



# **UNESCO CHAIR AND NETWORK**

For the Sustainable Management of Water and Conflict  
Resolution

## **THE INTERNATIONAL NETWORK OF WATER- ENVIRONMENT CENTRES FOR THE BALKANS INWEB**

### **ACTIVITY REPORT**

**01 Jan 2007 – 31 Dec 2008**

September 2009

**UNITWIN/UNESCO Chairs Programme  
Progress report**

**Period of activity:** 01 January 2007 – 31 December 2008

**Title of the UNESCO Chair and Network:** International Network of Water Environment Centres for the Balkans (INWEB)

**Report established by:** Jacques Ganoulis

**Function / Title:** Chair holder and Coordinator / Professor

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## Summary

The principal objective of INWEB and its related cooperation programmes is to promote and ensure a “Sustainable Management of Water and Conflict Resolution”, with special attention to transboundary issues in South Eastern Europe (SEE, the Balkans). INWEB is an active network, composed of main partners from all the 10 Balkan countries. The principal outcomes/results/impact obtained in this period may be summarised as follows:

- Revised INWEB website with new database on transboundary aquifers in the Balkans powered by Google Earth. The interactive map allows visitors to take a tour of 65 locations in different river basins in the Balkans, zoom into selected aquifer locations, and access information on aquifer properties, hydrology, hydrogeology, water uses and policy. (UNESCO BRESCE TRANSKARSTBA project). This is a useful tool for the integrated management of transboundary karst aquifers in SEE.  
<http://www.unesco.org/venice>  
[http://www.inweb.gr/index.php?option=com\\_inweb\\_maps&Itemid=199](http://www.inweb.gr/index.php?option=com_inweb_maps&Itemid=199)
- Compilation of database on shared aquifers in the Mediterranean region on water availability, use and demand from existing databases in relevant UN agencies (UN-ESCWA project on “Capacity building for the sustainable modelling, management and protection of internationally shared groundwater in the Mediterranean region”), with follow up workshop on database content, use and maintenance. The database provides a useful tool for the integrated management of transboundary groundwaters in the Mediterranean.  
<http://www.escwa.org.lb>  
[http://www.inweb.gr/index.php?option=com\\_inwebmedamaps&Itemid=201](http://www.inweb.gr/index.php?option=com_inwebmedamaps&Itemid=201)  
[http://www.inweb.gr/index.php?option=com\\_inwebmedamapseast&Itemid=204](http://www.inweb.gr/index.php?option=com_inwebmedamapseast&Itemid=204)  
[http://www.inweb.gr/index.php?option=com\\_content&view=article&id=252:escwa-workshop-on-shared-aquifers-database-for-meda-region-&catid=58:events&Itemid=190](http://www.inweb.gr/index.php?option=com_content&view=article&id=252:escwa-workshop-on-shared-aquifers-database-for-meda-region-&catid=58:events&Itemid=190)
- Workshop on Transboundary Groundwaters in SEE: Assessment and Future Perspectives. (Supported by UNESCO IHP, UNECE). The results of the workshop facilitate the identification and prioritisation of follow-up activities on transboundary groundwater in the region.  
<http://www.unesco.org/ihip>,  
<http://www.unece.org>,  
[http://www.inweb.gr/index.php?option=com\\_content&view=article&id=254:workshop-on-transboundary-groundwaters-in-see-&catid=58:events&Itemid=190](http://www.inweb.gr/index.php?option=com_content&view=article&id=254:workshop-on-transboundary-groundwaters-in-see-&catid=58:events&Itemid=190)

