



Progress and challenges on water and health: the role of the Protocol on Water and Health



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Progress and challenges on water and health: the role of the Protocol on Water and Health

*Submission by the Bureau of the Meeting of the Parties to the
Protocol on Water and Health to the Fifth Ministerial Conference
on Environment and Health*

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Executive summary

Among the main achievements of the European environment and health process is the adoption, at the Third Ministerial Conference on Environment and Health (London, 1999), and subsequent entry into force of the Protocol on Water and Health to the 1992 Convention on the Protection and Use of Transboundary Watercourses and International Lakes.

The Protocol has developed significantly since the Fourth Ministerial Conference on Environment and Health was held in Budapest in 2004. It entered into force in 2005 and currently has 24 Parties; it benefits over 60% of the population of the European region. The Fifth Ministerial Conference, to take place in March 2010 in Parma, is the first since the Protocol became a legally binding instrument, and is an important opportunity to take stock of progress and challenges.

Since the Protocol came into force, governing and subsidiary technical bodies have been established for it, and project implementation has started successfully in a number of countries. Parties are developing and strengthening the necessary technical and strategic knowledge. They have established a system for mutual assistance, the Ad Hoc Project Facilitation Mechanism. The approaches and provisions of the Protocol are increasingly being put into practice, at both international and national levels.

Universal access to safe drinking-water and adequate sanitation remains unrealized in many countries in the European region. Infant mortality and morbidity from water-related diseases are on the decline but significant subregional inequality remains. The impacts of climate change pose new challenges to

water resource managers, water supply systems and sanitation networks, as well as to the health sector. The Protocol is the first international legally binding treaty designed to ensure, by linking integrated water management and health issues, the adequate supply of safe drinking-water and adequate sanitation for all. Even though the Protocol is still in its early stages of implementation, it is playing a crucial role in reducing the heavy burden of water-related disease that people in the pan-European region have to face.

This paper demonstrates the continued relevance and role of the Protocol on Water and Health to the environment and health process in the European region. It also aims to indicate to environment and health ministers the main challenges related to: socioeconomic and gender inequalities; the Protocol and the Children's Environment and Health Action Plan for Europe; governance and awareness issues; surveillance of water-related diseases; finance, assistance and cooperation; and the impacts of climate change on human health and water resources. The paper also indicates the way ahead in addressing these challenges within the frameworks of both the European environment and health process and of the Protocol on Water and Health.

The Protocol is a success story for the environment and health process. The Fifth Ministerial Conference in Parma should aim to consolidate this success by encouraging further accessions to the Protocol, and by promoting implementation of the Protocol to improve the water and health situation in the region.

Résumé

Parmi les principaux aboutissements du processus européen Environnement et santé, il convient de mentionner l'adoption, lors de la Troisième Conférence ministérielle sur l'environnement et la santé (Londres, 1999), et, par la suite, l'entrée en vigueur du Protocole sur l'eau et la santé à la Convention de 1992 sur la protection et l'utilisation des cours d'eau transfrontières et des lacs internationaux.

Le Protocole s'est largement développé depuis la Quatrième Conférence ministérielle sur l'environnement et la santé organisée à Budapest en 2004. Il est entré en vigueur en 2005 et compte actuellement 24 parties. Il profite aussi à plus de 60 % de la population de la Région européenne. La Cinquième Conférence ministérielle, prévue à Parme en mars 2010, est la première Conférence organisée depuis que le Protocole est devenu un instrument juridiquement contraignant, et constitue une occasion importante de faire le point sur les progrès accomplis et les défis.

Depuis l'entrée en vigueur du Protocole, des organes directeurs et des organes techniques subsidiaires ont été spécialement créés, et des projets ont été mis en place avec succès dans plusieurs pays. Les parties génèrent et renforcent le savoir technique et stratégique nécessaire, et ont établi un système d'aide mutuelle, à savoir le Mécanisme de facilitation des projets. Les stratégies et dispositions prévues dans le Protocole sont de plus en plus mises en pratique aux niveaux international et national.

L'accès universel à l'eau potable et à un assainissement adéquat n'est pas encore une réalité dans bon nombre de pays de la Région européenne. Si la mortalité et la morbidité infantiles imputables aux maladies d'origine hydrique sont en recul, des inégalités importantes persistent au niveau sous-régional. Les effets du changement climatique posent de nouveaux défis aux responsables de la gestion des ressources hydriques,

aux systèmes d'approvisionnement en eau et aux réseaux d'assainissement, ainsi qu'au secteur de la santé. Le Protocole est le premier traité international juridiquement contraignant conçu afin de garantir, en établissant un lien entre la gestion intégrée de l'eau et les questions sanitaires, l'approvisionnement approprié en eau potable et un assainissement adéquat pour tous. Bien que le Protocole soit encore à ses premiers stades de mise en application, il joue un rôle fondamental dans l'allègement de la lourde charge des maladies d'origine hydrique à laquelle doivent faire face les populations de la région paneuropéenne.

Ce document permet de comprendre la pertinence et l'importance continues du Protocole sur l'eau et la santé pour le processus Environnement et santé dans la Région européenne. Il vise également à porter l'attention des ministres de l'Environnement et de la Santé sur les principaux défis suivants : les inégalités socioéconomiques et sexospécifiques ; le Protocole et le Plan d'action pour l'environnement et la santé des enfants en Europe ; les questions de gouvernance et de sensibilisation ; la surveillance des maladies d'origine hydrique ; le financement, l'aide et la coopération ; et les effets du changement climatique sur la santé humaine et les ressources en eau. Le document indique aussi la voie à suivre pour relever ces défis dans le cadre du processus européen Environnement et santé et du Protocole sur l'eau et la santé.

Le Protocole est une véritable réussite pour le processus Environnement et santé. La Cinquième Conférence ministérielle de Parme doit conforter ce succès en encourageant d'autres adhésions au Protocole, et en encourageant sa mise en œuvre pour améliorer la situation de la Région dans le domaine de l'eau et de la santé.

Kurzfassung

Zu den wichtigsten Erfolgen des Prozesses Umwelt und Gesundheit in Europa gehören die Annahme des Protokolls über Wasser und Gesundheit zu dem Übereinkommen von 1992 zum Schutz und zur Nutzung grenzüberschreitender Wasserläufe und internationaler Seen auf der Dritten Ministerkonferenz Umwelt und Gesundheit (London, 1999) und dessen späteres Inkrafttreten.

Das Protokoll hat seit der Vierten Ministerkonferenz Umwelt und Gesundheit 2004 in Budapest erhebliche Veränderungen erfahren. Es trat 2005 in Kraft und umfasst gegenwärtig 24 Vertragsparteien. Somit kommt es über 60% der Bevölkerung der Europäischen Region zugute. Die Fünfte Ministerkonferenz, die im März 2010 in Parma stattfinden wird, ist die erste seit dessen Inkrafttreten als bindendes Rechtsinstrument und bietet deshalb eine bedeutende Chance zur Bestandsaufnahme in Bezug auf Erfolge und Herausforderungen.

