



UNESCO Chair
International Network of
Water-Environment Centres for the Balkans



UNESCO CHAIR AND NETWORK INWEB

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

AT

**ARISTOTLE UNIVERSITY OF THESSALONIKI
(AUTH), GREECE**

for the Sustainable Management of Water
and Conflict Resolution

ACTIVITY REPORT

01 Jan 2012 – 31 Dec 2013

Prepared by

Prof. Jacques Ganoulis

UNESCO CHAIR AND NETWORK INWEB/Aristotle University of Thessaloniki, Greece

UNESCO CHAIR/UNITWIN NETWORK PROGRESS REPORT FORM

Title of the Chair/Network:	UNESCO CHAIR/INWEB (International Network of Water Environment Centres for the Balkans) for the Sustainable Management of Water and Conflict Resolution
Host Institution:	Aristotle University of Thessaloniki (AUTH), GREECE
Date of establishment of Chair/Network: (mm, yyyy)	07, 2003
Period of activity under report: (mm, yyyy - mm, yyyy)	01, 2012 – 12, 2013
Report established by: (name, position)	Jacques Ganoulis Chairholder and Coordinator

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 Or by mail to UNESCO, Division for Teacher Development and Higher Education,
 Section for Higher Education
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1. Executive Summary:

Major outcomes, results and impact of the Chair, including on national policies, in relation to its objectives as stated in Article 2 of the Chair Agreement (between the Institution and UNESCO)
 (Not exceeding 300 words)

During the biennium 2012-2013, the main outcome/result/impact of the UNESCO Chair/INWEB network, was twofold:

- (1) Enhance the scientific capacity of the network by focusing on transboundary water management, and conflict resolution in the Mediterranean region (South Eastern Europe, Mahgreb, MENA – Middle East North Africa), and China, and
- (2) Assist UNESCO's Water Sector in Natural Sciences and UNESCO/IHP (International Hydrological Programme)/Paris for implementing various international programmes.

Concerning outcome (1), the principal 2012-2013 activities were as follows:

- 1.1 Regional partner and data provider for the Balkans of the UNESCO/ISARM (Internationally Shared Aquifer Resources Management) Programme : <http://www.isarm.org/publications/292>
- 1.2 KLIMENESTOS research project, Aug 2012 – Feb 2015, funded by the Greek Ministry of Education on "river flow and hydropower production under climate change".
http://www.inweb.gr/index.php?option=com_content&view=article&id=384:klimenstos-project-aug-2012&catid=48:news&Itemid=101
- 1.3 Active partner of the EU/TEMPUS educational project: Water Related Advanced Training and Education for Regional Needs in Mahgreb (WATER, EU 511095-TEMPUS)
- 1.4 Contributing to Plan Bleu - Green Economy working group, Feb 2012
- 1.5 Teaching to European University Centre at Peking University (EUCPU), BEIJING, China, 2012, 2013.

Concerning outcome (2), the following main activities were developed during 2012-2013:

- 2.1 Regional partner and data provider of the GEF/UNESCO DIKTAS (Dinaric Karst Aquifer System) project: <http://www.unesco.org/new/en/venice/natural-sciences/water/diktas>
- 2.2 UNESCO/HELP (Hydrology for Environment, Life and Policy) programme: *Research in the demonstration transboundary Mesta/Nestos river basin, for bridging the gap between science and policy and achieve the UN Millennium Development Goals.* <http://www.unesco.org/new/en/natural-sciences/environment/water/ihp/ihp-programmes/help/>
- 2.3 6th World Water Forum, Marseille, session 1.5.2, coordinated by UNESCO Chair /INWEB, Mar. 2012
- 2.4 UNESCO/GEF MedPartnership project: Reporting on Risk Assessment of Coastal Mediterranean Aquifers <http://www.themedpartnership.org/>
- 2.5 Contribution to Transboundary Water Assessment (TWAP) <http://www.isarm.org/publications/448> and UNESCO/FAO Groundwater Governance projects, third regional consultation meeting, Oct 2012 <http://www.groundwatergovernance.org/>
- 2.6 Teaching 3 modules of the UNITAR e-course on Water Diplomacy, Nov. 2013
- 2.7 Active participation to UNESCO High Level Meeting, Nairobi, Kenya, Sept. 2013.

2) Activities:

Overview of activities undertaken by the Chair during the reporting period.

In 2012-2013, the UNESCO Chair/INWEB at AUTH developed various education, training, capacity building and research activities; many of them are related to UNESCP/IHP Programmes, such as the UNESCO/ISARM, UNESCO-HELP, UNESCO/GEF/DIKTAS and the UNESCO/UNEP/MEDPARTNERSHIP programmes.

In 2013, the Chair holder spent much of his time in Paris, working with the UNESCO IHP/Groundwater Sector for implementing international programmes, such as the UNESCO/UNEP TWAP (Transboundary Water Assessment Project) <http://www.geftwap.org/> and the UNESCO/FAO Groundwater Governance Programmes <http://www.groundwatergovernance.org/>. During the biennium 2012-2013, the Chair organized, contributed to and participated in many national and international meetings, workshops and conferences in cooperation with national and international partners. The Chairholder participated actively in the UNESCO High Level Meeting, Nairobi, Kenya, Sept. 2013 and in the Closing Ceremony of the International Year 2013 of Water Cooperation, Mexico, Dec. 2013. He also contributed with two papers in two UNESCO related books: (1) Free Flow-Reaching Water Security Through Cooperation, J. Griffiths, & Lambert, R., ed., and (2) Global Water, prepared by the UNESCO Chair at the Australian National University. More details on these activities and also references to publications produced by the Chair are given below and also on the INWEB's website www.inweb.gr, which is, for technical reasons, under update concerning the after Dec. 2012 period.

a) Education/Training/Research

(key education programmes and training delivered and research undertaken by the Chair during the reporting period, target group and geographical coverage)

i) Education (leading to certificate)**a.i.1 Title:** Postgraduate Course: "Decision and Risk Analysis"

Prof. Ganoulis, UNESCO Chair holder and INWEB coordinator, is member of the teaching staff. The course is part of the MSc Programme on "*Environmental Protection and Sustainable Development*" offered by the Division of Hydraulics and Environmental Protection, Department of Civil Engineering, AUTH.

