



*Convention on Protection and Use of Transboundary Watercourses and International Lakes  
Working Group on Monitoring and Assessment  
Core Group Groundwater*

**WGMA/2003/2**

Fourth meeting

St. Michielsgestel, The Netherlands, 12-13 September 2003

**Working paper:**

**PROGRESS REPORT ON GROUNDWATER PILOTS AND ACTIVITIES  
UNDER ISARM, ETC.**

(period October 2002 – September 2003)

Core Group Groundwater  
September 2<sup>nd</sup>, 2003

## 1. Introduction

This report gives an overview of the activities of the Core Group Groundwater (CGG) and the progress made with the implementation of the UNECE groundwater guidelines for the period October 2002 – September 2003. The groundwater programme has been described in the document “Overall working programme on the implementation of the guidelines on monitoring and assessment of transboundary groundwaters” (WGMA/2002/5a). The activities are related to the implementation of the guidelines into groundwater pilots but also in relation to the implementation of the EU Water Framework Directive and the activities for ISARM.

A new activity is the contribution to the preparation of the 2<sup>nd</sup> WWDR (World Water Development Report).

## 2. Meeting of the Core Group Groundwater

The CGG organised its 13<sup>th</sup> meeting back to back with the 3<sup>rd</sup> Meeting of the WGMA in Helsinki (2 October 2002).

For the results of this meeting see *Annex 1: minutes of meeting (CGG 13.04)*

### *Future activities:*

It was planned to organise a core group meeting in April or May 2003 but for several reasons this meeting did not take place. An important reason was the unclear financial situation regarding IWAC.

The groundwater guidelines have been translated in the Russian language. Because of financial restrictions the Russian version has not been printed but is available as pdf-file on the IWAC website and can be downloaded (see: [www.iwac-riza.org](http://www.iwac-riza.org) under “IWAC” and “publications”).

## 3. Pilot programme

### a. General

The overall pilot programme exists of two phases, a **preparatory phase** and an **implementation phase**. Both phases can be divided in two parts. The **preparatory phase** consists of an ‘*inception study*’ and a part ‘*monitoring and assessment needs analysis*’, the **implementation phase** consists of an ‘*implementation*’ part and the ‘*evaluation*’. As for the river pilot programme it was decided that the present pilot programme concerns only the first phase: *the preparatory phase*. For the description of the pilot programme see “Overall working programme on the implementation of the guidelines on monitoring and assessment of transboundary waters” (WGMA 2002/5a).

### b. Aggtelek – Slovak Karst

#### *Project leaders:*

Ms Eszter Havas-Szillágyi (Min. of Environment and Water Management, Hungary)

Ms Katarina Moziesikova (SHMU, Slovakia).

During the first (kick-off) meeting (Jósvafő, March 2002), an overall working programme had been elaborated.

The objectives of the pilot project are defined as follows:

- implementation and testing of the “Guidelines on M&A of transboundary groundwaters”;
- initial characterisation of the Aggtelek Karst – Slovakian Kras Aquifer as a transboundary groundwater body according to the 2000/60/EC Water Framework Directive;
- vulnerability mapping on the Aggtelek Karst – Slovakian Kras applying the “European method” of Cost Action no. 620.

In June 2002 both countries prepared their own part of the draft inception report.

*Present status:*

During the last meeting of groundwater pilot between Hungary and Slovakia on the Aggtelek – Slovak Karst (held in Bratislava (March 4-5, 2003) both countries presented their activities and defined the steps to be undertaken in accordance with the actions for the WFD and ICPDR (see annex 2: minutes of meeting 2<sup>nd</sup> expert meeting). Slovakia has taken the initiative to prepare the (draft) common inception report. At this moment the short form of the Inventory report is finalised and the digitalised map basement is prepared.