Seit Inkrafttreten des Protokolls sind eine Reihe von fachlichen Leitungs- und Nebenorganen geschaffen worden, und in einigen Ländern wurde schon erfolgreich mit der Projektumsetzung begonnen. Die Vertragsparteien entwickeln das notwendige fachliche und strategische Wissen und bauen es aus. Sie haben als ein System zur gegenseitigen Hilfe das Ad-hoc-Projektbeschleunigungsverfahren geschaffen. Die Konzepte und Bestimmungen des Protokolls werden auf nationaler wie internationaler Ebene in zunehmendem Maße in die Praxis umgesetzt.

Ein allgemeiner Zugang zu sicherem Trinkwasser und einer bedarfsgerechten Abwasserbeseitigung ist in vielen Ländern der Europäischen Region immer noch nicht verwirklicht. Zwar sind Mortalität und Morbidität von Kindern an wasserbedingten Krankheiten heute rückläufig, doch besteht nach wie vor ein erhebliches Maß an Ungleichheit innerhalb der Region. Die Auswirkungen des Klimawandels stellen die verantwortlichen Entscheidungsträger in der Wasserwirtschaft und die

Wasserversorgungs- und Abwasserbeseitigungssysteme, aber auch das Gesundheitswesen insgesamt vor neue Herausforderungen. Das Protokoll ist der erste international bindende Vertrag, mit dem durch Verknüpfung von Themen der sektorübergreifenden Wasserbewirtschaftung mit Fragen des Gesundheitsschutzes eine bedarfsgerechte Versorgung mit sicherem Trinkwasser und eine bedarfsgerechte Abwasserbeseitigung für alle angestrebt werden. Auch wenn die Umsetzung des Protokolls sich noch im Anfangsstadium befindet, so spielt es doch eine entscheidende Rolle bei der Verringerung der schweren Belastung der Menschen in der Europäischen Region durch wasserbedingte Krankheiten.

In diesem Papier wird die anhaltende Bedeutung des Protokolls über Wasser und Gesundheit für den Prozess Umwelt und Gesundheit in der Europäischen Region erläutert. Ferner wird darin der Versuch unternommen, den Umwelt- und Gesundheitsministern die zentralen Herausforderungen auf folgenden Gebieten vor Augen zu führen: sozioökonomische und geschlechtsbedingte Ungleichheiten; das Protokoll und der Aktionsplan zur Verbesserung von Gesundheit und Umwelt der Kinder in der Europäischen Region der WHO; Organisationsführung und Sensibilisierung; Überwachung wasserbedingter Krankheiten; Finanzierung, Hilfe und Zusammenarbeit; Folgen des Klimawandels für menschliche Gesundheit und Wasservorkommen. Das Papier weist den Weg für die Auseinandersetzung mit diesen Herausforderungen im Rahmen des Prozesses Umwelt und Gesundheit in Europa wie auch des Protokolls über Wasser und Gesundheit.

Das Protokoll stellt einen großen Erfolg für den Prozess Umwelt und Gesundheit dar. Die Fünfte Ministerkonferenz in Parma sollte darauf abzielen, diesen Erfolg durch Ermutigung weiterer Beitritte zu dem Protokoll und durch Förderung von dessen Umsetzung zur Verbesserung der Lage der Region in Bezug auf Wasser und Gesundheit zu festigen.

Резюме

Среди основных достижений Европейского процесса “Окружающая среда и здоровье” – принятие на Третьей министерской конференции по окружающей среде и охране здоровья (Лондон, 1999 г.) и последующее вступление в силу Протокола по проблемам воды и здоровья к Конвенции о защите и использовании трансграничных водотоков и международных озер 1992 года.

За период после Четвертой министерской конференции по окружающей среде и охране здоровья, состоявшейся в Будапеште в 2004 г., в деятельности, связанной с Протоколом, был достигнут значительный прогресс. Протокол вступил в силу в 2005 г., и в настоящее время к нему присоединились 24 страны; реализация его положений приносит пользу свыше 60% населения Европейского региона. Пятая министерская конференция, которая проводится в марте 2010 г. в Парме, – первая конференция на уровне министров с того времени, как Протокол стал юридически обязывающим инструментом; это даст ценную возможность проанализировать как достигнутые результаты, так и имеющиеся трудности и проблемы.

За период после вступления Протокола в силу под его эгидой были созданы руководящие и дочерние технические органы и в ряде стран началась успешная реализация его положений. Стороны Протокола развивают и наращивают объем необходимых технических и стратегических знаний. Создана система взаимной поддержки, так называемый Специальный механизм оказания содействия реализации проектов. Подходы и положения Протокола все более широко внедряются в практику на международном и национальном уровнях.

Цель обеспечения всеобщего доступа к безопасной питьевой воде и адекватным условиям санитарии во многих странах Европейского региона все еще не достигнута. Младенческая заболеваемость и смертность от болезней, связанных с водой, идут на спад, однако по этим показателям сохраняются значительные субрегиональные неравенства. Последствия изменения климата рождают новые

проблемы как для сектора здравоохранения, так и для управления водными ресурсами, систем водоснабжения и водоотведения. Протокол – это первый международный юридически обязывающий договор, предназначенный для того, чтобы обеспечить, на основе создания прочных связей между интегрированным управлением водными ресурсами и вопросами охраны здоровья, адекватное снабжение безопасной питьевой водой и адекватные условия санитарии для всех людей. Несмотря на то, что Протокол все еще находится на ранних стадиях реализации, он играет важнейшую роль в снижении тяжелого бремени болезней, связанных с водой, от которых страдает население общеевропейского региона.

В настоящем документе демонстрируются сохраняющаяся актуальность и важная роль Протокола по проблемам воды и здоровья для Европейского процесса “Окружающая среда и здоровье”. Он также направлен на повышение осведомленности министров окружающей среды и здравоохранения об основных проблемах по следующим аспектам: социально-экономические и гендерные неравенства; связь Протокола и Европейского плана действий “Окружающая среда и здоровье детей”; вопросы стратегического управления и информированности; эпиднадзор за болезнями, связанными с водой; вопросы финансирования, оказания помощи и сотрудничества; последствия изменений климата для здоровья людей и состояния водных ресурсов. В документе также изложены перспективные пути решения этих проблем в рамках как Европейского процесса “Окружающая среда и здоровье”, так и Протокола по проблемам воды и здоровья.

Протокол являет собой одно из успешных начинаний в рамках процесса “Окружающая среда и здоровье”. Пятая министерская конференция, которая состоится в Парме, должна консолидировать и развить этот успех, призывая новые страны присоединиться к Протоколу и всемерно содействуя его внедрению в целях улучшения ситуации с водой и здоровьем во всем регионе.

