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\*) Manuscript was not available while going to press.



## **HAAKON THAULOW**

### **EWA PRESIDENT 2003-2005**

It is a great pleasure for me to introduce the brand new Yearbook for the European Water Association (EWA) 2004-2005. I hope you agree that our new EWA Yearbook is much more attractive and appealing than previous editions.

The Yearbook contains basic information on EWA's work, what we do and how we do it. Further information on National Member Associations and key country data are provided, as well as information on our Corporate and Supporting members. I hope the yearbook will be of benefit to our members and contacts.

A major ongoing joint effort in Europe to combat water pollution and achieve sound ecological conditions is the implementation of the EU Water Framework Directive. A successful achievement of the directives goals, good ecological status in European waters by 2015, requires political will, financial resources, and input of competence and skills from a wide variety of water professionals.

EWA with its network of 55,000 professionals through the members of the national associations, can make a contribution to the implementation of the directive. EWA is recognised by the Commission as an important NGO; the grant that we received in 2004 from the Commission is proof of this. And we certainly will take advantage of this opportunity to influence the many technical and scientific issues of the directive.

We have recently taken steps to strengthen the links with the EU commission both to increase our influence, as well as to serve our members with relevant and actual information on the Commissions water-related activities.

EWA has an active strategy to recruit National Associations from all Central and Eastern European countries, including the new EU member states. We will also give higher priority to our work by strengthening the links with the National Member Associations. EWA conferences and workshops will in the future most preferably be arranged in close collaboration with the National Associations.

As you are aware, there is a lot going on in the water sector in Europe and worldwide. And EWA provides our members with relevant information. Our e-mail service EWMN -Environmental Water Management News has become very popular, and from our online journal EWMO you can download an increasing number of articles.

My two-year Presidential period ends with the EWA Council Meeting in April 2005. In signing off I would like to thank you all for the opportunity and the privilege of being your President. I would like to thank the Council, the Management Committee and the Secretariat at DWA in Hennef (former ATV-DVWK) for its strong support. It has been a wholly good and rewarding experience. And I am sure EWA will be in the best hands during the presidency of my successor Professor Jiri Wanner.

## **JIRI WANNER**

### **EWA PRESIDENT 2005-2007**



This Yearbook will be ready for EWA members in April 2005, in the month of the world's largest trade fair in environmental technology, IFAT in Munich, Germany. Thus the Yearbook can at the same time be a very efficient tool to present the Association to the IFAT visitors and exhibitors from most European countries and numerous countries from overseas.

The Association would like to present itself as a well established, traditional union of European national professional organizations in water on the one hand and as a modern, flexible organization open to any cooperation on the other. The current EWA membership comprises (with a few exceptions) all EU member countries, some non-EU countries like Norway and Switzerland and countries which are still negotiating their EU membership (Croatia, Serbia and Montenegro). The main task of EWA for the coming years is therefore clear: to welcome among its members the remaining EU countries (Sweden, Italy, Greece, Cyprus and Malta), the countries which are supposed to join the EU in year 2007 (Bulgaria, Romania) and other Balkan countries (Macedonia, Bosnia Herzegovina) and eastern European countries like Russia, Ukraine, Byelorussia and Moldova. Most probably, to complete this task is just a dream, but at the same time it is a very nice vision to have all European water associations gathered under one roof of EWA. On the other hand, when this was possible in soccer (UEFA), why not in water ... ?

The other task of EWA in near future will be to find common language with other international bodies active on the European water market. As EWA is an association of national professional organizations, its most natural counterpart is therefore the International Water Association IWA. This global organization has a very strong and influential membership in Europe and a lot of important IWA activities (professional conferences, workshops, training courses, etc.) take place in Europe. Very often the national representatives to IWA and EWA boards are recruited from the same national organizations and we can also find many professional people actively involved in both IWA and EWA structures. The forthcoming years are characterized by a very suitable constellation in the leading positions when both the IWA president (Mr. Somlyody) and the EWA president come from the same region in central Europe. The fact that the IWA headquarters in London are not far from the seat of CIWEM, an active national member of EWA, may also play an important role in the future closer collaboration of EWA and IWA. Thus my second dream as EWA upcoming president is to organize the IWA specialized conferences held on the European continent in future together with EWA. A very nice example of the IWA – EWA cooperation would be if EWA can be involved in the preparations of IWA world congress in 2008, when this prestigious event will return after many years to Vienna. Because of the location of the congress, an important part of its programme will be devoted to the Danube. In order to prepare a good scientific and technical programme for the part of the congress dealing with one of the main European rivers, I can imagine that EWA's deep involvement is vital.

Let me conclude my presidential address by expressing the hope that with the help of EWA's efficient Secretariat in Hennef and with the support of EWA national members, our Association will be able to move in the directions of these visions.

## **THE EUROPEAN WATER ASSOCIATION – MORE THAN 20 YEARS OF CLEAN WATER FOR EUROPE**

The European Water Association (EWA) was founded on 22<sup>nd</sup> June 1981 [at that time named the European Water Pollution Control Association (EWPCA)]. Delegates from eleven national professional associations came together at the International Trade Fair for Wastewater and Waste Disposal (IFAT) in Munich, representing associations dealing with water protection issues in Austria, Belgium, Denmark, West Germany, Finland, France, Great Britain, Italy, the Netherlands, Sweden, and Switzerland. They felt that in light of a uniting Europe there was a need for an exchange between national associations working in this sector. What had been informal irregular meetings until then, subsequently developed into an ongoing process that still carries on in terms of growing membership and the number of organised projects and events. The scope of the association was enlarged in 1999 with the name changed from "European Water Pollution Control" to "European Water Association".

Given the origin of the founding organisations, the Association always transcended the borders of the European Union and its predecessors. The membership increased continuously in the years after the foundation. Contacts to associations from Central and Eastern European Countries existed from the very beginning of the Association's work; full membership however became possible only after the fall of the Iron Curtain. Firms were also included in the organisation as Corporate Members.

Today the European Water Association (EWA) is an independent non-governmental and non-profit making organisation dealing with the management and improvement of the water environment. It is one of the major professional associations in Europe that covers the whole water sector, wastewater as well as drinking water and water related waste, providing best practice and best science. With member associations from nearly all Central and Eastern European Countries, it not only includes most of the current European Union member states, Norway, and Switzerland, but also most of the future EU members from Central and Eastern Europe.

Besides keeping its members well informed on EU legislation and standardisation, the aim of the association is to provide a forum for the discussion of key technical and policy issues. This is done by organizing international conferences, workshops and meetings, through special working groups for experts and publications. Through this exchange of knowledge the association intends to contribute to a sustainable water management: a safe water supply and the protection of water and soil.

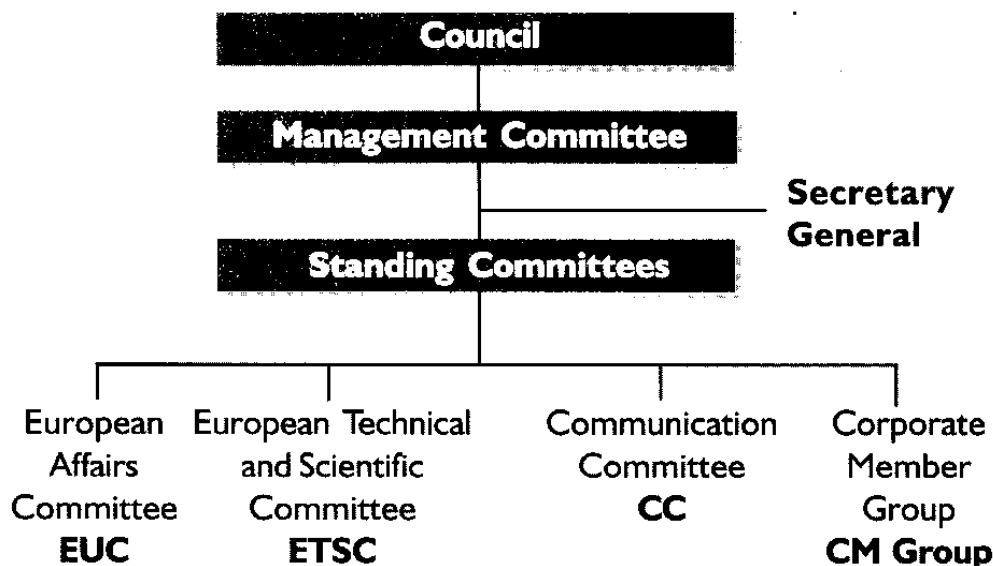
The EWA has established close contacts to the European Commission (DG Environment), the European Committee for Standardization (CEN), the European Environment Agency (EEA) and the European Parliament.

Today, the EWA consists of about 22 European national associations representing professionals and technicians for wastewater and water utilities as well as consultants, and 14 firms and enterprises as corporate members. The association thus represents about 55,000 professional individuals working in their national associations in a broad field of water management.

### **Organisation and Structure**

The highest authority of the EWA is the Council. Each member country is represented on the Council and these representatives meet annually to discuss and plan the activities of the association. The Management Committee is responsible for the daily work of the association and is supported by the Secretariat. In addition, Standing Committees and Working Groups support the work of the Association.

# Organisation & Structure



## Structure of the Management Committee

At the Council meeting in Lucerne on 23 May 2002 some new members for the EWA Management Committee (MC) were elected. The following is an overview of the current and future positions within the MC:

<b>EWA Management Committee</b>		
	<b>May 2003 - May 2005</b>	<b>May 2005- May 2007</b>
<b>President</b>	Haakon Thaulow, N	Jiri Wanner, CZ
<b>Past President</b>	Raymond Pinoit, F	Haakon Thaulow, N
<b>Honorary Treasurer</b>	Jörg Londong, D	Johannes Pinnekamp D
<b>MC member</b>	Peter Cook, UK	Peter Cook, UK
<b>MC member</b>	Jana Zagorc-Koncan, SLO	Jean-Philippe Torterotot, F
<b>MC member</b>	Jiri Wanner, CZ	Pertti Seuna, FIN
<b>MC member</b>	Jürg Meyer, CH	Jürg Meyer, CH
<b>Chairpersons of the Committees</b> (without fixed term of office)		
<b>European Technical and Scientific Committee (ETSC)</b>	Bojan Zmaic, HR	Bojan Zmaic, HR
<b>Communication Committee (CC)</b>	Helena Marecos do Monte, P	Helena Marecos do Monte, P
<b>Corporate Members Committee</b>	Peter Matthews, UK	Peter Matthews, UK
<b>European Affairs Committee (EUC)</b>		



**EWA National Member Associations**

### The Work of the Standing Committees

From the very beginning the Association laid emphasis on the exchange of information and knowledge between professional experts. Through this exchange of knowledge, the EWA contributes to a sustainable water management: safe water supply and the protection of water and soil. This was achieved by the organisation of more than 50 conferences and workshops taking place all over Europe and covering a very broad range of water related topics such as European legislation (Water Framework Directive, Sewage Sludge Directive etc.), technical questions like for example the significance of small wastewater treatment plants in rural areas and integrated approaches. The European Water Association organizes conferences and symposia at regular events like the International Trade Fair for Wastewater and Waste Disposal (IFAT) in Munich and Aquatech in Amsterdam. An increase in the number of members from Central and Eastern Europe (accession countries), has raised the interest for events dealing with water protection issues.

However, not only conferences and the reports thereof were and are the output of the Association's work, but also publications such as the study "The Comparability of Quantitative Data on Waste Water Collection and Treatment" and the study "Urban Wastewater Projects – A Layperson's Guide" which was realised together with the European Environment Agency (EEA). It met with very high interest and was translated into various European languages.



All this work is achieved through the different Committees and Working Groups that were established from the very beginning. They are based on the voluntary work of experts coming from the different National Member Associations and working together on various subjects of current interest in the water field.

### The Communication Committee (CC)

Communication Committee (CC) is the new name of the former Editorial Committee (EdC) whose main job was the production of the printed journal “European Water Management Online”. The committee changed its name due to a restructuring of the Association’s communication strategy. Its main task is now the coordination of the newly established online journal “European Water Management Online” which is directly accessible via EWA’s homepage at [www.EWAonline.de](http://www.EWAonline.de) at no extra cost. The committee also co-ordinates a further means of communication, the European Water Pollution Control Network and the weekly newsletter European Water Management News (EWMN) which ensures a coherent communication of both organizational and technical information to members and the public.

### European Affairs Committee (EUC)

The committee follows the work of the European Commission and arranges regular meetings with officials in the Commission, responsible for activities of relevance to water management. The committee gives comments and advice to official European institutions on behalf of its members.

