed or improved. As a result, over 40 million people in the European Region of WHO cannot access clean water. This exposes especially children to a higher risk of diarrhoeal diseases.

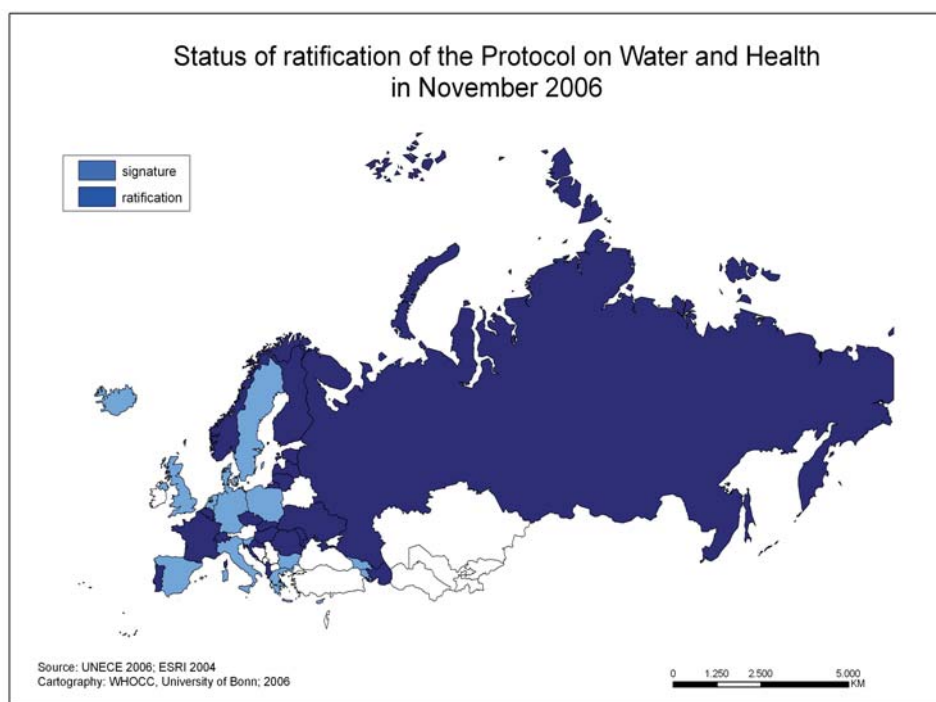
Overcoming these inequalities presents an opportunity to save thousands of lives, and that is where the Protocol's success will ultimately reside. Efforts to increase the number of European citizens with access to safe drinking-water and basic sanitation will receive a boost with the Protocol's entry into force, in line with the Millennium Development Goals. We at WHO encourage the countries that are on the way to ratifying the Protocol to join it and translate its general provisions into national laws and regulations. With the treaty now in force, progress in one country is progress in the whole Region.

A handwritten signature in dark ink, which appears to read "Marc Danzon". The signature is written in a cursive style and is positioned above a horizontal line.

*Marc Danzon*  
*WHO Regional Director for Europe*

## From signature to ratification

*In 7 years, 20 countries have ratified the Protocol on Water and Health to the 1992 Convention on the Protection and Use of Transboundary Watercourses and International Lakes. The Protocol entered into force on 4 August 2005 as the first legally binding instrument for the prevention and control of water-related diseases through improved and harmonized water supply and management. The Protocol implementation, jointly supported by the United Nations Economic Commission for Europe (UNECE) and the WHO Regional Office for Europe, will also help countries achieve the Millennium Development Goals (MDGs).*



**Fig. 1. Status of ratification of the Protocol on Water and Health**  
(© WHO CC WaMRi University of Bonn)

Europe is a continent of transboundary water resources, where some countries receive more than 50% of their waters from neighbouring countries. Ensuring their sustainable use requires international cooperation.

The 1992 Convention on the Protection and Use of Transboundary Watercourses and International Lakes – the Water Convention – aims to provide a basis for a reasonable and equitable management of water resources that serves the needs of nature, agriculture, industry and human health.

