



United Nations
Educational, Scientific and
Cultural Organization



International
Hydrological
Programme

UNESCO-IHP
ISARM and PCCP Programmes



ISARM2010 International Conference

TRANSBOUNDARY AQUIFERS

Challenges and new directions

6-8 December 2010, UNESCO, Paris

Conference Programme



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Programme Overview

DAY 1 6 December		DAY 2 7 December				DAY 3 8 December					SIDE EVENT 9-10 December	
Rooms XI-XII		Room XI	Room XII	Room IV	Room III	Room XI	Room XII	Room III	Room IV	Room VI	Rooms VI-XIV	
7:30 - 08:30	Badge claim										Pilot Course <i>Integrated Transboundary Groundwater Management/ Tools and Methods</i>	
09:00 - 10:30	Opening Ceremony	Topic 1.1	Topic 2.1	Topic 3.1	Topic 4.1	Topic 1.5	Topic 2.5	Topic 3.5	Topic 3.7	Side Event: GEF & UNESCO		
10:30 - 11:00	Coffee Break	CB/PS				CB/PS						
11:00 - 12:30	High Level Panel	Topic 1.2	Topic 2.2	Topic 3.2	Topic 4.2	Topic 1.6	Topic 2.6	Topic 3.6	Topic 3.8	Side Event: GEF & UNESCO		
12:30 - 14:00	Lunch Break	LB/PS				LB/PS						
14:00 - 16:00	UNESCO-ISARM Overview	Topic 1.3	Topic 2.3	Topic 3.3	Topic 4.3	High Level Roundtable						
16:00 - 16:30		CB/PS					UNW-AIS					
16:30 - 17:00							CB/PS					
17:00 - 18:00	IAH Presidents' Award 2010	Topic 1.4	Topic 2.4	Topic 3.4	Topic 4.4	Closing ceremony						
	Film Projection											
	Reception & Book Launch											

Plenary Session
 Parallel Session (Oral presentations)
 Social / Side event
 Coffee-Lunch Break / Poster Session

DAY 1 (6 December)
Plenary sessions



Overview

- 9h00 – 10h30 OPENING CEREMONY
- 11h00 – 12h30 HIGH LEVEL PANEL: The implementation of the UNGA Resolution (A/RES/63/124) on the 'Law of Transboundary Aquifers': the Way Forward
- 14h00 – 17h00 UNESCO ISARM OVERVIEW
- 17h00 – 18:30 EVENING PROGRAMME

Monday 6 December

Rooms XI and XII, PLENARY SESSION (morning)

OPENING CEREMONY

	<p>Chairs</p> <p><i>Mr J.A. Tejada-Guibert</i>, Director a.i., UNESCO Division of Water Sciences <i>Mr A. Szöllösi-Nagy</i>, Rector, UNESCO-IHE</p> <p>Opening Speeches</p> <p><i>Ms I. Bokova</i>, Director-General, UNESCO <i>Mr B. Kante</i>, Director, UNEP-DELC <i>Mr W. Struckmeier</i>, President, IAH <i>Mr M. Al Najjar</i>, Minister of Water and Irrigation, Jordan <i>Mr S. Khunkitti</i>, Minister for Natural Resources and Environment, Thailand <i>Mr E. Candioti</i>, Ambassador, Member of the UN International Law Commission <i>Mr I. Kiso</i>, Ambassador, Permanent Delegate of Japan to UNESCO <i>Ms M.M. Khimulu</i>, Ambassador, Permanent Delegate of Kenya to UNESCO <i>Mr B. ter Haar</i>, Ambassador, Permanent Delegate of The Netherlands to UNESCO <i>Mr J-P. Thébault</i>, Ambassador (at large) for the Environment, Ministry of Foreign Affairs and Ministry for the Ecology, Energy, Transports and Sustainable Development, France <i>Mr A. Quiñonez</i>, Executive Secretary of External Relations Secretariat, OAS</p>
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9:00-10:30

Coffee Break /Poster Session

DAY 1 (6 December)
Plenary sessions



Monday 6 December

Rooms XI and XII, PLENARY SESSION (morning)

HIGH LEVEL PANEL: The implementation of the UNGA Resolution (A/RES/63/124) on the 'Law of Transboundary Aquifers': the Way Forward

11:00-12:30

Chairs

Mr A. Szöllösi-Nagy, Rector, UNESCO-IHE

Mr C. Yamada, Ambassador, UN International Law Commission 'Special Rapporteur' on the 'Law of Transboundary Aquifers', Special Advisor of the Minister of Foreign Affairs of Japan