- Promotion of demonstration transboundary basin of Mesta/Nestos River (UNESCO Hydrology for Environment, Life and Policy programme (HELP). The HELP programme has an impact on bridging the gap between science and policy and achieving the UN Millennium Development Goals.  
<http://unescohelp2007.com>
- Proposal to twin transboundary Mesta/Nestos River basin (Bulgaria/Greece) with that of San Pedros River (US/Mexico) to promote exchange of expertise and experience. (TwinBasin project). The TwinBasin project has an impact on capacity building for river basin authorities.  
<http://www.twinbasin.org>
- Workshop on Pinios River basin focusing on issues concerning the EU Water Framework Directive (SPI-Water project)  
<http://www.spi-water.eu>,  
[http://www.inweb.gr/index.php?option=com\\_content&view=article&id=253:spi-water-workshop-&catid=58:events&Itemid=190](http://www.inweb.gr/index.php?option=com_content&view=article&id=253:spi-water-workshop-&catid=58:events&Itemid=190)
- Workshop on Developing Regional Cooperation for Shared Karst Aquifer Management in SEE, 27-28 Jun 2008 (UNESCO BRESKA GOTRANSKARSTBA project on improving water governance for managing transboundary karst aquifers in the Balkans).  
<http://www.unesco.org/venice>,  
[http://www.inweb.gr/workshops/Workshop\\_Thessaloniki\\_June\\_08/Agenda\\_and\\_Presentations\\_Workshop\\_Thessaloniki\\_June\\_2008.html](http://www.inweb.gr/workshops/Workshop_Thessaloniki_June_08/Agenda_and_Presentations_Workshop_Thessaloniki_June_2008.html)
- IV International Symposium on Transboundary Waters Management, 15-18 Oct 2008. This major event attracted over 170 participants and aimed to assess the state of the art and the progress recently made in the sustainable management of transboundary waters by different disciplines such as law, socio-economics and water science. to review current major international programmes concerned with the assessment and management of transboundary water resources and to promote interdisciplinary approaches for integrated transboundary water resources management. This international conference resulted in the publication of the Thessaloniki Statement  
<http://www.inweb.gr/twm4/>,  
<http://www.inweb.gr/twm4/files/Thessaloniki%20Statement%20Final%20Version.pdf>
- UNESCO Pilot course on Transboundary Groundwater Integrated Management, 13-14 Oct 2008. This course was developed by a UNESCO IHP Task Force on Transboundary Groundwater Education to promote inter-disciplinary and inter-professional practical tools to facilitate concrete responses to transboundary groundwater sustainable management issues.  
<http://www.unesco.org/ihp>,  
[http://www.inweb.gr/index.php?option=com\\_content&view=article&id=255:unesco-pilot-course-on-transboundary-groundwater-management-&catid=59:education-training&Itemid=147](http://www.inweb.gr/index.php?option=com_content&view=article&id=255:unesco-pilot-course-on-transboundary-groundwater-management-&catid=59:education-training&Itemid=147)

## I. Address and Contact

	Address of the Host Institution	Address of the Chairholder (or coordinator) Other contact person
Name Function/Title University/Institution Faculty/Department/Centre P.O. Box Street Postal Code City Province Country Phone Fax E-mail Website of UNESCO Chair or UNITWIN Network Website of Host Institution	Aristotle University of Thessaloniki  University Campus  54124 Thessaloniki Macedonia Greece  <a href="http://www.auth.gr">www.auth.gr</a>	Jacques Ganoulis Coordinator/Professor  Aristotle University of Thessaloniki Department of Civil Engineering, Division of Hydraulics and Environmental Engineering University Campus  54124 Thessaloniki Macedonia Greece (+30)(2310 99 56 82 (+30)(2310) 99 67 81 <a href="mailto:iganouli@civil.auth.gr">iganouli@civil.auth.gr</a> <a href="http://www.inweb.gr">www.inweb.gr</a>

## **II. Available resources**

### **1. Human resources**

Provided by host institution Aristotle University of Thessaloniki (AUTH)

<http://www.auth.gr>

[http://www.auth.gr/inter/unesco/index\\_el.html](http://www.auth.gr/inter/unesco/index_el.html)

- Status of the Chair in the organisational structure of the Institution (number of posts contributing to the Chair)  
UNESCO Chair & Network hosted by AUTH  
1 full Prof., 1 Secretary, 1 Technical Assistant
- Number of academic staff (part time), full professors, researchers, lecturers  
2 full Prof., 3 assistant. Prof., 3 researchers
- Number of visiting staff  
Variable (one or two)
- If there are other staff or groups contributing to the Chair or Network, please indicate their number and status (postgraduate students, advisors, consultants, experts, NGOs, etc)  
All 10 active members of INWEB  
3 graduate students, 3 experts, 1 Non-Governmental Organisation (NGO)
- Number of administrative staff  
2 part time

### **2. Other resources**

- Financial contributions  
Provided by various institutions financing specific projects.  
Amount is variable, depending on specific projects.  
Projects have specific objectives.
- Material resources  
Provided by AUTH:  
Telephone, fax, stationery, heating, lighting, electricity.  
Internet connection, office equipment.  
All used for running the UNESCO Chair and Network INWEB.
- Space placed at the disposal of the Chair and Network  
Provided by AUTH:  
Office space (approx 20m<sup>2</sup>).  
Meeting room (up to 150 persons).  
Reception area (approx 50 m<sup>2</sup>).  
All shared with other functions of the Aristotle University of Thessaloniki.

### III. Activities

#### 1. **UNESCO IHP, UNESCO BRESCE (ROSTE), ECE, GEF, UNDP and ESCWA Research, Capacity Building and Training Programmes, meetings, conferences and workshops.**