Special working groups within the EUC deal with the topics “Water Framework Directive” and “Central and Eastern European Countries”.

### European Technical and Scientific Committee (ETSC)

The ETSC provides a focal point for communication and co-operation between European practitioners and researchers concerned with subjects including Sludge, TOC/BOD/COD, and Groundwater. The work results in technical and scientific papers and documents.

The committee is also responsible for the organisation and sponsorship of workshops, seminars, conferences and symposia.

### The Network of Experts

Although the Working Groups already present a focal point for the exchange of information, they only involve a limited number of persons out of the approximately 55,000 members assembled in the EWA National Member Associations. Additionally, the Working Groups cover only specific topics and are not able to answer to immediate requests.



## THE EWA CODE OF ETHICS – THE ROLE OF PROFESSIONAL ETHICS IN WATER MANAGEMENT

*Claus Hagebro and Peter Matthews  
The European Water Association (EWA)*

### Ethics in society

The legal case between the State of South Africa and 39 international medical companies producing AIDS medicine gave cause for a lot of publicity and discussion on moral and ethics. This suddenly became a problem for many people, as these companies acting within a free market economy would not allow production of cheap copy-medicine. Because it was a question of seriously sick people who could not afford to buy the expensive medicine, the companies were supposed to act according to moral principles and accept an income loss.

The reason for this change in attitude towards companies and institutions may be the result of the situation after the collapse of communism in Europe. Marxism was opposed to the free market economy/capitalism and provided criticism. After its disappearance the market economy was left alone and after some time many people found out that market economy also have some negative side effects. In this way a New Criticism of the market economy has developed. At the same time society has become very complicated. It is difficult to identify or understand all conditions in relation to e.g. a medical production. The public relates to simple messages. Therefore ethical principles are becoming increasingly important. We judge the company by its image and the way it introduces itself and on how it is presented in the press.

Some time ago an article by William Warner<sup>1)</sup> discussed the influence of religion on wastewater treatment. The article described by means of examples how religious beliefs can direct behaviour relating to health and hygiene. The author stated that the number of people infected by faecal-related diseases continues to grow and he asked if hygiene is controlled better by the myths of religion than the facts of science. His own answer was: probably not – but he added that if all religions commanded: wash your hands after being in the toilet such a single disciplining taboo would have a major positive impact.

### Trust of experts

Communities at large no longer automatically trust experts as they used to do. Environmental professionals are no exception. There is a general trend that organisations have to become environmentally certified and demonstrate responsible governance, indeed ethical governance. Environmental ethics is not just the subject of academic study, it is the stuff of newspaper editorials as demonstrated above. Most people have an instinctive view that water is a human right and that its supply should probably be free. However, it is recognised that water service charges can be levied for the cost of treatment and carriage of water and wastewater. There is a powerful element of trust, when these policies are provided by utilities. When the service fails or the resources are misused, not only do customers suffer, but also they feel that the trust has been broken.

From the above it seems that there is an increasing demand for simple messages or rules to guide our general behaviour in relation to e.g. water management. Such rules could help to make the statement “make water everybody’s business” from the World Water Vision come true. It seems that one success factor would be ethical behaviour at corporate and personal level in water management.

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<sup>1)</sup> William S. Warner (2000): The influence of religion on wastewater treatment: a consideration for experts. WATER 21, August 2000

## The concept

At the Water Associations Worldwide seminar at the World Water Forum in The Hague, the European Water Association (EWA) introduced the idea of ethical behaviour of water professionals. At the seminar we presented some generally accepted basic principles formulated as “Ten Commandments” which could serve as the foundation on which new water ethics could be developed. Furthermore, it was suggested to introduce an oath to be taken by individual members when they enter the water management profession. Finally EWA offered to take the lead on behalf of the Water Associations Worldwide for the further development of these ethical principles.

Since The Hague, a small task group developed the idea of a Code of Ethics for the European Water Association and its National Member Associations. It worked in conjunction with a similar working group in the Chartered Institution of Water and Environmental Management (CIWEM) which serves UK and Eire. A number of changes have been made:

- The Code is now one which can be adopted by a professional body and its individual members which would be expected to comply with it
- It is less evangelical and more practical
- There is the possibility to broaden the issue to include all environmental activities to allow for the diversity of our organisations and to state the commitment of water professionals to the wider environment. However, the Code is very easily expressible in water terms and that version will be presented here.

There is some merit in adopting the same wording throughout all organisations to ensure harmony across Europe but it is recognised that, in practice, there may be variations. For example, some may wish to express the principles in a paragraph rather than ten bullet points; others may wish to choose a slightly different form of words to aid understanding – for example, the words ‘ensure’ and ‘promote’ may replace each other just like some may wish to replace ‘water’ with ‘environment’ to emphasise the focus of their organisation. So, the heart of the acceptance of the Code of Ethics by the water associations is acceptance of the principles.

## The Code of Ethics

Individual Members of the Professional Association will be expected to use their influence to the fullest extent and to behave to the best of their ability to maintain a sustainable environment in the following way:

- Ensure that the use of environmental resources is fair and equitable and sustainable and takes account of the needs of a diverse environment.
- Never knowingly or deliberately over-exploit environmental resources.
- Never knowingly or deliberately cause the environment to be damaged or nuisance to be created by the discharge of unacceptable quantities of any substance or energy in any form.
- Recognise that in contributing to the provision of environmental services they provide an important contribution to human well-being.
- Ensure that the uses of the environment do it no harm or to the life within it and wherever possible enhance it.
- Embrace the needs of the community.
- Promote the concepts of integration of the management of the wider environment.
- Use their wisdom in serving the community and constantly strive to learn more.
- Serve as an example to others for responsible environmental behaviour.
- Never engage in corrupt practice and maintain a high standard of professional behaviour which will serve as an example to others.

## The national implementation

Since the adoption of the Code by the EWA Council for the Association itself, the National Member Associations have deliberated on its implementation.

The UK member association CIWEM (The Chartered Institution of Water and Environmental Management) has adopted the Code in its original wording. With slight changes the code was translated into French and adopted by *ASTEE* (Association Scientifique et Technique pour l'Eau et l'Environnement) which recommended its adoption to its members in all their professional activities. The German Association *DWA* (German Association for Water, Wastewater and Waste) adopted a shorter version together with two other big German water related associations, thus reaching a wider community than only its own members. All three associations expended huge efforts to make the code known to the public and to their individual members, e.g. through press releases, articles in the associations' journals and publication on their homepages.

Other associations have accepted the code as a guideline without formally adopting it, others are still reflecting on a possible adoption.

<b>The EWA Code of Ethics – National implementation</b>		
<b>Country</b>	<b>EWA National Member Association</b>	<b>Activities to implement the Code of Ethics</b>
<b>A</b>	Österreichischer Wasser- und Abfallwirtschaftsverband (ÖWAV) – Austrian Water and Waste Management Association	Discussion of the Code within the association
<b>CH</b>	Verband Schweizer Abwasser- und Gewässerschutzfachleute (VSA)	Discussion and acknowledgement of the Code within the association
<b>D</b>	DWA Deutsche Vereinigung für Wasserwirtschaft, Abwasser und Abfall e.V. – German Association for Water, Wastewater and Waste	Discussion of the Code, adoption in an own wording, publication in the association's journal
<b>DK</b>	The Water Pollution Committee of the Society of Danish Engineers (Ingeniørforeningen i Danmark, IDA)	Discussion and acknowledgement of the Code within the association
<b>F</b>	Association Scientifique et Technique pour l'Eau et l'Environnement (ASTEE)	Discussion of the Code, adoption in an own wording, recommended to the association's members
<b>L</b>	Association luxembourgeoise des services d'eau (ALUSEAU)	Discussion of the Code, accepted as guideline for the association.
<b>N</b>	Norwegian Water Association (NWA)	Discussed and accepted as guideline for the association
<b>NL</b>	Netherlands Association for Water Management (NVA)	Discussed and accepted as guideline for the association
<b>UK</b>	The Chartered Institution of Water and Environmental Management (CIWEM)	Discussion of the Code, adoption in its original wording, publication in the association's journal

## EUROPEAN WATER POLICY

*Dr. Helmut Blöch*  
*European Commission*



### 1 Abstract

The European Union has a tradition of water protection legislation dating back to the 1970s, with true success stories such as the Drinking Water Directive or the Bathing Water Directive. Building on past experience and looking at the challenges of the future, it has just thoroughly expanded and restructured its water policy by the EU Water Framework Directive<sup>1</sup>. The key objectives of the new policy are:

- all waters to be protected – groundwaters, rivers, lakes and coastal waters, and all waters to achieve good quality ('good status') by 2015
- one coherent management frame based on river basins and involving all water-related legislation
- citizens to be involved: participation of citizens, stakeholders and NGOs as mandatory principle
- economic instruments supporting environmental objectives
- ambitious and binding on objectives, whilst flexible on tools to achieve them.

Implementation of the new European Water Policy will be a challenge for all involved parties. In an unprecedented way, a Common Implementation Strategy with all partners has been set in plan, delivering guidance documents and testing/validating them in pilot river basins across Europe, thus providing a living example of Good European Governance.

### 2 Building on past experience and initiatives in European water policy

Early European water legislation focused, in a "first wave" in the 1970s and 1980s, mainly on quality standards for certain types of waters – bathing waters, fish and shellfish waters and waters used for drinking water abstraction. Success stories of this period are, inter alia, the 1980 Drinking Water Directive and the 1976 Bathing Water Directive.

The **Bathing Water Directive**<sup>2</sup> is one of the first elements of European water policy, and probably the best known to citizens as well as media, as reconfirmed every year when the European Commission published its annual Bathing Water Report – providing quality data and maps for all beaches in the EU.

Key elements of the Directive are

- setting of quality standards for bathing water quality

EU Bathing Water Directive: microbiological quality standards (outline)

Parameter	I-value (mandatory)	G-value (recommendation)
Total coliforms	10.000 / ml	500 / ml
Faecal coliforms	2.000 / ml	100 / ml

- measures to achieve compliance with quality standards where there still are problems
- regular sampling and monitoring of beaches
- annual report on bathing water quality

<sup>1</sup> Council Directive 80/778/EEC of 15.7.1980 relating to the quality of water intended for human consumption, OJ L229 of 30.8.1980, replaced by Council Directive 98/83/EC of 3.11.1998, OJ L330 of 5.12.1998

<sup>2</sup> Council Directive 76/160/EEC of 8.12.1975 concerning the quality of bathing water, OJ L31 of 5.2.1976

The **Drinking Water Directive**<sup>3</sup> has ensured security for consumers, residents as well as tourist on the quality of their drinking water. Following experience gained and based on latest scientific evidence, the Drinking Water Directive has been revised in 1998.

Key elements of the Directive in its present form are

- quality standards for bacteriological and chemical parameters
- regular sampling and monitoring
- regular information of consumers on water quality

Bacteriological and chemical quality standards for drinking water (outline)

Parameter	parametric value	
Escherichia coli	0	/100 ml
Enterococci	0	/100 ml
Arsenic	10	µg/l
Benzene	1,0	µg/l
Copper	2,0	mg/l
Fluoride	1,5	mg/l
Lead	10	µg/l
Nitrate	50	mg/l
Pesticides -each substance	0,10	µg/l
Pesticides – total	0,50	µg/l

In the 1990s a "second wave" of European water legislation addressed pollution from urban waste water, from agriculture and from large industries: The **Urban Waste Water Treatment Directive**<sup>4</sup> of 1991 provides for waste water collection and treatment for all settlements and agglomerations but the very small ones. Its deadlines are phased for 1998, 2000 and 2005, depending on the size of the settlement and the characteristics of the affected water, thus providing a sound basis for planning processes within the involved bodies and industries.

#### Urban Waste Water Treatment Directive: standard provisions

(24-hour average; either concentration or percentage of reduction shall apply)

Parameter	Value (concentration)	Value (% reduction)
Biological Oxygen Demand BOD <sub>5</sub>	25 mg/l	70 – 90 %
Chemical Oxygen Demand COD	125 mg/l	75 %

Mandatory design rules for sewerage systems as well as treatment plants (minimum design requirement = highest maximum weekly average load throughout the year).

