SECTION I

Major Findings of the Assessment

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MONITORING TRANSBOUNDARY RIVERS AND LAKES

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MONITORING IN EECCA AND SEE COUNTRIES

The longstanding cooperation on monitoring and assessment under the Water Convention have encouraged EECCA and SEE countries with common transboundary watercourses to develop joint monitoring programmes and harmonize their methodologies. The *Strategies for monitoring and assessment of transboundary rivers, lakes and groundwaters*[1] have been developed to assist EECCA and SEE countries in this endeavour.

As the river basin forms a natural unit for integrated water resources management, monitoring programmes should be designed for entire river basins. This is still difficult to achieve in most EECCA countries, where water management is not always based on river basins, due to inappropriate legislation and inappropriate institutional capacity and/or the enormous size of some transboundary basins.

A specific problem for the assessment of transboundary waters in EECCA countries arises from the widely used "maximum allowable concentrations of pollutants for a specific water use" (MAC) or water quality standards that seem to be more stringent than the water quality criteria and objectives often used in other parts of the UNECE region. It is often impossible to comply with these norms, partly due to the lack of appropriate measuring devices and partly because financial and human resources are lacking. Given the experience of other countries, particularly those applying the Water Framework Directive, future joint assessments should be based on water quality objectives or even ecologically based objectives, rather than MAC values. However, it is not realistic to expect EECCA countries to amend their national legislation in the short term.

Adopting a step-by-step approach, transboundary commissions could take the lead in this process by using water quality and environmental objectives in their daily practice. They should also agree on assessment methods to be used jointly within their transboundary basin. A promising example is cooperation between Moldova and Ukraine on the Dniester basin, where data from two of the six agreed-upon measuring stations are already being gathered and exchanged. Almost all of the 30 agreed-upon physico-

[1] Strategies for monitoring and assessment of transboundary rivers, lakes and groundwaters, UNECE, 2006 (ECE/MP.WAT/2006/20).

chemical parameters are being measured, but no measurements are being taken for the agreed-on three biological parameters and four radioactive determinands. In both countries, water laboratories have been designated as well as the entities responsible for data management and information exchange.

In EECCA, the ongoing reform of ministerial environmental departments and water agencies is an opportunity to harmonize responsibilities for water management and improve cooperation among entities involved in monitoring and assessment, including new partners (e.g. the research community and academia), and to designate appropriate institutions to supervise, guide and contribute to monitoring and assessment.

Insufficient and instable financing, a decrease in supply of the stations with spare parts, insufficient replacement of stations and laboratory devices with up-to-date equipment, the worsening situation regarding sampling and sample transport from remote stations, and departures of qualified staff were among the reasons for the decline of monitoring and assessment activities in the early 1990s. After a decade of decline, the funding situation has improved considerably, also due to foreign assistance programmes. However, attempts to upgrade existing monitoring networks still result in unreasonable suggestions to re-activate previously existing networks. Unless a thorough analysis of information needs is made, which is the most basic requirement for a decision on the number of stations, their location, parameters and frequency of measurement, informed decisions cannot be taken. There is a need to set priorities jointly agreed with the major actors, both nationally and in the transboundary context.

It should also be recalled that water monitoring is only one of the many sources of data/information on the conditions of transboundary watercourses. For example, in Georgia, assessments of transboundary waters also use estimates of pollution loads based on industrial production analysis. Data should also be gathered from other sources and disciplines such as agriculture, recreation, sociology, ecology and economics. Often local governments and municipalities are able to provide data on water purification and sewage utilities, factories, farmers and/or irrigators. The results of self-monitoring (monitoring of effluents and wastewater discharges by industries or municipalities, often under the conditions of their discharge license) is a valuable additional source of information for transboundary water assessments. Increasingly, these systems are being set up in EECCA and SEE, but their use is still limited to big industrial undertakings. Thus so far no such data are being used for transboundary water assessments.