- 1.1 Title: Managing Transboundary Karst Aquifers in the Balkans (TRANSKARSTBA).  
Duration: (2006) 1 year, completed in 2007  
Target groups: Scientists, policy makers, diplomats, public institutions and administrators.  
Geographical coverage for partners and participants: Greece, Albania, Bulgaria, FYR of Macedonia, Romania, Slovenia, Croatia, Serbia, Bosnia & Herzegovina, Turkey.  
Intended use of results:
- Review and publication of inventories on internationally shared surface and groundwaters in SEE
  - Development on the WEB of a special site on transboundary karst in SEE including common databases.
  - Setting of priorities for local cooperative studies and formulation of a project on transboundary karst
- Website: <http://www.unesco.org/venice>
- 1.2 Title: Sound Management of the Dinaric Karst Transboundary Aquifer System (DiKTAS). This project (Preparation Phase Grant -PPG- of the Full Size Project -FSP-) was under preparation during 2007, and commenced in 2008.  
Duration: 2 years  
Target groups: Scientists, policy makers, diplomats, public institutions and administrators.  
Geographical coverage for partners and participants: Croatia, Serbia, Montenegro, Bosnia & Herzegovina, Albania, FYR Macedonia (with Slovenia, Italy, Greece).  
Intended use of results:
- reduced environmental stress derived from the disintegrated management of its water and land resources and the means to link these towards the preservation of the unique aquatic habitats that depend on the Dinaric Karst waters.
  - a sound foundation, in terms of political agreements, drawing on scientific hydrogeological analyses, to identify the issues that are significant for Karst aquifers in terms of transboundary impacts
  - a strengthened regional and national capacity to address the risks emanating from transboundary impacts of land use on the Karst Aquifer and to its ecosystems and biodiversity, based on regular data exchange
  - demonstration of the viability of innovative solutions and approaches to manage and mitigate the risks in priority regions where urgent actions are deemed to be necessary.
- Website: <http://dinaric.iwlearn.org/>
- 1.3 Title: Hydrology for the Environment, Life and Policy (HELP) Programme: The case of the Mesta/Nestos River:  
Duration: 2004 - indefinite  
Target groups: Public institutions and administrators, all citizens  
Geographical coverage for partners and participants: Europe, Africa, and Asia  
Intended use of results:
- Developing tools for IWRM
  - Application to the transboundary Mesta/Nestos River catchment (Greece-Bulgaria).
  - Implementation of EU Water Framework Directive
- Website: <http://www.unesco.org/water/ihp/help>
- 1.4 Title: Capacity building for sustainable utilisation, management and protection of internationally shared groundwater in the Mediterranean region  
Duration: (2004-2007) 3 years  
Target groups: Representatives of water management institutions in selected MEDA countries and European Union Member States in the region.  
Geographical coverage for partners and participants: Africa, Europe, Asia  
Intended use of results:

- increased awareness and strengthened capacity of targeted beneficiaries to plan and management groundwater resources in the Mediterranean region.

This project is implemented by ESCWA in collaboration with UN-ECA, UN-ECE, UNESCO, UN-DESA and non-United Nations entities.

Website: <http://www.escwa.org.lb>

- 1.5 Title: Improving Governance for Managing Transboundary Karst Aquifers in the Balkans (GO-TRANSKARSTBA)  
Duration: (2007) 1 year  
Target groups: Scientists, policy makers, diplomats, public institutions and administrators  
Geographical coverage for partners and participants: Greece, Albania, Bulgaria, FYR of Macedonia, Romania, Slovenia, Croatia, Serbia, Bosnia & Herzegovina, Turkey.  
Intended use of results:
  - Organise consultations with experts from the Balkans and select information on national governance of transboundary karst aquifers
  - Develop a transboundary karst aquifer knowledge base for SEE, and make it available on the WEB in GIS form.
  - Organise a workshop in Thessaloniki, Greece, in October 2007, in order to formulate recommendations and an action plan for long term sustainable management of transboundary karst aquifers in the region.
Website: <http://www.unesco.org/venice>
- 1.6 Participation at a workshop on Transboundary Aquifers organised by UNESCO IHP, the Académie de l'Eau and the BRGM, Paris, France, 29<sup>th</sup>-20<sup>th</sup> May 2007. The workshop underlined the importance of transboundary aquifers across the world and affirmed the interdisciplinary nature of water management as well as the necessity to create a common language between the different disciplines.  
Website: <http://www.unesco.org/ihp>
- 1.7 Presentation on "The Role of Regional Academic and NGO Partnerships in Promoting Water/Environmental Sustainability" at the UNESCO international conference on Higher Education for Sustainable Development, San Luis Potosi, Mexico, 5<sup>th</sup>-7<sup>th</sup> July 2007.  
Website: <http://www.hesd07.uaslp.mx/>
- 1.8 Participation at the UN-ESCWA Workshop on "Evaluation and Adaptation of Existing Water Visions/Forecasts for Shared Aquifer Management in the MEDA Region", Cairo, Egypt, 30<sup>th</sup>-31<sup>st</sup> July 2007.  
Website: <http://www.escwa.org.lb>
- 1.9 Presentation of work on involving stakeholders in transboundary water resources management in the Mesta/Nestos River basin between Bulgaria and Greece at the UNESCO HELP Symposium in Gauteng, South Africa, 4<sup>th</sup>-9<sup>th</sup> November 2007.  
Website: <http://unescohelp2007.com>
- 1.10 At the invitation of the president of the Hellenic National Commission for UNESCO, UNESCO Chair INWEB participated at a meeting held in Athens, Greece on 5th November 2007, chaired by the Director of UNESCO's Regional Bureau for Science and Culture in Europe, Mr. Englebert Ruoss. The purpose of the meeting was to explore and plan future areas of cooperation.  
Website: <http://www.unesco.org/venice>
- 1.11 Presentation on work on the "Development of joint databases for the management of shared aquifers" at two back to back workshops held in Cairo, Egypt, from 14<sup>th</sup>-17<sup>th</sup> January 2008 and organised by the UN Economic and Social Commission for Western Asia (ESCWA) in collaboration with the UN Economic Commission for Africa, ECA; UN Economic Commission for Europe, ECE; UN Educational Scientific and Cultural Organization International Hydrological Programme, UNESCO-IHP; and UN- Department for Economic and Social Affairs, UN-DESA, together The Arab Centre for the Studies of Arid and Dry Lands, ACSAD; and the Centre for Environment and Development for the Arab and Europe, CEDARE.