The result of the pilot project was introduced at the ICPDR 2<sup>nd</sup> Groundwater Workshop ICPDR-GEF/Danube (Budapest, 12-13 May 2003). The workshop report and the documentation concerning this 2<sup>nd</sup> Groundwater Workshop is available on the homepage: [www.icpdr.org/undp-drp](http://www.icpdr.org/undp-drp) under “Ongoing activities/Characterisation of Groundwater bodies/2nd Groundwater Workshop/Final draft Synthesis Report”.

c. Bug (groundwater pilot)

During the first (kick-off) meeting (Lublin 11<sup>th</sup> of June 2002) the parties agreed to start the following actions:

- to sign a tripartite agreement between Ukrainian Ministry of Ecology, Ministry of Natural Resources and Environmental Protection of Belarus and Polish Ministry of Environment;
- it has been accepted that Poland will be the initiating and leading country in the preparatory works to sign the Agreement;
- Mr Blinov and Mr Kurilo committed themselves to guide the matters regarding preparations to start the project in their countries;
- the project will include groundwaters in the area of the whole Bug river basin;
- works on the Inception Report will be done simultaneously to preparations leading to sign the agreement.

For the workout of the Project information about the Bug river basin will be used from the Pilot Project on Monitoring of the Bug basin rivers. Mrs Malgorzata Landsberg-Uczciwek committed herself to working out a working version of the Inception Report till the end of September 2002. Mr Blinov from Ukraine, Mr Kurilo from Belarus and Mr Kazimierski committed themselves to bring all necessary information regarding the issues of ground waters and their monitoring and quality assessment. For more information reference has been made to the minutes of meeting.

*Present status:*

In November 2002 a first draft of the Inception Report has been finalised.

In July (2003) during the visit of Polish Deputy Minister of Environment in Belarus the both countries agreed with Draft Memorandum on Understanding prepared by Poland and amended by Belarus.

Unfortunately, until now Ukraine did not express its attitude to the document. At the meeting both countries (Belarus and Poland) committed themselves to contact with Ukrainian Ministry of Ecology for further progress.

Additionally, the Draft Application for Tacis financial support of the future Bug River Groundwater Project for Belarus was prepared in the framework of former Tacis Project on the Monitoring and Assessment of Bug River Surface Water in Belarus (2000-2002). It was submitted to the Ministry of Environment and can be sent by the Ministry to Brussels after signing of the Memorandum.

d. Vecht pilot (combination of groundwater and river pilot)

Since April 2001 meetings take place with Germany to set up the pilot Vecht. From the Dutch side (2 provinces and 4 regional water boards) there is interest, from the German side (2 Länder: Niedersachsen en Nordrhein-Westfalen) there is a problem with personnel and the costs involved. Recently a report has

been prepared describing the interest in such a pilot and also the relevance for the implementation of the WFD. The negotiations are still going on.

*Present status:*

The discussion for the Vecht as possible pilot is still going on. There are different national programmes (ICES-KIS and INTERREG) in which the Vecht pilot can be incorporated.

- e. Activities of the core group groundwater in relation to the pilots
  - Meeting on the progress of the pilots in 2003
  - Final discussion on the draft *'inception study' reports for the Aggtelek and Bug*
  - Preparation of the study *'monitoring and assessment needs analysis'*

*Present status:*

Originally, it was planned to finalise the first step (the inception study) before the end of 2002. Due to several reasons the finalisation has not been carried out so far.

#### **4. Meetings ISARM/UNECE**

From October 2002 till September 2003 several meetings on the management of transboundary groundwaters were organised. In all the conferences/workshops presentations were given on the UNECE groundwater programme (UNECE groundwater guidelines and the European case studies).

- a. Meeting in Mar del Plata (Mar del Plata, Argentina, 21-25 October 2002) XXXII IAH & VI ALHSUD Congress "Groundwater and Human Development".

Zsuzsa Buzás and Eszter Havas participated on this meeting and gave presentation on "UNECE Inventory of transboundary groundwaters" and "Guidelines on monitoring and assessment of transboundary groundwaters, implementation in a pilot area".