<http://ppva.civil.auth.gr/content/en/staff.html>

Duration: 5 hours/semester, 1st Semester, 2012-2013

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

Geographical coverage for partners and participants: National

Expected results: Enhanced knowledge on decision analysis under risk in environmental protection and sustainable development.

a.i.2 Title: Postgraduate Course: "Decision Theory and Risk Analysis"

The Chair holder is a member of the team of instructors. The course is part of the MSc Programme on "*Engineering Project Management*" offered by the Division of Hydraulics and Environmental Protection, Department of Civil Engineering, AUTH.

<http://www.civil.auth.gr/content/view/54/56/lang.en/>

Duration: 1st Semester, 2012-2013

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

Geographical coverage for partners and participants: National

Expected results: Enhanced knowledge on decision support and risk management in engineering projects

a.i.3 **Title:** Interdepartmental Postgraduate MSc Programme:
 “Ecological water quality and management at a river basin level”.
 Course on: “Land use. Human pressures. Impact assessment”

The course is part of the collaborative MSc Programme supported by the departments of Biology, Geology and Civil Engineering, AUTh. During 2012-2013 the Chair holder was a member of the teaching staff.

<http://qa.auth.gr/en/class/1/40050103>

Duration: 1st Semester, 2012-2013

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

Geographical coverage for partners and participants: National

Expected results: Enhanced knowledge on IWRM (Integrated Water Resources Management) and application of the EU-Water Framework Directive.

a.i.4 **Title:** Annual course on “European Policy in Environmental Protection”
 Peking University, Beijing, China (2012, 2013)

The Chairholder is Council member/elected at the EUCPU (European University Centre at Peking University). He contributed to this course as a Guest Lecturer during the winter semesters of 2012 and 2013. The course is run in cooperation with the School of Government and the EUCPU

<http://www.pku-euc.org/organisation/>

Duration: 2 to 3 Guest Lectures/semester (6 to 8 hours)

Target groups: Master and PhD students at Peking University, Beijing, China

Geographical coverage for partners and participants: International

Expected results: Introducing to Chinese students the European experience on water resources management and environmental protection policy.

a.i.5 *UNITED NATIONS INSTITUTE FOR TRAINING & RESEARCH (UNITAR)*
e-Learning Course on Multilateral Diplomacy:

Title: “Introduction to Water Diplomacy” October 21 to November 17, 2013

The Chairholder was moderator for modules II, III and the final simulation exercise of the e-learning course that has been developed by UNITAR’s Multilateral Diplomacy Programme, in partnership with the University of East Anglia, Water Security Research Centre and the UNESCO/IHP. The e-course aims to enhance participants’ appreciation of how, through understanding water’s conflict potential, we can promote and develop efficient cooperation tracks for sustainable water resources management, especially in internationally shared river basins and groundwater aquifers.

<http://www.unitar.org/mdp/e-learning>

Duration: 4 weeks leading to certificate

Target groups: International UN staff, Diplomats, Master and PhD students

Geographical coverage for partners and participants: International

Expected results: Promoting cooperation for water related conflict resolution

ii) Training (short term)	<p>a.ii.1 <u>Title</u>: Tempus project EU 511095: Water Related Advanced Training and Education for Regional Needs in Mahgreb (WATER). Intensive short course on <u>Risk Assessment in Water Resources</u>: Climate Change, Floods and Droughts: preventing strategies and plans. <u>Location</u>: Biskra, Algeria <u>Duration</u>: 5 days: 10-14 December 2012 <u>Target groups</u>: Engineers, MSc and PhD students in water related sciences <u>Geographical coverage</u>: N. Africa and SE Europe</p> <p>a.ii.2 <u>Title</u>: Tempus project EU 511095: Water Related Advanced Training and Education for Regional Needs in Mahgreb (WATER). Intensive short course on <u>Transboundary Water Resources Management</u>: Basic definitions, Shared monitoring, Legal issues and policy, Case studies <u>Location</u>: Annaba, Algeria <u>Duration</u>: 5 days: 24-28 March 2013 <u>Target groups</u>: Engineers, MSc and PhD students in water related sciences <u>Geographical coverage</u>: N. Africa and SE Europe</p>
iii) Research	<p>During 2012-2013, the Chair was involved in the following research projects:</p> <ul style="list-style-type: none"> • KLIMENESTOS project, Aug 2012 – Feb 2015 Investigation of climate change in Greece and the related impact on the sustainability of hydropower projects and the rural economy: Application in the Nestos river basin. (Funded by the Greek Ministry of Education, Special Department for the Management and Enforcement of Actions in the Fields of Research and Development and Technological Innovation). http://www.inweb.gr/index.php?option=com_content&view=article&id=384:klimenstos-project-aug-2012&catid=48:news&Itemid=101 • WATER-FOOD-ENERGY Nexus, 2011-2014 This research project focus on an integrated mathematical modelling of small hydro electrical plants that could operate in existing irrigation reservoirs (<15 m height and <1m³/s flow rate). The effective water use for an integrated energy production and irrigated agriculture is part of the recent problematic issue of water-energy-food nexus. Main parts of the research are: hydrological modelling of small artificial reservoirs, cost-benefit evaluation of micro hydro-energy production, effective agricultural irrigation and measures for environmental protection (definition of an ecological flow rate downstream of the dam). • PHYTOREMEDIATION Project, 2011-2014 This is an experimental investigation of applying phytoremediation for the reclamation of sites affected by sewage sludge. Two experimental sites were selected, one within the area of the Thessaloniki Wastewater Treatment Plant, Greece, which receives sludge for temporary deposition, and the other within the area of the Bezludivka Wastewater Treatment Plant in Kharkiv, Ukraine, which is an area with dewatering sludge lagoons. • NUMERICAL MODELING OF GROUNDWATER FLOW IN KARST, 2011-2014 The project aims to analyse the hydrodynamic function of the karst spring of Almyros, located in the island of Crete, Greece. Different technical tools will be investigated and applied in order to increase the length of time the spring's water is fresh. In order to understand the hydrodynamic function of the Almyros spring, a simulation model was developed based on the commercially available ModFlow and Feflow software. The hydrodynamic modelling was done in order to predict the state of flow in the greatest region during the operation of the pumping wells, to ascertain their interaction with the Almyros spring and to find an optimal solution for an efficient freshwater supply from the source. Different scenario of the aquifer functioning were created, and based on these simulations, future operating conditions of the source, as well as the expected flow rate output, were calculated, in order to be able to recommend effective management practices for the aquifer.