Rapporteurs

Mr A. Merla, Senior Consultant, UNESCO-IHP

Mr F. Sindico, University of Surrey, UK

Keynote speaker

Mr C. Yamada, Ambassador, UN International Law Commission 'Special Rapporteur' on the 'Law of Transboundary Aquifers', Special Advisor of the Minister of Foreign Affairs of Japan

Panelists

Mr E. Candioti, Ambassador, Member of the UN International Law Commission

Mr A. Duda, Senior Adviser International Waters, GEF

Mr B. Kante, Director, UNEP-DELC

Mr C. Ngangoué, Chair, AMCOW-TAC

Ms R. Peters, Water Director, Dutch Ministry for Transport, Public Works and Water Management

Mr S. Puri, Secretary General, IAH

Mr A. Quiñonez, Executive Secretary of External Relations Secretariat, OAS

Mr J-P. Thébault, Ambassador (at large) for the Environment, Ministry of Foreign Affairs and Ministry for the Ecology, Energy, Transport and Sustainable Development

Ms A. Aureli, Responsible Groundwater Activities, UNESCO-IHP

12:30-14:00

LUNCH BREAK /Poster Exhibition

DAY 1 (6 December)
Plenary sessions/Evening programme



Monday 6 December

Rooms XI and XII, PLENARY SESSION (afternoon)

UNESCO-ISARM Overview

14:00-17:00

Chairs

Mr O. Unver, Coordinator UN-WWAP
Mr S. Lee, Chairperson of the Council of UNESCO-IHP

Rapporteurs

Mr A. González, Embassy of Argentina to the UN, Vienna
Ms Vanessa Vaessen, BGR

Regional Inventories

Background, Achievements and the Way Forward (2000-2010)

Ms A. Aureli, UNESCO-IHP

Americas

Mr N. da Franca, ISARM Americas / **Ms M. Miletto**, UN-WWAP, former OAS

Africa

Mr A. Makarigakis, UNESCO Addis Ababa / **Mr A. Amani**, UNESCO Nairobi / **Mr M. Karaba**, IGAD

Asia

Mr J. Ramasamy, UNESCO Beijing / **Mr G. Arduino**, UNESCO Jakarta

South-Eastern Europe and Mediterranean

Mr J. Ganoulis, UNESCO Chair INWEB

Europe

Ms A. Lipponen, UNECE

Western Asia

Mr Y. Al-Mooji, UN-ESCWA / BGR

Questions and answers

Social/Side events (Room XI)

Evening Programme

17:00-17:15

IAH Presidents' Award 2010

The Presidents Award is presented to a senior hydrogeologist who has made outstanding contributions to the advancement of hydrogeology. This year it will be awarded to Prof. Ghislain de Marsily (Univ.Paris VI, French Academy of Sciences).

17:15-17:45

Film Projection

One Water, directed by Mr Ali Habashi. Filmed in 15 countries in both hemispheres, *One Water* is a film that celebrates all the myriad ways water has touched human lives around the globe and explores our changing relationship to water.

18:00-...

Welcome Reception and Book Launch

UNESCO-IHP would like to invite you to a Welcome Reception where Mr Fekri Hassan will launch his essay *Water History for our Times*. There will also be a presentation of the forthcoming title *Water History and Humanity*, Volume 1 in the History of Water and Civilisation Series, for which Mr Hassan is Editor in Chief.

DAY 2 (7 December)
Oral presentations (Technical sessions)