Water affects human health directly, whether people drink it or use it to ensure basic hygiene and sanitation. It also affects human health through indirect use, for example

through recreation or as a component of food production. The absence of water can also significantly affect human health.

Aware of the links between water and health, particularly when water is not supplied in sufficient quantity or quality, 35 countries signed the Protocol on Water and Health to the Water Convention during the Third Ministerial Conference on Environment and Health (London, United Kingdom, 1999) with the 36th joining one year later (Fig. 1 and Box 1). Since this historic signature, progress has been made under the Protocol in a number of important areas, addressing technical and scientific questions and identifying priorities for action.



## Mechanisms for Protocol implementation

The Working Group on Water and Health, established by the signatory countries and composed of country representatives, addresses technical and scientific questions with the support of a network of WHO collaborating centres and of *ad hoc* expert groups.

The Legal Board formulates the rules of procedure that govern the deliberations, as well as a compliance regime that monitors observance of the provisions of the Protocol by its Parties.

The Meeting of the Parties, the highest decision-making body for the Protocol, guides its implementation by adopting proposals from the technical bodies.

### Box 1. Parties and Signatories

#### Parties

Albania, Azerbaijan, Belgium, Croatia, the Czech Republic, Estonia, Finland, France, Hungary, Latvia, Lithuania, Luxemburg, Norway, Portugal, Republic of Moldova, Romania, the Russian Federation, Slovakia, Switzerland and Ukraine.

#### Countries on their way to ratification

Armenia, Georgia, Germany, Greece, Italy, Malta, the Netherlands.

#### Other signatory countries

Cyprus, Denmark, Iceland, Monaco, Poland, Slovenia, Spain, Sweden, the United Kingdom.

## Water for health: contributing to the Millennium Development Goals (MDGs)

*Simple access to safe water and adequate sanitation is an essential first step to protect human health, and a basic human right. Within its holistic approach, including supply of safe drinking-water and adequate sanitation, the Protocol on Water and Health will also help countries in the WHO European Region to achieve the two MDGs related to water and sanitation*

Lack of access to safe drinking-water and poor sanitation still threatens the health of



**Fig. 2. Hygiene is a simple measure to protect health from water-related diseases**  
(© V.Shkaruba / WHO)

millions of people in the WHO European Region. Water-related problems in other parts of the world often overshadow this critical situation.

While most of the 877 million people in the Region take clean water for granted, too many still lack a regular supply of safe water. According to the WHO/United Nations Children's Fund (UNICEF) Joint Monitoring Programme for Water Supply and Sanitation, as of 2002:

- almost 140 million (16%) do not have a household connection to a drinking-water supply;
- 85 million (10%) do not have improved sanitation (Fig. 2); and

- over 41 million (5%) do not have access to a safe drinking-water supply.

Children are the most vulnerable to unsafe water and poor sanitation. The highest incidence of infectious diseases caused by poor-quality drinking-water is often found in infancy, a vulnerable time in a child's life. This causes over 13 000 deaths from diarrhoea among children aged 0–14 years in the Region (5.3% of all deaths in that age group), with the largest contribution coming from countries of central and eastern Europe

and central Asia.

Evidence indicates that making a difference in water supply and sanitation across the European Region requires actions to be targeted to the specific needs of countries, regions or populations. The Protocol contributes significantly to the achievement of water-related MDGs through the commitment of its Parties to set targets for the provision of safe drinking-water and adequate sanitation, and to monitor progress towards these targets (Box 2).

## Box 2. Water-related MDGs

The MDGs, to be reached by 2015, represent the commitments made in the United Nations Millennium Declaration (2000) to reduce poverty and hunger, and to tackle ill health, gender inequality, lack of education, lack of access to clean water and environmental degradation. Specific targets within each of the MDGs allow the measurement of progress. The MDGs related to water are currently the priority in the Protocol implementation.