#### Urban Waste Water Treatment Directive: additional provisions for sensitive areas

(annual averages, either concentration or percentage of reduction shall apply)

Parameter	Value (concentration)	Value (% reduction)
Total nitrogen		
Plants of 10 000 –100 000 p.e.	15 mg/l	70 – 80 %
Plants >100 000 p.e.	10 mg/l	
Total phosphorus		
Plants of 10 000 –100 000 p.e.	2 mg/l	80 %
Plants >100 000 p.e.	1 mg/l	

The Urban Waste Water Treatment Directive has already contributed to an improvement of the quality of our big rivers. However, there are delays, in some cases even scandalous delays, with still prevailing discharges

<sup>3</sup> Council Directive 80/778/EEC of 15.7.1980 relating to the quality of water intended for human consumption, OJ L229 of 30.8.1980, replaced by Council Directive 98/83/EC of 3.11.1998, OJ L330 of 5.12.1998

<sup>4</sup> Council Directive 91/271/EEC of 15.5.1991 concerning urban waste water treatment, OJ L 135 of 30.05.1991, amended by Commission Directive 98/15/EC of 27.02.1998, OJ L 67 of 07.03.1998

of untreated or insufficiently treated waste water; Brussels and Milan are only two 'highlights' of this negative hit list.

The **Nitrates Directive**<sup>5</sup> sets out clear rules for nitrates pollution from agriculture, one the main sources of groundwater pollution as well as of eutrophication of surface waters in many regions of Europe. There is a two level approach: Within nitrate vulnerable zones (i.e. regions with elevated nitrates concentrations in groundwater or surface water >50 mg/l, and/or with eutrophicated waters, or in danger of become eutrophic) legally binding measures are required, such as minimum manure storage capacities coherent with the nitrogen demand of soil and crop; restrictions for manure application in terms of time, location and nitrogen load per hectare and year etc. Outside vulnerable zones codes of good agricultural practice have to be promoted on a voluntary basis.

Pollution to water, air and soil by large industrial installations has been addressed by the **Directive for Integrated Pollution and Prevention Control (IPPC)**<sup>6</sup>. Emission controls for installations covered have to be based on best available technique. Requirements apply to new installations as well as, after a transition period until 2007, to existing installations.

### 3 A new European water policy: Good European Governance

Water problems throughout Europe have a lot in common, e.g. pollution from waste water and agricultural sources. However, local and regional water problems can present a quite diverse pattern, both as regards quality and quantity, in the North and in the South of the EU, in the present Member States and in countries in Central and Eastern Europe and the Mediterranean soon to join the EU. This is true for the quality of our groundwaters, lakes and rivers, for flood events in some regions, for local and regional scarcity in water in others, and for the protection of our waters as a resource, be them fresh waters or marine waters.

Based on experience gained but also gaps identified, mid-1995 saw pressure for a fundamental rethink of EU water policy coming to a head, and agreement achieved between the Commission, the European Parliament's Environment Committee and the Council of Environment Ministers on the need for a fundamental reform.

The **Water Framework Directive** presents a breakthrough in European Water Policy, not only as regards the scope of water protection, but also as regards its development and its implementation.

The Commission has, right from the start, developed this new policy in an open and transparent way involving all stakeholders, NGOs and the scientific community. Only based on a broad consultation exercise including a two-day Water Conference with all interested and involved parties did the Commission come forward with its legislative proposals<sup>7</sup>, with the following key elements:

- all waters to be protected, groundwaters and surface waters including coastal waters
- all waters to achieve good quality ('good status') by 2015
- water management based on river basins
- "combined approach" of emission limit values and quality standards, plus phasing out particularly hazardous substances
- economic instruments (economic analysis; water pricing)
- mandatory participation by citizens, stakeholders and NGOs.
- streamlining legislation, and ensuring one coherent managerial frame.

#### Expanding the scope of water protection

All of Europe's waters will be protected under the Water Framework Directive, surface waters and ground water (in the past only a limited number of water for specific human use, such as fish waters, shellfish

<sup>5</sup> Council Directive 91/676/EEC of 12.12.1991 concerning nitrates pollution from agriculture, OJ L375 of 31.12.1991

<sup>6</sup> Council Directive 96/61/EC of 24.09.1996 concerning integrated pollution prevention and control, OJ L257 of 10.10.1996

<sup>7</sup> Commission Proposal for a Water Framework Directive of 26.02.1997, COM(97)49, OJ C 184 of 17.06.1997, of 26.11.1997, COM(97)614, OJ C 16 of 20.01.1998, and of 17.02.1998, COM(98)76, OJ C 108 of 07.04.1998

waters, bathing waters are protected under European legislation). Unlike previous water legislation, the Water Framework Directive covers surface water and groundwater together, as well as estuaries and marine waters. Its purpose is threefold: to prevent further deterioration; to promote sustainable water consumption based on the long-term protection of available water resources; and to contribute to the provision of a supply of water in the qualities and quantities needed for its sustainable use.

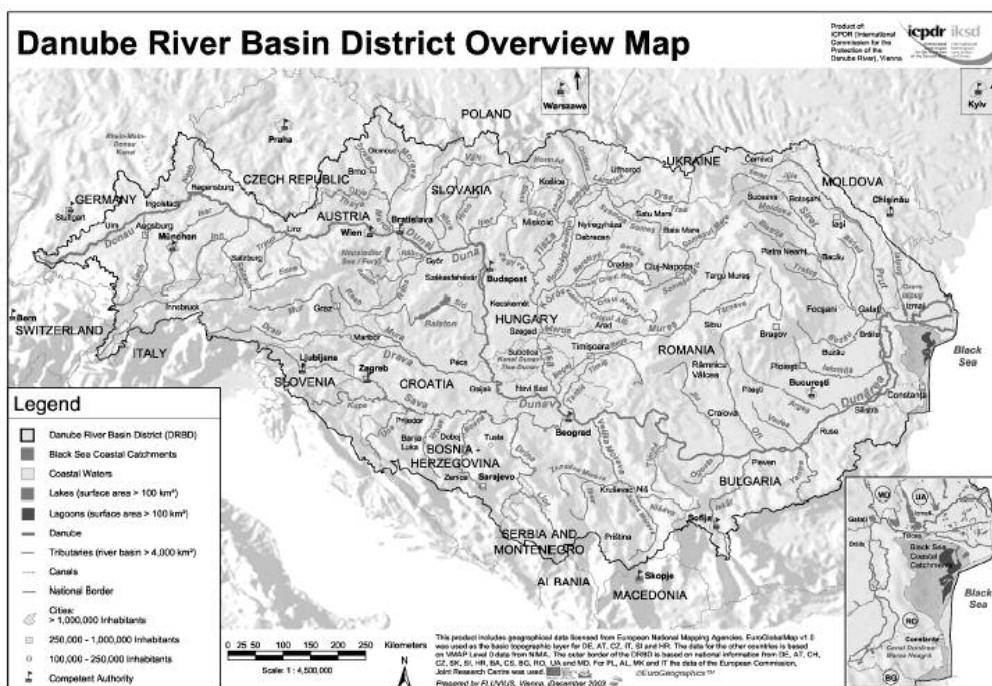
### “Good status” for all waters by a set deadline

Under the Directive Member States will have to ensure that ‘good status’ is achieved or kept in all waters by a set deadline, 15 years after coming into force, i.e. 2015. Certain limited derogations will be possible, but linked to a clear set of conditions.

For groundwater, good status is measured in terms of both quantity and chemical purity; for surface waters ecological quality and chemical quality are the criteria. A Daughter Directive on Groundwater will – as set out in the Water Framework Directive – detail on monitoring, criteria for chemical status, reversion of upwards trends and prevention measures to protect groundwater<sup>8</sup>.

### Water management based on river basins

One of the Framework Directive’s innovations is that rivers and lakes will need to be managed by river basin – the natural geographical and hydrological unit – instead of only administrative or political boundaries. Several EU Member States already took a river basin approach in the past but this was not the case everywhere. For each river basin district – many of which will transcend national frontiers – a river basin management plan will need to be established and updated every six years. This plan will have to include an analysis of the river basin’s characteristics, a review of the impact of human activity on the status of waters in the basin, and an economic analysis of water use in the district. Groundwater and coastal waters would be assigned to the nearest or most appropriate river basin district. Regions and river basins like those in the Rhine or Elbe/Labe basins have served as a positive example for this approach to water management, with their cooperation and joint setting of objectives across Member States borders and even beyond the borders of the EU.



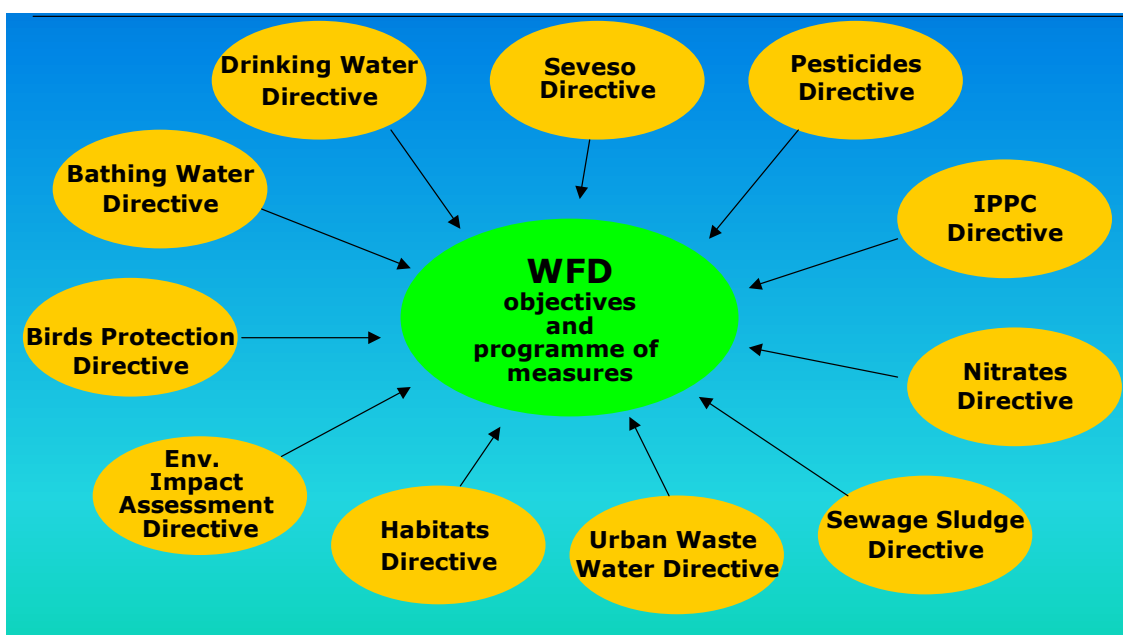
**The Danube: The EU’s largest river basin, and the most international basin world-wide: size 817.000 km<sup>2</sup>, shared between 18 countries;**

<sup>8</sup> Commission Proposal for a Directive on the protection of groundwater against pollution, COM(2003)550

## Programme of measures, emission limit values and water quality standards

Central to each river basin management plan will be the requirement to establish a programme of measures to ensure that all waters in the river basin achieve the objective of good water status. Our waters do not know political or administrative borders. Therefore wherever Member States share a river basin, they are under obligation to jointly develop and establish the necessary assessment and the necessary programme of measures.

The starting point for this programme is the full implementation of any relevant national or local legislation as well as of a range of Community legislation on water and related issues.



If this basic set of measures is not enough to ensure that the goal of good water status is reached, the programme must be supplemented with whatever further measures are necessary. These might include stricter controls on polluting emissions from industry or agriculture as well as from urban waste water sources.

By establishing one single managerial frame for all water-related legislation, the Water Framework Directive will ensure coherence, and will rationalise EU water legislation by absorbing the operative provisions of 7 old directives<sup>9</sup>, and repealing them at a later stage.

On pollution control, the Directive takes a “combined approach”

- firstly, limiting pollution at the source by setting emission controls (e.g. waste water, agricultural fertilisers) and
- secondly, establishing water quality objectives for water bodies (to ensure that those reduced emissions fit into the local or regional environment).

In each case, the more stringent approach will apply. Thus Member States will have to set down in their programmes of measures both limit values to control emissions from individual point sources and environmental quality standards to limit the cumulative impact of such emissions as well as of diffuse sources of pollution. The emissions limit values will as a minimum have to be set in line with Community, national and regional legislation, inter alia, with the Directive on Integrated Pollution Prevention and Control (IPPC) and the Urban Waste Water Treatment Directive for installations and discharges covered by these Directives.

<sup>9</sup> 1975 Surface Water Directive and its 1979 Daughter Directive on Sampling and Analysis, 1976 Dangerous Substances Directive, 1977 Decision on Exchange of Information on Surface Waters, 1978 Fishwater Directive, 1979 Shellfish Water Directive, 1980 Groundwater Directive



For relevant pollutants and pollution sources the Water Framework Directive foresees EU Daughter Directives for emission controls and water quality standards. A (first) List of Priority Substances has already been agreed in 2001<sup>10</sup>.