Website: <http://www.escwa.org.lb>

- 1.12 Presentation of a paper entitled "Communicating scientific results to stakeholders to facilitate the decision making" at the General Assembly of the European Geosciences Union (EGU). This was held in Vienna, Austria from 13<sup>th</sup> to 18<sup>th</sup> April 2008.  
Website: <http://www.egu.eu/>, <http://meetings.copernicus.org/egu2008/>
- 1.13 Participation at an International Roundtable on Stakeholder Public Participation for the Integrated Management of Shared Water Resources - The Case of Nestos/ Mesta River Basin, 15<sup>th</sup>-16<sup>th</sup> April 2008, Sofia, Bulgaria, organised by the Global Water Partnership - Mediterranean and the Global Water Partnership in the framework of the joint Petersberg Phase II / Athens Declaration Process, GEF IW:LEARN Activity D2, GEF SPM and the Mediterranean Component of the EU Water Initiative.  
Website: <http://www.watersee.net/mesta-nestos-river-basin.html>
- 1.14 Participation on the Scientific Committee and presentation at the 3rd International Conference on Managing Shared Aquifer Resources in Africa, 25<sup>th</sup>-27<sup>th</sup> May, 2008, Tripoli, Libya, organized by the General Water Authority, Libyan Arab Jamahiriya, UNESCO IHP and Sahel and Sahara Observatory. The conference provided input to the seventh phase of the UNESCO IHP, contributed to the current debate on transboundary aquifers management focusing on Africa, and provided information on the Global Environment Facility's International Waters Learning Exchange and Resource Network.  
Website: [www.unesco.org/water/ihp/pdf/isarm\\_tripoli\\_2008.pdf](http://www.unesco.org/water/ihp/pdf/isarm_tripoli_2008.pdf)
- 1.15 Presentation of a WEB-based database system of transboundary aquifers in the South East Europe (SEE) and also in the Euro-Mediterranean Partnership countries, highlighting the lessons learned that should be taken into account in designing the Convention metadata base. At the 9<sup>th</sup> Meeting of the Parties to the Convention on the Protection and Use of Transboundary Watercourses and International Lakes (Working Group on Monitoring and Assessment) 17<sup>th</sup>-18<sup>th</sup> June 2008, Geneva, Switzerland,  
Website: [http://www.unece.org/env/water/meetings/documents\\_WGMA.htm](http://www.unece.org/env/water/meetings/documents_WGMA.htm)
- 1.16 Participation at an international workshop on "Water and Climate Change in South-eastern Europe: Understanding Impacts & Planning for Adaptation", Tirana, Greece 24<sup>th</sup>-25<sup>th</sup> June 2008, organised by the World Bank in cooperation with the Albanian Ministry of Environment, Forestry and Water Administration and the Global Water Partnership Mediterranean. The workshop contributed to the Mediterranean Component of the EU Water Initiative (MED EUWI), and to collaborative efforts on current and emerging water issues.  
Website: <http://www.watersee.net/water-and-climate-change.html>
- 1.17 Participation on the international scientific committee and presentation at the UNESCO International Conference on Water Scarcity, Global Changes and Groundwater Management Responses, from 1<sup>st</sup>-5<sup>th</sup> December 2008, Irvine, USA This Conference, convened by UNESCO and the University of California Irvine, presented innovative and appropriate technologies to address water scarcity and global change effects on water availability and quality, explore the specific scientific and technical tools for groundwater studies and management, and discuss how to incorporate such technologies into short-term decision-making and long-term water management and policy-making.  
Website: <http://www.waterunifies.com/>



