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**ECONOMIC COMMISSION FOR EUROPE**

**MEETING OF THE PARTIES TO THE CONVENTION ON  
THE PROTECTION AND USE OF TRANSBOUNDARY  
WATERCOURSES AND INTERNATIONAL LAKES**

Fourth meeting  
Bonn (Germany), 20–22 November 2006  
Item 7 (f) of the provisional agenda

**DATABASE ON TRANSBOUNDARY WATERS IN THE UNECE REGION**

Submitted by the chairperson of the Working Group on  
Monitoring and Assessment

1. At their second meeting (The Hague, Netherlands, 23-25 March 2000), the Parties to the Convention decided to establish the International Water Assessment Center (IWAC) and agreed on IWAC's terms of reference. One of IWAC's tasks was to assist in the preparation of status reports, including region-wide information on the conditions of transboundary waters, and in developing and maintaining an appropriate database (ECE/MP.WAT/5, annex V).
2. This task has led, among others, to the IWAC report "Assessment Practices and Environmental Status: 10 Transboundary Rivers in Europe" published in December 2001, and followed up by discussions in the IWAC's Steering Group about efficient ways and means of building up a database and even information system on transboundary waters.
3. With the decision of the third meeting of the Parties to undertake an assessment of the status of, and trends in, transboundary waters, a wealth of information was gathered through specifically designed datasheets from countries in Eastern Europe, the Caucasus and Central Asia (ECE/MP.WAT/2006/16 and its addenda) and more information is expected from other countries. The Working Group on Monitoring and Assessment considered therefore establishing

a database, based on these datasheets, to allow a wide audience to access these data and information on transboundary waters.

4. Given more recent developments, the core group on groundwaters, established under the Working Group on Monitoring and Assessment, has developed a questionnaire on the status of transboundary groundwaters, which is currently under completion by countries in Central Asia, Caucasus and South-Eastern Europe. The responses to this questionnaire will additionally provide a wealth of groundwater-related information, which should also be accessible to a wide audience.

5. Moreover, policy analysis, development of guidelines and other activities under the 2007-2009 workplan, such as workshops and the Policy Dialogues in EECCA under the EU Water Initiative, are likely to provide Parties and the secretariat with an increasing amount of additional data and information. Therefore a decision on the establishment of a well-designed database, and even information system, under the Convention, linked to those established by some joint bodies and international organizations, most noticeable the European Environmental Agency, becomes crucial.

6. To facilitate a decision by the Parties on this matter, the Working Group on Monitoring and Assessment decided at its seventh meeting to collect information on the possible scope and use of a database, through a questionnaire. The present document is based on the discussion within the Working Group on Monitoring and Assessment and on the replies to the questionnaire received from Azerbaijan, Bulgaria, Czech Republic, Finland, Hungary, Latvia, Lithuania, Romania, Serbia and Uzbekistan and the general comments by France and Germany.

7. The Meeting of the Parties may wish to:

(a) Take note of the present document and express its acknowledgement for the work undertaken by the Working Group on Monitoring and Assessment under the leadership of the Finnish Environment Institute;

(b) Decide to establish, in a phased approach, a database on transboundary waters in the UNECE region, following the description in the draft work plan 2007-2009 (ECE/MP.WAT/2006/3, programme element 3.2) and further specifications contained in the annex to the present document;

(c) Entrust the Working Group on Monitoring and Assessment to oversee the development of the database and take a lead in developing and populating the database's part related to the two subject areas: protection of surface water resources against pollution and overuse and protection of groundwaters against pollution and overuse;

(d) Invite the Chairperson of the Working Group on Integrated Water Resources Management and relevant task forces and expert groups hereunder to assist in the design of the database on such issues as accidental pollution, flood management, and protection of water-related ecosystems, and any other issues which could become the second part of the database after 2009 (e.g. economic and social aspects, water basin management plans);

(e) Invite the Meeting of the Parties to the Protocol on Water and Health to provide its advice to the Working Group on Monitoring and Assessment on the structure of the database and the storage of such water-and-health related information, which are related to water management issues included under article 6, paragraphs 2 (g - i) and paragraphs 2 (l - m) of the Protocol on Water and Health, and which could also become part of the database after 2009;

(f) Invite the Chairperson of the Working Group on Monitoring and Assessment to inform the Parties at their fifth meeting about the progress achieved and the steps to be undertaken after 2009.