For particularly hazardous substances (“priority hazardous substances”) a mechanism for their phasing out (cessation of emissions, discharges and losses to or via the aquatic environment) is a legal obligation. The List of Priority Substances agreed in 2001 lists also those substances foreseen for ‘phasing out’.

Daughter Directives will now have to address the emission controls, the phasing out and the water quality standards.

As for waters used for drinking water abstraction, they will be subject to particular protection, Member States being required to set environmental quality standards for each significant body of water that is used for abstraction or may be in future. The quality standards must be designed to ensure that under the expected water treatment regime the abstracted water will meet the requirements of the Drinking Water Directive.

### Water quantity addressed

The Water Framework Directive is the first piece of Community water legislation to address the issue of water quantity. It stipulates that the programme of measures established for each river basin must aim to ensure a balance between the abstraction and recharge of groundwater. This will without doubt entail considerable challenges in several regions, depending whether past practices were sustainable or not; groundwater over-abstraction poses a serious problem in several regions. Complementing this environmental objective, all abstraction of surface water or groundwater will require prior authorisation except in areas where it can be demonstrated that this will have no significant impact on the status of the water. These provisions, together with the full cost-recovery pricing, will contribute towards protecting water as a resource.

### Getting the prices right

The need to conserve adequate supplies of a resource for which demand is continuously increasing is also one of the drivers behind what is arguably one of the Directive’s most important innovations – the introduction of pricing. Member States will be required to ensure that the price charged to water consumers – such as for the abstraction and distribution of fresh water and the collection and treatment of waste water – contribute to the wise use of this limited resource. However, the principle of affordability to the citizens may also be taken into account when fixing water charges, e.g. in less-favoured areas or to provide basic services at an affordable price.

### Getting the citizen involved: participation of the public

Caring for Europe’s waters will require more involvement of citizens, interested parties, non-governmental organisations (NGOs). To that aim the Water Framework Directive will require information and consultation of all interested and involved parties when river basin management plans are established.

### Implementing the Water Framework Directive – a common challenge to all

In implementing the Water Framework Directive, all parties – Member States, European Commission, Candidate Countries and all other involved parties – face considerable challenges, in terms of substance as well as deadlines.

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<sup>10</sup> European Parliament and Council Decision 2455/2001/EC of 20.11. 2001 establishing a List of Priority Substances, OJ L331 OF 15.12.2001



### Time schedule under the Water Framework Directive

Transposition into national legislation	December 2003
Analysis of impacts and pressures	December 2004
Economic analysis of water use	December 2004
Inter-calibration of quality classification	December 2004
Monitoring programmes operational	December 2006
Latest date for starting public participation	December 2006
River basin management plans, programme of measures	December 2009
Environmental objective achieved	December 2015

Further, the majority of our river basins in Europe are shared between countries. A common understanding of the Directive and common approaches are therefore of crucial importance for a successful implementation. This is why, in an unprecedented effort, Member States and European Commission have agreed on a Common Implementation Strategy.

Key activities within the Strategy are

- exchange of information
- development of guidance documents
- management of information and data
- application, testing and validation in pilot river basins

During summer and autumn of 2001 a range of working groups have taken up work, with the specific task of **developing guidance documents** for selected target areas. Those groups are led by various Member States, the Commission and the European Environment Agency. A Strategic Coordination Group guides and coordinates the process.

Immediately after start of the work, full integration of Candidate Countries, stakeholders and NGOs has been ensured. Detailed information is available on the Internet, as is the full text of the Common Implementation Strategy, its partners, working structure and deliverables<sup>11</sup>.

### Guidance documents

A range of documents has been delivered by the Common Implementation Strategy, in line with the work programme and the priorities set:

- Economics aspects
- Groundwater – assessment and classification tools
- Identification of river basin districts
- Identification of water bodies
- Analysis of pressures and impacts
- Monitoring
- Intercalibration
- Transitional and coastal waters
- Public participation
- Heavily modified water bodies
- Geographical information systems (GIS)
- Role of wetlands in the WFD
- Best practices for flood prevention and flood protection

All the guidance documents are publicly available on the European Commission's information exchange platform<sup>12</sup>.

### Pilot river basins across Europe

During 2003 and 2004, the guidance documents developed have been tested and validated in selected pilot river basins across Europe, to ensure their finalised version in time for the practical work of developing the river basin management plans.

<sup>11</sup> European Commission, Member States and Norway: Common Implementation Strategy for the EU Water Framework

<sup>12</sup> <http://forum.europa.eu.int/Public/irc/env/wfd/home>

- Odense Fjord (Denmark)
- Oulujoki (Finland)
- Moselle/Mosel – Saar/Sarre (France, Germany, Luxemburg and Belgium)
- Marne (France)
- Neisse/Nysa (Czech Republic, Germany, Poland)
- Somes (Hungary, Romania)
- Schelde/Escaut (France, Belgium, Netherlands)
- Pinios (Greece)
- Shannon (Ireland)
- Guadiana (Portugal)
- Jucar (Spain)
- Tevere (Italy)
- Cecina (Italy)
- Harju (Estonia)
- Ribble (United Kingdom)
- Krka (Slovenia)
- Nitra (Slovakia)
- Daugava (Latvia)
- Arges (Romania)
- Zagyva-Tarna (Hungary)

## 4 Conclusions

The Water Framework Directive commences with the words

*“Water is not a commercial product like any other but, rather, a heritage which must be protected ...”*

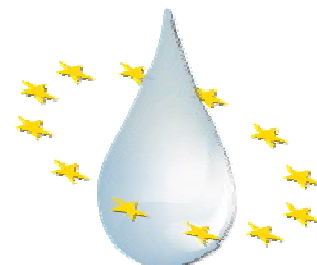
In many fields progress has been achieved, however Europe's waters are in need of more protection, in need of increased efforts to get them clean or to keep them clean, as emphasised by reports recently published by the European Environment Agency<sup>13 14 15</sup>. After 25 years of European water legislation this is a demand not only by the scientific community and other experts, but also to an ever increasing extent by citizens and environmental organisations.

The Water Framework Directive sets ambitious objectives for the protection of our water resources across Europe

- binding on environmental objectives,
- flexible on tools to achieve these objective, as well as on organisation and property ownership and financing, open to innovation,
- providing a sound basis for long-term planning at a technical, financial and political level,
- involving the civil society, and thus
- providing a living example of Good European Governance.

Let us take up the challenge of water protection, one of the great challenges for the European Union in the new millennium. Let us seize the initiative generated by the present political process on the Water Framework Directive, for the benefit of all Europe's citizens and our waters.

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Internet: <http://europa.eu.int/comm/environment/water>



This contribution reflects the views of the author and not necessarily those of the European Commission.

<sup>13</sup> European Environment Agency: Sustainable use of Europe's waters? Copenhagen 2000 (part 1); Copenhagen 2001 (part 2), Copenhagen 2002 (part 3); <http://www.eea.eu.int>

<sup>14</sup> Environment Agency: Europe's waters: An indicator-based assessment, Copenhagen 2003; <http://www.eea.eu.int>

<sup>15</sup> European Environment Agency Signals 2002, Copenhagen 2004, ; <http://www.eea.eu.int>

# EWA – COOPERATION IN THE FIELD OF EUROPEAN STANDARDIZATION ON WASTEWATER ENGINEERING



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## 1 General

EWA holds close liaison to the Technical Committee CEN/TC 165 "Waste water engineering" of the European Committee for Standardization CEN.

With increasing requirements of the various authorities of the EU but also of national bodies to the protection of peoples' health and the surrounding environment waste water engineering gains an increasing importance. There is an increasing demand for European Standards drafted by consent that are supporting the secure meeting of the environmental requirements. Furthermore Standards promote world wide trade, encouraging rationalization, quality assurance and contribute to environmental protection.

In the implementation of the European Directives the European Standardization also plays an important part.

The "Single European Act" of 1986 demands that within the single European market the free exchange of goods, personnel, services and capital is ensured.

Already at that time it could be foreseen that especially the free trade of goods and services would cause considerable difficulties due to various national regulations and technical standards in European countries. These different technical rules would be technical barriers and trade barriers which had to be eliminated in the single European market.

To ensure that products correspond to legal requirements, valid in Europe, with regard to health and safety, the reference to standards in a legal text is considered to be more effective than the elaboration of detailed laws.

The so-called "New Approach" to technical harmonization and standards' is seen as an essential condition for improving the competitiveness of European industry.

Member States' regulations shall refer to European Standards in order to use their content of expertise, flexibility and adaptability to technical alterations for the creation of the EU single market.

The European Commission asked the European Committee for Standardization CEN (Comité Européen de Normalisation) via "mandates" to provide the necessary technical details and to formulate them in European Standards.

The free trade of goods and the freedom of movement for persons, services and capital has become reality. By common European Standards, barriers to trade are cut back. Consumers, manufacturers and authorities profit equally from standardization by increased safety and quality of products or plants. With a common standard, valid in 28 European states, a product can be put more easily on the market. Customers rather demand products or services which can be relied on.

From the free participation of all interested parties in standardization work, comprising of representatives from industry, trade, science and authorities, European standardization derives its acceptance.

Until today about 9600 European Standards have been elaborated by "Technical Committees (TC)" within CEN.

## 2 The European Committee for Standardization (CEN)

Up to now 28 standards organisations of as many European states are members of CEN (see <http://www.cenorm.be/cenorm/members>). CEN is an international non-profit association governed by the co-ordinated laws on non-profit associations, international non-profit associations and foundations. CEN was not founded by governments but by National Standards Bodies.

The aim of CEN is the implementation of standardization throughout Europe to facilitate the development of the exchange of goods and services, by the elimination of the barriers set by provisions of a technical nature. Basic principles of work are:

- openness and transparency;
- consensus;
- voluntary agreement between all parties when standards are developed;
- national commitment and technical coherence;
- integration with other international work.

Anybody can submit proposals for new standards. In general, proposals for new standards projects are submitted by National Standards Bodies or by Working Groups under a technical committee. With respect to European law, new standards projects are required by the European Commission or the EFTA secretariat. Once accepted, a standardization project involves all the interested parties such as designers, manufacturers, consumers, operators, the state and testing bodies via national standards bodies.

National Standards Bodies are an elementary part of the European Standardization to represent the national points of view. National Standards Bodies delegate experts to plenary meetings of CEN/TCs and nominate experts for Working Groups under the TC.

Standards are consensus based. Once discussion has reached the stage of initial agreement, the results are published as draft standards and made available to the interested public for comments, in case of European Standards in all of the 28 member states.

Comments received are discussed by the committee and a final draft is made available to National Standards Bodies (NSB) which are requested to decide by a weighted voting on the approval of the final draft to become a European Standard (EN). Once the European Standard is approved, CEN members have the obligation to implement EN as national standards without any modification either in one of the 3 official CEN languages or as translation. Furthermore, they have to withdraw any conflicting national standard. This means that one European Standard is implemented into 28 national standards.

National Standards Bodies may only become a member of CEN if they have already implemented 80 % of the published European Standards unchanged as national standard.

## 3 European Standardization in the field of wastewater engineering ...

CEN/TC 165 is responsible for waste water engineering, which has up to now, since its foundation in 1989, developed about 90 European Standards for this field.

In CEN/TC 165 these standards were mainly developed from requests of the industry, which actively supports their elaboration and finances the work.

Standards drafted in CEN/TC 165 mainly belong to the so-called horizontal standards. They specify general requirements to sewers and drains, products for the waste water engineering, the design, laying and structural design of sewers and waste water treatment plants. They are used in design, calculation and performance of processing and plant engineering as well as in construction, operation and maintenance of waste water plants. For communicative purposes standards to terms and definitions are elaborated. Standards drafted in CEN/TC 165 include the whole field of waste water engineering from the point where the waste water arises, including surface water run-off, to the discharge into rivers or lakes.

Products for which in material related TCs standards are drafted, such as CEN/TC 155 "Plastic piping systems" and CEN/TC 203 "Cast iron pipes" the product standards also have to meet the standards of TC 165 for general requirements from which an important element of the market situation of TC 165 has an effect on other TCs and affects them directly.

Therefore a multitude of standards of TC 165 was given a mandate on the basis of the Public Procurement Directive (Sektorenrichtlinie)(93/38/EEC), now replaced by Directive 2004/17/EC of the European Parliament and of the Council of 31 March 2004, co-ordinating the procurement procedures of entities operating in the water, energy, transport and postal services sectors.