## **2. EU Research, Cooperation and Policy Programmes**

- 2.1 Title: A Regional Model for Integrated Water Management in Twinned River Basins (RIVERTWIN).  
Duration: March 1, 2003 to February 28, 2007 (3 years)  
Target groups: Public institutions and administrators, all citizens  
Geographical coverage for partners and participants: Europe, Africa, and Asia  
Intended use of results:
- Transfer of knowledge and technology to developing countries
  - Results may be used as tools for sustainable water resources management at river catchment scale.
  - Implementation of EU Water Framework Directive
- Website: <http://www.rivertwin.org>
- 2.2 Title: Cooperation Along a Big River: the case of Volga River (Russia) (CABRI – Volga).  
Duration: January 1 2004 – 31 March 2007 (2 years and 3 months)  
Target groups: Public institutions and administrators, all citizens  
Geographical coverage for partners and participants: Europe, and Asia  
Intended use of results:  
CABRI-Volga is an international coordination action to facilitate cooperation and to coordinate research in environmental risk management in large river basins in the EU, Russia & the New Independent States (NIS).
- Results will contribute to enhance existing initiatives on the development of coordination mechanisms along the basin, such as the establishment of the Volga Basin Council
- the establishment of a State Fund for the Protection of Small Rivers in the Volga Basin
  - the establishment of a national committee for the International Human Dimension Programme on Global Environmental Change
- Website: <http://www.cabri-volga.org>
- 2.3 Title: Science-Policy Interfacing in support of the Water Framework Directive implementation (SPI-Water). This project was under preparation during 2005.  
Duration: (November 1 2006 – 31 October 2008) 2 years  
Target groups: Scientists, policy makers, public institutions and administrators.  
Geographical coverage for partners and participants: Belgium, Italy, Netherlands, Spain, UK, Cyprus, Belgium, Greece, Belgium, Germany, France, Lebanon, Morocco.  
Intended use of results:
- The results will provide a mechanism allowing operational links between research scientists and policy makers, which will enhance progress with respect to the implementation of the EU Water Framework Directive with an impact on the European Water Initiative.
- Website: <http://www.spi-water.eu>
- 2.4 Title: TwinBasinXN (TB<sup>XN</sup>)  
Duration: 2003 – 2007 (4 years)  
Target groups: River basin organisations, Integrated Water Resources Management (IWRM) specialists, NGOs, companies, stakeholders in water uses  
Geographical coverage for partners and participants: Worldwide  
Intended use of results:
- To enhance human resources capacities and disseminate shared knowledge regarding administrative, technical, institutional aspects of managing river basins in different geographical, political or economic contexts.
- Website: <http://www.twinbasin.org>
- INWEB was also a partner involved in the preparation of 3 further EU research and cooperation initiatives, submitted under the EU 7th Framework scheme, which were not approved.
- 2.5 Sustainable large scale water sharing schemes to counteract risks related to long-term climate changes effects on the hydrological cycle (NEREIDES) (3 year project).

- 2.6 A New Strategy for Hydropower in Europe (HP Strategy). (2 year project).
- 2.7 Climate Change Impacts on Snow- and Ice-derived Water Resources and Adaptation Strategies in Mediterranean Mountain Regions (MountSnowMed) (4 year project).

### **3. NATO programmes**

- 3.1 Participation in the NATO ARW “Uncertainty and Decision Analysis” held in Lisbon, Portugal, 26th-29th April 2007. The workshop aimed to build a foundation to apply chemical risk assessment approaches and tools to a broad collection of non-chemical environmental stressors. The main objectives of the workshop were to conduct a critical review of the current technical and scientific status of non-chemical environmental stressors, to evaluate the potential application of current chemical risk analysis approaches to non-chemical stressors and to provide a comprehensive analysis of management alternatives. Within this larger context, systematic strategies for investigating and addressing uncertainty and its effect on modelling results and policy recommendations were given particular priority.  
Website: <http://www.risk-trace.com/portugal/index.php>
- 3.2 Participation in the NATO ARW “Dangerous Pollutants in Urban Water Cycle” held in Lednice, Czech Republic, 2<sup>nd</sup>-6<sup>th</sup> May 2007. The workshop focused on challenges in safety and security of water supply and sanitation, urban water resources management, dangerous pollutants in the urban water cycle, xenobiotics and their treatment, impact assessment and wastewater treatment and reuse.  
Website: [http://water.fce.vutbr.cz/NATO/nato\\_arw.htm](http://water.fce.vutbr.cz/NATO/nato_arw.htm)
- 3.3 Participation at the NATO Institute on Environmental Modelling workshop on “Uncertainties in Environmental Modelling and Consequences for Decision making” held in Vrsar, Croatia from 30th September-11th October 2007. The workshop covered topics related to modelling uncertainties, predicting global warming, the fate of pollutants in aquifers, and other environmental problems.

### **4. Dissemination of Knowledge, Results and Achievements**

- 4.1 Mediterranean EUWI/WFD Joint Process meeting, 17 January 2007, Athens, Greece. UNESCO Chair INWEB participated in the inception meeting of the Working Group on Shared Water Resources Management led by the Global Water Partnership – Mediterranean (GWP-Med). The overall objective of the Working Group is to promote synergies between competent EU and non EU partners of the Mediterranean region and to assist for a common approach on key aspects of joint management of shared surface and ground water resources.  
Website: <http://www.emwis.net/initiatives/medeuwi/JP>, <http://www.minenv.gr/medeuwi/>

## **5 Academic activities**

### ***5.1 Education (leading to certification) 2007-2008***

5.1.1 Title: Environmental Protection and Sustainable Development

Duration: 1 Semester

Target groups: Graduate students, 10 male, 15 female (variable)

Geographical coverage for partners and participants: National

(The course is run in cooperation with the Division of Hydraulics and Environmental Protection, Department of Civil Engineering, AUTH).