Annex

**ESTABLISHMENT AND POPULATION OF A DATABASE ON TRANSBOUNDARY  
WATERS IN THE UNECE REGION**

**Introduction**

1. A collection of logically related data designed to meet the information needs of one or more users is considered a database. More specifically, a database is a collection of records stored in a computer in a systematic way, so that a computer program can be used to manage and query these records and thus provide answers to questions. A collection of data constitutes a database only if it has certain properties: for example, data management should ensure integrity and quality of data, there is a shared access by a community of users, a structural description of the type of data held in that database (the so-called scheme or data model) is used, and a query language is supported.
2. The datasheets on transboundary rivers, lakes and groundwaters (see annexes I and II in document ECE/MP.WAT/2006/16) are at the root of such a database.

**I. GENERAL COUNTRY STATEMENTS**

3. Azerbaijan, Bulgaria, Czech Republic, Finland, Hungary, Latvia, Lithuania, Romania, Serbia and Uzbekistan responded to a questionnaire drawn up by the Finnish Environment Institute, following the outcome of the seventh meeting of the Working Group on Monitoring and Assessment. These countries generally supported the establishment of a database on transboundary waters and provided specific suggestions, which are summarized below.
4. Germany informed about the availability of data on its transboundary waters in databases operated by the European Environmental Agency. France was of the opinion that the secretariat should not be involved in such technical issues as the establishment of a database as this was the task of joint bodies, such as those to which France is a party.

**A. Purpose of the database**

5. The database on transboundary waters should address specific transboundary water problems. Thus, it should be tailor-made to the specificity of the Water Convention's work and only provide information on transboundary waters and their basins. In doing so, it should supplement databases of joint bodies.
6. From the Working Group's and the secretariat's point of view, it is also important to establish links or make references, as appropriate, to other water-related databases operated, for example, under the auspices of the United Nations, the European Commission and the Organization for Economic Co-operation and Development. The establishment of links to the

International River Basin Register,<sup>1</sup> State of the Environment reports by the European Environmental Agency, and the country reports under the Environmental Performance Review programme of UNECE is self evident.

## **B. Phased approach**

7. Although there were a variety of countries' responses (depending on their needs and priorities to manage their transboundary waters, and the prevailing conditions, including the pressure factors), the following preferences for a phased approach became apparent:

### ***First phase (2006-2009)***

- Protection of surface water resources against pollution and overuse;
- Protection of groundwaters against pollution and overuse.

### ***Second phase (beyond 2009)***

- Accidental water pollution;
- Prevention, protection and mitigation of floods;
- Protection/sustainable use of water-related ecosystems;
- Water management related information following article 6 of the Protocol on Water and Health.<sup>2</sup>

8. This sub-division takes into account progress made on gathering data on surface waters and groundwaters in a structured way and the need for further methodological work on other issues.

## **C. Users of the database**

9. Apart from the members of the Water Convention's working groups, future users of the database include: ministerial officials, staff of national water agencies and/or water boards, national and international research institutes, and joint bodies.

10. It should, however, be taken into account that the secretariat is most likely a permanent user of the database, given its responsibility for the assessment of transboundary waters and the preparation of policy documents, strategies and guidelines.

## **D. Frequency of database access and updating**

11. As it was to be expected, ministerial officials and members of the Water Convention Working Groups would access the database at least once a year, if there were no specific national tasks that would require a more frequent access (e.g. preparation of assistance programmes, preparation of national reports). Consequently, updates would be provided annually.