- b. Workshop on the UNESCO/OAS ISARM Americas Programme (Transboundary Aquifers of the Americas).

Originally, this meeting was planned in the first half year of 2003 but finally it will be held on September 24<sup>th</sup> and 25<sup>th</sup> in Montevideo. UNECE (Geo Arnold) is invited on this workshop and will present the activities and experiences in Europe.

***Future activities:***

Regional Workshop on lullemeden Aquifer System (Paris, 7-9 February 2002)

The meeting was focussed on the implementation of strategies and actions needed for the launching of the ISARM in Africa. A concrete implementation policy proposal on the lullemeden aquifer system has been elaborated and is send to GEF as possible donor.

In 2003 the implementation policy proposal on the lullemeden aquifer has been accepted by GEF. This means the UNECE will be involved in the realization phase of the project.

Workshop "Sustainable Utilisation, Management and Protection of Internationally Shared Groundwater Resources in SEE (South Eastern Europe) Countries". (Zagreb, Croatia, June 27-29, 2002).

(UNESCO Initiative "Rebuilding of Scientific Cooperation in South-East Europe).

Branco Bosnjakovic presented a paper submitted by Geo Arnold.

This workshop lead to a project proposal for the development and implementation of a decision-making analysis system (DAS) for sustainable utilisation, management and protection of internationally-shared aquifer resources in the South Eastern European (SEE) region, with emphasis on the Western Balkan countries. An abstract of the proposal is given in annex 3.

## **5. IWAC/UNECE/EU/WFD**

A new activity in which IWAC can be involved is the so-called Harmoni-CA project. This project is an activity under the responsibility of DG Research (EU).

## **6. WWDR**

In June 2003 UNECE contributed in the preparation of a draft document "Development of groundwater indicators for the second edition of the World Water Development Report" as a member of the Groundwater Indicators Working Group (UNESCO, IAEA, IAH and UNECE). The UNECE report "Problem-oriented approach and the use of indicators" is used as an important background report for this document.

## **7. Publications**

In 2003 a paper titled: "UNECE inventory of transboundary groundwaters in Europe" has been submitted for a special issue of the International Journal of Groundwater on Transboundary Aquifers.





## **CGG 13.04**

### **Minutes of the 13<sup>TH</sup> Meeting of the Core Group on Groundwater in Helsinki, Finland, on 2 October 2002**

The meeting was attended by Core group members: chairman Mr Geo Arnold (The Netherlands), Ms Zsuzsa Buzás (Hungary), Ms Teresa Zan (Poland), Mr John Chilton (BGS/UK), Ms Francesca Bernardini (UNECE Secretariat) and Ms. Ilonka Záborszky (The Netherlands). Mr Manuel Varela (Spain), Mr Peter Roncák (Slovak Republic) and Ms Eszter Havás-Szilagyi were not present and they informed Mr Arnold about their absence in advance.

#### **1. Opening**

Mr Geo Arnold welcomes the participants to the 13<sup>th</sup> CGG meeting in the Finnish Environment Institute in Helsinki, Finland.

The core group adopted the provisional agenda, see document CGG13.01

#### **2. Minutes of the 12<sup>th</sup> meeting (CG12.04)**

The 12<sup>th</sup> meeting of the CGG was held in March 2002 during the kick-off meeting of the Aggtelek-Slovak Karst pilot project.

The meeting minutes have been approved, except for two small remarks.

Point 10: Mr Arnold attended two meetings of the EU working group on monitoring (CIS Working group 2.7), the first held in Brussels (23 May) and the second in Copenhagen (18 and 19 September) where he informed the meeting about the UNECE activities on groundwater and contributed to the preparation of the groundwater paragraphs of the Guidance on Monitoring for the Water Framework Directive.

Point 11: On behalf of Mr Arnold, Mr Bosnjakovic presented the UNECE activities on groundwater during a workshop “Sustainable Utilisation, Management and Protection of Internationally Shared Groundwater Resources in SEE (South Eastern Europe) Countries”. This meeting was an UNESCO initiative on “Rebuilding of Scientific Cooperation in South-East Europe” and was held in Zagreb, Croatia on June 27-29.