b) Conferences/Meetings

(key conferences and meetings organized by the Chair or to which its Chairholder contributed)

i) Key meetings, conferences and workshops contributed by the Chair

Project Team Meeting, GEF-UNDP-UNESCO Regional Project DIKTAS 19th - 20th January 2012, Trebinje, Bosnia and Herzegovina

The Chairholder, Prof. J. Ganoulis, attended the project team meeting of the GEF-UNDP-UNESCO Regional Project "Protection and Sustainable Use of the Dinaric Karst Aquifer System (DIKTAS)" http://www.inweb.gr/index.php?option=com_content&view=article&id=353:gef-undp-unesco-regional-project-diktas&catid=48:news&Itemid=101

For the meeting results, please see

<http://diktas.iwlearn.org/resources/projectdocuments/project-management-summary-report-2012/view>

For a description of the Work Plan please see

<http://diktas.iwlearn.org/publications/projectdocuments>.

Green Economy Working Group, Mediterranean Plan Bleu 7th-8th February 2012, Paris France

The Chairholder, Prof. J. Ganoulis, was invited to take part of a working group dealing with green economy. The first meeting took place in Paris, France, from 7th-8th February 2012.

The OCEMO (Office of Economic Cooperation for the Mediterranean and Gulf Countries), the CMI (Marseille Center for Mediterranean Integration);

<http://www.cmimarseille.org/web/base2/cmi/index.html>)

and their partners, Plan Bleu (<http://www.planbleu.org/indexUK.html>), and

Femise (<http://www.femise.org>), organised a high level conference on green economy in the Mediterranean in May 2012. The conference aimed to demonstrate that green growth could be a chance for employment in the Mediterranean basin and that the environment is not a burden for economy, but rather a substantial opportunity for jobs creation.

The conference was linked to the United Nations Conference on Sustainable Development Rio+20 scheduled for June 20 -22, 2012. The objective of Rio+20 was to secure political commitment for sustainable development including green economy. The organizers of Rio+20 were committed to providing decision makers with advice. With this in mind, a working group was set up in order to make recommendations to decision makers of the Mediterranean countries, leading to the recommendation process on green economy in the Mediterranean region.

Plan Bleu, a member of the UNEP, coordinated this initiative and invited representatives from civil society, the private sector and experts to form this working group.

http://www.inweb.gr/index.php?option=com_content&view=article&id=354:plan-bleu-green-economy-working-group-feb-2012&catid=48:news&Itemid=101

UNESCO IHP expert meeting on "Assessment of risk and uncertainty related to the coastal aquifers in the Mediterranean"

UNESCO Chair INWEB at the Aristotle University Thessaloniki hosted a UNESCO-IHP Expert Meeting on "Assessment of risk and uncertainty related to the coastal aquifers in the Mediterranean", held from 20-21 February, with the participation of national groundwater experts of the 12 participating countries in the region, selected in cooperation with the national GEF Focal points.

<http://www.themedpartnership.org/>

http://www.inweb.gr/index.php?option=com_content&view=article&id=355:unesco-ihp-expert-meeting-on-assessment-of-risk-and-uncertainty-related-to-the-coastal-aquifers-in-the-mediterranean-feb-2012&catid=48:news&Itemid=101

UNESCO IHP experts meeting for the "Preparation of the groundwater supplements to the TDA-Med, SAP and ICZM Protocol"

UNESCO Chair INWEB at the Aristotle University Thessaloniki hosted a UNESCO-IHP Experts Meeting for the "Preparation of the groundwater supplements to the TDA-Med, SAP and ICZM Protocol" from 22-23 February 2012. This meeting was organized by UNESCO-IHP within the framework of the sub-component 1.1 on "Management of Coastal Aquifers and Groundwater" of the GEF UNEP/MAP MedPartnership.

A small group of high level experts attended and conceptualized the groundwater supplements to the existing formal documents under the framework of the Barcelona Convention and the related Protocols. Discussions focused on the structure, scope and content of this package of “supplements” to be developed during 2012-2013 for final approval and hopefully endorsement by the participating countries in early 2014. This package will be the result of an effort to synthesize all the scientific/technical/legal/policy recommendations, the results of 7 demonstration pilots, and the national and regional reports produced under the 4 main activities of UNESCO-IHP’s sub-component. Efforts will also be made to link up with other GEF initiatives, both global and regional (DIKTAS, IW:LEARN, TWAP, etc.).

http://www.inweb.gr/index.php?option=com_content&view=article&id=357:unesco-ihp-expert-meeting-on-assessment-of-risk-and-uncertainty-related-to-coastal-aquifers-management-in-the-mediterranean-20-21-february-2012&catid=58:events&Itemid=190
<http://www.themedpartnership.org/>

6th World Water Forum, session 1.5.2 coordinated by UNESCO Chair INWEB
12th-17th March 2012, Marseille, France

The UNESCO Chair/INWEB at the Aristotle University of Thessaloniki (AUTH), Greece, coordinated session 1.5.2. at the 6th World Water Forum in Marseilles, 12th - 17th March 2012. The session was entitled:

DEVELOPING EFFECTIVE REGIONAL AGREEMENTS FOR COOPERATION AND PEACE IN TRANSBOUNDARY SURFACE AND GROUNDWATER RESOURCES MANAGEMENT

Background and objective

Bi- and multi-lateral agreements on transboundary rivers, lakes and aquifer water resources management are important tools for enhancing effective cooperation, involving political commitment and implementing joint water management plans. There are three main obstacles for developing and implementing agreements on shared water management: (1) lack of political willingness, (2) differences in socio-economic and cultural levels between riparian countries and (3) lack of trust, conflicting objectives and different priorities between countries, in relation to their history, sovereignty and possible territorial claims. The main objective of this session is to identify tools and methodologies and to summarise innovative solutions in order to increase the number of such agreements, improve their quality and facilitate their implementation by involving stakeholder participation.