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<sup>1</sup> <http://www.transboundarywaters.orst.edu/about/>

<sup>2</sup> Depending on the progress and experience with compliance reporting under the Protocol on Water and Health

12. Such a low frequency of access is not surprising. Having a user-friendly and purpose driven database, the frequency will most likely increase, as it was the case with the web sites of the Convention and the International Water Assessment Center.

#### **E. Quality control**

13. In their responses, countries stressed the need to include a reference to the source of data and information.

14. Although this is a usual requirement for any database, it is of particular importance for datasets for transboundary river basins. Given the experience with the assessment of transboundary waters in the EECCA region (see ECE/MP.WAT/2006/16 and Add.1 to Add.6) this would avoid disputes over the data and information submitted by the riparian countries (which sometimes considerably differ, even regarding basic geographical information for the same river basin/sub-basin or monitoring data for nearby located stations). Moreover, data from water-related international assistance projects, data retrieved from databases of international organizations/institutions or literature may complete, as appropriate, official information submitted by countries.

#### **F. Queries**

15. The responses to the questionnaire provided a number of “standard” queries that would be made among the records for various rivers/lakes. Examples for such standard queries suggested by countries include: which river basins are covered by transboundary agreements, which measuring stations in a given group of river basins (e.g. all river draining to the Caspian Sea) show high/good/moderate status, at which measuring stations pollution by a given hazardous substance exceeds established standards, which lakes are “at no risk”, and which lakes are threatened by eutrophication.

16. Given the experience gained with the completion of the first phase of the assessment report (see decisions in document ECE/MP.WAT/2006/16), a number of other queries will become obvious, for example, the combination of population density and biological oxygen demand (BOD) to get insight into the efficiency of municipal wastewater treatment in river basins.

#### **G. Cost-sharing arrangements for design, operation and maintenance of the database**

17. The response to the questionnaire included the readiness of the respondents to advice on the design of the database and assist in the database population by providing national data. In most case, respondents were not governmental officials that were entitled to commit themselves to financial contributions. Thus, this is an issue for decision making at the fourth meeting of the Parties.

## **II. SPECIFIC ISSUES TO BE CONSIDERED FOR THE WORK IN THE FIRST PHASE (2007-2009)**

### **A. Protection of surface water resources against pollution and overuse**

18. The basis for the work on this subject are the completed datasheets already available for a number of rivers basins in EECCA countries and those expected to be submitted by countries for the other river basins (see annex I to document ECE/MP.WAT/2006/16).

19. As to water-quality and water-quantity related data, referred to in the above-mentioned annex I, the preference was on long-time and aggregated data, rather than real time data:

- Aggregated data would include long-term yearly averages and/or yearly averages of up to 10 water-quality determinands for up to 5 measuring stations per basin/sub-basin, mostly at the border or close to it;
- Other aggregated data would refer to the chemical and ecological status at border stations (high, good and moderate) for transboundary waters in the EU area. For EECCA countries there is not yet such a classification and the database would at least provide information related to the three classes used in the datasheets (high and good status, water bodies with moderate pollution, and polluted water bodies), in some cases accompanied with the respective national water-pollution index or national water-quality class;
- Hydrological data would include the long-term mean monthly discharge and/or the long-term yearly discharge values plus the maximum and minimum observed values. The minimum flow to be observed at the gauging stations would also be included.

20. The inclusion of data on freshwater abstraction by major sectors and renewable freshwater recourses, as proposed by the secretariat, would make it possible to signal overuse of resources in transboundary river basins and shed light on the sharing of water resources among the riparian countries. To this end, the Working Group on Integrated Water Resources Management may wish to become involved in the design of the database.

Work on the subject is well advanced and there seems to be no major problems as to the structure of the database, the amount of data to be stored and possible queries to be made. With all likelihood the database would be operational before 2009.

