





PART 1: OBJECTIVES AND SCOPE OF THE ASSESSMENT

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BACKGROUND

Transboundary waters play a significant role in the UNECE region. From the 56 countries in the region, all but the three island states (Cyprus, Iceland and Malta) share water resources with one or more other countries. Sometimes, the transboundary river basins extend outside the UNECE region, and include parts of Afghanistan, China, the Islamic Republic of Iran, Mongolia and other countries.

According to information provided by Member States, in the UNECE region, about 160 major transboundary rivers form or cross the boundary between two or more States. Approximately 100 of them drain directly into regional seas, lakes or desert sinks. About 40 major transboundary lakes shared by two or three countries, and around 150 important transboundary aquifers, are located in these basins. The actual number of these transboundary rivers, lakes and aquifers is much higher as countries only reported transboundary waters that have essential water management functions (see inventory of transboundary rivers and lakes in annex 1).

Some of the 100 first-order transboundary basins are very small (60 to several hundred km²), as it is the case with several water bodies shared by Ireland and the United Kingdom, Italy and San Marino, Finland and the Russian Federation, and Turkey and Bulgaria. Other basins cover an area of up to and over 2,000,000 km², as is the case with the basins of the Ob, Yenisey and Amur rivers.

In many cases, a country that is upstream of another country in one basin is downstream of that (or a third) country in another basin. This shows the close hydrological interdependency of countries in transboundary basins. The reasonable and equitable use of transboundary waters, and water sharing between countries and among different sectors within the countries, are therefore particular challenges.

THE WATER CONVENTION

The 1992 UNECE *Convention on the Protection and Use of Transboundary Watercourses and International Lakes* (Water Convention) was adopted with the aim of fostering sustainable management of shared water resources, creating a framework for stable and predictable cooperation and thus increasing security in the region. Under the Convention, the Parties shall take all appropriate measures to prevent, control and reduce the pollution of waters causing or likely to cause transboundary impact. They shall also ensure that transboundary waters are used with the aims of ecologically sound and rational water management, the conservation of water resources and environmental protection. Moreover, the Parties are obliged to ensure that transboundary waters are used in a reasonable and equitable way, and to ensure the conservation and, where necessary, restoration of ecosystems.

Riparian Parties (Parties bordering the same transboundary waters) have specific obligations. For example, they shall establish and implement joint programmes for monitoring the conditions of transboundary waters, including floods and ice drifts. Moreover, these riparian Parties shall, at regular intervals, carry out joint or coordinated assessments of the conditions of transboundary waters and the effectiveness of measures taken to prevent, control and reduce transboundary impact. The results of these assessments shall be made available to the public.

Accurate assessments of the status of water resources and the magnitude of water problems are essential for preparing proper policy actions at the local, national and transboundary levels. Hence the Parties to the Water Convention decided at their third meeting (Madrid, 26-28 November 2003) to carry out an assessment of the status of transboundary waters with the aim to evaluate compliance with the obligations of the Convention and to assess progress achieved in improving the status of transboundary waters in the region. The Parties to Water Convention mandated its Working Group on Monitoring and Assessment with the preparation of the Assessment, under the leadership of Finland.

At their fourth meeting (Bonn, 20-22 November 2006), the Parties to the Convention undertook a major review of the assessment of rivers and lakes in the EECCA region. The present Assessment was finalized and adopted by the Working Group on Monitoring and Assessment at its eight meeting in Helsinki on 26-27 June 2007.

SPECIFIC OBJECTIVES

The Assessment highlights the achievements in integrated water resources management at the transboundary level, and sheds light on the effectiveness of the measures taken to prevent, control and reduce transboundary impact. It develops knowledge and understanding necessary for further action, and is thus designed for decision-makers. It identifies situations of water crisis and provides guidance for strategic investment by prospective donors.

The specific objective of the Assessment is to serve as a point of reference for such measures by Governments, international river basin organizations (joint bodies), other international organizations and relevant non-governmental organizations (NGOs) to improve the status of transboundary waters and agree on joint measures related to integrated water resources management.

The Assessment also underlines the challenges that countries still face in operating adequate monitoring systems, examining and counteracting existing pressure factors on these water bodies, improving the ecological and chemical status of transboundary waters, and providing information on trends. The Assessment also sheds light on the effectiveness of the measures taken and provides the grounds for further measures to prevent, control and reduce transboundary impact.