Programme

- Introductory remarks on the importance of effective regional agreements for cooperation and peace, including the current situation and future challenges – Gretchen Kalonji, Assistant Director General for Natural Sciences, UNESCO –
- Jacques Ganoulis UNESCO/INWEB, AUTH Presentation of new solutions and four relevant case studies to address effective solutions, two from transboundary groundwater aquifers and two from transboundary river basins
- DIKTAS: Dinaric Karst Aquifer System, South Eastern Europe - Treidel Holger, UNESCO
- The Transboundary Aquifers and the Jordan River Basin - Ahmed AlYaqoubi, Water Resources Directorate, Palestinian Water Authority (PWA), - Deeb Abdelghafour, Water Resources Development, PWA
- The GUARANI Aquifer System, South America - Ofelia Tujchneider, CONICET, Argentina
- The Great Lakes Water Quality Agreement (GLWQA) - U.S.-Canada, Susan Hedman, USEPA -
- Mike Goffin, Environment Canada

Panel summary: solutions for new agreements and improving existing ones

Interactive debate: lessons learnt, problems, tools and methodologies for effective solutions

Concluding remarks and future activities

<http://www.worldwaterforum6.org/en/gallery/videos/expert-opinions>

<http://www.worldwaterforum6.org/en/>

http://www.inweb.gr/index.php?option=com_content&view=article&id=363:6th-world-water-forum-session-152-coordinated-by-unesco-chair-inweb&catid=48:news&Itemid=101

Coastal Aquifers Management Symposium
15th-17th March 2012, Cassis, France

The Chairholder, Prof. J. Ganoulis, was present at a symposium on “Coastal Aquifers Management”

organized by the French Chapter of IAH and held in Cassis, France, 15-17 March 2012. This symposium aimed to present the state of knowledge on the operation, the methods of study and the protection and management of coastal aquifers.

The main topics were:

- Characterization of aquifers (geometry, hydrodynamics, water quality)
- Problems of invasion in salt or natural context of overexploitation and improving the quality of hydrosystems
- Management and monitoring of the coastal aquifers
- Management of aquifers on islands
- Managing aquifers and sharing resources to meet various demands

A field trip was made in the vicinity of Cassis and Marseille to see an alluvial aquifer, a karst aquifer and a submarine karst spring (Port Miou). \

http://www.inweb.gr/index.php?option=com_content&view=article&id=377:coastal-aquifers-management-mar-2012&catid=48:news&Itemid=101

1st International and the 4th National Congress on Recycling of Organic Wastes in Agriculture 26th-27th April 2012, Isfahan, Iran

The Chairholder, Prof. J. Ganoulis, was invited as member of the international scientific committee and presented a paper on "Risk analysis of wastewater reuse in agriculture" at the 1st International and the 4th National Congress on "Recycling of Organic Wastes in Agriculture," held at the Islamic Azad University (IAU), Khorasgan branch (Isfahan, Iran) from 26th– 27th April 2012. The paper was selected as the "best paper" in the conference.

Topics covered included:

- Waste reuse in agriculture
- Waste water reuse in agriculture
- Consideration of farms and organic waste utilization in animals and poultry nutrition
- Recycling and usage of agricultural waste and other organic waste
- Methods of quality improvement and optimization of process, leachate and waste water treatment
- Increasing public awareness about recycling, reuse, reduction of domestic and organic waste
- Industrial food waste utilization in agriculture

<http://crowa.khuisf.ac.ir/>

http://www.inweb.gr/index.php?option=com_content&view=article&id=378:1st-international-and-the-4th-national-congress-on-recycling-of-organic-wastes-in-agriculture-apr-2012-&catid=48:news&Itemid=101

Water Related Advanced Training and Education for Regional Needs in Maghreb 2nd-7th May 2012, Annaba, Algeria

The Chairholder, Prof. J. Ganoulis, attended the TEMPUS project meeting held in Annaba, Algeria from 2-7 May 2012. This project is for the establishment of the Regional WATER centre at EMI-UM5A, Rabat. It aims to assess, develop and upgrade curricula that will provide engineers, post-graduate students and professionals with in-depth knowledge that will allow them to meet and follow up the new regional water resources policies and master plans of the Maghreb governments, and achieve a holistic approach to sustainable development of water resources in Maghreb. The project will also create a regional and national training and teaching centre in water technologies. In particular, this meeting focused on:

- 1: State of the art of project, planning of activities and responsibilities
- 2: Planning of training courses and visits to European partners
- 3: Transfer of funds to Algeria
- 4: Equipment
- 5: Water centre in Algeria

http://www.inweb.gr/index.php?option=com_content&view=article&id=379:water-related-advanced-training-and-education-for-regional-needs-in-maghreb-may-2012&catid=48:news&Itemid=101

Water Related Advanced Training and Education for Regional Needs in Maghreb 23rd Aug-10 Sep 2012, Thessaloniki, Greece

The Chairholder, Prof. J. Ganoulis, had the pleasure of welcoming colleagues from the Tempus project (EU 511095-TEMPUS-1-1-2010 WATER) which commenced in October 2010, and in which the Aristotle University of Thessaloniki, Greece, the University Badji Mokhtar, Algeria, the Institut National Agronomique de Tunisie (INAT), Tunis and the Mohammed V Agdal University, Morocco, are partners. The visit took place between the 23rd August and 10th September 2012 and its purpose was to prepare material for intensive courses in the Maghreb region.

http://www.inweb.gr/index.php?option=com_content&view=article&id=380:water-related-advanced-training-and-education-for-regional-needs-in-maghreb-aug-2012&catid=48:news&Itemid=101

Hydropredict 2012 conference **24th-27th Sep 2012, Vienna, Austria**

The Chairholder, Prof. J. Ganoulis, presented a paper entitled "Water regime vulnerability due to climate change impacts on snow cover budget at mountainous basins of the Mediterranean" at the HydroPredict 2012 conference held in Vienna from 24th-27th September 2012.