### MDG 4. Reduce child mortality

#### Target 5. Reduce by two thirds the under-five mortality rate between 1990 and 2015

In the European Region, lack of safe water and adequate sanitation is a major cause of child mortality, especially in eastern countries (Fig. 3). This has been recognized as a priority in the WHO Children's Environment and Health Action Plan for Europe (CEHAPE), adopted by health and environment ministers in June 2004. CEHAPE focuses on four main pillars for improving children's health, one of which is ensuring safe water and adequate sanitation to prevent and reduce child morbidity and mortality.

### MDG 7. Ensure environmental sustainability

#### Target 10. Halve the proportion of people without sustainable access to safe drinking-water and basic sanitation by 2015

Provision of safe water and adequate sanitation, combined with hygiene education, reduces mortality caused by diarrhoeal diseases by 65% and morbidity by 26%.

Although access to drinking-water is nearly 100% achieved in the European Region, in many countries of central and eastern Europe, particularly in rural areas, water is safe only in 30–40% of households. Sanitation is often also inadequate in these areas (50–60%). This is a field of potential improvement for the Protocol.

#### Target 11. Achieve a significant improvement in the lives of at least 100 million slum dwellers by 2020

Progress towards the MDGs in this area is measured by the proportion of households with access to secure tenure. Access to safe water and sanitation is crucial in breaking the vicious cycle of poverty, improving health and promoting economic and social development. Access to water is so crucial that its lack turns a household in a slum: the latter is in fact defined as "a group of individuals living under the same roof that lack one or more of the following conditions: access to safe water; sanitation; secure tenure; durability of housing; and sufficient living area"<sup>1</sup>. The key challenge in Europe is managing water supply to ensure fair water pricing. This would significantly improve the lives of slum dwellers.



Fig. 3. 13,000 child diarrhoea deaths in the European Region are water related (© V.Verbitski)

<sup>1</sup> UN-HABITAT, October 2002

## Opportunities to make a difference through the Protocol

*Through the Protocol on Water and Health, WHO and UNECE support a wide range of actions including legislative reforms, laboratory training, harmonization of data collection and reporting, and promotion of plans to ensure water safety.*

The Protocol's holistic approach to preventing, controlling and reducing water-related diseases includes both the supply of safe drinking-water (Fig. 4) and adequate sanitation and the basin-wide protection of water resources. The involvement of all stakeholders—professionals, scientific experts, the public at large, nongovernmental organizations (NGOs) and local action groups—is also vital, and international cooperation forms an important and attractive aspect of the Protocol for donors and recipients alike.

Protocol Parties (ratifying countries) are committed to reducing mortality and morbidity from water-related diseases through setting country-specific targets and establishing effective monitoring programmes. Data from such programmes

would provide the evidence for different types of both national interventions and international cooperation programmes, including those for protecting resources and managing water supply and sewerage services.

Opportunities under the Protocol include:

- strengthening health systems
- improving the planning and management of water resources
- improving the quality of water supply and sanitation services
- addressing future health risks
- ensuring safe recreational water environments.

### Strengthening health systems

Under the Protocol, water-related diseases of microbiological origin requiring priority action have been identified. These include cholera, bacillary dysentery, enterohaemorrhagic *Escherichia coli*, typhoid (and paratyphoid) and viral hepatitis A. Parties will review their systems for surveillance and outbreak detection and identify and implement the most appropriate measures to reduce these diseases, including public health measures such as vaccination and improvements in water treatment, and distribution measures, such as disinfection. This aspect of the Protocol implementation contributes to the achievement of target 5 of MDG 4.

Similarly, chemical contaminants of drinking-water are now under review to identify those requiring priority action. Some of the diseases caused by nitrates, lead and arsenic in water include “blue baby syndrome”, diseases of the nervous system and skin diseases.