Preface

The main focus of the Fifth Ministerial Conference on Environment and Health, to be held in Parma, Italy from 10 to 12 March 2010, will be on children's health in a changing environment. The Conference will assess progress towards achievement of the Regional Priority Goals of the Children's Environment and Health Action Plan for Europe (CEHAPE), adopted at the Fourth Ministerial Conference on Environment and Health in Budapest in 2004. At the same time, the Parma Conference will look into the new challenges that have become better understood since the Budapest Conference, particularly the impacts of climate change.

Among the main achievements of the European environment and health process is the adoption, at the Third Ministerial Conference in London in 1999, and entry into force in 2005 of the Protocol on Water and Health to the Convention on the Protection and Use of Transboundary Watercourses and International Lakes. The Parma Conference will be the first to take place since the Protocol became a legally binding instrument. In light of this, and taking into account the relevance of the Protocol to the issues to be addressed at the Conference, the Working Group on Water and Health, the main governing body of the Protocol, entrusted the Protocol's Bureau to prepare and submit the present paper as an input to the Fifth Ministerial Conference. The French Ministry of Health and Sports kindly provided financial support for the preparation of this paper.

The paper aims to show how the Protocol on Water and Health has contributed to the achievement of safe water and adequate sanitation for the population of the European region, particularly in support of CEHAPE Regional Priority Goal 1, how it contributes

to the strengthening of the water and health sectors in the pan-European region and how it can assist Parties in meeting the challenges of adapting to climate change. The paper thus demonstrates the continued relevance and role of the Protocol on Water and Health to the environment and health process in the European region. It also aims to indicate to environment and health ministers the main challenges in the area of water and health and to show the way ahead in addressing them, within the frameworks both of the European environment and health process and of the Protocol on Water and Health. The main issues will be discussed in depth during the pre-Conference event: "The Protocol on Water and Health: where health, environment and development policies meet", to be held on 9 March 2010 in Parma, prior to the Ministerial Conference.

The basic aims of the Protocol – the reduction of water-related diseases and the sustainable use of water resources – remain as relevant as they were at the time of the Third Ministerial Conference. The region has not yet achieved universal access to safe water; mortality and morbidity related to unsafe water and inadequate sanitation remain unacceptably high; and water resources are often used in an inefficient manner. This jeopardizes not only the Millennium Development Goal related to environmental sustainability, but also those related to universal primary education, poverty alleviation, and maternal and child health. The region is generally on its way to reaching the drinking-water target, although efforts remain vital to ensure access to safe water in the home or dwelling, particularly in rural areas. The sanitation target, however, may well be out of reach for a significant number of countries (United Nations, 2009b).

Effects of gradual climate change and extreme weather events such as floods and droughts form an additional challenge to the sustainable provision of safe water and adequate sanitation, and to the sustainable functioning of health systems in the region.

1. Lessons from ten years of experience of the Protocol

At the time of the Budapest Conference, only 11 States had deposited instruments of ratification of the Protocol, which was insufficient for its entry into force. The Protocol was therefore not prominently present in the proceedings.

The call by the Budapest Conference to speed up ratification of the Protocol (see paragraph 4 of the Budapest Declaration) met with a positive response from many countries. Since the Budapest Conference, the Protocol has developed significantly: it entered into force in 2005 and currently has 24 Parties.¹ This is a success story for the environment and health process. The Fifth Ministerial Conference in Parma should aim to consolidate this success by encouraging further accessions to the Protocol, and by highlighting the relevance of the Protocol in addressing different aspects of water and health to decision-makers in the European region.

Since the Protocol came into force, governing and subsidiary technical bodies have been established for it and project implementation has started successfully in a number of countries. Parties are developing and strengthening the necessary technical and strategic knowledge. They have established a system for mutual assistance, the Ad Hoc Project Facilitation Mechanism. The approaches and provisions of the Protocol are increasingly being put into practice, at both international and national levels.

The Protocol is the first international legally binding treaty designed to ensure, by linking integrated water

management and health issues, the adequate supply of safe drinking-water and adequate sanitation for all. Even though the Protocol is still in its early stages of implementation, it is playing a crucial role in reducing the heavy burden of water-related disease that people in the pan-European region have to face. In 2006, nearly 140 million people (16%) in the eastern Europe, Caucasus and central Asia (EECCA)² region still did not have a household connection to a drinking-water supply, over 41 million people (5%) did not have access to a safe drinking-water supply and 85 million people (10%) did not have improved sanitation.

These general statistics do not reflect important changes in access to safe water and adequate sanitation that have occurred in the European region at the national level. Based on a 2008 review, the WHO-United Nations Children's Fund Joint Monitoring Programme (JMP) has observed some impressive changes in access to improved sources water and sanitation (UNICEF and WHO, 2008). While the percentage of the population that gained water supply coverage in the period 1990–2006, compared to the 1998 median population, was relatively modest in the western part of the region (typically 1–10%), it was very significant in the eastern part of the region (20% in Azerbaijan). The gains made over the same period with regard to sanitation were, however, more modest, and typically remained below 10% in the countries that participated in the review.

1 Albania, Azerbaijan, Belarus, Belgium, Croatia, the Czech Republic, Estonia, Finland, France, Germany, Hungary, Latvia, Lithuania, Luxembourg, the Republic of Moldova, the Netherlands, Norway, Portugal, Romania, the Russian Federation, Slovakia, Spain, Switzerland and Ukraine. Updated progress in ratification of the Protocol can be found on: http://treaties.un.org/Pages/ViewDetails.aspx?src=TREATY&mtdsg_no=XXVII-5-a&chapter=27&lang=en.

2 The EECCA countries are: Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, the Republic of Moldova, the Russian Federation, Tajikistan, Turkmenistan, Ukraine and Uzbekistan.

However, the JMP has long struggled to ensure wide coverage of the countries in the European region, and the data provide information on access, but not on quality of service nor on the compliance of drinking-water at the point of consumption with the *WHO Guidelines on Drinking-water Quality* (WHO, 2008a). In future, the Protocol itself, with its reporting on the progress achieved towards “access to drinking-water for everyone”, and “provision of sanitation for everyone” will improve knowledge on sustainable access to safe water and adequate sanitation, and link this information to epidemiological data on disease burden and related water management issues.

At present, however, unacceptable levels of, in particular, childhood mortality and significant levels of morbidity from water-related diseases caused by microbial pathogens, chemical contaminants and impaired hygienic conditions persist in many countries. Well known diseases such as hepatitis A, typhoid fever and bacillary dysentery remain a serious health problem for many countries in the region, while emerging diseases such as campylobacteriosis, giardiasis, cryptosporidiosis and legionellosis are of recognized importance in some countries but are still beyond the technical capacities of surveillance systems in other countries. Detecting outbreaks and developing appropriate contingency plans for dealing with water-related diseases remain a challenge for many countries.

