



UNESCO-ISARM-MED CONSULTATIVE MEETING

**KEY ISSUES FOR SUSTAINABLE MANAGEMENT OF
TRANSBOUNDARY AQUIFERS IN THE MEDITERRANEAN AND IN SOUTH
EASTERN EUROPE (SEE)**

Thessaloniki, Greece, 21st – 23rd October 2004

FINAL REPORT

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Prepared by

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INTRODUCTION

1.1 **The ISARM-Balkan Project:**

This project is a recent initiative in the Balkan region, sponsored by UNESCO, Paris and carried out by the UNESCO Chair and Network/International Network of Water-Environment Centres for the Balkans (INWEB), Aristotle University of Thessaloniki, Thessaloniki, Greece.

UNESCO, and more specifically UNESCO's International Hydrological Programme (IHP) (Paris), having recognized that transboundary aquifer systems are important sources of fresh water in many regions of the world, decided in June 2002 to launch a new initiative to promote studies in regard to transboundary aquifers called the Internationally Shared Aquifer Resources Management programme (ISARM).

The UNESCO/ISARM programme aims at improving understanding of scientific, socio-economic, legal, institutional and environmental issues related to the management of transboundary aquifers. The programme operates through a joint coordination committee of experts from UNESCO-IHP, the International Association of Hydrogeologists (IAH), the Food and Agriculture Organisation of the United Nations (FAO) and the United Nations Economic Commission for Europe (UNECE). As a first step the programme has initiated the inventory of Transboundary Aquifers of the World.

The first phase of the UNESCO/ISARM programme was initiated in Africa in 2002 and the second in the Americas in 2003. The first UNESCO/OAS ISARM-Americas Workshop was held in Montevideo, Uruguay from September 24th - 25th 2003. Participation at the Workshop was strong: twenty countries were represented, including Haiti and the Dominican Republic.

A third phase, which contains the present study, was launched in the Balkans in 2003 by UNESCO/ISARM and the coordinator of the present study UNESCO Chair/INWEB. In close cooperation with the IAH/ Transboundary Aquifer Resource Management (TARM) Commission, INWEB, held a workshop in Thessaloniki in October 2004 to present and assess its results.

INWEB also cooperated closely with UNECE: Working Group on Monitoring & Assessment, Switzerland to follow up the European inventory previously compiled by UNECE, as well as with The Economic and Social Commission for West Asia (ESCWA), Lebanon, and the Observatoire du Sahara et du Sahel (OSS) Tunisia, for the Mediterranean inventory.

In March 2004, discussions between UNESCO-IHP, UNESCO Chair/INWEB and the Global Water Partnership, Mediterranean, (GWP-MED) Secretariat, Athens, aimed at coordinating two separate ongoing activities concerning internationally shared surface and groundwaters in order to prevent a duplication of efforts and wasting of resources. One of the advantages of this was that both studies were prepared by the same team of national experts, most of whom are members of UNESCO Chair/INWEB. It was agreed that both studies concerning inventories on surface and groundwaters could be presented in two workshops in series, as follows:

- 1) UNESCO Workshop Thessaloniki, 18-20 October 2004
DEVELOPMENT OF AN INVENTORY OF INTERNATIONALLY SHARED SURFACE WATERS IN SOUTH-EASTERN EUROPE (SEE)

- 2) UNESCO/ISARM Consultative meeting Thessaloniki, 21-23 October 2004
KEY ISSUES FOR SUSTAINABLE MANAGEMENT OF TRANSBOUNDARY AQUIFERS IN THE MEDITERRANEAN AND IN SOUTH EASTERN EUROPE (SEE)

This report summarises the main results and recommendations of the UNESCO/ISARM workshop as well as the draft inventory of Internationally Shared Aquifers in the Balkans, which was prepared by UNESCO Chair and Network/INWEB, Aristotle University of Thessaloniki, Greece (Prof. Jacques Ganoulis), and presented and discussed during the workshop.