**Fig. 4. Access to safe drinking water is an essential human right**  
(© V.Shkaruba / WHO)



## Improving planning of water resources: health through integrated water resources management

Formulating national plans for integrated water resources management (Box 3) and for water use efficiency is crucial to ensure sustainability of water resources. The development of such plans, contributing to the achievement of MDG 7, should take into account health considerations. This means that decision-making on water resources should consider all elements of the environmental system, as well as the possible adverse effects on health, including the location of potential sources of pollution and collection points, treatment methods and resources' natural capacity for regeneration (Fig. 5).

National interventions and international cooperation programmes should include integrated plans for the management of water resources at the river basin level. By advocating an approach aimed at preventing negative effects on health, the Protocol is an effective instrument to integrate health concerns in current and

future river basin plans. This approach has immediate repercussions for the MDG targets relating to:

- the reduction of child mortality (through its positive impact on risk levels for water-related diseases),
- the fight to key communicable diseases, in particular malaria (through improved water management and reduction of mosquito breeding places), and
- better access to safe drinking water (through a better allocation of water to different user groups).



### Box 3. Integrated water resources management (IWRM)

IWRM is the process of promoting the coordinated development and management of water, land and related resources, to maximize the resulting economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems. Addressing health concerns in integrated water management allows prevention and control of diseases around the water cycle.

## Improving the quality of the water supply and sanitation services

### Water supply

Parties to the Protocol are concerned with the quality of the services that supply drinking-water to the population with regard

to environmental performance and customer satisfaction (Fig. 6). This is not monitored at present, or is monitored in different ways by different countries or even within the same country. To improve the quality of the water supply service, a common monitoring system is being established under the Protocol that enables harmonized monitoring of key parameters, allowing Parties to analyse





**Fig. 6. Problems with water supply in central Asia**  
(© T. Divakova)

trends and make comparisons within and across countries.

When production, distribution and final consumer are not geographically contiguous, the management of the water supply network becomes critical to protect health. The Protocol validates norms and standards for the management of water supply networks, and provides guidance on their use.

### Sewerage and wastewater treatment

Wishing to take a holistic approach to water and health, the Parties to the Protocol decided that equal attention ought to be given to wastewater treatment. They built on the



**Fig. 7. Wastewater treatment plants protect both human health and the vulnerable marine environment**  
(© United Nations Environment Programme/Mediterranean Action Plan)

experience of the Mediterranean Action Plan, a cooperative effort of 21 countries and the European Union (EU) to protect the marine and coastal environment, which identified a procedure for assessing the quality of service of sanitation networks and the performance of wastewater treatment plants (Fig. 7). Protocol Parties are adapting this methodology to include it in their common monitoring system and thus protect both human health and water resources.

### Efficient reporting

The Protocol ensures that harmonized and efficient reporting systems are set up to support the improvement of the quality of service.

Monitoring procedures under the Protocol recognize reporting mechanisms already in place, particularly those resulting from the relevant directives of the EU to avoid duplication and achieve synergies. With regard to drinking-water directives, which refer to the WHO guidelines for drinking-water quality, WHO maximizes these synergies by supporting countries in adapting its guidelines to national legislation, and in strengthening water and clinical laboratory skills and equipment.

For countries not covered by EU directives, similar care is given to ensuring that procedures under the Protocol are fully in line with other global reporting mechanisms.

In both cases, coordination is assured with the WHO/UNICEF Joint Monitoring Programme for Water Supply and Sanitation, which serves as the monitoring programme for the MDGs and the International Decade for Action “Water for Life” 2005–2015.

## Addressing future health risks

The comprehensive approach of the Protocol allows countries to address future risks to health from water scarcity and other emerging water-related threats.

### Risks from water scarcity

Demand for water changes for many different reasons, such as efficiency improvements in production processes, improving living standards and ecological changes. This increasing need for water and the degradation of the environment cause freshwater scarcity, which leads to insufficient water availability to meet basic human needs, degraded aquatic ecosystems and lack of water for irrigation and food production.

Among the available measures to meet the increasing demand for water, three are receiving special attention; all pose potential risks to health.