The conference brought together professionals, scientists and members of governmental institutions dealing with water resources management. Representatives of natural, social and engineering sciences met together to exchange experience and presented the current views on the adaptation and mitigation of adverse effects of global change on water resources systems.

The main objectives of the conference were to:

- present tools and methods which assist in assessing and discriminating between human and climate change induced impacts on water resources systems;
- discuss the predictive capability of simulation models used for water resources issues, including the model output uncertainty,
- present tools and methods for adaptation to changing global conditions;
- address water management policy to reduce vulnerability and to increase the resilience of water resources systems; and
- analyze the role of water resources within the complex social-economic-climatic system.

<http://web.natur.cuni.cz/hydropredict2012/>

http://www.inweb.gr/index.php?option=com_content&view=article&id=383:hydropredict-2012-conference-sep-2012&catid=48:news&Itemid=101

2nd UNESCO-IHP Expert Meeting on "Assessment of Risk and Uncertainty related to Coastal Aquifers Management in the Mediterranean" **4th-5th October 2012, Antalya, Turkey**

This workshop constituted the 2nd Meeting of the national groundwater experts contributing to UNESCO-IHP's activity on the "Assessment of Risk and Uncertainty related to Coastal Aquifers Management in the Mediterranean" under the GEF UNEP/MAP MedPartnership.

During this two day meeting, which was held at the Akdeniz University in Antalya, Turkey from 4th-5th October 2012, the national representatives from the GEF countries presented the results included in their national reports. The preliminary version of the geo-referenced interactive information system on Mediterranean coastal aquifers, developed by the UNESCO Chair INWEB, was also demonstrated.

http://www.inweb.gr/index.php?option=com_content&view=article&id=381:2nd-unesco-ihp-expert-meeting-on-assessment-of-risk-and-uncertainty-related-to-coastal-aquifers-management-in-the-mediterranean-oct-2012-&catid=48:news&Itemid=101

Groundwater Governance project- third regional consultation meeting **8th-10th October 2012, Amman, Jordan**

The Chairholder, Prof. J. Ganoulis, attended the regional consultation meeting of the Groundwater Governance project organised by the UNESCO-IHP network and held in Amman, Jordan, from 8th-10th October 2012.

These consultations are a fundamental component of the project and focus on the regional characteristics of groundwater use and seek to promote the discussion about the characteristics, the priorities, the visions and the specific challenges to the region.

The primary focus of the project is the set of human behaviours that determine groundwater use and abuse. The objective is to accelerate the adoption of improved groundwater resource governance from resource management institutions to millions of individual users.

The project is expected to define a Shared Vision and Global Framework for Action on Groundwater Governance. These will be derived from:

- An examination of the state of governance in relation to groundwater supply and demand.

- The development of regional groundwater governance diagnostics integrating local and national experiences together with perspectives for management at local, national and transboundary levels. <http://www.groundwatergovernance.org/>
http://www.inweb.gr/index.php?option=com_content&view=article&id=382:groundwater-governance-project-third-regional-consultation-meeting-oct-2012&catid=48:news&Itemid=101

**Kick off meeting, Klimenestos project
31st October 2013, Athens, Greece**

The Chairholder, Prof. J. Ganoulis, and the General Secretary, Dr. Ch. Skoulikaris, met with other partners in the Klimenestos research project entitled “Investigation of climate change in Greece and the impact on sustainability and the rural economy of hydropower projects: Application in the Nestos river basin. (Greek Ministry of Education, Special Department for the Management and Enforcement of Actions in the Fields of Research and Development and Technological Innovation).”

www.gsrt.gr

**European Studies course at the European University Centre at Peking University
16th-17th November 2012 and 28th-30th November 2013, Peking, China**

The European University Centre, together with the School of Government and the Center for European Studies at Peking University for the third time organized a course in European Studies. The course was designed for Master’s and PhD students at Peking University and focuses on different aspects of Europe from a political, economical, social and cultural perspective and with teachers coming from European member universities to Peking University to teach. The Chair holder, Prof. J. Ganoulis, offered two courses to students on 16th and 17th November 2012 and 28th and 30th November 2013.

<http://a0020.srv.lu.se/info/pkueuc/>

http://www.inweb.gr/index.php?option=com_content&view=article&id=385:european-studies-course-at-the-european-university-centre-at-peking-university-nov-2012&catid=48:news&Itemid=101

**FEMISE annual conference
23rd-24th Nov 2012, Marrakesh, Morocco**

The “Forum Euro-Mediterranean des Instituts des Sciences Economiques” (FEMISE) is a Euro-Mediterranean network established in June 2005 with more than 94 members from economic research institutes. FEMISE held its annual conference from 23 - 24 November 2012 in Marrakesh, Morocco. The theme of the conference was: “Inclusive Development in the South -Med Countries and the role of the EU-Med partnership”. The conference theme was addressed by distinguished speakers who shared their knowledge and views on the subject. The Chair holder, Prof. J. Ganoulis, was in attendance.