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The overall objective of the Assessment is to cover transboundary rivers, lakes and groundwaters in the 100 first order river basin in the UNECE region, as completely as possible. For this first edition, the Parties to the Water Convention decided that special attention was to be given to transboundary waters shared by countries in Eastern Europe, Caucasus and Central Asia (EECCA)¹ and South Eastern Europe (SEE)² as these countries face the biggest challenge to jointly reduce transboundary impact. Thus, a comprehensive volume of information has been gathered from these countries, which was never before available to the international community. This body of new information complements the already existing and easily accessible (e.g. on the Internet) information from other countries in the region, gathered, for example, as part of these countries' analysis under the Water Framework Directive.³

The present assessment includes 140 transboundary rivers (most of them with a basin area over 1,000 km²) and 30 transboundary lakes in the European and Asian parts of the UNECE region, as well as 70 transboundary aquifers, located in SEE, the Caucasus and Central Asia.

¹ Countries in Eastern Europe, Caucasus and Central Asia are Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Moldova, Russian Federation, Tajikistan, Turkmenistan, Ukraine and Uzbekistan.

² Countries in South-Eastern Europe are Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Greece, Montenegro, Romania, Serbia, Slovenia, The former Yugoslav Republic of Macedonia and Turkey.

³ Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for European Community action in the field of water policy.

TRANSBOUNDARY SURFACE WATERS

The assessment of transboundary rivers and lakes is structured according to the main discharge basins of regional seas. It includes:

- Transboundary rivers and lakes in the discharge basins of the Barents Sea, White Sea and Kara Sea;
- Transboundary rivers and lakes in the discharge basins of the Sea of Okhotsk and the Sea of Japan;
- Transboundary rivers and lakes in the discharge basin of the Aral Sea and other transboundary surface waters in Central Asia;
- Transboundary rivers and lakes in the discharge basin of the Caspian Sea;
- Transboundary rivers and lakes in the discharge basin of the Black Sea;
- Transboundary rivers and lakes in the discharge basin of the Mediterranean Sea;
- Transboundary rivers and lakes in the discharge basins of the North Sea and Eastern Atlantic Ocean;
- Transboundary rivers and lakes in the discharge basin of the Baltic Sea.

Wherever possible, the assessment highlights for each river (and lake) basin:

- General features of the basin including its hydrological regime;
- Pressure factors in the basin;
- Status of water bodies (e.g. ambient water-quality data, water-quality classifications);
- Transboundary impact; and
- Trends, future developments and management measures envisaged.

TRANSBOUNDARY GROUNDWATERS

The assessment of transboundary groundwaters includes:

- Transboundary groundwaters in SEE, located in the discharge basins of the Black Sea and the Mediterranean Sea;
- Transboundary groundwaters in the Caucasus, located in the Kura River basin being part of the discharge basin of the Caspian Sea;
- Transboundary groundwaters in Central Asia, located in the discharge basin of the Aral Sea, the southern part of the discharge basin of the Caspian Sea and in river basins in Central Asia with a desert sink.

Wherever possible, the assessment highlights for each of the transboundary aquifers:

- General characteristics of the transboundary aquifer;
- Uses and functions;
- Groundwater abstraction and use;
- Problems related to groundwater quantity;
- Problems related to groundwater quality;
- Evidence for transboundary effects;
- Groundwater management measures for the transboundary aquifer.

PARTNERS

Under the auspices of the Meeting to the Parties to the Convention, the Assessment of Transboundary Rivers, Lakes and Groundwaters has been carried out by the Working Group of Monitoring and Assessment, under the overall leadership of the Government of Finland. It has been a joint undertaking of international and national organizations; more than 150 experts have been involved by providing information and peer-reviewing texts.

The **assessment of rivers and lakes** was a joint activity of the Finnish Environment Institute, national authorities in the UNECE region responsible for water management, international river commissions (Danube, Elbe, Meuse, Moselle, Oder, Rhine, Saar and Scheldt) and international lake commissions (Lake Constance and Lake Geneva). The United Nations Environmental Programme (UNEP) particularly assisted in the production of river basin maps.

The **assessment of transboundary groundwaters** was a joint activity of the British Geological Survey, the Slovak Hydrometeorological Institute and the United Nations Educational, Scientific and Cultural Organization (UNESCO) with its International Groundwater Resources Assessment Centre (IGRAC) and the national authorities responsible for water management in SEE, Caucasus and Central Asia. Inputs were also made by the International Network of Water-Environment Centers for the Balkans (INWEB) for groundwater assessment in SEE; and by the Organization for Security and Cooperation in Europe (OSCE) for groundwater assessments in Caucasus and Central Asia and by the United Nations Development Programme (UNDP) and the United States Agency for International Development (USAID) for groundwater assessments in Caucasus.