Expected results: Enhanced knowledge on environmental protection and sustainable development.

5.1.2 Title: Decision Theory and Risk Analysis

Duration: 1 Semester

Target groups: Graduate students, 10 male, 15 female (variable)

Geographical coverage for partners and participants: National

(The course is run in cooperation with the Division of Management and Regional Development, Department of Civil Engineering, AUTH).

Expected results: Enhanced knowledge on decision support and risk management in planning and operation of civil and environmental engineering activities.

## **5.2 Training**

5.2.1 Title: UNESCO Pilot Course on Transboundary Groundwater Management

Expected results: Participants will have enhanced inter-disciplinary and inter-professional practical tools at their disposal to enabling them to better facilitate concrete responses to transboundary groundwater sustainable management issues.

Duration and Place: 13<sup>th</sup>-14<sup>th</sup> October 2008, Thessaloniki, Greece

Target groups: engineers, economists, decision-makers, lawyers and sociologists involved in groundwater/environmental issues.

Geographical coverage for partners and participants: Argentina (2), Cameroon (1), Egypt (1), France (2), FYROM (1), Ghana (1), Greece (9), India (1), Italy (1), Namibia (1), Romania (1), Slovenia (1), South Africa (2), the Netherlands (1), Uganda (1), Ukraine (2), USA (2), Uzbekistan (1).

<http://www.inweb.gr/twm4/SideEvent.php>

## **6 Organisation of Conferences/ Meetings**

Title for each conference, meeting organized by the Chair/Network

Dates and place

Participants (*number and geographical coverage*)

6.1 Title: INWEB General Assembly

Date and Place: 9<sup>th</sup> January 2007, Thessaloniki, Greece

Participants: Total (10)

Greece (10)

6.2 Title: INWEB Board of Management meeting

Date and Place: 8<sup>th</sup> February 2007, Thessaloniki, Greece

Participants: Total (8)

Croatia (1), Greece (6), Slovenia (1)

6.3 Title: Workshop on Transboundary Groundwaters in SEE: Assessment and Future Perspectives

This workshop was coordinated by UNESCO Chair INWEB with the support of UNESCO IHP and UNECE. The workshop aimed to jointly review, agree and finalise the assessment of transboundary groundwaters in South Eastern Europe, and to identify possible follow-up activities in the region on transboundary groundwaters.

Date and Place: 23-24 April 2007, Thessaloniki, Greece.

Participants: Total: (17)

Bulgaria (1), Croatia (1), FYROM (1), Greece (5), Hungary (1), Italy (1), the Netherlands (1), Romania (1), Switzerland (1), Serbia & Montenegro (2), Slovenia (1), UK (1)

[http://www.inweb.gr/index.php?option=com\\_content&view=article&id=254:workshop-on-transboundary-groundwaters-in-see-&catid=58:events&Itemid=190](http://www.inweb.gr/index.php?option=com_content&view=article&id=254:workshop-on-transboundary-groundwaters-in-see-&catid=58:events&Itemid=190)