Article 6 of the Protocol is the backbone for action to reduce water-related diseases and to ensure universal access to safe water and adequate sanitation through management of water resources. According to this article, each country shall, within two years of becoming a Party, “establish [...] targets for the standards and levels of performance that need to be achieved or maintained for [...] protection against water-related disease”. The time-bound targets shall, in each country, cover drinking-water supply and sanitation, health surveillance systems, and water and environmental management issues. Progress towards these targets shall be regularly monitored and reported.

Article 8 of the Protocol requires Parties to ensure that comprehensive national and/or local surveillance and early-warning systems are established, improved or maintained. Within three years of becoming a Party, each Party shall have established surveillance and early-warning systems, contingency plans and response capacities. There is therefore a clear synergy between the provisions of the Protocol on Water and Health and the implementation of the International Health Regulations (2005).

This system offers Parties a high level of flexibility, since targets can vary according to national priorities, conditions and needs. Many of the 24 Parties to the Protocol have begun the process and are tackling the challenge of developing the necessary internal coordination and cooperation mechanisms, engaging all relevant stakeholders, gathering and analysing the necessary data and information to set targets, and developing surveillance and early warning systems, and systems for monitoring and reporting progress. To assist Parties in setting targets under the Protocol, *Guidelines on the setting of targets, evaluation of progress and reporting*³ have been elaborated, illustrating steps that need to be taken and aspects that should be considered when setting targets.

3 *Guidelines on the setting of targets, evaluation of progress and reporting*, developed by the Task Force on Indicators and Reporting established under the Protocol on Water and Health (draft version available at: http://www.unece.org/env/documents/2009/wh-wg/ece_mp_wh_wg_1_2009_4%20E.pdf, accessed 9 February 2010).

2. Socioeconomic and gender inequalities

2.1 Access to safe water in rural areas: the special case of small-scale water supplies

According to the UNICEF/WHO Joint Monitoring Report of 2008 (UNICEF and WHO, 2008), access to improved drinking-water sources and access to improved sanitation remain a challenge in many countries, with some actually regressing instead of progressing towards Millennium Development Goal 7, Target 3 to “halve, by 2015, the proportion of the population without sustainable access to safe drinking-water and basic sanitation”. While most of the population in urban areas does have such access, service quality, in terms of uninterrupted access, leak losses and microbial contamination at tap, remains a serious concern in many countries in the region. The greatest need for increasing access, especially through in-house connections, is however predominantly a rural problem.

The backbone of the water supply in rural areas all over the pan-European region is small-scale, community or privately operated water supply systems. Here, specific challenges are apparent. Adequate resource protection (zoning and enforcement) is lacking in many areas where small-scale water supply systems operate. Maintenance of such systems is often problematic, in particular in relation to individual components of treatment units and small distribution networks. With the collapse of the Soviet Union came a deterioration in the centralized regulated water and wastewater facilities; existing systems are in a bad state or have even collapsed. Local administrations and operators lack modern technical knowledge and often are also deprived of access to scientific and technical support because their water services are located in remote

places or, because of their size, are not considered of interest to major water suppliers. The isolation of the operators also leads to different, undefined terminologies, limited use of international standards and different organizational set-ups. Furthermore, consistent compliance with microbiological standards is difficult in the case of small-scale water supplies and the chemical contamination remains a local concern. Lack of awareness of health problems arising from small-scale water supplies among local users is another challenge. A rapid and major spread of infections and thus diseases is often the consequence.

The approach of the Protocol in promoting action at the local level is a benefit for small-scale water supplies. The setting of targets at local level helps to identify the root causes of these obstacles to improved human health. To address these problems, governments should promote local action among different stakeholders, with special attention to protecting the most vulnerable groups. So far, actions are often initiated by some governments; support by nongovernmental organizations (NGOs), especially in rural areas, has often proved crucial to making quick progress locally.

In particular, the risk-assessment/risk-management approach of the Protocol, using water safety plans (WSPs), is seen as a valuable and viable method to increase access to safe drinking-water through small-scale water supplies. WSPs help water suppliers, water managers and households understand the risks of contamination and the importance of verifiable controls at the different stages of water supply. At international level, the Protocol focuses on capacity-building by also promoting exchange of experience, common problems and good

practices among operators of small-scale water supplies and experts. It is important to provide an enabling environment that promotes the implementation of WSPs in small-scale supplies by providing external expertise, the establishment of partnerships between suppliers, the preparation and distribution of easy-to-understand guidance documents, and training and education.

2.2 Equitable access to water and sanitation

Access to water and sanitation is often seen as a purely technical problem, while both social and governance aspects are neglected. General Comment No. 15 on the right to water, adopted in November 2002 by the Committee on Economic, Social and Cultural Rights, sets the criteria for the full enjoyment of the right to water. It identifies the criteria of sufficiency in quantity, safety to human health and organoleptic acceptability, physical accessibility and economic affordability.

The affordability of water has a significant influence on the use of water and selection of water sources. Households with the lowest level of access to a safe water supply frequently pay more for their water than do households connected to a piped water system. The high cost of water may force households to use alternative sources of water of poorer quality that represent a greater risk to health. Furthermore, high costs of water may reduce the volume of water used by households, which in turn may influence hygiene practices and increase risks of disease transmission (WHO, 2008a). By way of illustration of the importance of this problem even for European Union countries, it has been reported that, in 2008, 424 742 consumers in Belgium (approximately 12.13% of the population) were in arrears with the payment of their water bills (Anon, 2009).

The health sector can play a major role in strengthening the evidence base on people experiencing economic difficulties in sustainable access to safe water and adequate sanitation, advocating economically affordable water and sanitation services at a level that safeguards and promotes human health by ensuring that a solid legal basis is developed for guaranteed economic accessibility of water supply and sanitation services, by raising awareness in policy-makers of the socioeconomic consequences for society when economic barriers to access become insurmountable, and by informing socioeconomically weak segments of the populations of their rights and of the supporting measures taken by national governments to realize such rights.⁴

Water must be affordable for everyone. It is a sad irony that the poor, who often receive the lowest level of services, making do with unreliable service delivery and water of inferior quality, pay proportionally the most per litre for their water. Ensuring the affordability of water requires that services match what people can pay. This is not simply a matter of the total cost of water proportional to the household income. Many people in weak socioeconomic circumstances earn money on an irregular basis, which inhibits them from entering into long-term financial commitments that might be cheaper in the long run. It may be necessary to offer a range of levels of service and technologies, with the potential for progressive upgrading. In order to meet their obligations, governments will need to sharpen their monitoring of the water market, and take action to ensure that the entire population can access a minimum service, through mechanisms such as pricing, supportive regulatory environments, appropriate social support structures, and an enabling legal environment (WHO, 2003).