Acknowledgment: The UNESCO Chair and Network/INWEB wishes to express its gratitude to Dr. Alice Aureli, UNESCO/IHP/Groundwater, who took the initiative to launch the ISARM-Balkans project and provided valuable support at all stages of the project.

1.2 Activities and workshop preparation

Prior to the workshop, institutional partners of INWEB, being INWEB's main partners, together with UNESCO national representatives, were invited to collect existing data on transboundary aquifers.

Two different types of data were identified:

- 1) Scientific-hydrological, hydraulic, water quality and ecosystem characteristics and
- 2) Socio-economic data on water uses, institutions, policies and stakeholders.

The data were presented using standardised spreadsheets, with various useful categories of information. Each spreadsheet referred to a particular international aquifer. Prior to the workshop a draft inventory was completed and sent to all partners for comments.

On the basis of this information, experts from UNESCO, UNECE and SEE were invited to Thessaloniki to attend the three-day workshop in order to identify key issues and problems for the sustainable management of international groundwaters in the Balkan region. At the workshop they worked together to initiate the preparation of an atlas of internationally shared aquifers in SEE, and to define support mechanisms to improve cooperation for the better use and protection of shared water resources in the region.

The work for this project is based on previous programmes and initiatives such as:

- The Athens Declaration
- The United Nations Economic Commission for Europe (UNECE) Guidelines on Monitoring and Assessment of Transboundary Aquifers
- The European Water Initiative
- UNESCO, United Nations Environment Programme (UNEP)
- Food and Agriculture Organisation of the United Nations (FAO).

Basic information was provided by the following national experts:

- Dr. Rossitza Gorova, Executive Environment Agency, Ministry of Environment and Water, Sofia, Bulgaria
 - Dr. Lidija Globevnik, University of Ljubljana, Faculty of Civil and Geodetic Engineering, Ljubljana, Slovenia
 - Prof. Dr. Sevket Cokgor, Istanbul Technical University, Faculty of Civil Engineering, Istanbul, Turkey
 - Mr. Nijaz Lukovac, Hydro-Engineering Institute, Sarajevo, Bosnia-and Herzegovina
 - Prof. Dejan Ljubisavljevic, University of Belgrade, Faculty of Civil Engineering, Serbia and Montenegro (*only UNESCO part*)
 - Prof. Cvetanka Popovska, University of Ss. Cyril and Methodius, Faculty of Civil Engineering, Skopje, Former Yugoslav Republic of Macedonia (FYR Macedonia)
 - Dr. Manjola Banja, Hydrometeorological Institute, Tirana, Albania
 - Asst. Prof. Davor Malus, University of Zagreb, Faculty of Civil Engineering, Zagreb, Croatia
- most of whom are members of UNESCO Chair / INWEB.

1.3. Workshop Announcement

The workshop was officially announced in May 2004 as follows:

**The Internationally Shared Aquifer Resources Management - Mediterranean ISARM - MED
Consultative Meeting**

**KEY ISSUES FOR SUSTAINABLE MANAGEMENT OF TRANSBOUNDARY AQUIFERS IN
THE MEDITERRANEAN AND IN SOUTH EASTERN EUROPE (SEE)**

**Thessaloniki, Greece
21-23 Oct. 2004**

Organised by

**UNESCO Chair / INWEB (Int. Network of Water Environment Centres for the Balkans)
AUTH (Aristotle University of Thessaloniki) (Greece)
Hellenic National Commission for UNESCO (Athens)
IAH / TARM Commission (Int. Association of Hydrogeologists / Transboundary Aquifer
Resource Management)**

In cooperation with

- UNESCO-IHP (Int. Hydrological Programme)
UNECE (Economic Commission for Europe: Working Group on
Monitoring & Assessment) (Switzerland)**
- **ESCWA (The Economic and Social Commission for W. Asia) (Lebanon)
OSS (Observatoire du Sahara et du Sahel) (Tunisia)**

1. OBJECTIVES

In order to help resolve problems of water use, environmental protection and economic development in SEE and the Mediterranean, there is a need to improve cooperation between countries sharing transboundary aquifers.