Tuesday 7 December

TOPIC 1 - Room XI

Topic 1.1, Global overview of transboundary aquifer systems <i>Chair: Wilhelm Struckmeier, IAH</i>			
9:00-10:30	Global information and Knowledge Sharing on Transboundary Aquifers - A Discussion Paper	N. Kukurić	International Groundwater Resources Assessment Centre (IGRAC), The Netherlands
	The SADC Hydrogeological Map and Atlas: Towards an Improved Understanding of Groundwater Regimes in Southern Africa	K. Pietersen	Water Geosciences Consulting, South Africa
	GEOAQUIFER: A Practical International Consultation Exercise with the North-Western Sahara Aquifer System	AWF/ADB	African Water Facility/African Development Bank
	Transboundary Aquifer Management in the SADC region	P. Beetlestone	Southern African Development Community (SADC) Water Division, Botswana
Topic 1.2, Global overview of transboundary aquifer systems <i>Chair: Abou Amani, UNESCO</i>			
11:00-12:30	Geochemical and Neo-tectonic Data Provides a New Understanding of the Hydrogeology of the Great Artesian Basin	A.J. Love	School of the Environment, Flinders University, Australia
	The Silala/Siloli Watershed in Bolivia/Chile: Lessons from the Most Vulnerable Basin in South America	B.M. Mulligan/ G. Eckstein	University of Calgary, based at the Universidad de San Francisco Xavier, Sucre, Bolivia/Texas Wesleyan School of Law; International Water Law Project; USA
	Characterisation of a Transboundary Karst Aquifer: the Classical Karst	F. Cucchi	Dipartimento di Geoscienze, University of Trieste, Italy
	Circum Saharan Transboundary Aquifers: Inventory and Challenges for Management	A. Mamou	Sahara and Sahel Observatory
Topic 1.3, Global overview of transboundary aquifer systems <i>Chair: Alexandros Makarigakis, UNESCO</i>			
14:00-16:00	Investigation of Transboundary Aquifers in Russia: Modern State and Main Tasks	I. S. Zektser	Water Problems Institute, Russian Federation
	Austrian-German Cooperation in Modelling and Managing a Transboundary Deep Groundwater Body	O. Vollhofer	Federal Ministry of Agriculture, Forestry, Environment and Water Management, Austria
	Transboundary Aquifers in Great Mekong River Basin	H. Zaisheng	China University of Geosciences, Beijing, China
	Complex Hydrogeological Study of a Hungarian – Ukrainian Transboundary Aquifer	P. Szucs	University of Miskolc, Hungary
	Ajloun and Golan – A Transboundary Groundwater Resource?	C. Siebert	Helmholtz-Centre for Environmental Research UFZ, Germany
	Challenges Facing the Management of Shared Aquifers	O. Salem	General Water Authority, Libya
Topic 1.4, Global overview of transboundary aquifer systems <i>Chair: John Chilton, IAH</i>			
16:30-18:00	Transboundary Groundwater Sharing and Contamination	K. Ali	Pakistan Water Partnership, Pakistan
	Case Study of Transboundary Aquifers in Yemen	M. Kalinin	International Sakharov Environmental University, Belarus
	Deep Transboundary Water-Bodies: Exploration and Management in the Pannonian Basin of the Republic of Croatia	S. Kolbah	INA Naftapljin Oil & Gas Exploration & Producing Company, Croatia
	Karst Transboundary Aquifers: Challenges for Management	O. Bonacci	Split University, Croatia
	Hydrological Investigation Challenges of Transboundary Watershed Aquifer in the Himalayan Region	A. Verdhen	IIT Delhi, India

Debate, questions and answers after each session

DAY 2 (7 December)
Oral presentations (Technical sessions)