4 For an example of the development of a relevant legal framework see: Armeni C (2008).

3. The Protocol and the Children's Environment and Health Action Plan for Europe

The Fourth Ministerial Conference on Environment and Health adopted the Children's Environment and Health Action Plan for Europe (CEHAPE). Its Regional Priority Goal 1 stated that: "We aim to prevent and significantly reduce the morbidity and mortality arising from gastrointestinal disorders and other health effects, by ensuring that adequate measures are taken to improve access to safe and affordable water and sanitation for all children".⁵ Emphasis is placed on three aspects: the provision of adequate and affordable safe water and basic sanitation; better implementation of the Protocol on Water and Health and implementation of national plans to increase the proportion of households with access to safe and affordable water and adequate sanitation, thereby ensuring that all children have access to clean water and sanitation by 2015; and awareness raising among the population, particularly caregivers, and the provision of education on basic hygiene.

Since the adoption of the CEHAPE, the evolution of the Protocol on Water and Health has created a supportive infrastructure for achieving Regional Priority Goal 1. Through the work on target setting and indicators, a much better understanding has been gained of the specific challenges in rural areas, where schools often completely lack sustainable access to safe water and adequate sanitation, and do not have proper hand-washing facilities equipped with soap and running water. Such environments, where intense person-to-person contact prevails, present high risks for environmental hazards and can justifiably be targeted for priority intervention under the Protocol (Adams et al., 2009).

In addition to establishing targets for improving access to safe water and adequate sanitation, the Protocol also aims to reduce the level of water-related diseases. When sanitary conditions are less than optimal, children are at risk not only of diarrhoeal diseases, but also of intestinal parasites, and of long-term exposure to chemical contaminants such as anthropogenic lead or naturally occurring arsenic. The Protocol allows a flexible approach, adapted to local circumstances and capabilities. This may involve ensuring wider accessibility of low osmolarity rehydration and zinc supplementation, promoting breastfeeding, strengthening rotavirus research and vaccination, or initiating or intensifying campaigns for hand washing with soap, and household water treatment and storage (UNICEF and WHO, 2009). The flexibility in the approach is one of the strong points of the Protocol.

⁵ The full text of the CEHAPE may be found at: <http://www.euro.who.int/document/e83338.pdf> (accessed 9 February 2010).

4. Governance and awareness of water and health issues

At the Budapest Conference, policy-makers defined different tools for the protection of health and environment, in particular, the need for “transparency and the meaningful democratic involvement of stakeholders in decision-making processes” (paragraph 17a of the Budapest Declaration). The Protocol brings together the issues of water, health and environment and requires its Parties to follow, inter alia, the principle of access to information and public participation in decision-making processes as defined in Article 5(i).

Public understanding of the link between environment, drinking-water and sanitation, and human health is low. This is particularly problematic in the event of clear contamination of drinking-water, in relation to communication with health care providers (Guidotti and Ragain, 2008), vulnerable populations (Nsiah-Kuni, 2008) and consumers at large (Rundblad, 2008). In the EECCA region, there is a relatively strong focus on the quantitative, rather than the qualitative, aspects of water resource management. The water and health link is often seen narrowly as securing the necessary amount of water for drinking and hygiene purposes. However, the increasing impacts of climate change are changing perceptions. The relationships between environment, water and health are progressively becoming more prominent and appreciated.

Nevertheless, water and health issues do not figure prominently on many governments’ agendas, despite their high social and economic importance. Financial resources are often limited; among the countries of the Organisation for Economic Co-operation and Development (OECD), for example,

public health typically accounts for approximately only 9% of gross domestic product (GDP).⁶ This is still a comparatively high percentage when compared to non-OECD countries. In the Republic of Moldova, for example, public sector funding for health decreased by two thirds between 1993 and 2003, when it stood at 3.4% of GDP.⁷ Existing technical and institutional frameworks are not geared towards intersectoral cooperation. Consequently, health and environment institutions, already suffering from comparatively limited means, often do not work together but continue working within their own boundaries, applying their own sectoral policies.

The Protocol’s specific structure and approach do help to address the questions of governance and public awareness. The spirit of the Protocol puts human beings at the centre of the framework of the natural environment, and makes cross-sectoral cooperation a core prerequisite for successful implementation.

4.1 Multisectoral planning and implementation

The setting of targets under the Protocol fosters multisectoral planning. Target-setting creates a platform for discussion, promotes coherence in policies, and harmonizes and integrates the actions of different stakeholders, such as governmental agencies, NGOs, the scientific community, the private sector and the general public. The target-setting process promotes vertical communication between the different levels of administration (from local to national), and helps to translate national targets into local contexts.

6 Source: OECD (2009).

7 Source: WHO (2007).

Hungary is a good example of how cross-sectoral cooperation works: a special interministerial committee was established to assist ministries in implementing the Protocol. A national committee on public health (NCPH) was created by Governmental Decision 1063/2005 (VI.23). An interministerial committee on water and health was formally created during the 24 January 2007 session of the NCPH. The Interministerial Committee on Water and Health acts as a special subcommittee of the National Committee on Public Health. The Interministerial Committee has a wide pool of experts to draw on, allowing it to cover all fields of the Protocol (e.g. from ministries and government agencies dealing with public health, environment and water management, local and regional development, economy and transport, agriculture, industry and national development, as well as a representative from the Prime Minister's office, relevant water associations, environmental NGOs and other interest groups). Although it is of a technical nature, the Committee has a clear political mandate. Its purpose is to coordinate the implementation of the Protocol on Water and Health, as well as the implementation of instruments of interministerial compliance, to inform policy-makers on water and health-related matters, and to make informal arrangements to improve cooperation between ministerial departments. The Committee also facilitates public access to information related to water and health issues (UNECE, 2008). Resources have been secured for its functioning and it is linked with other governmental programmes and plans relevant to the Protocol.

Other Parties to the Protocol – Norway and Finland, among others – have taken a similar approach to that of Hungary, creating special bodies tasked with coordinating implementation of the Protocol at the national level.

4.2 Access to information and public participation

One of the main principles guiding the Protocol's implementation is found in Article 5(i), which specified the need for access to information and public participation in decision-making. This coincides with the Budapest Declaration, in paragraph 18c, calling for tools to guarantee access for the general public to reliable and helpful information. The Protocol also provides a concrete mean of putting these principles into practice as, in its Article 6, it requests Parties to organize public consultations within their process of target setting. It does not impose a uniform concept of minimum requirements on all Parties but, rather, requests Parties, within the framework of a national dialogue, to establish and publish national and/or local targets. The time-bound targets shall, in each country, cover drinking-water supply and sanitation, the performance of those systems, health systems, and water and environmental management issues, and progress towards these targets shall be regularly monitored and reported. The intention is that national opinion-forming processes will furnish the greatest motivation for setting and attaining targets. This can be seen in Ukraine, where different meetings on the issues of water and health and related legislation have been organized by NGOs over the years. These meetings have contributed to the country's commitment to implementing the Protocol and, on a regional level, to an increased allocation of budgets for, inter alia, school sanitation projects.