1. Desalination of seawater (increasingly important) poses specific health risks, particularly with regard to inadequate mineral content of the final product. Within the Protocol, guidelines for safe desalination procedures are being developed.
2. Reservoir management (likely to gain in importance) poses specific challenges for health protection associated to the management of toxic organisms living in such reservoirs (cyanobacteria). Under the Protocol, expert meetings are organized to identify the best ways to meet these challenges through the revision of WHO guidelines and the development of further Protocol policy guidelines.
3. Reuse of treated wastewater (already in place in areas threatened by desertification) can be a partial solution in water-poor

and water-stressed areas, contributing significantly to meeting demands of agriculture and the public. Reuse requires risk assessment and the development of appropriate risk management procedures to avoid adverse effects on health. Parties to the Protocol contribute to assessing current research programmes and developing the evidence base for WHO guidelines on wastewater reuse. Under the Protocol, efforts could later be expanded to include wastewater treatment products, as well as food safety issues that are affected by water quality (i.e., food products such as shellfish and others).



Fig. 8. Ensuring safe recreational water environments during seasonal overcrowding can be a challenge  
(© K. Pond)

### Risks from emerging water-related threats

Surveillance methods for the emergence of water-related health threats are being developed under the Protocol, in addition to priority activities to meet the MDGs. Such emerging threats encompass some diseases of microbiological origins (i.e., cryptosporidiosis and giardiasis), severe and acute diarrhoea of undetermined origin, jaundice and dehydration.



## Ensuring safe recreational water environments

Recreational water activities have substantial benefits to health and well-being, but each aquatic environment—spa, swimming pool, beach, lake, river or coastal environment—poses its own risks to health depending on the type of water, geographical location, and local conditions (Fig. 8). These are in

turn linked to physical, microbiological and chemical hazards.

Parties to the Protocol are committed to ensure safe recreational environments, and to monitor progress towards this goal. Where necessary, training is provided for the gathering of robust environmental data to guide decision-making.

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## What next?

*“For the Protocol to work properly, it needs all the players to be fully involved to ensure efficient and effective water services in order to prevent the diseases. Public health cannot advance without safe water”.*

*– R. Bertolini, Director, WHO Regional Office for Europe*

The Protocol recognizes that water “has social, economic and environmental values, and should therefore be managed so as to realize the most acceptable and sustainable combination of these values”<sup>2</sup>. To maximize its benefits, Parties should cover as much as possible the whole WHO European Region, and establish collaboration within and beyond the health sector.

The entry into force of the Protocol is not the end, but the beginning of a process. Ratifying the Protocol means benefiting from participation in a harmonized and collaborative system aimed at the safe and sustainable management and use of water resources. By functioning as an honest broker between Parties, the Protocol facilitates addressing recognized problems of common concern.



**Fig. 9. The Protocol's entry into force will boost efforts to increase the number of European citizens with access to safe drinking-water and basic sanitation**  
(© V.Shkaruba / WHO)

<sup>2</sup> Protocol on Water and Health to the 1992 Convention on the Protection and Use of Transboundary Watercourses and International Lakes, Article 15 (g)



The WHO Regional Office for Europe and the United Nations Economic Commission for Europe (UNECE) jointly provide secretariat functions for the Protocol on Water and Health, coordinating activities for its implementation. WHO handles the health aspects, while UNECE takes care of the legal, procedural and environmental aspects.

The WHO Regional Office for Europe works to support the implementation of the Protocol as part of its programme on water, sanitation and health. The programme's general aim is to reduce water-related disease and optimize the health benefits of sustainable water management and sanitation. Its objectives are to support the health and environment sector in effectively addressing the issues related to poor water management and working to reduce the burden of disease associated with it.

The primary goal of the UNECE is to encourage greater economic cooperation among its member states. Its focus includes the environment and human settlements, and the development and follow-up of international environmental conventions.

The full text of the Protocol on Water and Health is available on the web site of the WHO Regional Office for Europe in English, French, German and Russian:  
<http://www.euro.who.int/watsan>

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