The workshop objectives are:

- to review the available data collected during the first phase of the ISARM Inventory of the Transboundary Aquifers of OSS Mediterranean Countries.
- to learn from the experience gained in the ESCWA region and to coordinate with ESCWA on the preparation of a Mediterranean inventory.
- to compile an inventory of the Balkans region following the ISARM framework document guidelines.
- to identify the key issues for sustainable management of transboundary aquifers in SEE and the Mediterranean area.
- To create an appropriate database at the UNESCO-WMO IGRAC Centre and develop a GIS-based inventory of shared aquifers in the Mediterranean region and SEE. This inventory may serve as a basis for formulating specific local projects for cooperative actions.

2. BACKGROUND

The need for international cooperation on the sustainable management of transboundary groundwater resources in the Balkans is particularly acute, and there are many examples where potential conflicts in the use of international groundwaters could arise. Prior to 1992 there were only six international river basins in the Balkans, whereas after the collapse of the Yugoslav Federation, the number of internationally shared river basins in the area more than doubled. Today in fact there are 13 international shared river basins as well as 4 transboundary lake basins. Institutions dealing with water problems in the region need support to use modern information and communications technologies for monitoring, modelling and water management studies.

The water resources in the semi-arid northern part of the UN-ESCWA region are dominated by groundwater characterized by significant and large shared aquifers located in the Eastern and Southern sections of the Mediterranean basin. UN-ESCWA gives high priority to sustainable development and joint management of transboundary groundwater resources and has carried out important aquifer studies in the region. UN-ESCWA is a partner in the ISARM initiative and is currently concluding two important ISARM case studies on the regional Basalt Aquifer system in Jordan and Syria and on Paleogenic Carbonate Aquifers, which are both represented within the Mediterranean basin.

The work for this project is based on previous programmes and initiatives such as:

- ISARM, UNESCO, IAH, UNECE, FAO (Food and Agriculture Organisation)
- The European Water Initiative
 - The Athens Declaration
 - The UNECE Guidelines on Monitoring and Assessment of Transboundary Groundwaters
 - The OSS programme on arid zones
 - The ESCWA findings on legal frameworks.

3. METHODOLOGY

Before the workshop ESCWA, UNECE, UNESCO and OSS will compile a draft document presenting the state of knowledge on shared aquifers in the region based on the ISARM questionnaire. Using this information, experts from OSS and SEE will be invited to identify key issues and problems for the sustainable management of aquifers in the region at the three-day workshop in Thessaloniki, Greece. At the workshop they will work together to initiate the preparation of an Atlas of International Aquifers in the Mediterranean Region, to define support mechanisms to improve cooperation for the better use and protection of shared groundwater resources in the region, and to identify tools to help countries better evaluate their groundwater resources.

WORKSHOP OUTPUTS/RESULTS

2. Major outputs and related results

As far as monitoring and cooperation between countries for common management of internationally shared aquifer resources are concerned, the actual situation in the Balkans is far from satisfactory.

Although there are some good examples of ongoing programmes on transboundary water cooperation in the region, for most of the sub-Danubian river basins such activities are very scarce and lack coordination.

Lessons concerning international cooperation may be drawn from the activities of the Danube River Basin Programme, which was initiated in 1994 by the Danube River Protection Convention (DRPC), and also from the ongoing Lake Ohrid Conservation Project. The UNECE Water Convention provides guidelines and scientific case studies in transboundary waters, which are a good model to follow when addressing specific issues observed in the Balkans, such as:

- Lack of information and reliable data
- Insufficient monitoring, lack of common approaches
- Over-exploitation of groundwater resources
- Deterioration of groundwater quality
- Potential tensions in sharing international aquifers, especially during drought periods
- Weak institutional capacity and degradation of technical infrastructure
- Lack of bilateral and multilateral agreements
- Non integrated administrative policy for environmental protection

One major result of the workshop was the updated inventory of transboundary aquifers in SEE. This should be improved and disseminated to parties at different levels (local, regional and national authorities, citizens, NGOs, governments, EU, UN, international donors). This inventory can be considered as the main product of phase I of this ISARM-Balkans regional project. The main characteristics of the project were identified during the final plenary session of the Thessaloniki workshop (see next paragraph on workshop recommendations).