4.3 Capacity building and tools

The Protocol promotes international cooperation between technical experts and water and health managers through its subsidiary policy bodies: the Meeting of the Parties, the Working Group on Water and Health and the Ad Hoc Project Facilitation Mechanism; and its technical bodies: the Task Force on Indicators and Reporting, the Task Force on Extreme Weather Events and the Task Force on Surveillance. The scientific and technical recommendations that result from the work of the task forces benefit from a first political review process in the Working Group on Water and Health, before being submitted for final adoption to the plenary Meeting of the Parties. These subsidiary bodies ensure exchange of experience and cross-fertilization and thereby progress in the whole region. Moreover, participation of experts in international activities under the Protocol has boosted cross-sectoral coordination at the national level.

4.4 Accountability

A broad national dialogue, the periodic review of progress towards set and publicly announced targets, the national publication of the result of the review and the reporting of progress within an international framework create a good basis for the accountability of Parties regarding their commitments made on ratifying the Protocol. The Protocol supports transparency so that national and international civil societies as well as other stakeholders, e.g. other States Parties, have the opportunity to be informed of the progress of a Party in implementing the Protocol. A first reporting cycle has just begun. The findings will be discussed at the second session of the Meeting of the Parties in November 2010 and inform future work under the Protocol.

The Protocol also includes a mechanism to review compliance with its regulations. The Compliance Committee (see Article 15) is a transparent, non-confrontational, non-judicial and consultative arrangement. The elected committee of nine independent members has the overall responsibility to review cases of non-compliance. An important feature of the compliance mechanism is that not only Parties but also members of the public can bring cases of non-compliance to the attention of the Committee.

5. Surveillance of water-related diseases

According to the definition of the Protocol in Article 2 (1) “water-related disease means any significant adverse effects on human health, such as death, disability, illness or disorders, caused directly or indirectly by the condition, or changes in the quantity or quality, of any waters”. Water-related diseases (WRDs), such as diarrhoea (most frequent disease), typhoid fever and hepatitis A, remain one of the major health concerns. In the European region, 13 000 children under the age of 14 die every year because of diarrhoea resulting from poor water conditions (WHO, 2010). It is not only the lack of access to water sources and sanitation but also the quality of water and sanitation where access is available that causes problems. Outbreaks of diseases occur because of lack of source protection, insufficient treatment, faulty distribution, leakages in the network or contamination at the point of use. Drinking contaminated water often causes the simultaneous infection of a large number of consumers, who may represent a substantial proportion of a community. Microbial contamination is the main concern within the pan-European region, but chemical pollution too, restricted to specific local areas, has a significant impact on human health.

Parties to the Protocol have recognized the importance of emerging diseases which, because of their rapid proliferation or their penetration in countries from which they were hitherto absent, pose special risks to human health. Among these diseases are: campylobacteriosis, cryptosporidiosis, giardiasis and legionellosis. This list is not exclusive; it is indeed likely that, in future, attention will be given to other emerging pathogens, particularly rotavirus

and norovirus, as well as to health-threatening ecological changes, particularly the proliferation of toxic algae and cyanobacteria in resource waters used for drinking or recreational activities.

Special attention is being given to the protection of vulnerable groups, including the growing population of immunocompromised patients, the elderly and the very young. The increasingly intensive use of a variety of water-based technologies, including domestic and industrial air conditioning, advanced water-based recreational environments, and water-based medical appliances such as high-speed dental drills reinforces the need for renewed attention to basic water hygiene. Emerging pathogens in drinking-water lead to new demands in drinking-water hygiene, even in countries that have achieved a high standard of water treatment over the past two decades. Special attention also needs to be given to the causes of occurrences of pathogenic microorganisms in drinking-water, followed by adequate water protection measures and water treatment processes.

There is a clear difference between the geographical areas in the burdens of mortality and morbidity attributable to WRD outbreaks within the pan-European region. This factor is directly linked to the access to improved water supply at home in urban and rural areas. For instance, in EUR-B and EUR-C countries⁸ between 10% and 25% of the population in rural areas, and about 80% in urban areas, suffer from poor water supply, in comparison to EUR-A countries where 100% of the population in both rural and urban areas enjoy access to water.

⁸ EUR-A: Andorra, Austria, Belgium, Croatia, the Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Israel, Italy, Luxembourg, Malta, Monaco, the Netherlands, Norway, Portugal, San Marino, Slovenia, Spain, Sweden, Switzerland, the United Kingdom. EUR-B: Albania, Armenia, Azerbaijan, Bosnia and Herzegovina, Bulgaria, Georgia, Kyrgyzstan, Montenegro, Poland, Romania, Serbia, Slovakia, Tajikistan, the former Yugoslav Republic of Macedonia, Turkey, Turkmenistan, Uzbekistan. EUR-C: Belarus, Estonia, Hungary, Kazakhstan, Latvia, Lithuania, the Republic of Moldova, the Russian Federation, Ukraine.

An additional factor for the unequal spread of WRDs is the percentage of the population connected to sanitation facilities. In EUR-B and EUR-C countries, the figure is 10–15% in rural areas, and 75–84% in urban areas, in comparison to EUR-A countries, where 95% of the population in rural areas and 100% in urban areas have access to sanitation. In addition, in both EUR-B and EUR-C countries, only a low percentage of wastewater is treated in an adequate and safe manner, threatening the environment, especially the quality of water bodies used for drinking-water or recreational purposes.

Contamination by some chemicals, such as pesticides, nitrate, fluoride, lead and arsenic, constitutes a concern for public health, in the case of both drinking-water and recreational waters; this is even more of a problem where the institutional, financial and educational capacity to monitor drinking-water on a regular basis is often poor.

In enclosed recreational waters, health impacts can be caused by operational errors in the management of the facility while, in coastal waters, swimming, bathing and any sport that causes contact with water may lead to outbreaks of diseases, especially when the coastal waters have been contaminated by raw or partially treated sewage. Contamination by domestic sewage and runoff, untreated or partially treated industrial wastewater, effluent from abandoned waste sites, and diffuse pollution can also pose problems for inland surface waters used for recreational purposes. Poor water quality in natural waters used for the production of shellfish and other seafood, and irrigation by means of reclaimed treated wastewater may negatively impact on the safety of the food chain.

The Protocol aims to protect human health and well-being. This includes strengthening the role of national health systems in the surveillance of endemic levels of water-related diseases, and bolstering their capacity for outbreak detection and contingency planning. Article 8 of the Protocol commits Parties to establishing “comprehensive national and/or local surveillance and early-warning systems”. These public health surveillance systems represent the ongoing and systematic collection,

analysis and interpretation of health data to describe and monitor a health event. Practical guidance⁹ has been developed under the Protocol, calling for information collected at local level to be analysed at regional and national levels. Outbreak management teams (OMT) should be set up at local, regional and national levels. The task of the OMTs is, first, to detect outbreaks of WRDs, then to react adequately to them, and finally to identify management measures necessary to prevent further dangerous exposures.