Tuesday 7 December

TOPIC 2 - Room XII

Topic 2.1, Managing transboundary aquifers: challenges and opportunities <i>Chair: Emmanuel Chi nyamakobvu, UNCCD</i>			
9:00-10:30	Simply-Structured Groundwater Model Analysis for Informing Management of Transboundary Aquifers: Examples from Bengal Aquifer System (Bangladesh, India) and Nubian Sandstone Aquifer System (Chad, Egypt, Libya, Sudan)	C.I. Voss	U.S. Geological Survey, USA
	Towards Joint Management of Transboundary Aquifer Systems: Methodological Guide	R.M. Stephan	UNESCO's International Hydrological Programme, France
	Beyond 'Transboundary' Aquifers: Australia's Great Artesian Basin	M. Papas	Macquarie University, Sydney, Australia
	Transboundary Aquifers of the Fergana Valley: Challenges and Opportunities	A. Karimov	International Water Management Institute (IWMI), Central Asia Office, Uzbekistan
	The Hydrochemical Characteristics and Evolution of Groundwater and Surface Water in the Western Part of the River Nile, El Minia District, Upper Egypt	M. El Kashouty	Cairo University, Egypt
Topic 2.2, Managing transboundary aquifers: challenges and opportunities C <i>Chair: Annukka Lipponen, UNECE</i>			
11:00-12:30	Guarani Aquifer System Project: Strengths and Weaknesses of its Implementation	M.A. Giraut	Undersecretariat of Water Resources, Argentina
	Reviewing the Criteria for the Sustainable Management of the Carboniferous Limestone Aquifer at the Belgium-France Border	D. De Smet	Vlaamse Maatschappij voor Watervoorziening (VMW), Dept. Water Resources and Environment, Belgium
	Sustainable Development of Non-renewable Transboundary Groundwater: Strategic Planning and Strategic Alternatives for the Nubian Sandstone Aquifer System	K. Abu Zeid	Centre for Environment and Development for the Arab Region and Europe (CEDARE), Egypt
	Modeling Surface Water Depletions Due to Groundwater Pumping in a Transboundary	J. B. Valdes	University of Arizona, USA
	Spatial Dynamics and Hydro-Economic Modeling of Transboundary Aquifers	P.G. Katic	The Australian National University, Australia
Topic 2.3, Managing transboundary aquifers: challenges and opportunities <i>Chair: Jacob Burke, FAO</i>			
14:00-16:00	Concepts For Transboundary Groundwater Management in a Region of Extensive Groundwater Use And Numerous Contaminated Sites	P. Huggenberger	University of Basel, Switzerland
	Solutions For Groundwater Management in Areas Affected by High Arsenic Content: Vojvodina Case Study	M. Dimkic	Jaroslav Cerni Institute for Water Management, Serbia
	A Hydro(Geo)Logical Model for the Holocene History of the SW Part of the Nubian Sandstone Aquifer System Using Climate Model Scenarios and Analyses from Lake Yoa (Chad) Sediments	C. Grenier	Laboratoire des Sciences du Climat et de l'Environnement, France
	Managing Transboundary Aquifers for Climate Change: Challenges and Opportunities	M.A.K. Muir	Coastal and Marine Union, Netherlands / AINA, University of Calgary
	Water Resources and Management Issues	M.R. Ahmed	Palestinian Water Authority, Palestinian Authority
	Toward Management of Transboundary Aquifers in Two of Africa's Rural and Urban Areas? The Cases of the Lake Chad Basin and the Togo-Benin-Nigeria Coastal Aquifer	H. Machard de Gramont	Bureau de recherches géologiques et minières (BRGM), France
Topic 2.4, Managing transboundary aquifers: challenges and opportunities <i>Chair: François Donzier, INBO</i>			
16:30-18:00	Transboundary Aquifers in Karst - Source of Water Management and Political Problems. Case Study, SE Dinarides	P. Milanović	Belgrade, Serbia
	Transboundary Groundwater Aspect in the Past Water Management Practices and in the New Water Policies of Turkey	A.K. Onur	General Directorate of State Hydraulic Works, Turkey
	Mathematical Modeling Is The Main Instrument For Assessment Of Transboundary Groundwater Flows	I. Polshkova	Water Problem Institute, Russian Federation
	Transboundary Aquifers and Groundwater Resources Management between Provinces of Japan: In Case of Kumamoto Prefecture, Kyusyu Island, Japan	T. Tanaka	University of Tsukuba, Japan
	Management Challenges and Opportunities in the Endorheic Basins of the Northern Saharan Transboundary Aquifers	C. King	Oxford University Centre for the Environment, UK

Debate, questions and answers after each session

DAY 2 (7 December)
Oral presentations (Technical sessions)