Products such as vitrified clay pipes and manholes, pipes and manholes made from concrete, fibre-cement pipes and manholes, steel pipes, gullies, manhole covers and gratings, separators and small and large sewage treatment plants are used everywhere in Europe in waste water engineering systems. They are in the scope of the Construction Products Directive (EU-Directive 89/106/EEC). That is why for these products harmonized standards (hEN) were drafted and others are still under preparation. They have to fulfil the given requirements of the Mandate M/118 "Wastewater Engineering Products" and of the Mandate M131 for "Pipes, Tanks and Ancillaries not in contact with water for human consumption". Harmonized standards according to the Directive 89/106/EEC are the prerequisite for the CE-Marking of these products and thus the basis for the circulation on the European market.

By the use of standards in the field of waste water engineering, the state of the art for those who construct waste water systems, components and treatment plants and the operators is ensured. Between designers on the one hand and suppliers on the other hand the clarity of the contract is increased by referring to standardized requirements to the quality of the products which are as a rule secured by standardized test methods and standardized procedures for the assessment of quality.

European Standards facilitate the access of products on the market and support a better acceptance of these products in the EU-countries and world-wide. The very rationalizing and thus cost saving effect of product standards in the field of waste water engineering, e. g. by standardization of dimensions, use of pre-fabricated parts, security of a high quality and by standardized clarification procedures becomes noticeable in a long durability of the products and in lower production costs as well as in a decrease of costs in operation and maintenance.

All the national CEN members are entitled to nominate delegates to CEN TC 165 and experts to Working Groups, ensuring a balance of all interested parties. Participation as observers of recognized European or international organizations is also possible under certain conditions.

Especially representatives of the operators (users), the manufacturers, design engineers and other consulting engineers, public institutions and test laboratories belong to the interested parties of CEN/TC 165.

Due to the structure of the CEN/TC 165 participants in plenary meetings consist of three delegates each of the National Standards Bodies, the convenors of the Working Groups, representatives of the Liaison partners and close European Associations, such as the EWA.

Responsible for drafting European Standards in their scope are Working Groups, which are composed in the right balance between different interests like manufacturers, users, testing laboratories a.s.o. Most of the secretariats are held by National Standardization Bodies.

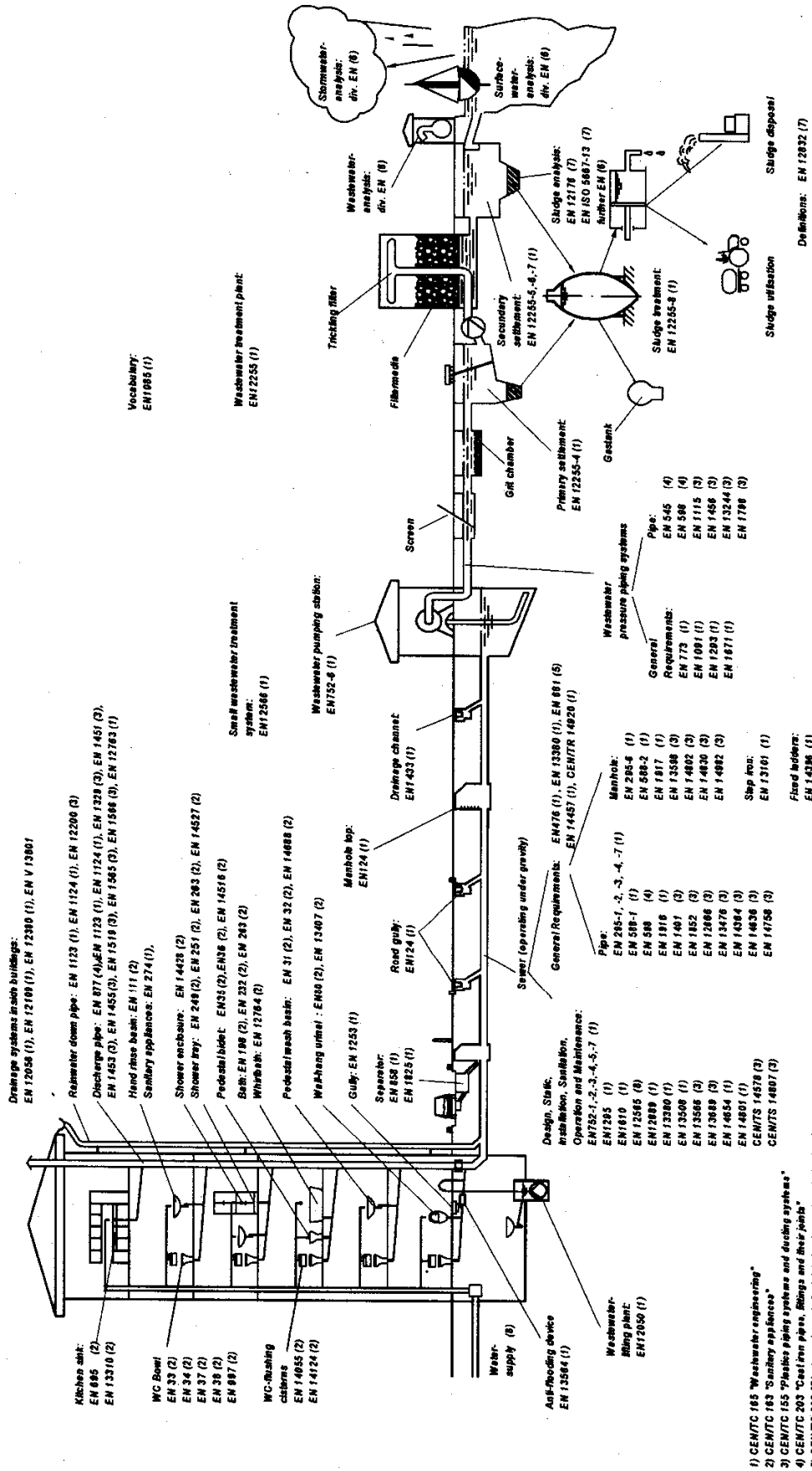
To participate in the activities of CEN/TC 165, please contact the National Standards Organization in your country.

For drafting European Standards in the field of waste water engineering TC 165 has established 16 Working Groups (WGs) which are shown in Annex 1.

A scheme including European Standards resp. draft standards in the field of wastewater engineering is shown in Annex 2.



Annex 2



This scheme was elaborated by CEN/TC 185 "Wastewater engineering" (Secretariat DIN). All listed European Standards nos. draft standards are available at the National Standards Bodies.

European Standards resp. Draft Standards in the field of Wastewater engineering

- EN 12058 (1), EN 12100 (1), EN 12390 (1), EN V 13061
- Rainwater down pipe: EN 1123 (1), EN 1124 (1), EN 12200 (3)
- Discharge pipe: EN 877 (4), EN 1123 (1), EN 1124 (1), EN 1329 (3), EN 1451 (3), EN 1452 (3), EN 1453 (3), EN 1519 (3), EN 1565 (3), EN 1596 (3), EN 12763 (1)
- Hand-rinse basin: EN 111 (2)
- Sanitary appliances: EN 274 (1)
- Shower enclosure: EN 14428 (2)
- Shower tray: EN 248 (2), EN 251 (2), EN 263 (2), EN 14527 (2)
- Pedestals/beds: EN 31 (2), EN 32 (2), EN 14688 (2)
- Basin: EN 190 (2), EN 232 (2), EN 261 (2)
- Washbasin: EN 12764 (2)
- Pedestal/wash basin: EN 31 (2), EN 32 (2), EN 14688 (2)
- Washing unit: EN 90 (2), EN 13607 (2)
- Manhole top: EN 724 (1)
- Drainage channel: EN 1433 (1)
- Road gully: EN 124 (1)
- Septic (operating under gravity): EN 476 (1), EN 13360 (1), EN 891 (5), EN 14451 (1), CEN/TR 14920 (1)
- General/Requirements: EN 14451 (1), CEN/TR 14920 (1)
- Pipes: EN 245-1, -2, -3, -4, -7 (1), EN 205-4 (1), EN 508-1 (1), EN 508-2 (1), EN 508-3 (1), EN 508-4 (1), EN 508-5 (1), EN 508-6 (1), EN 508-7 (1), EN 508-8 (1), EN 508-9 (1), EN 508-10 (1), EN 508-11 (1), EN 508-12 (1), EN 508-13 (1), EN 508-14 (1), EN 508-15 (1), EN 508-16 (1), EN 508-17 (1), EN 508-18 (1), EN 508-19 (1), EN 508-20 (1), EN 508-21 (1), EN 508-22 (1), EN 508-23 (1), EN 508-24 (1), EN 508-25 (1), EN 508-26 (1), EN 508-27 (1), EN 508-28 (1), EN 508-29 (1), EN 508-30 (1), EN 508-31 (1), EN 508-32 (1), EN 508-33 (1), EN 508-34 (1), EN 508-35 (1), EN 508-36 (1), EN 508-37 (1), EN 508-38 (1), EN 508-39 (1), EN 508-40 (1), EN 508-41 (1), EN 508-42 (1), EN 508-43 (1), EN 508-44 (1), EN 508-45 (1), EN 508-46 (1), EN 508-47 (1), EN 508-48 (1), EN 508-49 (1), EN 508-50 (1), EN 508-51 (1), EN 508-52 (1), EN 508-53 (1), EN 508-54 (1), EN 508-55 (1), EN 508-56 (1), EN 508-57 (1), EN 508-58 (1), EN 508-59 (1), EN 508-60 (1), EN 508-61 (1), EN 508-62 (1), EN 508-63 (1), EN 508-64 (1), EN 508-65 (1), EN 508-66 (1), EN 508-67 (1), EN 508-68 (1), EN 508-69 (1), EN 508-70 (1), EN 508-71 (1), EN 508-72 (1), EN 508-73 (1), EN 508-74 (1), EN 508-75 (1), EN 508-76 (1), EN 508-77 (1), EN 508-78 (1), EN 508-79 (1), EN 508-80 (1), EN 508-81 (1), EN 508-82 (1), EN 508-83 (1), EN 508-84 (1), EN 508-85 (1), EN 508-86 (1), EN 508-87 (1), EN 508-88 (1), EN 508-89 (1), EN 508-90 (1), EN 508-91 (1), EN 508-92 (1), EN 508-93 (1), EN 508-94 (1), EN 508-95 (1), EN 508-96 (1), EN 508-97 (1), EN 508-98 (1), EN 508-99 (1), EN 508-100 (1)
- Manhole: EN 205-4 (1), EN 508-2 (1), EN 1917 (1), EN 13588 (3), EN 14802 (3), EN 14820 (3), EN 14822 (3), EN 14824 (3), EN 14826 (3), EN 14828 (3), EN 14830 (3), EN 14832 (3), EN 14834 (3), EN 14836 (3), EN 14838 (3), EN 14840 (3), EN 14842 (3), EN 14844 (3), EN 14846 (3), EN 14848 (3), EN 14850 (3), EN 14852 (3), EN 14854 (3), EN 14856 (3), EN 14858 (3), EN 14860 (3), EN 14862 (3), EN 14864 (3), EN 14866 (3), EN 14868 (3), EN 14870 (3), EN 14872 (3), EN 14874 (3), EN 14876 (3), EN 14878 (3), EN 14880 (3), EN 14882 (3), EN 14884 (3), EN 14886 (3), EN 14888 (3), EN 14890 (3), EN 14892 (3), EN 14894 (3), EN 14896 (3), EN 14898 (3), EN 14900 (3), EN 14902 (3), EN 14904 (3), EN 14906 (3), EN 14908 (3), EN 14910 (3), EN 14912 (3), EN 14914 (3), EN 14916 (3), EN 14918 (3), EN 14920 (3), EN 14922 (3), EN 14924 (3), EN 14926 (3), EN 14928 (3), EN 14930 (3), EN 14932 (3), EN 14934 (3), EN 14936 (3), EN 14938 (3), EN 14940 (3), EN 14942 (3), EN 14944 (3), EN 14946 (3), EN 14948 (3), EN 14950 (3), EN 14952 (3), EN 14954 (3), EN 14956 (3), EN 14958 (3), EN 14960 (3), EN 14962 (3), EN 14964 (3), EN 14966 (3), EN 14968 (3), EN 14970 (3), EN 14972 (3), EN 14974 (3), EN 14976 (3), EN 14978 (3), EN 14980 (3), EN 14982 (3), EN 14984 (3), EN 14986 (3), EN 14988 (3), EN 14990 (3), EN 14992 (3), EN 14994 (3), EN 14996 (3), EN 14998 (3), EN 15000 (3)
- Step nos.: EN 13161 (1), EN 14758 (3)
- Fixed ladders: EN 14336 (1)
- Design, Start, Installation, Start-up, Operation and Maintenance: EN 752-1, -2, -3, -4, -5, -7 (1), EN 1295 (1), EN 1610 (1), EN 12565 (3), EN 12989 (1), EN 13300 (1), EN 13500 (1), EN 13506 (3), EN 13689 (3), EN 14654 (1), EN 14801 (1), CEN/TS 14578 (3), CEN/TS 14807 (3)
- Wastewater-lifting plant: EN 12036 (1)
- Wastewater-analysis: EN 12178 (7), EN ISO 5687-13 (7), EN 12255-4, -7 (1), EN 12255-9 (1)
- Sludge analysis: EN 12178 (7), EN ISO 5687-13 (7), EN 12255-4, -7 (1)
- Sludge treatment: EN 12255-9 (1)
- Sludge disposal: EN 12632 (7)
- Definitions: EN 12632 (7)