In order to be able to respond to outbreaks and incidents of WRDs and significant threats within the whole region, the Protocol calls for joint and coordinated international action (laid out as a general principle in articles 11 and 12). This includes the transmission of information on WRDs at international level and the sending of analysed data to international organizations, such as WHO, but also the establishment of surveillance systems in collaboration between Parties, and the improvement of existing systems. In this way, the Protocol supports and strengthens the application of the International Health Regulations (2005).

The Protocol offers guidance on the issue, particularly for the EECCA and the south-east European (SEE) countries. The guidance documents review the main threats to health related to water services, refer to basic concepts of epidemiology and disease surveillance, and provide advice on data management and analysis.

9 *Guidance on water-related disease surveillance*, developed by the Task Force on Surveillance established under the Protocol on Water and Health (draft documents available at: http://www.unece.org/env/water/meetings/documents_WGWH_second.htm, accessed 9 February 2010).

6. Finances, assistance and cooperation

There is common agreement in professional circles that the provision of safe water and adequate sanitation is cost-effective when investments are measured against gains in health and economic productivity (Clasen and Haller, 2008; SIWI, 2005).

There is, however, a widespread lack of understanding in the general public of the positive effects of investing in sanitation. This has led to a “sanitation crisis” as stated by the United Nations Independent Expert of the Human Rights Council on the issue of human rights obligations related to access to safe drinking-water and sanitation. Specific to the European region is the urgent need to invest not only in improved access but also in renovation of existing supply and distribution networks,¹⁰ in particular to decrease leakage, improve continuity of water supply and improve water quality at the point of consumption. It is estimated that there is a need to double the investment in the EECCA region in water supply and sanitation to secure access to safe drinking-water and sanitation.¹¹ At the same time, these investments benefit the economy, since expenses related to water pollution and disasters are avoided.¹² However, often the problem is not only the lack of investment in infrastructure but also the overall weakness of national and local institutions in ensuring that investments are sustainable and are supported by policies and strategies that sustain their impacts.

International donors are not as effective as they could be in addressing the problems of health, water resource management, and water supply and sanitation. Official development assistance (ODA) programmes tend to address the three sectors separately, without much consultation between the different departments of an individual donor, and without much interdonor consultation prior to the allocation of funding. Geographical distribution of ODA funding shows that the EECCA and SEE countries are not seen as a priority.

The Protocol foresees practical instruments to ensure that commitments are translated into action. Article 14 of the Protocol on international support for national action was provided with a means of implementation at the first Meeting of the Parties in 2007, when Parties decided to establish a mechanism for international support to EECCA and SEE countries: the Ad Hoc Project Facilitation Mechanism (AHPFM). The tasks of the AHPFM are to identify priority activities and advocate funding proposals or direct assistance to enable countries to develop national strategies on water and health. The mechanism guarantees to donors that projects are well prepared and politically supported. The cooperative approach allows countries to undertake projects which are beyond the individual funding capacity of a single donor. The recipient countries receive assistance in formulating projects, thus increasing their chances of being funded. Projects are followed up and incorporated into the Protocol’s programme of work, which guarantees a long-term commitment.

10 Based on data collection from about 400 utilities (see: OECD (2007)).

11 Ibid.

12 Source: statistics of the Stockholm International Water Institute (<http://www.siwi.org>, accessed 9 February 2010).

The AHPFM ensures better screening of projects, and donors can maintain direct supervision of implementation. Projects on setting targets and target dates improve governance, an issue of concern to a number of donors. The AHPFM also promotes partnerships between donors and recipients and not only monetary transfers but also direct exchange and technical assistance.

Two projects on the implementation of target setting have begun: one in the Republic of Moldova with financial support from Switzerland, and one in Ukraine with financial support from Norway. Similar project proposals from Armenia and Kyrgyzstan are being discussed.

International donors are beginning to recognize the Protocol as an excellent venue for combining the national priorities of EECCA countries with eligible ODA support. Norway has initiated the establishment of a water fund under the auspices of the European Bank for Reconstruction and Development, with a particular link to the Protocol on Water and Health. This link offers access to investment support that further enhances the value for donors of channelling international support through the Protocol.

Currently, the financing of the AHPFM relies mainly on countries that are not European Union (EU) members, as EU countries have already made commitments to EU funding programmes. The AHPFM and the funding from EU countries and the European Commission should be better coordinated, as the aims to be achieved are similar, and the local stakeholders identical (i.e. there is a need for better donor coordination).

Finally, it must be also recalled that implementation of the programme of work under the Protocol is dependent solely on voluntary contributions. Therefore, to ensure long-term sustainability of activities and the necessary continued commitment to foster progress in the region, it is fundamental that all Parties contribute both in cash and in kind to the programme of work.

7. Impacts of climate change on human health and water resources

Climate change constitutes an added obstacle to ensuring sustainable access to safe water and adequate sanitation. Since water is the key medium through which climate change impacts on human populations, adaptation in the way water resources, water supply and sanitation systems are managed will be key to safeguarding human health (United Nations, 2009a).

Many countries in the pan-European region are experiencing a growing number of extreme weather events resulting from the changing climate, and often displaying distinctive features of disasters, with their associated direct impacts on human health. Premature deaths, diseases and forced displacement of communities are some of the most threatening consequences. Because of this, there is growing recognition of the link between extreme weather events and health. In the long run however, the greatest health impacts may come not from acute shocks such as natural disasters or epidemics, but from the gradual build-up of pressure on the natural, economic and social systems that sustain health, and are already under stress in many countries in the European region. These gradual but continuous stresses include the reduction and seasonal changes in the availability and quality of fresh water and rising sea levels. This creates new challenges to meeting the human need for safe water and adequate sanitation in a sustainable manner throughout the region.

This growing recognition was first formalized by the Sixty-first World Health Assembly, which, in Resolution WHA61.19, urged Member States to develop health measures and integrate them into plans for adaptation to climate change, and

to strengthen the capacity of health systems for monitoring and minimizing the health impacts of climate change.¹³ It is further reflected in the fact that climate change is one of the main topics on the agenda of the Fifth Ministerial Conference on Environment and Health and will be one subject for the future of the European environment and health process.

Changes in climate will bring new opportunities as well as challenges in the water and health field. A focus on adaptation to climate change puts greater emphasis on the need to protect and manage water resources sustainably. Potential adaptive capacity is high but rarely achieved in current water services. New risks resulting from gradual climate change include changes in ecosystems, such as the proliferation of toxic cyanobacteria, while higher temperatures in the aquatic environment can promote the growth of pathogens. Flooding can take water stations out of production for extended periods of time, while adaptation to extended droughts may necessitate demand management, reduction of unaccounted-for water, and innovative reuse of treated wastewater, particularly in agriculture. Systematic assessments must be made of the climate change resilience of all utilities and of rural water and sanitation programmes, and urgent adaptation measures need to be put in place in areas likely to face climate change effects (WHO, 2009).