In order to ensure the joint management of surface and groundwaters and to attain the long-term goals and sustainability of ISARM-Balkans the following actions were decided upon during the general discussion:

Establish a general cooperation framework for all sub-Danubian internationally shared surface and groundwaters, i.e. promote a *Regional Convention for Trans-Balkan Water Management* (TRANSWATER-Balkans) to be signed by all interested governments.

TRANSWATER-Balkans should promote and integrate specific and detailed bilateral or local cooperation agreements for transboundary surface and groundwater management in the Balkans.

A main element of TRANSWATER-Balkans should be the elaboration of a Water Action Plan (WAP) covering the whole Balkan region (WAP-Balkans), and describing the common methodology and steps to be undertaken for ISARM-Balkans for the sustainable management of international surface waters in the region

Based on the findings and recommendations of the Thessaloniki workshop some specific pilot projects (given in Annex 3) should be promoted to international donors. These pilot projects may effectively start the implementation stage of ISARM-Balkans.

WORKSHOP RECOMMENDATIONS

**3. Workshop Recommendations:
Towards a Regional Initiative for Transboundary Aquifer Resources Management in SEE**

TITLE OF PROGRAMME

A regional initiative for Internationally Shared Aquifer Resources Management in the Balkans: (ISARM-Balkans)

PARTNERS

All Balkan countries and especially those eligible for GEF funding.

MAIN OBJECTIVE

Joint investigation of alternative strategies for actions on sustainable management and environmental protection of transboundary groundwater resources and socio-economic regional development.

TYPE OF PROJECT

Regional cooperation: region-wide cooperation in research, development, innovation, technology transfer, capacity building, education and training, public participation.

ISSUES

- Scientific assessment – harmonisation of knowledge and data base
- Socio-economic assessment and priorities
- Cooperative frameworks / Institutional analysis / general framework required (UNECE, EU Water Directive)
- Awareness and communication / Education & training / Capacity building
- Involvement of expertise from the Balkans and other regions, notably ESCWA, OSS and ISARM programmes in other regions
- Petersberg and Athens processes, EU programmes, EU Water initiative/GWP Med, GEF, MED-MAP programmes

MAJOR REGIONAL ACTIVITIES

- Regional scientific inventory (to be continuously improved), with expert agreement on available aquifer water resources in the region. Harmonisation of data management procedures and data exchange
- Development of a digital working environment: Collation of guidelines and different scientific practices
- Identification of common scientific methodologies and how to apply them: e.g. for karstic aquifers and water uses such as water supply, ecological purposes, irrigation, hydropower
- Addressing special problems (e.g. groundwater - coastal water interaction, legal issues)
- Identification of ways in which water-related problems may be linked to common socio-economic and environmental aspects and their related institutional issues
- Integration of groundwater and surface water management (frameworks and institutions)
- Development of sub-regional bi- or trilateral pilot demonstration projects covering issues such as the application of new tools and methodologies (e.g. artificial recharge, innovative technologies)

STRATEGIC PARTNERSHIPSPHASED DEVELOPMENT

Stage I: Inventories, documentation, initial prioritisation (IN PROCESS)

Stage II: Development of methodologies for management and detailed analyses (REQUIRED)

Stage III: Implementation (ANTICIPATED)

TENTATIVE SPONSORS

GEF, EU, MED-MAP, National Authorities.