# **DIRECTORY OF MEMBERS**

## AUSTRIA

### Water supply and sewerage systems

	Data
<b>General statistical information (2004)</b>	
Total population in million inhabitants	8.1
Population density in inhabitants per km <sup>2</sup>	96.2
<b>Drinking water sector (2004)</b>	
Percentage of inhabitants served	87
Specific household consumption in litre per person and day	125
Origin of drinking water:	
% Surface water	–
% Groundwater	50
% Spring water	50
<b>Wastewater sector (2001)</b>	
Annual wastewater quantity in million m <sup>3</sup>	1,068
Total number of inhabitants and population equivalents (1,000)	20,084
Percentage of total population connected to public sewer systems	86.6
Percentage of total population connected to public treatment plants	86.6
Wastewater treatment plants	
% of annual wastewater quantity treated with primary treatment only	< 1
% of annual wastewater quantity treated with primary and secondary treatment only	6.7
% of annual wastewater quantity treated with primary, secondary and tertiary treatment	93.3



## AUSTRIA

National EWA Member Association

ÖWAV  
Österreichischer Wasser- und Abfallwirtschaftsverband

Austrian Water and Waste Management  
Association

### President

DI Dr. Werner Flögl

### Managing Director

DI Manfred Assmann

### Secretariat

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### EWA Council representative

Mr. Dipl.-Ing. Dr. Werner Flögl  
FLOEGL HYDRO CONSULTING  
ENGINEERS FHCE  
Haus der Technik  
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### Description

The Austrian Water and Waste Management Association (ÖWAV) represents a voluntary federation of all the parties interested in water and waste management in Austria.

ÖWAV has seven main committees, and about 50 expert working groups. The expert working groups are producing the elaboration of recommendations, guidelines, rules, working instructions and studies for special fields of water and waste management.

The ÖWAV provides advisory services for members; publishes information papers; is documentation centre for Austrian publications in the field of water and waste management; public information services.

ÖWAV organises about 20-30 congresses, symposiums, seminars and conferences per year. Furthermore ÖWAV provides trainings for operating personal of water and waste treatment plants.

Every member receives a bimonthly magazine and the monthly ÖWAV-newsletter per email.

### Membership

Total number of members: about 1850, including public and private bodies directly involved in water and waste management: government and state authorities, cities, departments, engineering companies, professional associations, institutions, technical colleges and universities, scientists, lawyers, companies and industry.

## BELGIUM

### Water supply and sewerage systems

	Flanders	Wallonia	Brux Cap	Total Data
<b>General statistical information</b>				
Total population in million inhabitants (2002)	6.016	3.380	1	10.396
Population density in inhabitants per km <sup>2</sup>	445	201	6.199	341
<b>Drinking water sector</b>				
Percentage of inhabitants served	99	99	100	99
Specific household consumption in litre per person and day	108	105	119	107
Total production of drinking water in million m <sup>3</sup> [local production (+ import – export)]	256+87	396-(87+69)	2.5 + 69	660
Origin of drinking water:				
% Surface water	46	20	29	34
% Ground water	54	80	71	66
% Spring water	0	0	0	0
<b>Wastewater sector</b>				
Annual wastewater quantity in million m <sup>3</sup>	?	261	79	?
Total number of inhabitants and population equivalents (1.000 )	?	3,970	1,200	?
Percentage of total population connected to public sewer systems	84.57	73	90	?
Percentage of total population connected to public treatment plants	55.11	?	20	?
Wastewater treatment plants				
% of annual wastewater quantity treated with primary treatment only	0	0	0	0
% of annual wastewater quantity treated with primary and secondary treatment only	1.12	28.1	20	?
% of annual wastewater quantity treated with primary, secondary and tertiary treatment	53.98	10.8	0	?



## **BELGIUM**

National EWA Member Association

Belgian Committee of IWA (B-IWA)

### **President**

Prof. Willy VERSTRAETE  
Universiteit Gent – Faculteit L&TBW  
Coupure Links 653  
BE - 9000 GENT

### **Secretariat**

Belgian Committee of IWA (B-IWA)  
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<http://www.b-iwa.be/>

### **EWA Council representative**

Prof. Willy VERSTRAETE

### **Description**

B-IWA is the Belgian National Committee of IWA representing Belgian specialists in the field of drinking water and wastewater from the whole sector (firms, universities, government institutions, individuals). It mainly ensures the link with IWA and EWA and organizes information sessions (Happy Hours) for its members three times a year.

## CROATIA

### Water supply and sewerage systems

	Data
<b>General statistical information*</b>	
Total population in million inhabitants (2001)	4.381
Population density in inhabitants per km <sup>2</sup>	50
<b>Drinking water sector*</b>	
Percentage of inhabitants served	
Specific household consumption in litre per person and day	232
Total production of drinking water in million litre	
Origin of drinking water:	
% Surface water	
% Groundwater	86
% Spring water	
<b>Wastewater sector*</b>	
Annual wastewater quantity in million m <sup>3</sup>	
Total number of inhabitants and population equivalents (1,000)	2,230*
Percentage of total population connected to public sewer systems	40-50
Percentage of total population connected to public treatment plants	
Wastewater treatment plants	67
% of annual wastewater quantity treated with primary treatment only	
% of annual wastewater quantity treated with primary and secondary treatment only	
% of annual wastewater quantity treated with primary, secondary and tertiary treatment	

\*(2000)



## CROATIA

National EWA Member Organisation

Croatian Water Pollution Control Society  
(Hrvatsko društvo za zaštitu voda)

### Chairman

Alfred Obranic, B.Sc.,  
geology engineer

### Secretary

Milica Opacic, B.Sc.,  
chemistry engineer

### Secretariat

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Internet: [www.voda.hr/hdzv](http://www.voda.hr/hdzv)

### EWA Council representative

Dr.sc. Sinisa Sirac  
Croatian Waters,  
chemical technology engineer  
(Manager of the Water  
Resources Protection Sector)  
Member of the Great Council

### Description

The Croatian Water Pollution Control Society was founded in 1979 as an independent non-governmental association of citizens with the primary objectives to develop, improve, and increase general awareness of the necessity to protect water resources, and also to assemble scientists, experts, and all other interested citizens and corporations involved in water resources protection who wish to further develop and improve this activity.

The Society deals with the issues of water resource protection in order to promote importance of all water – related problems, questions and dilemmas.

The Society informs the scientist, or expert, and also the general public about the current problems, measures, and accomplishments in the domain of water resources' protection; both in Croatia and worldwide;

encouraging the investment of best efforts to preserve the good state of the water resources and to prevent degradation and to provide remedy upon occurrence of problematic conditions.

The Society carries out technical trainings and organizes workshops and water resource protection conferences, deemed to improve the expertise of Society's members who deal with disposal and treatment of wastewaters.

The Society sets up professional training sessions based upon the specific requirements of its members. Technical training on methods and experiences in wastewater treatment are especially popular among the Society members, and so far as many as seven such trainings have been successfully carried out.





## CZECH REPUBLIC

### Water supply and sewerage systems

	Data
<b>General statistical information</b>	
Total population in million inhabitants (2002)	10.2
Population density in inhabitants per km <sup>2</sup> (1999)	129.30
<b>Drinking water sector (1998)</b>	
Percentage of inhabitants served	89.8
Specific household consumption in litre per person and day	103
Total annual production of drinking water (public water supply)	753 mil. m <sup>3</sup>
Origin of drinking water:	
% Surface water	65
% Groundwater	30
% Spring water	3
% Others	2
<b>Wastewater sector (1998)</b>	
Annual wastewater quantity in million m <sup>3</sup>	576
Total number of inhabitants and population equivalents (1,000)	122,387
Percentage of total population connected to public sewer systems	77.4
Percentage of total population connected to public treatment plants	72.5
Wastewater treatment plants	
% of annual wastewater quantity treated with primary treatment only	2
% of annual wastewater quantity treated with primary and secondary treatment only	31
% of annual wastewater quantity treated with primary, secondary and tertiary treatment (nutrient removal plants)	67

## CZECH REPUBLIC



National EWA Member Association

Asociace čistírenských expertů České republiky  
(ACE CR)

Association of Wastewater Treatment Experts  
(AWWTE)

### Secretariat

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Internet: [www.ace-cr.cz/](http://www.ace-cr.cz/)

### EWA Council representative

Jiri Wanner  
VSCHT Dept. Of Water Technology  
and Environmental Engineering  
Technická 5  
CZ-166 28 Prague 6

### Description

The ACE CR is the association representing Czech specialists and companies working in the fields of wastewater, waste and water management and quality control of surface waters. The main activities of the association cover both technical-scientific subjects and the economic and legal aspects of water environment protection. The association provides consultancy to the state and local authorities and to private subjects. The ACE CR organizes professional seminars and conferences on both national and international level and provides training courses on different levels.

businessmen, operating personnel and technicians as well as of university students.

Besides EWA, the ACE CR cooperates closely with similar associations in all neighbouring countries and with IWA, the International Water Association.

The membership consists of engineers, scientists, lawyers,



## ESTONIA

### Water supply and sewage systems

<b>General statistical information 2004</b>	<b>Data</b>
Total population in million inhabitants (1998)	1,36
Population density in inhabitants per km <sup>2</sup>	32
<b>Drinking water sector 2003</b>	
Percentage of inhabitants served	77
Specific household consumption in litre per person and day	100
Origin of drinking water:	
% Surface water	35
% Groundwater	65
% Spring water	-
<b>Wastewater sector 2003</b>	
Annual wastewater quantity in million m <sup>3</sup>	119 <sup>1)</sup>
Total number of inhabitants and population equivalents (1,000)	980
Percentage of total population connected to public sewer systems	72
Percentage of total population connected to public treatment plants	71
Wastewater treatment plants	
% of annual wastewater quantity treated with primary treatment only	1
% of annual wastewater quantity treated with primary and secondary treatment only	25
% of annual wastewater quantity treated with primary, secondary and tertiary treatment	71

<sup>1)</sup> wastewater requiring treatment



## ESTONIA

National EWA Member Association

Eesti Veeühing  
Estonian Water Association

### Chairman

Mr. Ain Lääne

### Secretariat

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### EWA Council representative

Ain Lääne

### Description

The Estonian Water Association was founded on 2 October 1999 as a voluntary union of private persons dealing with water management problems. The goal of the association is to enhance water management and protection, supply of drinking water, treatment of wastewater, water hygiene and related natural sciences in Estonia. In addition much attention is paid to improving the usage of professional terminology in Estonian, to comment draft legislation and to distribute water related information. There is a tradition to hold at least 5 conferences/ seminars per year, from which at least two are held outside the capital, discussing regional water problems together with local stakeholders. A lot of information sharing is going on via electronic mail and homepage ([www.veeyhing.ee](http://www.veeyhing.ee)). In 2005, the total number of members is 147, of them, 3 are honorary members and 6 are students. The members represent various groups; there are water authorities from the Ministry of Environment and from the Regional Environmental Services, scientists from academic institutions and universities, business sector people dealing

with selling water treatment chemicals or water supply devices or constructing enterprises and private consultancy companies.

During the last 5 years most of the international cooperation has been carried out within the framework of various programs funded by the Global Water Partnership ([www.gwpcee.org](http://www.gwpcee.org)).

GWP has provided more than half of the budget for Estonian Water Association. The topics of the common activities with other new EU member states have been: Public Private partnership, water protection in Common Agricultural Policies, better financial flows in water management, water and education, public participation in the preparing of river basin management plans. As the international cooperation around the Baltic Sea countries has also been a long tradition in Estonia, at least one seminar for the grass root water protection organizations is held too, in cooperation with the network Coalition Clean Baltic ([www.ccb.se](http://www.ccb.se)), to discuss the work under the EU Water Framework Directive.