Particularly with regard to children's health, adapting to the effects of climate change should not be separated from achieving other development objectives, notably the stated goal of universal sustainable access to safe water and adequate

¹³ For the full text of WHO61.19 on climate change and health, see: http://apps.who.int/gb/ebwha/pdf_files/WHA61-REC1/A61_Rec1-part2-en.pdf (accessed 23 December 2009).

sanitation. These issues should be addressed in an integrated manner (UNICEF, 2008).

The main impacts of climate change in relation to water and health in the European region are, inter alia (Bates et al., 2008; Menne et al., 2008; EEA, 2008):

- changing precipitation patterns, with increased water scarcity in the southern areas and increased water availability in the northern latitudes;
- change in precipitation extremes in both intensity and frequency, with higher flood risks and associated mortality, physical injuries, infectious disease and psychological trauma;
- reduced water availability, resulting in higher concentration of pollutants, and higher water temperatures, resulting in more intense growth of micro-organisms, including pathogens;
- projected further rises in lake and river surface water temperatures with increasing air temperatures, which will have several effects on water quality and hence on human use of aquatic ecosystems. Changes include movement of freshwater species northward and to higher altitudes. Climate change may thus favour and stabilize the dominance of harmful cyanobacteria in phytoplankton communities, resulting in enhanced health risks, particularly in water bodies used for public water supply and recreational use.

Secondary effects include:

- changes in water quantity and quality resulting from climate change that are expected to affect food production and availability; this is likely to increase the vulnerability of marginalized groups, such as the poor, women, children and the elderly (Menne et al., 2008);
- impacts of climate change on the functioning and operation of existing water infrastructures;¹⁴
- water resource management impacts on many other policy areas, e.g. energy, health, food security and ecosystem functioning.

Adaptation should aim to increase the resilience, flexibility and robustness of existing water management systems and accommodate uncertain

future climate scenarios. Adaptation measures for water and land management can meet the demands for food, energy and the environment without compromising economic development (UN-Water, 2009). Even though more research is being done than in the past on the broader issue of climate change, there is still a need for a better understanding of the socioeconomic and institutional aspects of vulnerability, resilience and adaptation in relation to the major impacts of climate change, including costs and benefits.

Generally, to be effective, adaptation to climate change needs to be integrated into national and local strategies and plans. There is also a call for it to be integrated into all sectors. The Protocol offers this holistic approach by linking the issues of both water resource management, and drinking-water and sanitation, to the health issue, with a long-term planning perspective. The core obligations of the Protocol to set targets and target dates (Article 6) for water supply and sanitation, water management and health protection, and to establish surveillance systems will be also of great use in adapting adequately to climate change.

The principle of target setting means that coordination mechanisms must be established and a baseline analysis carried out for each specific topic before specific targets are set. The linkage of the different administrative sectors responsible and the application of information on current climate variability in water-related management facilitate adaptation to longer-term climate change impacts. Thus, the target-setting process itself fosters both national and local dialogue within the framework of long-term cross-sectoral thinking. This approach can help to tackle impacts of climate change that exacerbate other risks and socioeconomic factors, such as gender and age.

The Task Force on Extreme Weather Events works with national specialists and representatives from professional organizations in the field of water supply, drainage and sanitation to develop guidance on the assessment of resilience, basic disaster preparedness and planning, climate proofing of utilities, impact on coastal areas, impacts of

¹⁴ *Guidance on Water Supply and Sanitation in Extreme Weather Events*, developed by the Task Force on Extreme Weather Events, established under the Protocol on Water and Health (draft version available at: http://www.unece.org/env/water/meetings/EWE/2nd_meeting/WSS_Guidance.doc, accessed 9 February 2010).

extreme weather on health, integration of climate-related risk management in the implementation of water safety plans, adaptation measures for water utilities, adaptation for drainage, sewerage and wastewater treatment, and communication techniques. *The Guidance on Water Supply and Sanitation in Extreme Weather Events*¹⁵ aims to provide knowledge on the new risk elements and identifies adaptation measures in relation to the management of key health determinants such as water supply and sanitation utilities. It calls, inter alia, for the establishment of early-warning systems and proper communication structures, as well as the broad application of WSPs.

Moreover, the *Guidance on Water and Adaptation to Climate Change* (UNECE, 2009), developed under the Convention and the Protocol provides a step-by-step guide to developing adaptation strategies for the water sector, taking into account the health consequences of climate change impact, as well as the impacts of those adaptation strategies on health.

15 Ibid.

8. The way forward – recommendations

The review of progress achieved by the Parties to the Protocol on Water and Health since its adoption in 1999 shows that remarkable progress has been achieved, and that a firm basis is being developed for the Protocol to operate as the key international legal instrument on water and health in the European region, supporting the implementation of the EU *acquis communautaire*, but also providing a solid basis for the strengthening of the legal and regulatory framework in non-EU countries. Nevertheless, there is still work to be done. Key areas for future action include those laid out below.

1. Strengthening the implementation of the Protocol and using it as platform to analyse the different national situations, streamline and harmonize responsibilities within national and local authorities, and develop sound and integrated policies in the areas of water, health and environment.
2. Promoting the ratification of the Protocol by other countries in the pan-European region, particularly Signatories and countries from the EECCA and SEE subregions.
3. Addressing funding issues and ensuring stable, sustainable and reliable funding for the Protocol, in line with the principles of common but differentiated responsibility among the Parties.
4. Making use of the Protocol as a powerful tool to follow up and implement in a coherent and rational way the water and health commitments of the environment and health process and to fulfil other international commitments, such as the Millennium Development Goals.
5. Promoting the equitable approach of the Protocol in order to reduce inequalities in water and health risk management resulting from socioeconomic, gender and age-related factors within the pan-European region.
6. Using the Protocol as a platform for a political dialogue and long-term technical cooperation on water and health-related issues, and to foster financial cooperation to reduce inequalities within and between countries.
7. Taking advantage of the Protocol's technical bodies to establish effective surveillance and response systems as tools for the prevention and control of water-related diseases.
8. Recognizing and applying the provisions of the Protocol as a tool for the adaptation of water supply and sanitation services to the effects of climate change.
9. Taking advantage of the AHPFM established under the Protocol to assist countries whose economies are in transition to develop and implement sustainable water resource management, to build and maintain appropriate infrastructure for the supply of safe drinking-water and adequate sanitation, paying due regard to small-scale water supplies and household treatment.
10. Using the Compliance Mechanism to promote enforcement of the commitments of Parties.
11. Strengthening the cooperation between the Protocol and other international legal mechanisms of the United Nations Economic Commission for Europe, the United Nations and WHO in order to establish synergies that promote the human rights approach in relation to environmental issues. The Protocol also offers a unique non-confrontational environment supporting the implementation of different elements of the *acquis communautaire* of the European Union.



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