- 6.4 Title: SPI Water Pinios River Basin workshop  
Date and Place: 22<sup>nd</sup> October 2007, Thessaloniki, Greece  
Participants: Total (25)  
 Belgium (4), Greece (19), Italy (1), the Netherlands (1)  
<http://www.spi-water.eu>  
[http://www.inweb.gr/index.php?option=com\\_content&view=article&id=253:spi-water-workshop-&catid=58:events&Itemid=190](http://www.inweb.gr/index.php?option=com_content&view=article&id=253:spi-water-workshop-&catid=58:events&Itemid=190)
- 6.5 Title: UNESCO ESCWA workshop: Shared Aquifers Database for the MEDA Region: Content, Use and Maintenance.  
Date and Place: 26<sup>th</sup>-27<sup>th</sup> November 2007, Thessaloniki, Greece  
Participants: Total (18)  
 Algeria (1), Egypt (3), France (2), Germany (2), Greece (3), Jordan (1), Lebanon (3), Morocco (1), Palestine (1), Tunisia (1)  
[http://www.inweb.gr/index.php?option=com\\_content&view=article&id=252:escwa-workshop-on-shared-aquifers-database-for-meda-region-&catid=58:events&Itemid=190](http://www.inweb.gr/index.php?option=com_content&view=article&id=252:escwa-workshop-on-shared-aquifers-database-for-meda-region-&catid=58:events&Itemid=190)
- 6.6 Title: INWEB Board of Management meeting  
Date and Place: 8<sup>th</sup> January 2008, Thessaloniki, Greece  
Participants: Total (4)  
 Greece (4)
- 6.7 Title: INWEB General Assembly  
Date and Place: 22<sup>nd</sup> January 2008, Thessaloniki, Greece  
Participants: Total (10)  
 Greece (10)
- 6.8 Title: IV International Symposium on Transboundary Waters Management  
Date and Place: 15<sup>th</sup>-18<sup>th</sup> October 2008, Thessaloniki, Greece  
Participants: Total (169)  
 Albania (8), Algeria (1), Argentina (2), Australia (1), Azerbaijan (1), Belgium (1), Botswana (1), Brazil (3), Bulgaria (2), Burkina Faso (1), Cameroon (1), Canada (2), Chile (1), China (1), Croatia (5), Denmark (1), Egypt (4), Ethiopia (1), Finland (1), France (8), FYROM (2), Germany (4), Ghana (1), Greece (32), Hungary (1), India (2), Iran (1), Israel (1), Italy (8), Jordan (3), Kuwait (1), Malaysia (2), Mexico (2), Moldova (1), Namibia (2), Netherlands (1), Palestine (1), Portugal (2), Romania (2), Russia (14), Saudi Arabia (2), Serbia (6), Slovenia (3), South Africa (7), Spain (2), Turkey (1), Uganda (1), UK (2), Ukraine (2), USA (12), Uzbekistan (2).  
[www.inweb.gr/twm4](http://www.inweb.gr/twm4)

## **7 Interuniversity Exchanges/ Partnerships**

*(Please specify:*

*Name and institutions involved in the exchange and partnership, number of persons- staff and students received, staff and students sent on exchange)*

EU Socrates Programme. 2-5 student exchanges per year between France, Germany, Austria and Greece.

## 8 **Publication and multimedia materials**

*(Please estimate costs of publications and expected revenues from their sale)*

### Articles in Journals

- Ganoulis J., Levner, E., 2008, Risk-based integrated management of transboundary water resources: A general framework”, *Int. J. of Risk Assessment and Management* Vol. 10, 4, pp. 291-311
- Mpimpas H., Anagnostopoulos P., Ganoulis J., 2008, Uncertainty of Model Parameters in Stream Pollution Using Fuzzy Arithmetic, *Journal of Hydroinformatics*, Vol 10, No 3, Pp. 189–200
- Levner E., De Pablo, D. A. L., Ganoulis J., 2008, Risk management of transboundary water resources using the green supply chain approach. *Int. J. of Risk Assessment and Management* Vol. 10, 4, pp. 357-372
- Arfib B., De Marsily G., Ganoulis J., 2007, Locating the zone of saline intrusion in a coastal karst aquifer using spring flow data, *Ground Water*, Vol. 45, 1, 28-35 Ganoulis J., 2007, Risk-based integrated management of transboundary water resources: A general framework, *International Journal of Risk Assessment and Management* (accepted, in print).

### Articles in books

- Ganoulis J., 2007, Modelling Water Quality for Integrated Water Resources Management at the Basin Scale, *Dangerous Pollutants (Xenobiotics) in Urban Water Cycle*, Eds. Hlavinek P. et al., NATO Series, Lednice .
- Ganoulis J., 2007, Integrated Flood Risk Management: The Cabri-Volga project, Risk, Uncertainty and Decision Analysis for Environmental Security and Non-Chemical Stressors, Eds. Linkov I. et al., NATO Series, Lisbon.
- Ganoulis J., 2007, Environmental and Human Security in the Mediterranean, *Environmental Security in Harbors and Coastal Areas*, Eds. Linkov I., Kiker G., Wenning R., Springer, 1-11.
- Ganoulis J., 2007, Multicriterion Decision Analysis for Conflict Resolution in Sharing Groundwater Resources, *Overexploitation and Contamination of Shared Groundwater Resources: (Bio)Technological and Political Approaches to Avoid Conflicts*, Eds. Darnault C. et al., Springer, The Netherlands, Ch. 17 (in print).
- Ganoulis J., 2007, A Risk–Based Integrated Approach for Managing Transboundary Groundwater Resources, *Overexploitation and Contamination of Shared Groundwater Resources: (Bio)Technological, And Political Approaches to Avoid Conflicts*, Eds. Darnault C. et al., Springer, The Netherlands, Ch. 15 (in print).

### Teaching Material

- Ganoulis J., 2007, Cooperation and Prevention of Conflicts in the Management of Transboundary Waters in South East Europe, *UNESCO PCCP Series no. 37, 38 & 39*, UNESCO, Paris (in print).

## IV Outcomes

Please describe shortly (up to 500 words) the major outcomes of the Chair/Network with special reference to their impact on the human, social, economical and cultural development at local, national, regional or international level. Whenever applicable indicate the impact of activities on promoting gender equality, rural development, attaining the Millennium Development Goals, Education For All and Sustainable development etc.