## FINLAND

### Water supply and sewage systems

<b>General statistical information 2004</b>	<b>Data</b>
Total population in million inhabitants	5,2
Population density in inhabitants per km <sup>2</sup>	16
<b>Drinking water sector (2004)</b>	
Percentage of inhabitants served	91
Specific household consumption in litre per person and day	150
Origin of drinking water:	
% Surface water	40
% Groundwater	60
% Spring water	-
<b>Wastewater sector (2004)</b>	
Annual wastewater quantity in million m <sup>3</sup>	500
Total number of inhabitants and population equivalents (1,000)	-
Percentage of total population connected to public sewer systems	81
Percentage of total population connected to public treatment plants	81
Wastewater treatment plants	450
% of annual wastewater quantity treated with primary treatment only	0
% of annual wastewater quantity treated with primary and secondary treatment only	10
% of annual wastewater quantity treated with primary, secondary and tertiary treatment	90



## FINLAND

National Member Association

Suomen Vesiyhdistys ry  
Water Association Finland

### President

Pertti Seuna  
President  
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### Secretary General

Markku Korhonen  
Secretary General  
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### Secretariat

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### EWA Council representative

Pertti Seuna

### Description:

A non-governmental body with some 600 individual members and 16 corporate members, founded in 1969. The purpose of this body is to improve and distribute knowledge and promote professional networking in Finland and abroad.

### Scope:

Standing committees for hydrology, limnology, water supply and waste water treatment, water legislation, river basin management, water ecology and water pollution control, fisheries, hydraulic engineering.

**Activities:** bringing together water professionals, participation in international water bodies (IWA, EWA, WEF) organizing seminars, among them the World Water Day celebration and Junior Water Prize, publications, study tours at home and abroad, etc.



## FRANCE

### Water supply and sewerage systems

<b>General statistical information</b>	<b>Data</b>
Total population in million inhabitants	61
Population density in inhabitants per km <sup>2</sup>	110
<b>Drinking water sector</b>	
Percentage of inhabitants served	99
Specific household consumption in litre per person and day (1995)	164 l
Origin of drinking water	
% surface water	60
% groundwater	40
% spring water	
<b>Wastewater sector</b>	
Annual wastewater quantity in million m <sup>3</sup>	16,3
Total number of inhabitants and population equivalents (1,000)	53,400 and 81,500
Percentage of total population connected to public sewer systems	93
Percentage of total population connected to public treatment plants	87.5
Wastewater treatment plants	15,435
% of annual wastewater quantity treated with primary treatment only	≠ 15
% of annual wastewater quantity treated with (primary) and secondary treatment only	70
% of annual wastewater quantity treated with primary, secondary and tertiary treatment	≠ 15

Data from year 2000



## FRANCE

National Member Association

Association Scientifique et Technique pour l'Eau et l'Environnement-ASTEE

Scientific Technical Water Environment Association

### President

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### Managing Director

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### Secretariat

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### EWA Council Representative

Jean-Philippe TORTEROTOT  
Cemagref-Enges  
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67070 Strasbourg Cedex

### Description

The Scientific Technical Water Environment Association (ASTEE), formerly AGHTM, was established in 1905 to promote and circulate knowledge on municipal techniques affecting public hygiene and health, i.e. drinking water, waste water, solid waste disposal, etc ... It now has regional sections, standing technical committees, and working groups, and also organises congresses, symposiums, seminars and conferences. It publishes a monthly magazine and reports on various studies.

### Membership

Total number of members: about 4,000, including public and private bodies directly involved in environmental management: municipal and regional corporations (municipalities, cities, departments, specialist organizations), government and state authorities, , engineering companies, professional associations, institutions, institutes of technology,

technical colleges and universities.

### Activities

- Gathering, processing and dissemination of information on environmental management including distribution of the Association's monthly review: "Techniques, Sciences, Méthodes (TSM)".
- Holding seminars and study groups
- Presentation of research papers disseminating the results of research in the field of water, carried out by IWA members and research organizations
- Presenting requests and petitions to the government; presenting requests for government environmental assistance for water, waste water and working to resolve problems with solid waste treatment.



## GERMANY

### Water supply and sewerage systems

General statistical information [2]	Data
Total population in million inhabitants (1998)	82.5
Population density in inhabitants per km <sup>2</sup> (1999)	231.00
<b>Drinking water sector 2001 [1]</b>	
Percentage of inhabitants served	99
Specific household consumption in litre per person and day	127
Origin of drinking water:	
% Surface water	20.7***
% Groundwater	64.7
% Spring water	9.4
% Others	5.2
<b>Wastewater sector 2001 [1]</b>	
Annual wastewater quantity in million m <sup>3</sup>	10,473*
Total number of inhabitants and population equivalents (1,000)	126,178
Percentage of total population connected to public sewer systems	95
Percentage of total population connected to public treatment plants	93
Wastewater treatment plants	
% of annual wastewater quantity treated with primary treatment only	0.2**
% of annual wastewater quantity treated with primary and secondary treatment only	5.1
% of annual wastewater quantity treated with primary, secondary and tertiary treatment	94.7

[1] Statistisches Bundesamt, Fachserie 19 Reihe 2.1, Ausgabe 2001 (veröffentlicht. 2003)

[2] [www.statistik-portal.de](http://www.statistik-portal.de)



## GERMANY

National EWA Member Association

DWA Deutsche Vereinigung für Wasserwirtschaft,  
Abwasser und Abfall

German Association for Water, Wastewater and  
Waste

### President

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Hermann H. Hahn, Ph. D.  
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### Managing Director

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### EWA Council representative

Prof. Dr.-Ing. Jörg Londong  
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99423 Weimar

### Description

The DWA – German Association for Water, Wastewater and Waste – is in Germany spokesman for all general water questions and supports the development of a safe and lasting water-supply and distribution intensively. It works as a politically and economically independent organization technically in the fields water-supply and distribution, sewage, waste and floor protection.

The DWA is the member strongest union in Europe in this field and one takes a special position away from the public by its technical competence regarding standardization, professional education and information. The about 16,000 members represent the experts and executives from communes, universities, engineering offices, authorities and enterprise.

The main emphasis of its activities is on the acquirement and update of a uniform technical set of rules and standards as well as the cooperation on the list of technical norms at a national and international level. Not only the technical scientific topics but also the economic and legal interests of the environment and prevention of water pollution are included.

## HUNGARY

### Water supply and sewerage systems

<b>General statistical information</b>	<b>Data (2003)</b>
Total population in million inhabitants	10.15
Population density in inhabitants per km <sup>2</sup>	109
<b>Drinking water sector</b>	
Percentage of inhabitants served	98
Specific household consumption in litre per person and day	151 l
Origin of drinking water:	
% Surface water	6
% Groundwater	43
% Karstic water	11
% Bankfiltered water	40
<b>Wastewater sector</b>	
Annual wastewater quantity in million m <sup>3</sup>	514,1
Total number of inhabitants and population equivalents	14.2 / 10 <sup>6</sup>
Percentage of total population connected to public sewer systems	59
Percentage of total population connected to public treatment plants	51
Wastewater treatment plants	
% of annual wastewater quantity treated with primary treatment only	2,6
% of annual wastewater quantity treated with primary and secondary treatment only	68,3
% of annual wastewater quantity treated with primary, secondary and tertiary treatment	29,1

**President**

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**Managing Director**

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**HUNGARY**

## National Member Association

## Hungarian Waste Water Treatment Association

**Description**

The Hungarian Waste Water Treatment Association is celebrating its fifth birthday this year. At present, the association represents more than 300 members and this number is steadily increasing.

This association, which works as a civilian organisation, has the following main objectives:

- Participation in processes of EU legal harmonisation and in the elaboration of technical directives,
  - Organisation of symposiums, events and advanced training,
  - Provision for the protection of member's interests, assistance of the professional level and compliance with professional ethics.
- The association brings out a bimonthly journal (HÍRCSA-TORNA), in which the associations' activities are presented.
- Combination of experts and organisations of canalisation, waste water treatment, sludge processing and re-utilisation of treated waste water and sludge in a single association with a mutual interest in assistance and support,
  - Development of corporations between professional and official organisations,
  - Co-operation and exchange of information, knowledge and experiences between local and foreign experts and expert-organisations interested in the development and modernisation of canalisation and waste water treatment,

## LATVIA

### Water supply and sewerage systems

	<b>Data</b>
<b>General statistical information</b>	
Total population in million inhabitants	2,377383
Population density in inhabitants per km <sup>2</sup>	36,8
<b>Drinking water sector</b>	
Percentage of inhabitants served	84
Specific household consumption in litre per person and day	64 – 200
Total production of drinking water in million litre	290 219 900 litre per day
Origin of drinking water:	
% Surface water	33
% Groundwater	67
% Spring water	0
<b>Wastewater sector</b>	
Annual wastewater quantity in million m <sup>3</sup>	0,284685 litre per day
Total number of inhabitants and population equivalents (1,000)	no data
Percentage of total population connected to public sewer systems	84
Percentage of total population connected to public treatment plants	no data
Wastewater treatment plants	
% of annual wastewater quantity treated with primary treatment only	no data
% of annual wastewater quantity treated with primary and secondary treatment only	no data
% of annual wastewater quantity treated with primary, secondary and tertiary treatment	no data



## LATVIA

National Member Association

Latvia Water and Waste Water Works Association

**President:**

Mr. Andis Dejus  
 Director of "Liepaja Water" Ltd  
 Address: Str. Kr. Valdemara 12,  
 Liepaja, LV-3400, LATVIA

**Managing Director:**

Mr. Edgars Tauriņš  
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 LV 1002, LATVIA  
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**Description**

21 enterprises are members of the Latvia Water and Waste Water Works Association.

**The target program** of the Association is to ensure provision of stable high quality water supply and wastewater services to the residents.

**General tasks and methods:**

Co-operating with government and administrative institutions working at elaboration and improvement of laws and regulative enactments in the field of water supply and

wastewater; co-operating with municipalities in the fields related to the operation of water supply and wastewater companies, improvement of the structure of such companies and the problems that in all cities and towns of Latvia shall be solved jointly; organising systematic and purposeful training of employees working in water supply and wastewater sector by using existing and establishing new training centres, meeting contemporary requirements etc.

## LITHUANIA

### Water supply and sewerage systems

	Data
<b>General statistical information*</b>	
Total population in million inhabitants	3.45
Population density in inhabitants per km <sup>2</sup> (2001)	53.4
<b>Drinking water sector*</b>	
Percentage of inhabitants served	72
Specific household consumption in litre per person and day	97
Total production of drinking water in million litre	-
Origin of drinking water:	
% Surface water	0
% Groundwater	100
% Spring water	0
<b>Wastewater sector*</b>	
Annual wastewater quantity in million m <sup>3</sup>	167
Total number of inhabitants and population equivalents (1,000)	3408
Percentage of total population connected to public sewer systems	65
Percentage of total population connected to public treatment plants	65
Wastewater treatment plants	
% of annual wastewater quantity treated with primary treatment only	16,7
% of annual wastewater quantity treated with primary and secondary treatment only	32.2
% of annual wastewater quantity treated with primary, secondary and tertiary treatment	50.3

\* Year of data 2004



## LITHUANIA

National EWA Member Organization

Vandenų švaros asociacija (VŠA)

Clean Water Association (CWA)

### President

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E-mail: e.levitas-vs@delphi.lt

### EWA Council representative

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Phone/Fax: +370 37 291828  
E-mail: e.levitas-vs@delphi.lt

### Description

The Clean Water Association (CWA) is a non-governmental environmental organization.

CWA was founded on May 31, 1996. Registered on September 25, 1996. Registration No.529

The CWA's mission is the reduction of pollution of surface and ground water by engineering, organizational, educational, legal, and economical means.

The main goals of Association's activities are:

- Environmental education aimed at the formation of the right comprehension by the population of the problems of water resources.
- The improvement of the design, construction, operation, and maintenance of facilities for the prevention of pollution of water bodies, primarily, of the plants for the treatment of the wastewater.
- The rise of professional qualifications of specialists and organizations working in

the field of water pollution control.

- The quest for and support of the right and effective governmental strategies and policy in the sphere of protection of water bodies.
- The assistance in the creation and development of the production of technological equipment for the treatment of wastewater in Lithuania.
- The build up and strengthening of the ties of Lithuania's environmentalists with the counterpart organizations, associations, and specialists of other countries.
- The support for the global efforts aimed at the protection of water against pollution.

Members of CWA are: Lithuanian municipalities, universities, water supply enterprises, design bureaus.