#### **3. Activities in 2002 (Progress Report (WGMA 2002/5b)**

Mr Arnold informed the meeting that the Groundwater Guidelines are being translated into Russian and that they will be printed and available by the end of the year 2002. These guidelines will also become available as a downloadable document on the IWAC website [www.iwac-riza.org](http://www.iwac-riza.org).

#### **4. Pilot project reporting**

Ms Buzás reports in brief on the kick-off meeting of the first groundwater pilot project Aggtelek-Slovak Karst that was held in Jósvalfö, Hungary from 6-8 March 2002.

The meeting had three objectives:

1. Implementation and testing of the “Groundwater Guidelines on monitoring and assessment of transboundary groundwaters”
2. Initial characterisation of the Aggtelek-Slovensky Kras Aquifer as a transboundary body according to the 2000/60/EC Water Framework Directive
3. Vulnerability mapping on the Aggtelek Karst-Slovensky Kras applying the “European method” of the Cost Action No. 620

The report on this pilot project will be prepared by Hungary and Slovak Republic and becomes available in English in November. A decision on the cover of this report will be decided at a later stage. The report will be sent separately to the members of the CGG.

Ms Zan informed the meeting on the first Working Session on the upcoming transboundary groundwater pilot in the Bug river basin. This meeting was held on 11 June 2002 in Lublin, Poland. Three countries participated: Belarus, Poland, Ukraine. Mr Arnold attended the meeting as project leader of the UNECE groundwater programme.

Ms Zan says that the pilot project is not official yet, as the three countries involved have to make an agreement at a Ministerial level and therefore a preparatory meeting has to take place. ?? Poland will be lead country for this project. The pilot involves 2 aquifers and the whole river basin will be included. Belarus and Ukraine promised to prepare material for the inception report and have this sent to Poland. Furthermore Ms Zan says that financial support will be necessary for the second part of the pilot project.

In the TACIS workshop in Minsk held on 28-29 November 2002 it would be a good idea to introduce the groundwater pilot project. It is suggested that Mr Chilton might be present at this meeting in his role as pilot project leader for the river pilots.

Mr Arnold informed the meeting about the status of the pilot Vecht. The Netherlands is still very much interested, but co-operation with Germany is still difficult. In the meantime Mr Thomas Stratenwerth has been contacted and he was informed on the goal of this pilot. A notice has been sent to the Ministry in Germany. This document will be discussed in October 2002.

#### **5. Working programme 2000-2004 (WGMA 2002/5a) and Progress report on the implementation of the guidelines on monitoring and assessment of transboundary groundwaters (period November 2001 – October 2002) (WGMA 2002/5b)**

Mr Arnold prepared the two documents for the meeting of the WGMA. Both documents were sent in advance to the members of the core group for their remarks. Due to lack of time the participants were not able to send their remarks.

During this core group meeting document WGMA/2002/5a “Overall working programme on the implementation of the guidelines on monitoring and assessment of transboundary groundwaters” has been discussed and it was decided to make some textual changes:

- text in chapter 2.4 in the first sentence needs to be changed
- the text in chapter 2.5 will be completed with the Bug and the Slovak Karst - in chapter 3.1 a sentence will be added: The CGG would give assistance to promote the implementation of the recommendations on/in a basic scale to help implementing the WFD?
- in different parts (chapter 5) the relationship between the Water Framework Directive and the UNECE should be mentioned.



Mr Arnold proposed to invite people from Belarus, Hungary and Slovak Republic to become members of the Core Group on groundwater.

Core group members will get 2 weeks to give comments on the relationship with the WFD.

Ms Bernardini suggested to put the WGMA/2002/5a and 5b on the UNECE website.

WGMA 2002/5b is a summary of the progress made last year and this will be mentioned in the WGMA meeting by Mr Arnold.