Date: 6 December 2004

Signature:

LIST OF PROJECTS

4. Suggested List of Projects (*)

	TITLE OF PROJECT	COUNTRIES	KEY ISSUES	SUB-ISSUES
1	Sustainable water management of the Dinaric karst region	BIH and Croatia	Pollution management (health), hydraulic management, hydropower Hutovo Blato wetland marsh	
2	Sava aquifer. Sustainable development, management, pollution control and flood protection across the border with BIH	Croatia, S&M and BIH	Water supply and irrigation	
3	International legislation regarding transboundary rivers affecting national aquifers	Sava: Slovenia: Croatia, BIH and S&M Danube: Hungary, S&M, Romania, and Bulgaria	Artificial recharge	Examples of existing legislation from legal framework of Sava and Danube Rivers.
4	Multilateral legal harmonisation over groundwater protection issues in the transboundary aquifer regions	Romania, Hungary, S & M and Bulgaria.		
5	Assessment and sustainable development of multi-functional and multi-layered deep transboundary aquifers	Romania, Hungary, S & M and Bulgaria	Characteristics and functions of different layers, and relationship between them.	

(*) Not in order of priority

Suggested List of Projects (cont'd) (*)

	TITLE OF PROJECT	COUNTRIES	KEY ISSUES	SUB-ISSUES
6	Salt water intrusion in Delta Region of Evros/Meric/Maritca River	Turkey, Greece and Bulgaria	Salt water intrusion, agricultural, biodiversity, sustainable ecosystem realisation	Irrigation
7	Resource assessment for transboundary aquifers management	Turkey and Bulgaria	Data collection and harmonisation	
8	Integrated monitoring and management of upper Jurassic /lower Cretaceous transboundary groundwater body	Romania and Bulgaria	Region with scarcity of surface water - groundwater supply therefore of great importance. Connection of sea water intrusion from the Black Sea with surface ecosystems	
9	Integrated monitoring and management of Sarmatian aquifer	Bulgaria and Romania	Scarcity of surface water and problems of overexploitation and pollution of aquifers connected to surface water systems. Problems of ecosystem degradation and sea water intrusion	
10	Establishment of a cooperative framework for karstic aquifers in SEE using a web supported information and communication platform	Slovenia, Croatia and all karst regions in SEE	Web site, discussion forum for experts and institutions	

(*) Not in order of priority

Suggested List of Projects (cont'd) (*)

11	Sustainable management strategies	All SEE countries		
12	Integrated surface and groundwater management in <u>Prespa</u> Lakes catchment area	FYR Macedonia, Albania, Greece	Lakes dependent on groundwater systems. Preservation of ecosystems, regional economic development, monitoring of groundwater	Biodiversity
13	Sustainable water management in Dojran Lake catchment area	FYR Macedonia and Greece	Groundwater/surface water interaction. Preservation of ecosystems, regional economic development, monitoring of surface and groundwater using ecological approach.	Inter-basin groundwater transfer
14	Management of deep aquifers using mathematical models in the region of Vojvodina/Banat	Romania, Hungary and S & M		
15	Groundwater dependent wetlands in Mura River basin	Slovenia and Croatia, Hungary and (Austria)	Biodiversity decline and wetlands ecosystem	
16	Submarine ecosystems related to karst submarine discharge	All Adriatic /Mediterranean coast countries	Submarine ecology, biodiversity	MED Action Plan

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(*) Not in order of priority

Suggested List of Projects (cont'd) (*)

17	Biodiversity inherent within the Dinaric karst system			
18	PIRIN National Park, groundwater, mountain lakes and springs partly situated in Mesta/Nestos River Basin, partly in Struma River Basin	Bulgaria and Greece	Environmental protection and interaction of groundwater with surface water (IWRM)	
19	Preservation and sustainable management of Vjosa/Aoos National Park	Albania and Greece	Environmental protection and interaction with surface water (IWRM)	
20	Role of aquifers in order to respond to climatic extremes		Climate extremes and their impact on karst aquifers	
21	Role of aquifers in retaining carbon-dioxide			
22	Land use change and its impacts on karstic aquifers			
23	Karst aquifer water quality protection	All coastal countries plus Bulgaria	Specific guidelines for monitoring and assessment, contamination transfer	

(*) Not in order of priority

MINUTES OF PLENARY SESSION

5. Plenary Session

General Workshop Recommendations

Date: Saturday, 23rd of October 2004

Chairman: Bo Appelgren (BA)

Participants: All workshop participants

BA presents and distributes an introductory paper describing the main issues and activities for a regional initiative for sustainable management of transboundary aquifers in the Balkans (ISARM-Balkans).