**MedPartnership expert meeting on Policy, Aquifer and Groundwater Legal and Institutional issues
29th-30th Nov 2012, Paris, France**

The Strategic Partnership for the Mediterranean Sea Large Marine Ecosystem (MedPartnership) is a collective effort of leading organizations (regional, international, non governmental, etc.) and countries sharing the Mediterranean Sea towards the protection of the marine and coastal environment of the Mediterranean. The MedPartnership is being led by UNEP/MAP and the World Bank and is financially supported by the Global Environment Facility (GEF), and other donors, including the EU and all participating countries.

The MedPartnership works through two lines of actions: technical and policy support led by UNEP/MAP (Regional Project) and project financing led by the World Bank (Investment Fund/Sustainable MED).

As part of this project, the Chairholder, Prof. J. Ganoulis, attended the Expert meeting on Policy, Aquifer and groundwater Legal and Institutional issues, organized by UNESCO – IHP, and held in Paris, France from 29th -30th November 2012.

<http://www.themedpartnership.org/med/pfpublish/p/doc/793b67c1896e7c132085117ce3dde907>

http://www.inweb.gr/index.php?option=com_content&view=article&id=387:medpartnership-expert-meeting-on-policy-aquifer-and-groundwater-legal-and-institutional-issues-nov-2012&catid=48:news&Itemid=101

**Expert meeting on Groundwater Resources Governance in Transboundary Aquifers
Sponsored by the Swiss Agency for Development and Cooperation (SDC)
8-9 January 2013, Paris, France**

The aim of the meeting was to gather the necessary information for the detailed design of the full size

project “Groundwater Resources Governance in Transboundary Aquifers”.

Main objectives:

- (i) improve the knowledge and recognition of transboundary groundwater resources,
- (ii) establish cross-border dialogue and cooperation,
- (iii) develop shared management tools; and
- (iv) facilitate governance reforms focused on improving livelihoods, economic development and environmental sustainability.

UNEP/MAP GEF Strategic Partnership for the Mediterranean Sea Large Marine Ecosystem (MedPartnership)

Fourth Coordination Group Meeting

3-5 April 2013, Paris, France

The aim of the meeting was to discuss the conclusions of the mid-term evaluation and to coordinate activities for 2013 and 2014.

Main discussion items:

- Introduction to the MedPartnership’s current status of implementation
- Mid-Term Evaluation (MTE)
- Discussion on the contents and recommendations of the MTE
- New opportunities for the second half of the project implementation
- Reporting/Budgetary/administrative issues

UNEP/MAP GEF Transboundary Waters Assessment Programme (TWAP)

UNESCO Component: Transboundary Aquifers and SIDS

Inception Meeting, Perugia, Italy 14-15 May 2013

The main objective of this inception meeting was threefold:

1. Familiarise all participants with the objectives, outputs and execution modalities of the GEF TWAP component on Transboundary Aquifers and SIDS groundwater systems
2. Clarify the roles and responsibilities of each project partner, the project’s organizational structure and lines of communication
3. Decide on the next steps and project milestones.

The Chairholder was rapporteur of the meeting. <http://www.geftwap.org/>

UNESCO Strategic and High-Level Meeting on Water Security and Cooperation

11-13 September 2013, Nairobi, Kenya

The UNESCO High-Level and Strategic Meeting on Water Security and Cooperation was held from 11 to 13 September 2013 at the Kenya School for Monetary Studies in Nairobi, Kenya, to promote international cooperation on freshwater, including the planning of joint activities within the scope of the eighth phase of the International Hydrological Programme (IHP-VIII). The three-day meeting began with a high-level panel discussion and was followed by a meeting of the Working Group established by the IHP Intergovernmental Council at its 20th session

Over one hundred and sixty participants from about fifty countries attended the meeting, including several Ministers of Water and Environment from African countries, other senior diplomats, representatives of UNESCO and the IHP Intergovernmental Council, directors of several water-related centres under the auspices of UNESCO as well as several UNESCO Chair-holders, water experts and partners of IHP. Also present were about ten representatives of international and national media agencies.

During the discussion Prof. Jacques Ganoulis, UNESCO Chair on Sustainable Management on Water and Conflict Resolution, referred to the challenge of involving those that are responsible for water issues in finding solutions, saying that the only answer is education. Mr Ephraim Kamuntu stressed that indeed those responsible should be part of the solution.

Closing Ceremony of the International Year 2013 of Water Cooperation

Mexico City, Mexico, 5-6 December 2013

In December 2010, the United Nations General Assembly declared 2013 as the United Nations

International Year of Water Cooperation (Resolution AMES/651154). A global celebration aimed at promoting activities at all level in order to achieve the objectives related to water resources.

With over 400 participants from 60 countries and over 200 institutions including government agencies, development banks, international and civil society organisations, private companies, academics, etc. the celebration provided an overview or the main achievements of the International Year.

The Closing Ceremony focused on the following topics:

1. The Key to Peaceful Water Sharing
2. Challenges and opportunities for Water Cooperation
3. Water Cooperation: The future we want
4. The way forward: Off the Beaten Track

Furthermore, the event addressed some crosscutting issues such as water security, water cooperation and gender, water governance, water and education, water and culture, cooperation and sustainable development. Participants agreed that the Closing Ceremony of the International Year of Water Cooperation provided an opportunity to follow up on the work presented in 2013.

German Federal Institute for Geosciences and Natural Resources (BGR)

International Workshop on Groundwater Systems in Europe

Berlin/Germany, 22 and 23 August 2013.

The workshop was organized on the occasion of the completion of the “International Hydrogeological Map of Europe” (IHME). The agenda comprised five themes addressing various aspects of groundwater systems in Europe, the IHME project and its applications, and on the issue of transboundary aquifers. Most of the oral presentations have been pre-selected, but the workshop was complemented by a multitude of posters, in order to allow participants to display their related findings and achievements.