#### **6. Other related business activities**

ISARM: many activities in different regions are taking place. UNECE has been asked several times to present their activities in these meetings. Also other Core group members can contribute to these activities. Questions from other resources can be shared among the core group members.

#### **7. Closure**

Mr Arnold thanked the core group members for their presence and closed the meeting.

Next core group meeting will be held in April or May 2003.



**Minutes of the Second Experts Meeting  
Aggtelek – Slovak Karst pilot project  
(Bratislava, March 4.-5. 2003)**

On the March 4-5 meeting the following organisations were represented:

- Hungary: Ministry of Environment and Water, MÁFI – Hungarian Geological Survey, VITUKI;
- Slovakia: SHMI, Geological Survey of Slovak Republic.

(The list of the participants is in Annex 1.)

Project leaders: Hungary: Ms. Eszter Havas Szilágyi  
Slovakia: Ms. Katarína Možiešiková

The meeting was held after some delay, because of the reorganization and following moving of officers of the Hungarian Ministry, nowadays the Ministry of Environment and Water. The first aim of the meeting was the evaluation of the already elaborated chapters of the Inception report (Project preparatory phase). Programme of the Experts Meeting was approved and went on as follows:

1. Objectives
2. MoU ( Memorandum of Understanding)
3. Establishment of the project organization
4. Delineation of the Pilot area
5. General description of the Pilot area
6. Functions and exploitations
7. Monitoring practices
8. Institutional background
9. International cooperation
10. Workplan (activities, time schedule, responsibilities)
11. Funding

At the beginning both countries reported about the present situation, the existing activity. After this, the concept and tasks of the delineation of pilot and test area was discussed and the information about funding in both countries was presented. It was broadly discussed and the next items were accepted:

- **Pilot area** - was delineated as four adjacent hydrogeological structures;
- **Test area** - hydrogeological structure Dolný vrch was delineated. For the test area, groundwater vulnerability mapping following the EU approach is planned;
- **Workplan** - next meeting will be held in Bratislava (during the River Basin Management Expert Group - RBM EG), to arrange next project activities. About the date of this meeting, Ms. Havasné Szilágyi will inform.

In accordance with the WFD and ICPDR (Danube Convention) RBM EG, Questionnaire for overview of countries` activities in the field of *Annex Impress 3.10 Review for groundwater, Summary of key tasks for groundwater – Initial characterisation* the using of existing data are applicable next way:

- Collate data on pressures of the groundwater body (WFD, Annex II, 2, 2.1);

- Collate information on impacts on the groundwater (WFD, Annex II, 2, 2.1);
- Review existing groundwater monitoring data (chemical and water level) and data on dependent surface waters and ecosystems;
- Assess the water balance of groundwater body;
- Consider possible relationships between the groundwater body and connected wetlands;
- Consider both chemical and quantitative status to decide whether the groundwater body is likely to be at risk;
- A review of the delineation of the groundwater body may be undertaken if the data on pressures and impacts indicates that it may be helpful to subdivide bodies for the purpose of developing a practical programme of measures;
- Assess vulnerability of groundwater to pollution from recorded pollution pressure – *at present no possibility to realise exists*;
- The development of a conceptual model of the groundwater flow – *at present no possibility to realise exists*

It was agreed, that the above-mentioned data would be collected within the bounds of possibility. After bilateral data confrontation, the both part - Hungary and Slovak - would add undermentioned maps in digitalised form (over-layers), if the possibility to obtain them exists;

**Pilot area :**

- 1) Administrative;
- 2) Lithological;
- 3) Geological.

**Test area:**

- 1) Karst features;
- 2) Geomorphological;
- 3) Of soils – *check a possibility to obtain this data*;
- 4) Of covering layers thickness – *check a possibility to obtain this data*

**Next activities:**

- the Slovak part will send to Hungarian the system of data inventory – GEOENVIRON
- finalisation of Inception report ( short version) by Slovak part

The maps will be collected on SHMI, where the attempt to joint both parts of the over-layers will be done. Information about the kind of used co-ordinates is absolutely necessary.