Jacques Ganoulis (JG) notices that the main issues of ISARM-Balkans may be grouped into three main categories

- 1) Scientific: both hydrological, water management and socio-economic studies.
- 2) Institutional frameworks: institutional analysis, agreements and capacity building, and
- 3) Education, training and public participation.

Ibrahim Gurer (IG) points out that data and opinions expressed in this meeting are only expert views yet to be approved by respective governments. Data access and sharing need the approval of governmental institutes.

JG agrees to mention in all documents that these are expert views, not yet officially endorsed by governments

Shammy Puri (SP) points out that 160 countries have officially approved the UNESCO-ISARM programme in UNESCO-Paris. He agrees that data submission should be approved by governments.

Mihai Viorel Bretotean says that the term Balkans should be considered as being synonymous with that of South Eastern Europe. (SEE). As Romania belongs to the Balkans, the definition of the term Balkans in the "Introduction" of the draft inventory on international groundwater in the Balkans" should be corrected.

BA: Regional cooperation should be the fundamental element of the ISARM-Balkans programme

JG: It is essential that a formal regional cooperation agreement be developed (like the one for Danubian countries). A similar agreement should be developed for all sub-Danubian countries and respective international waters. Within this regional framework, more specific bi-or tri-lateral agreements should be developed.

Vladimir Stavrlic expresses the opinion that the general framework agreement should mainly include general principles adapted to the region and not enter into details. Responsible institutions of the countries involved should be listed. Bilateral agreements are also necessary for more analytical description of the specific problems and issues.

Yusuf Al-Mooji: Need for common methodology and harmonisation.

Francesca Bernadini: UNECE already has general cooperation frameworks available

Dimitris Faloutsos: Include INWEB/EU initiatives/GWP Med as strategic partners

IG: proposes to develop an introductory paragraph, describing the main issues.

SP: We should consider regionalisation by specific types of aquifers and not by geographical entities.

General Comments

- It was agreed to establish a list of projects to be proposed as pilot projects for funding by international donors. (*see List of Projects*)
- The umbrella project should be the ISARM-Balkans programme
- Priorities and criteria should focus on projects that are eligible for financing by GEF.
- It is suggested that on the programming of GEF projects UNESCO/ISARM and Bo Appelgren, who is very familiar with GEF requirements should develop further the programming and formulation of a regional ISARM-Balkans strategy including the objectives and outcomes - based on identified funding options. The strategy would provide the opportunities for regional consensus building consultations with the participation of decision makers and in line with the workshop's main recommendations.

Next stage

- Within the next 6-8 months projects for potential funding should be elaborated
- Proposal should be addressed to GEF/PDF B
- The continued support of this initiative by UNECE should be ensured
- Governments should be contacted, because pilot projects should be demand driven
- Karst groundwater protection should be considered a priority
- The draft inventory should be finalised by 15 November
- The project list should be reformulated into a matrix and sent to all participants for comment within the next month
- One contact person from each country should be designated
- The draft directory and workshop presentations should be made available on IGRAC, UNECE and INWEB's web sites

ANNEX 1 (List of Participants)

**The Internationally Shared Aquifer Resources Management-Mediterranean
ISARM-MED
Consultative Meeting**

**KEY ISSUES FOR SUSTAINABLE MANAGEMENT OF TRANSBOUNDARY AQUIFERS IN
THE MEDITERRANEAN AND SOUTH EASTERN EUROPE**

Thessaloniki, Greece, 21-23 Oct. 2004



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ANNEX 2 (Workshop Agenda)

UNESCO-ISARM-MED Consultative Meeting
KEY ISSUES FOR SUSTAINABLE MANAGEMENT OF TRANSBOUNDARY
AQUIFERS IN THE MEDITERRANEAN AND IN SOUTH EASTERN EUROPE
(SEE)