The Chairholder made an oral presentation entitled “WebGIS Cooperative Information System for transboundary waters” (Jacques Ganoulis, UNESCO Chair and INWEB)

ii) Other conferences/organizational activities undertaken by the Chair

Invited lecture by Dr. Charalampos Skoulikaris, General Secretary of the UNESCO Chair/INWEB National Engineering School of Athens, 14 Dec 2012

Title: Integrated Modelling for Sustainable Management of Water Resources Projects:

A Case Study from the “HELP” Mesta/Nestos River Basin

http://postgra.hydro.ntua.gr/index.php?option=com_content&view=article&id=234%3A2011-12-08-10-05-58&catid=51%3A2009-06-18-15-01-11&Itemid=88&lang=el

Institut Mediterranéen de l’Eau (IME)

Workshop on: “Multi-level approach of governance in the Mediterranean water sector”

Thursday, June 6th, 2013, Hôtel de Région, Marseille

The workshop was the follow-up to the Cross-continental Mediterranean Process of the 6th World Water Forum organized in Marseille (France) on 12-17 March 2012.

It corresponded to target II of the main issue on governance, which is framed as follows:

“By 2020, every country should activate and implement mechanisms for effective stakeholder participation throughout the different components of basin water resources management, and have in place a functioning articulation between central and decentralized levels”

The workshop intended to frame and prepare the progress to be made on water governance in Mediterranean countries, with better multilevel coordination and improved stakeholders’ involvement and participation.

Planetworkshops’ Global Conference, International Forum for a Sustainable Development UNESCO headquarters in Paris, France, on June 3rd, 4th and 5th 2013.

This Global Conference tackled the following theme: “Achieving a successful transition” and welcomed in UNESCO, Paris more than 2.000 participants during the three-day conference.

The Chairholder was invited to attend and to speak at the focus session entitled: « What type of cooperation is necessary in order to ensure “water security”? » that took place on June 4th, 2013.

iii) A selection of conference presentations by the Chairholder and other colleagues

All conference presentations are available and may be sent on request.

c) Interuniversity Exchanges/Partnerships

(principal exchanges/partnerships between the Chair and other institutions including UNESCO Chairs/UNITWIN Networks)

Most of the above activities were developed in cooperation with the core INWEB's partners and other UN related institutions.

The Chair also contributed by a paper published in the book "Global Water", edited by Paul Wyrwoll, UNESCO Chair in Water Economics and Transboundary Water Governance, The Australian National University. (www.globalwaterforum.org)

d) Publications/Multimedia Materials

(major publications and teaching/learning materials)

Please tick relevant fields of output and indicate volume of output:

	[tick]	[no.]
Books	<input type="checkbox"/>	
Books (edited)	<input type="checkbox"/>	
Books (chapters)	<input checked="" type="checkbox"/>	3
Monographs	<input type="checkbox"/>	
Research Reports	<input checked="" type="checkbox"/>	4
Journal Articles (refereed)	<input checked="" type="checkbox"/>	
Conference Proceedings	<input checked="" type="checkbox"/>	6
Occasional Papers	<input type="checkbox"/>	
Teaching/Learning Materials	<input checked="" type="checkbox"/>	3
Multimedia Materials (CD-Rom)	<input type="checkbox"/>	
Multimedia Materials (Video)	<input type="checkbox"/>	
Multimedia Materials (Other)		

Give details of major publications and materials including full citations.

i) Theses

5 PhD theses are under preparation.

ii) Publications

Book contributions

Ganoulis, J., & Skoulikaris, Ch. (2013). "Interactive open source information systems for fostering transboundary water cooperation." In: *Free Flow - Reaching Water Security Through Cooperation*, J. Griffiths, & Lambert, R., ed., United Nations Educational, Scientific and Cultural Organization (UNESCO) & Tudor Rose, 96-99.

J. Ganoulis, K. Quartano and Ch. Skoulikaris (2013) Promoting Cooperation for Transboundary Water Security: The Experience of the Unesco Chair/Inweb In: "Global Water: Issues and Insights ", Australian National University, Edited by Paul Wyrwoll et al., The UNESCO Chair in Water Economics and Transboundary Water Governance, 203-2014

Skoulikaris Ch., Ganoulis J. (2012). Climate Change Impacts on River Catchment Hydrology Using Dynamic Downscaling of Global Climate Models. in: Fernando, H., et al. (eds.), National Security and Human Health Implications of Climate Change, NATO Science for Peace and Security Series C: Environmental Security, 2012, 281-287, DOI: 10.1007/978-94-007-2430-3_240.

Papers reviewed and presented in International Conferences

Zalidis, G., Karapetsas, N., Skoulikaris, C., Misopolinos, L., & Manesis, C. (2013). Development of an integrated application portal for environmental spatial information dissemination in the Nestos river basin. In: *1st International Conference on Remote Sensing and Geoinformation of Environment* (pp. 87950B-87950B). International Society for Optics and Photonics.

N. Karapetsas, Ch. Skoulikaris, F. Katsogiannos, G. Zalidis, and T. Alexandridis (2013), Optimization of the resolution of remotely sensed digital elevation model to facilitate the simulation and spatial propagation of flood events in flat areas, *Geophysical Research Abstracts Vol. 15, EGU2013-11870*, 2013 EGU General Assembly 2013.

Ganoulis, J., Skoulikaris, Ch. (2012), Impacts of climate change and land use on river catchment hydrology using model downscaling. In: *The 10th Int. Conf. on Hydrosience and Engineering (ICHE-2012)*, Orlando, USA Nov. 4 – Nov. 7, pp. 275-276.

Skoulikaris Ch., Ganoulis J., (2012), Water regime vulnerability due to climate change impacts on snow cover budget at mountainous basins of the Mediterranean. In : *HydroPredict 2012, Predictions for Hydrology, Ecology and Water Resources Management: Water Resources and Changing Global Environment*. ed. / *Nachtnebel, P., Kovar, K., 2012, p. 79.*

Skoulikaris Ch., Antoniadis A., Karapetsas N., Misopolinos L., and Zalidis G. (2012), Mapserver Technologies and telemetric monitoring systems for near real time projection of flood events. In: *5th International Conference from Scientific Computing to Computational Engineering (5th IC-SCCE)*, Athens, Greece, 4-7 July, 2012, pp. 323-340.