**Deadlines:**

- first step – administrative and lithological maps - during 2 weeks Hungarian part will send over-layers to SHMI;
- Next step – data collection - until the May meeting in Budapest .
- Pilot project common presentation in the Hungarian groundwater workshop (Budapest, 12 – 13 May 2003)

The minutes were prepared by Katarína Možiešiková  
12<sup>th</sup> of March 2003, Bratislava

Specific Targeted Research Project (STREP):

Call Identifier: **FP6-2002-INCO-WBC-1**

Activity **INCO-2002-C.1.1**

*Integrated management of regional water resources planning and policy*

**SUSTAINABLE UTILISATION, MANAGEMENT AND PROTECTION OF  
INTERNATIONALLY-SHARED AQUIFER RESOURCES IN WESTERN  
BALKAN COUNTRIES**

Acronym:

***ISAB***

Part B1: Anonymous

May 7<sup>th</sup>, 2003

## **Proposal Summary page**

### *Proposal full title:*

Sustainable Utilisation, Management and Protection of Internationally-shared Aquifer Resources in Western Balkan countries

Acronym: **ISAB**

### *Strategic objectives addresses:*

The overall objective of the proposed project is the development and implementation of a decision-making analysis system (DAS) for sustainable utilisation, management and protection of internationally-shared aquifer resources in the South Eastern European (SEE) region, with emphasis on the Western Balkan countries.

### *Proposal abstract:*

With growing water quality deterioration, increasing demand for water in many countries of SEE, and the changing patterns of climate in the region, the contribution and role of transboundary aquifers in meeting these demands is likely to become more significant, thereby enhancing competition over these fragile resources. With growing competition, cooperative arrangements to jointly develop, manage and protect shared aquifers become a necessity, not only to avoid conflict but also to optimise the utilization of such aquifers. The need to manage and protect transboundary groundwaters in a sustainable way becomes even more acute as all SEE countries have either short, medium or long term commitments to comply with EU legislation, and in particular with the Water Framework Directive (WFD). As a complement to that, many countries of SEE wish to comply with their commitments in the framework of the relevant UN-ECE conventions and guidelines. The overall objective of the proposed project is to develop appropriate and generally applicable tools for sustainable utilisation, management and protection of transboundary groundwater resources in the SEE region, with emphasis on the Western Balkan countries. The steps towards the realisation of this overall objective are: (1) to develop and implement a regional information system (RIS) suited for shared transboundary groundwater systems; (2) to develop and implement a ready-made methodology of comprehensive hydrological modeling to understand physical and chemical factors and processes that describe evolving groundwater characteristics; (3) to develop a methodology and compile guidelines for monitoring and assessment of the physical behaviour and the environmental quality of shared transboundary groundwaters; (4) to analyse socio-economic and institutional aspects of these systems (drivers and pressures), in particular the supply-demand relationship, pollution, and the development of socio-economic and legal/policy options for reconciling conflicting sectoral and other group interests; (5) to investigate sustainability indicators as necessary tools to analyse the impact of changing legal, social and economic patterns in terms of risks and benefits, and to assess potential responses; (6) to identify promising and feasible scenarios for sustainable groundwater exploitation, management and protection of shared transboundary aquifers with a decision-making analysis system (DAS). The first three steps describe the state of the bio-physical system and changes (impact) due to natural causes and actions of man. Eventually, the outcome of the proposed project will support a better share of the benefits of water in the SEE countries. The results of the proposed project will be disseminated through access to RIS, brochures, a project website, workshops and seminars with stakeholders in the selected catchments and the whole SEE region, an international conference in the SEE region, and peer-reviewed scientific papers. Training and knowledge exchange on scientific and technological methodologies are important elements of this project, with emphasis on the participation of junior researchers (PhD, postdocs) and improved communication between institutions within countries of the SEE region. Provisions will be made to involve the main stakeholders in the project development.