21st – 23rd October 2004, Thessaloniki, Greece

Programme

Thu. 21st October 2004: **INTRODUCTION AND DRAFT INVENTORY**

- 08:00-09:00:** Registration
- 09:00-09:30:** Welcome by Greek representatives (Ministry, Rector, INWEB representative)
- 09:30-10:00:** Dr. A. Aureli, UNESCO IHP "Overview of the project."
- 10:00-11:00:** Prof. J. Ganoulis, INWEB "Main objectives in medium and long term scales: setting the stage."
- 11:00-11:30:** Coffee
- 11:30-13:00:** Dr. R. Enderlein, UNECE "An introduction to the role of the UNECE convention on the protection and use of transboundary groundwaters in the UNECE region."
 Dr. Z. Busas, UNECE "The inventory of transboundary groundwaters in the UNECE region."
 Dr. G. Arnold, UNECE "UNECE guidelines on monitoring and assessment of transboundary groundwaters and the pilot projects."
 Dr. J. Chilton, UNECE. "The difference between monitoring and assessment for groundwater and surface water."
- 13:00-14:30:** Lunch
- 14:30-15:00:** Prof. J. Margat, BRGM, Orleans "Groundwater and transboundary aquifers in the Mediterranean basin."
- 15:00-15:30:** Dr. Y. Al-Mooji, ESCWA "The situation in the Middle-East."
- 15:30-16:00:** Dr. D. Latrech, A. Mamou, OSS "The situation in N. Africa."
- 16:00-16:30:** Coffee
- 16:30-17:00:** Dr. S. Puri, ISARM "The worldwide ISARM programme and the suggested next steps in the Balkans."
- 17:00-17:30:** Dr. M. Miletto, OAS "The situation in the Americas."

Fri. 22nd October, 2004: **UPDATE OF AVAILABLE DATA**

- 09:00-09:30: Dr. B. Appelgren, FAO "Sustainable groundwater management - Institutional and socio-economic aspects."
 09:30-10:00: Dr. S. Burchi, FAO "Legal instruments for transboundary groundwater resources management". (Co-author of presentation Ms. Kerstin Mechlem).
 10:00-10:30: Dr. A. Merla, GEF "GEF and groundwaters."
 10:30-11:00: Dr. J. Van der Gun, IGRAC. "IGRAC and transboundary aquifers."

11:00-11:30: Coffee

- 11:30-11:45: Dr. M. Banja Harja, Hydrometeorological Institute: Albania
 11:45-12:00: Dr. N. Lukovac, Institute of Hydro-Engineering, Sarajevo: Bosnia and Herzegovina
 12:00-12:15: Prof. D. Malus, University of Zagreb: Croatia
 12:15-12:30: Dr. R. Gorova, Ministry of Environment & Water, Sofia: Bulgaria
 12:30-12:45: V. Stavric, UNDP, Skopje: FYR Macedonia
 12:45-13:00: IGME Representatives: Greece

13:00-19:00 Study trip to Vergina with lunch en route.

Sat. 23rd October 2004: **WORK IN GROUPS-CONCLUSIONS AND RECOMMENDATIONS**

- 09:30-09:45: Dr. M. Bretotean, National Institute of Hydrology and Water Management, Bucharest: Romania
 09:45-10:00: Dr. L. Globevnik, University of Ljubljana: Slovenia
 10:00-10:15: Prof. S. Cokgor, Istanbul Technical University: Turkey
 10:15-10:30: Dr. S. Jovanovic, University of Belgrade: Serbia & Montenegro
 10:30-11:00: Dr. V. Constantianos: GWP-Med, Greece

11:00-11:30: Coffee

11:30-12:00: S. Puri and J. Ganoulis: "Suggestions for working groups."

12:00-13:30: Lunch

13:30-15:30: Work in 3 groups

- Group1: Monitoring and modelling
- Group2: Developing synergies
- Group 3: Setting joint management framework

15:30-16:00: Coffee

- 16:00-17:30: Closing Session
- Group reports
 - Criteria for developing case studies
 - Prioritisation and seeking additional support

Sun. 24th October 2004:

Departure of participants

ANNEX 3 (Presentations and Papers)

ANNEX 4 (Inventory of Internationally Shared Aquifers)