Skoulikaris Ch., Ganoulis J., (2012). Assessment of Environmental Values for Integrated Water Resources Management. In: *XI International Conference of Protection and Restoration of the Environment*, Thessaloniki, Greece 3-6 July, 2012, pp. 253-261.

e) Cooperation with UNESCO-IHP

During 2012 and mainly in 2013 the Chairholder spent much of his time with UNESCO/IHP Paris and among other activities, he contributed to implement the following International Programmes:

GEF/FAO/UNESCO “Groundwater Governance: A Global Framework for Country Action”

The Chairholder was rapporteur of plenary consultation sessions in Amman, Jordan and in The Hague, The Netherlands. The project is co-financed and implemented by four partner agencies, FAO, IAH, UNESCO-IHP and the World Bank. UNESCO is responsible for organising 5 regional consultation workshops: (1) Latin America, Uruguay-2012, (2) Africa, Nairobi-2012, (3) Asia, China - 2012, (4) Arab region, Amman-2013 and (5) UN-ECE region, The Hague-2013.

<http://www.groundwatergovernance.org/>

UNEP/GEF/UNESCO “TWAP: Transboundary Water Assessment Project”

The Chairholder contributed implementing in transboundary aquifers the main environment objectives of this two-year Full Size Project (FSP). This general aim is to consolidate and apply methodologies based on indicators at different scales for global assessment and management of transboundary groundwater aquifers, lakes/reservoirs, river basins, large marine ecosystems, and the open ocean.

UNESCO is responsible for implementing the methodology in three in-depth case studies: Esquipulas-Ocotepeque-Citalá (Trifinio) Aquifer (shared by El Salvador, Guatemala, Honduras), Stampriet Aquifer (Namibia, Botswana, South Africa) and Pretashkent Aquifer (Kazakhstan, Uzbekistan). <http://www.geftwap.org/>

UNEP-MAP/GEF/UNESCO “Medpartnership Programme”

The Chairholder was responsible for the regional activity 1.1.1 “Assessment of Risk and Uncertainty of Coastal Aquifers in the Mediterranean”. Coordinator of 12 national experts from the following core members in the MedPartnership project: Morocco, Algeria, Tunisia, Libya, Egypt, Palestine, Lebanon, Turkey, Albania, Montenegro, Bosnia and Herzegovina and Croatia. Responsible for writing the regional report on: Risk and Uncertainty of Coastal Aquifers in the Mediterranean.

<http://www.themedpartnership.org/>

Developing an Interactive Information System for the Arab States and SubSahara

The Chairholder in cooperation with the Chair’s General Secretary Dr Charalambos Skoulikaris were committed by the UNESCO/RCSARM (Regional Centre for Shared Aquifer Resources Management), Tripoli, Libya for developing in cooperation with UNESCO-INWEB a geo-referenced information system for transboundary aquifers in Africa (<http://www.inweb.gr/fusion/4.html>). The system contains 71 transboundary aquifers, based on the IGRAC’s map of transboundary aquifers of the world. The number of countries sharing a transboundary aquifer ranges from 2 to 6, and the number of aquifers in a country shared with neighbouring countries, varies from 1 to 7. The system (a) enables national experts responsible for each country to update in real time information on transboundary aquifers and (b) supports public participation by allowing users to provide comments on the aquifers that appear on the base map.

f) Other

(any other activities to report)

N/A

3. Future Plans and Development Prospects:

Outline of action plan for the next biennium and short/medium and long-term development prospects. Please do not hesitate to refer to difficulties that the Chair has experienced (Not exceeding 300 words)

Plan for the next biennium:

Provide expertise and assist UNESCO-IHP in the following specific programmes:

- UNESCO/ISARM
- UNESCO/HELP
- MEDPARTNERSHIP (GEF, UNEP)
- GROUNDWATER GOVERNANCE (FAO, WORLD BANK)

Plan in short/medium term:

- Strengthen the links and cooperation between INWEB’s core partners
- Capacity building in the fields of groundwater management and climate change
- Regional applications and modelling techniques for sustainable water resources management
- Water governance with emphasis to groundwater resources
- Information and communication systems for water cooperation

Plan in medium/long term:

- Promoting and planning the creation of international river management commissions and transboundary groundwater governance institutions in order to overcome the economic crisis and contribute to socio-economic development in the Balkans.

Appendix:

1) Human Resources

Provided by Host Institution Aristotle University of Thessaloniki (AUTH):

- 1 full time Prof., 3 part time Profs, 1 general secretary/researcher, 1 part time technical assistant
- 5 PhD students
- A variable number of visiting staff (1-2)
- All 10 core members of INWEB

2) Financial Resources

Please tick sources of financial contribution and specify the amount in U.S. dollars

[tick] Amount (\$) for the biennium 2012-2013)

Host Institution	<input checked="" type="checkbox"/>	10.000 (partially in kind)
Partner Institution	<input type="checkbox"/>	
Government Body	<input type="checkbox"/>	
Other Public Institution/Body	<input checked="" type="checkbox"/>	90.000 (research projects)
(incl. Research Councils)		
UNESCO	<input type="checkbox"/>	
Other UN Agency	<input type="checkbox"/>	
IGO	<input type="checkbox"/>	
NGO	<input type="checkbox"/>	
Industry	<input type="checkbox"/>	
Other Private	<input type="checkbox"/>	

Give details of financial contributions, material resources and space.

- Financial contributions

- Amount is variable, depending on specific research projects
- Research projects have specific objectives related to UNESCO Chair activities
- For the time period 2012-2013 research was funded by the Greek Secretariat for Research, Ministry of Education (KLIMENESTOS project).

- 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 20 m²)
- Meeting room (up to 150 persons)
- Reception area (approx 50 m²).

All shared with other functions of the Aristotle University of Thessaloniki.

End of the Form