This Assessment is a contribution to the World Water Assessment Programme (WWAP) and has benefited from its support. The WWAP is a UN-wide programme that seeks to develop the tools and skills needed to achieve a better understanding of those basic processes, management practices and policies that will help improve the supply and quality of global freshwater resources. The WWAP aims to:

- Assess the state of the world's freshwater resources and ecosystems;
- Identify critical issues and problems;
- Develop indicators and measure progress towards achieving sustainable use of water resources;
- Help countries develop their own assessment capacity;
- Document lessons learned and publish a World Water Development Report (WWDR) at regular intervals.

This first Assessment has been prepared for the Sixth Ministerial Conference "Environment for Europe" (Belgrade, 10-12 October 2007). It supplements and specifies other reports prepared for this conference by the European Environment Agency and the Organisation for Economic Co-operation and Development under the "Environment for Europe" process.

SOURCE OF INFORMATION

The assessment is mainly based on information on the status of transboundary waters submitted individually or jointly by countries as well as joint bodies (e.g. International River and Lake Commissions) in response to specifically designed datasheets. Information on water-quality classes and trends in chemical determinands is mostly based on national assessment systems, which sometimes render comparisons between river basins difficult. The source of information is always indicated in the Assessment.

In addition, the following sources of information were used:

- Reviews undertaken by the secretariat on “Water and sanitation in the UNECE region: achievements in regulatory aspects, institutional arrangements and monitoring since Rio, trends and challenges”;⁴
- Environmental Performance Reviews undertaken by UNECE for countries in EECCA and other countries with economies in transition;
- Reports on the “Analysis of river basin characteristics, impacts of human activities and economic analyses required under the Water Framework Directive (2000/60/EC)”, prepared by EU countries and the international commissions for the Danube, Elbe, Meuse, Rhine, Oder and Scheldt;
- The first and second editions of the WWDR, a joint report by the 24 United Nations agencies concerned with freshwater, published in 2003 and 2006;
- Reviews undertaken by the UNEP Global International Waters Assessment (UNEP/GIWA) and the Division of Early Warning and Assessment/Office for Europe (UNEP/DEWA-Europe);
- Assessments undertaken by UNESCO, other international organizations, and national and international institutions under the International Shared Aquifer Resource Management (ISARM) programme, a global initiative for identification, assessment and sound management of transboundary aquifers;
- Reports by the Regional Environmental Centres, reports on pilot projects on monitoring and assessment carried out under the Convention⁵, and national reports submitted by countries to seminars and workshops under the Water Convention.

THE WAY AHEAD

This first Assessment should be seen as a pioneering work initiating a long-term process. Further assessments will be produced at regular intervals under the Water Convention. The future assessments will provide a periodic review, continuously updated, designed to give an authoritative picture of the state of the transboundary water resources in the UNECE region, benchmark progress, and provide the basis for continuous bilateral and multilateral cooperation under the Water Convention. The second assessment is scheduled for production in 5 years.

In the present assessment, the impact of human activities on the chemical status has been dealt with more comprehensively than hydromorphological alterations by human activities and their impact on the status of watercourses. Moreover, water-quality problems have been analyzed more deeply than water-quantity problems. Thus, the present assessment focuses on the most critical problems in the region and calls for holistic assessments to be made in the future.

Surface water and groundwater interactions in the same basins have not yet been dealt with in an integrated manner and the assessment report is still split into separate sections dealing with these water bodies. The reason is quite obvious: the assessed transboundary aquifers represent only part of the many other aquifers in the basins of the analyzed transboundary surface waters, and an analysis of the interactions between surface waters and groundwaters would thus be premature. Future assessments will deal with this deficiency.

Future assessments will be produced in a step-wise approach, taking into account priorities and main challenges of Parties to the Convention. The long-term objective is to produce a comprehensive assessment with information relevant to all aspects of integrated water resources management (e.g. including economic and social data, inputs from other sectors, etc).

⁴ Prepared for the first Regional Implementation Forum on Sustainable Development (Geneva, 15-16 January 2004) as document ECE/AC.25/2004/5 and Add.1 and Add.2.

⁵ Reports on river pilot projects are available on the website of the Water Convention's International Water Assessment Centre (IWAC).