### **B. Protection of groundwaters against pollution and overuse**

21. Work on the assessment of transboundary groundwaters started in summer 2006 with the design of a questionnaire as basis for information gathering (see annex II of document ECE/MP.WAT/2006/16). The process of information gathering is well advanced with replies from Azerbaijan, Bosnia and Herzegovina, Bulgaria, Georgia, Kyrgyzstan, Romania, Serbia and Uzbekistan, covering some 40 aquifers. Other countries in Central Asia and the Caucasus as well as countries in South-Eastern Europe are expected to reply, too.

22. Although, the core group on groundwaters (a specific body under the Working Group on Monitoring and Assessment) did not yet commence with the assessment of these aquifers, there seems to be no major problem as to the possible structure of the database, the type and amount of data to be stored and possible queries to be made. Thus, with all likelihood a prototype of the database could be operational by 2009, given the active involvement of the core group and the possible assistance by the United Nations Educational, Scientific and Cultural Organization (UNESCO).

### **III. SPECIFIC ISSUES TO BE CONSIDERED FOR THE WORK IN THE SECOND PHASE (beyond 2009)**

23. There are four subject areas on which a database could be established after 2009. Preparatory work is needed, however, already under the work plan for 2007-2009.

#### **A. Accidental water pollution**

24. Given the Protocol on Civil Liability and Compensation for Damage Caused by the Transboundary Effects of Industrial Accidents on Transboundary Waters (Civil Liability Protocol) and the activities of the joint ad hoc expert group on water and industrial accidents (see document ECE/MP.WAT/2006/2), countries included accidental water pollution as a subject area of the database.

25. The Working Group on Integrated Water Resources Management and the joint ad hoc expert group on water and industrial accidents are the most relevant bodies to provide advice in the period 2007-2009 on the database structure. In doing so, it should be noted that the secretariats of the Water Convention and the Convention on the Transboundary Effects of Industrial Accidents (Industrial Accidents Convention) are in a dialogue with the United Nations Environment Programme (UNEP), the European Commission and the Netherlands Institute for Inland Water Management and Wastewater Treatment (RIZA) about ways and means of using and expanding existing databases of these organizations/institutions related to industrial accidents also for the purposes of the Water Convention and Industrial Accidents Convention.

#### **B. Prevention, protection and mitigation of floods**

26. The task force on flood prevention, protection and mitigation, acting under the auspices of the Working Group on Integrated Water Resources Management, is the most relevant body to provide advice in the period 2007-2009 on the database structure. Work on the database could commence in 2009.

#### **C. Protection/sustainable use of water-related ecosystems**

27. The Working Group on Integrated Water Resources Management, given its leading role on the ecosystem approach in water management and its future activities on the implementation of the UNECE Rules on payments for ecosystem services in integrated water resources



management is the relevant body to provide advice in the period 2007-2009 on the database structure. Work on the database as such could commence in 2009.

**D. Water management related information under the Protocol on Water and Health**

28. One activity under the Protocol on Water and Health is the review and assessment of progress in the Protocol's implementation, including the implementation of target and target dates under article 6, paragraph 2. Currently such a reporting scheme related to health relevant information is under development, which may be supported by existing, within the World Health Organization (WHO), databases.

29. Water-related targets are referred to in paragraph 2 (g - i) and (l - m) of the same article. The Water Convention's draft workplan for 2007-2009 (see programme element 3.6 in document ECE/MP.WAT/2006/3) therefore calls for the establishment of a joint expert group to assist the Parties to the Protocol to review and assess their progress towards the achievement of these targets and prepare guidelines for harmonized reporting in relation to water management targets. This joint expert group could also provide advice in the period 2007-2009 on the database structure. Work on the database, either as part of an appropriate WHO database or part of the Water Convention's database, would commence after 2009.

**IV. ESTIMATE OF WORKLOAD AND COSTS**

30. Document ECE/MP.WAT/2006/3 on the draft work plan 2007-2009 provides a cost estimate of up to 117,000 USD for 12 man-months of programming and database population. This includes the completion of the work on the database on the items: (a) protection of surface water resources against pollution and overuse; (b) protection of groundwaters against pollution and overuse. It also includes the support to the work of other working and expert groups on the items of the database mentioned under chapter III.