The main outcomes of INWEB in 2007 and 2008 were various research, cooperation and training activities and the organisation of the IV International Symposium on Transboundary Water Management. INWEB's activities aim to ensure a "Sustainable Management of Water and Conflict Resolution", particularly in SE Europe (the Balkans) and address European policies and initiatives on environment and water, and affect in particular European cooperation in the Balkans and between EU and candidate countries like Croatia, Bulgaria and Romania. INWEB's activities generate a cooperation mechanism in support of the EU Water Initiative, and help to meet the following Millennium Development Goals related to water:

- Halve, by the year 2015, the proportion of people without access to safe drinking water every day until 2015, an additional 120,000 people should have access to safe drinking water
- Halve, by the year 2015, the proportion of people who do not have access to basic sanitation every day until 2015, an additional 240,000 people should be provided with sanitation
- Develop integrated water resources management and efficiency plans by 2005

These outcomes have a short and long term impact on socio-economic development and on better ways of Integrated Water Management. INWEB shares the idea proposed by different UNESCO projects like HELP (Hydrology, Environment, Life and Policy) and PCCP (from Potential Conflict to Cooperation Potential) and also the EU Water Initiative that state that at present the "water crisis is mainly a crisis of governance".

One of the main problems of water governance is the "paradigm lock", which is the lack of communication between scientists and professional decision makers. In order to break the "paradigm lock" and to make water governance more effective, INWEB promotes the linking of education, research and professional in the field, as well as partnerships between public, private and civil society actors.

INWEB also enhances the integration of research groups in the Balkans that are involved in integrated water resources management at the catchment scale and strengthens thereby the European Research Area by:

- developing approaches for integrated regional modelling as well as integrated scenarios
- creating links between ongoing and planned research programmes and coordinating initiatives at the national and international level

Dissemination remains a major feature of INWEB, ensuring that the practical use of project results will reach substantially beyond the immediate participants of the project. The most important dissemination channels and tools that INWEB uses are:

- a regularly updated website as the central dissemination platform and knowledge repository, containing all project documents, links to stakeholders and news (see [www.inweb.gr](http://www.inweb.gr))
- press releases and newsletters about key project events for wide circulation of project news

## V Forthcoming activities

*(Please outline the action plan for the current biennium)*

The principal forthcoming activities of INWEB are foreseen as follows:

- facilitate the exchange of information in the fields of water and environment
- promote an integrated system of research, training, information and documentation activities in the fields of integrated water management, ecology, environmental sciences, economy, conflict resolution and international waters
- provide advice and expertise to assist developing countries, particularly the Balkan countries, in:
- establish inter-sectoral pilot projects
- facilitate links between local, regional and global levels, and harmonising top-down and bottom-up approaches whilst taking into account social issues
- raise public awareness and contributing to public education in the fields of water and environmental protection
- promote training and professional development by providing distance learning
- update inventories of existing transboundary water systems
- create and maintain databases on water and the environment compatible to European Union standards and mainly related to transboundary water bodies (rivers, lakes, and coastal waters)
- develop guidelines and protocols for the prevention of potential conflicts and the resolution of existing conflicts over water resources and values.

	ACTION PLAN 2009 - 2010		
		2009	2010
	UNESCO HELP : Mesta/Nestos	X	X
	GEF-DIKTAS	X	X

## VI Development prospects

Actions aimed at obtaining a stable permanent status of the Chair/Network in the structure of the Institution

**Short and medium term:** Expanding education and training activities. Research in Karst and integrated modelling of water resources systems.

**Long term:**

- Developing a MSc programme on Transboundary Waters and Conflict Resolution
- Expanding research activities
- Broadening partnerships
- Mobilization of resources



## Annexes

### Annex 1

#### Sources of financial and material contributions

Host Institution: Office space, secretariat, communication tools and related expenses, other costs (electricity, consumables, etc)

Partner universities/ institutions: in kind contribution (man-days), travelling expenses

Governmental bodies and other public institutions: Research grants, in kind contribution (personnel)

UNESCO and other UN Agencies: Costs for organising meetings and workshops, travelling, expertise

Other private sources: Research foundations (grants)

### Annex 2

#### Target groups

(Please specify for each category number of male and female)

Target group	Male	Female	Total
Undergraduate students			
Graduate students	20	30	50
Postgraduate students	3	1	4
Academics	5	2	7
Public administrators		1	1
Employees from industry or other private organizations ( <i>please, specify</i> )			
Teachers from primary education			
Teachers from secondary education			
Teachers from technical and vocational education			
Teachers from adult education			
Others groups ( <i>Please specify</i> )			

## Geographical Coverage

- **National** X

- **Regional/Interregional/International** X

*Please specify countries and regions*

<b>Regions</b>	<b>Countries</b>
Africa	MENA Countries
Arab States	MENA Countries
Asia/Pacific	
Eastern and Central Europe	Balkan Countries
Western Europe and North America	
Latin America and the Caribbean	