In many EECCA countries, the labour and operating costs of sample collection and field analysis, laboratory analyses and data processing, interpretation, reporting and production of outputs have often been underestimated. Ignorance and inadequate assessments of these costs have been among the reasons why activities ceased after international assistance projects ended. It is therefore important that such international assistance projects be embedded in the national plans and that systems requirements be adapted to countries' resources so that operations can continue after a project is completed. Furthermore, there have been cases in which international projects had overlapping objectives, duplicated work and did not involve the right actors, thus wasting resources without improving monitoring and assessment. Recipient countries have a responsibility to streamline donors' efforts and avoid duplications and waste. At the same time, donors should respect recipient countries' priorities and indications.

Storage of data and information probably remains the weakest point in EECCA countries, where water, environmental and health agencies often rely on hard copies of data. It is of utmost importance that policymakers and planners better understand the various steps in data management. This will facilitate data exchange among the institutions undertaking the monitoring and assessment, including joint bodies.

It is wise and economically efficient to start the development of programmes step by step and stressing the need for harmonized methodology and the use of same or similar principles in assessing the status of shared water bodies. In this process, the EECCA and SEE countries sharing waters with EU countries will have a specific role to play: they are a bridge between western and eastern praxis in monitoring, and they could serve as models for introducing "modern" monitoring and assessment praxis as stipulated in the Strategies, step by step.

MONITORING IN WESTERN AND CENTRAL EUROPE

In Western and Central Europe, the knowledge regarding the state of water bodies and possible trends is relatively good. Monitoring results have been used as the basis for various water protection measures; however, there has also been a need to improve the situation. Therefore, during the last 5–10 years significant changes in developing and especially harmonizing the monitoring programmes and their methodological basis have taken place in Western and Central Europe.

At present, monitoring, assessment and reporting activities in EU countries are mostly steered by the obligations of different water-related directives.

The key directive concerning monitoring is the Water Framework Directive (WFD).[2] The main pressures on water resources are documented as a result of the implementation of the Urban Waste Water Treatment Directive,[3] the Integrated Pollution Prevention and Control Directive[4] and the Nitrates Directive[5] as well as the Directive on Pollution Caused by Certain Dangerous Substances Discharged into the Aquatic Environment of the Community.[6]

The status of water bodies (including their chemical and ecological status) will be documented in 2009 following the provisions of the Water Framework Directive. This forthcoming status assessment of the water bodies will incorporate information received under the other above-mentioned directives. The monitoring- and assessment-related activities under the Water Framework Directive could thus be seen as a kind of guide for monitoring, assessment and reporting for water bodies in EECCA and SEE.

Annex V of the WFD and the detailed guidance documents, developed under the Common Implementation Strategy on the Implementation of the Water Framework Directive, provide a sound basis for developing a harmonized monitoring and assessment system for all types of water bodies in the entire EU area.

The programme for monitoring the status of water bodies (rivers, lakes, transitional waters and coastal waters) is based both on the use of hydrobiological characteristics, supported with some key physico-chemical determinands, and on surveillance of certain harmful substances, including priority substances. The WFD also takes into account hydrological variations during the monitoring period.

The advantage of monitoring programmes that comply with EU legislation is a harmonized methodology in a large region with different types of pressure factors and water bodies. The programme has been established to continue for a longer period, with certain assessment and reporting intervals – for example, 2015 as the deadline for the second report.

[2] 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 as amended by decision No 2455/2001/EC of the European Parliament and of the Council of 20 November 2001 establishing the list of priority substances in the field of water policy.
[3] Council Directive 91/271/EEC of 21 May 1991 concerning urban waste-water treatment.
[4] Council Directive 96/61/EC of 24 September 1996 concerning integrated pollution prevention and control.
[5] Council Directive 91/676/EEC of 12 December 1991 concerning the protection of waters against pollution caused by nitrates from agricultural sources.
[6] Council Directive 76/464/EEC of 4 May 1976 on pollution caused by certain dangerous substances discharged into the aquatic environment of the Community.