## LUXEMBOURG

### Water supply and sewerage systems

	Data
<b>General statistical information</b>	
Total population in million inhabitants	0.450*
Population density in inhabitants per km <sup>2</sup>	174
<b>Drinking water sector</b>	
Percentage of inhabitants served	99.9
Annual quantity in million m <sup>3</sup>	37
Specific household consumption in litre per person and day	150
Origin of drinking water	
% Surface water	35
% Groundwater	20
% Spring water	45
<b>Wastewater sector</b>	
Annual wastewater quantity in million m <sup>3</sup>	65
Total number of inhabitants and population equivalents (1,000)	983
Percentage of total population connected to public sewer systems	99
Percentage of total population connected to public treatment plants	94
Wastewater treatment plants:	
% of annual wastewater quantity treated with primary treatment only	4
% of annual wastewater quantity treated with primary and secondary treatment only	74
% of annual wastewater quantity treated with primary, secondary and tertiary treatment	22

\* not included 0.100 border labour

Year of data: 2003



## LUXEMBOURG

### National EWA Member Organization

**ALUSEAU**  
Association luxembourgeoise des services d'eau  
Association of Water Services in Luxembourg

#### President

Mr. Fred LANG  
c/o SIDERO  
P. B. 129  
L-7502 Mersch  
Luxembourg

#### Secretariat

Mr. Marc BERNA,  
Secretary-treasurer  
c/o SIDERO  
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#### EWA Council Representative

Mr. Nico HOFFMANN  
Ingénieur  
Administration des travaux et des  
services techniques de la Ville de  
Luxembourg  
Centre E. Hamilius, 51, bd. Royal  
L-2429 Luxembourg

#### Description

ALUSEAU is the national association of water services in the Grand-Duchy of Luxembourg, regrouping members of the drinking-water sector and of the wastewater area.



Fred Lang

ALUSEAU is a politically independent and non-profit making association. The main objectives of the association are to promote the common interests of all authorities and public services dealing with water management. To that effect ALUSEAU aims at advocating the study of all scientific, technical, economic and administrative problems relating to drinking-water supply and sewage collection and treatment, promoting a suitable management of the water resources of the country. ALUSEAU is also representing its members in international associations dealing with the same objectives than described.

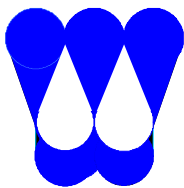


Marc Berna

## NETHERLANDS

### Water supply and sewerage systems

	Data
<b>General Statistical Information</b>	
Total population in million inhabitants (2004)	16,2
Population density in inhabitants per km <sup>2</sup> (2005)	481
<b>Drinking Water Sector</b>	
Percentage of inhabitants served (2003)	96
Specific household consumption in litre per person and day (2001)	126,2
Origin of drinking water: (2003)	
% surface water	38,1
% groundwater	58,4
% spring water	3,5
<b>Wastewater sector (2002)</b>	
Annual wastewater quantity in million m <sup>3</sup>	1346,6 million m <sup>3</sup>
Total number of inhabitants and population equivalents	15804 thousand inh./ 23400 thousand p.e.
Percentage of total population connected to public sewer systems	98
Percentage of total population connected to public treatment plants	98
Wastewater treatment plants	406
% of annual wastewater quantity treated with primary treatment only	0
% of annual wastewater quantity treated with primary and secondary treatment only	19,8
% of annual wastewater quantity treated with primary, secondary and tertiary treatment	80,2



## NETHERLANDS

### National EWA Member Organization

Nederlandse Vereniging voor Waterbeheer NVA  
(Netherlands Association for Water management)

#### President

Drs. C. Roos  
C/o Bureau KVWN/NVA  
Postbus 70  
2280 AB Rijswijk  
The Netherlands

#### Secretariat

M.C. van Houten  
Association executive  
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Email: info@nva.net

#### EWA Council Representative

Mr. drs. Peter C.G. Glas  
Waterschap De Dommel  
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5280 DA Boxtel  
Niederlande

#### Description

Founded on 18<sup>th</sup> September 1958, the Netherlands Association for Water Management, NVA, is a multidisciplinary group of people. In 2001 the association's membership numbered over 3000. The association's aim is to enhance the knowledge and art of multidisciplinary integrated water management and the collection, transport and treatment of wastewater. This is achieved by providing a platform to allow its members to exchange and test their knowledge and experience.

The profile of the association reflects the integrated approach to water quantity and water quality management, river management and pollution control, as well as the relationship with surface water management, groundwater management, sewerage, sewage and industrial wastewater and sewerage treatment.

The NVA aims to reach its goals by:

- organising scientific and technical conferences

- publishing periodicals and journals
- maintaining contacts with organisations and institutions, national and international, which pursue similar objectives
- organising and promoting education, training and study
- organising meetings and excursions both at home and abroad
- presenting awards to stimulate publications and research

#### NVA membership

NVA brings together people engaged in management, planning, design, construction, operation, maintenance, monitoring, research and education concerning sewerage, domestic and industrial sewage and wastewater treatment, river management, pollution control, flood and bank protection, i.e. all aspects of integrated water management. The association recognises individual members and (financial) contributors.



## NORWAY

### Water supply and sewerage systems

	Data
<b>General statistical information*</b>	
Total population in million inhabitants	4,61
Population density in inhabitants per km <sup>2</sup>	15.1
<b>Drinking water sector (data from 2002 )</b>	
Percentage of inhabitants served	89
No of litres delivered from waterworks per person and day	550
Total production of drinking water in million litre	808
Origin of drinking water:	
% Surface water	90
% Groundwater	10
% Spring water	0
<b>Wastewater sector*</b>	
Annual wastewater quantity in million m <sup>3</sup>	
Total number of inhabitants and population equivalents (1,000)	6260
Percentage of total population connected to public sewer systems	80
Percentage of total population connected to public treatment plants	77
Wastewater treatment plants	
% of annual wastewater quantity treated with primary treatment only	28
% of annual wastewater quantity treated with primary and secondary treatment only	63
% of annual wastewater quantity treated with primary, secondary and tertiary treatment	91

\*Year of data: 2000



## NORWAY

National EWA Member Organization  
Norwegian Water Association (NWA)

### President

Lars Enander  
Sweco Grøner  
P.O. Box 400  
1327 Lysaker  
Norway

### Secretariat

Secretary General  
Kristin Magnussen  
Damveien 23  
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E-Mail: [post@vannforeningen.no](mailto:post@vannforeningen.no)

### EWA Council representative

Senior Advisor Haakon Thaulow  
Norwegian Institute for Water  
Research  
PO box 173 Kjelsås  
N-0411 Norway

### Description

The Norwegian Water Association (NWA) is an independent non-governmental and non-profit organisation dealing with the management and improvement of the water environment. The NWA provides a forum for discussion of key technical, scientific and policy issues on water covering both water resources and water quality. NWA publicise its own journal "VANN" ("WATER"). Through this exchange of knowledge, the NWA significantly contributes to sustainable water management in Norway.

The NWA has 1050 individual and 530 as corporate members in Norway.

## PORTUGAL

### Water supply and sewerage systems

	Data
<b>General statistical information*</b>	
Total population in million inhabitants	9712154
Population density in inhabitants per km <sup>2</sup>	109
<b>Drinking water sector*</b>	
Percentage of inhabitants served	92
Specific household consumption in litre per person and day	161
Origin of drinking water	
% Surface water	55
% Groundwater	45
% Spring water	
<b>Wastewater sector*</b>	
Annual wastewater quantity in million m <sup>3</sup>	458
Percentage of total population connected to public treatment plants	50
Wastewater treatment plants	1312
% of annual wastewater quantity treated with primary treatment only	19
% of annual wastewater quantity treated with primary and secondary treatment only	18
% of annual wastewater quantity treated with primary, secondary and tertiary treatment	15
Number of inhabitants in the cities (x1,000)	4028
Percentage of population connected to public sewer systems in the cities	71
Percentage of population connected to public treatment plants in the cities	50
Wastewater treatment plants in the cities	1312
% of annual wastewater quantity treated with primary treatment only	19
% of annual wastewater quantity treated with primary and secondary treatment only	18
% of annual wastewater quantity treated with primary, secondary and tertiary treatment	15

\* Year of data: 2002



## PORTUGAL

### National EWA Member Organization

Associação Portuguesa de Engenharia Sanitária e Ambiental (APESB)

#### Secretariat

Associação Portuguesa de Engenharia Sanitária e Ambiental (APESB)

c/o Laboratório Nacional de Engenharia Civil  
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P-1700-066 Lisboa Codex

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Homepage: www.apesb.pt

#### EWA Council representative

Joaquim Poças Martins  
Presidente do Conselho de Admin.  
AGUAS DE GAIA EM  
Rua 14 de Outubro  
P-4400 Villa Nova de Gaia

#### Description:

The Associação Portuguesa de Engenharia Sanitária e Ambiental – Portuguese Association for Sanitary and Environmental Engineering (APESB) is a Portuguese non-profit, scientific and technical association, founded in 1980, for an indeterminate period of time, recognised as a corporate body of public interest since March 1990.

APESB has the following objectives:

- disposal of solid waste, in order to contribute to the implementation of better, feasible and sustainable solutions.
- To foster the technical and scientific exchange, including technology transfer and training, in the fields of water supply, drainage and treatment of wastewater as well as solid waste, at national level and in the Portuguese-speaking countries.
- To contribute to the scientific and technological development of subjects related to water supply, drainage, treatment and final disposal of wastewater and collection, treatment and final disposal of solid waste.
- To be a national body especially oriented to the study, analysis and discussion of aspects related with water supply, drainage, treatment and final disposal of wastewater and the collection, treatment and final





## SERBIA AND MONTENEGRO

### Water supply and sewerage systems

	<b>Data</b>
<b>General statistical information</b>	
Total population in million inhabitants (2002)	10,400,000
Population density in inhabitants per km <sup>2</sup> (2002)	102
<b>Drinking water sector</b>	
Percentage of inhabitants served (1997)	70
Specific household consumption in litre per person and day (1997)	250 (urban) 120 (rural)
Total production of drinking water in million litre (1997)	1,400,000
Origin of drinking water (1997):	
% Surface water	22
% Groundwater	78
% Spring water	
<b>Wastewater sector</b>	
Annual wastewater quantity in million m <sup>3</sup> (1995)	1,275
Total number of inhabitants and population equivalents (1,000) (1995)	13,798
Percentage of total population connected to public sewer systems (1995)	35
Percentage of total population connected to public treatment plants (1998)	10
Wastewater treatment plants	
% of annual wastewater quantity treated with primary treatment only (1998)	17
% of annual wastewater quantity treated with primary and secondary treatment only (1998)	83
% of annual wastewater quantity treated with primary, secondary and tertiary treatment (1998)	0



## SERBIA AND MONTENEGRO

National EWA Member Organization

Yugoslav Water Pollution Control Society (YUWPCS)

### Secretariat

Yugoslav Water Pollution Control Society (YUWPCS)  
Kneza Milosa St. 9/I  
11000 Belgrade  
Serbia and Montenegro

Phone: +381 11 3241 656  
Fax: +381 11 3241 656

### EWA Council representative

Prof. Stanka Filipovic  
Biotechnical Institute  
University of Montenegro  
Trg Kralja Nicole BB  
81000 Podgorica  
Serbia and Montenegro

### Description

YUWPCS is an independent organisation of experts in the water sector, established in 1966. The Society has a total of 140 individual and 50 corporate members from Serbia and Montenegro. Activities of the Society include organization of scientific and technical Conferences and Workshops, providing information services for society's members, as well as cooperation and exchange of information with other similar national or international associations. So far, the society has organized 33 national conferences, 4 international conferences and a number of workshops and seminars related to water quality and water pollution control. YUWPCS is a country representative and governing Member of

International Water Association since 1980.

## SLOVAK REPUBLIC

### Water supply and sewerage systems

	Data
<b>General statistical information*</b>	
Total population in million inhabitants	5.379
Population density in inhabitants per km <sup>2</sup>	109.7
<b>Drinking water sector*</b>	
Percentage of inhabitants served	84.3
Specific household consumption in litre per person and day	109.2
Total production of drinking water in million m <sup>3</sup>	377.8
Origin of drinking water:	
% Surface water	16.9
% Groundwater	83.1
% Spring water	0
<b>Wastewater sector*</b>	
Annual municipal wastewater quantity in million m <sup>3</sup>	131.2
Total number of population equivalents (municipal ww) (1,000)	3,006
Percentage of total population connected to public sewer systems	55.9
Percentage of total population connected to public treatment plants	50.5
Wastewater treatment plants	390
% of annual wastewater quantity treated with primary treatment only	9.7
% of annual wastewater quantity treated with primary and secondary treatment only	79.1
% of annual wastewater quantity treated with primary, secondary and tertiary treatment	11.2

\* Year of data: 2003