Tuesday 7 December

TOPIC 3 - Room IV

Topic 3.1, Transboundary aquifers, our common resource : the equitable sharing of an invisible resource <i>Chair: Enrique Candiotti, UNILC</i>			
9:00-10:30	Transboundary Water Resources in Latin America: An Opportunity for Friendship and Cooperation towards Sustainability	O.C. Tujchneider	Universidad Nacional El Litoral, Santa Fe, Argentina
	Capacity and Institutions for the Next 50 Years: What Kind of Expert and What Kind of Agency Will We Need	S. Puri	International Association of Hydrogeologists (IAH)
	The Transboundary Aquifer of the Geneva Region (Switzerland and France): Successfully Managed for 30 Years by the State of Geneva and French Border Communities	G. de Los Cobos	Department of Security, Police and Environment, State of Geneva, Switzerland
	The United Nations Resolution on the Law of Transboundary Aquifers - Interface with Domestic Natural Resources Legislation	S. Burchi	International Association for Water Law (AIDA)
Topic 3.2, Transboundary aquifers, our common resource : the equitable sharing of an invisible resource <i>Chair: Ariel Gonzalez, Embassy Argentina to UN Vienna</i>			
11:00-12:30	The UN Watercourse Convention and the Draft Articles on Transboundary Aquifers: the Way Ahead	C. Behrmann/ R.M. Stephan	European Commission, Belgium / UNESCO's International Hydrological Programme, France
	The Law of Transboundary Aquifers and the Berlin Rules on Water Resources (ILA): Interpretive Complementarity	L. del Castillo-Laborde	University of Buenos Aires (UBA), Argentina
	Sovereignty and Cooperative Management of Shared Water Resources in a Time of Shrinking Availability: The Role of International Law	S.C. McCaffrey	University of the Pacific, USA
	Transboundary Guarani Aquifer System and Groundwater Management Mechanisms	L. Amore	Ministry of Environment, Brazil
Topic 3.3, Transboundary aquifers, our common resource : the equitable sharing of an invisible resource <i>Chair: Maximiliano Campos, OAS</i>			
14:00-16:00	The Guarani Aquifer Agreement: A First Response to the Call for Regional Arrangements in Resolution 63/124	F. Sindico	Surrey Centre on Transboundary Aquifers Governance, UK
	Fragmentation in International Water Resources Law: Reconciling the International Law Commission's 2008 Draft Articles on Transboundary Aquifers with the 1997 UN Watercourses Convention	O. McIntyre	University College Cork, National University of Ireland, Ireland
	North American Transnational Groundwater Issues: Cooperation and Conflict	M.E. Campana	Oregon State University, USA
	Strengthening Water Governance Capacity for Transboundary Aquifers	E. Mitrotta	International Union for the Conservation of Nature (IUCN) Environmental Law Centre, Germany
Debate on: "The Guarani Aquifer: a Regional Showcase of Legal and Institutional Cooperation"			
Topic 3.4, Transboundary aquifers, our common resource : the equitable sharing of an invisible resource <i>Chair: Arnold Kreilhuber, UNEP</i>			
16:30-18:00	Equitability and the Global Web of Water Security	M. Zeitoun	University of East Anglia, UK
	Institutional Assessment of the Transboundary Santa Cruz and San Pedro Aquifers on the United States-Mexico Border	S. Megdal	University of Arizona, USA
	Transboundary Aquifer Institutions, Policies, and Governance: A Preliminary Inquiry	R.G. Varady	University of Arizona, USA
	Integrating Groundwater Boundary Matters into Transboundary Aquifer Management	W.T. Jarvis	Oregon State University, USA

Debate, questions and answers after each session

DAY 2 (7 December)
Oral presentations (Technical sessions)



Tuesday 7 December

TOPIC 4 - Room III

Topic 4.1, Case studies from around the world Moderator: Léna Salamé, UNESCO-PCCP			
9:00-10:30	Keynote Speech: Groundwater and Global Water Security	M. Zeitoun	University of East Anglia, UK
	Mitigation and Prevention of Conflicts on Border Aquifers between Colombia and Venezuela: Far from the Rhetoric, Closer to the Reality	H. Martinez	University of New York City, USA
	The Urgency Of Preventive Mediation on Water Issues: The Bolsón del Huevo Aquifer in El Paso (USA)/Ciudad Juárez (Mx)	D. de Courcelles	Centre National de la Recherche Scientifique, Ecole Normale Supérieure, Lyon, France
	Management of Transnational Groundwater Resources East of European Union – Challenges and Opportunities	T. Nałęcz	Polish Geological Institute, Poland
Topic 4.2, Case studies from around the world Moderator: Léna Salamé, UNESCO-PCCP			
11:00-12:30	Setting Stage of Cooperation Between Bangladesh and India for Transboundary Aquifers	M.A.T. Khandakar	Ministry of Water Resources, Bangladesh
	Transboundary Groundwaters: Experiences of Conflict Management and Regional Cooperation in East Africa	M.J. Mulagwanda	Peoples Voice for Development (PEVODE), Tanzania
	Water as Parameter of Cooperation between Morocco and Algeria: The Case of Angad-Maghnia Transboundary Stressed Aquifers of Bounaïm-Tafna Basin	Y. Zarhloule	University Mohammed 1, Oujda, Morocco
Topic 4.3, Tools and good practices for transboundary aquifer management Moderator: Pieter van der Zaag, UNESCO-IHE			
14:00-16:00	Peak Water meets Peak Oil: Moving Towards Unitization of Transboundary Aquifers	W.T. Jarvis	Oregon State University, USA
	Managing Hidden Treasures Across Frontiers: The International Law of Transboundary Aquifers	G. Eckstein	Texas Wesleyan School of Law; International Water Law Project; USA
	Complex Projects Modelling as a Tool to Establish a Cooperation Framework within Transboundary Aquifers	E. Hassenforder	Entre Deux Eaux, France
	Addressing Socio-Economic and Institutional Dimensions in Transboundary Aquifer Management by Using Hydro-Economic Modeling and Serious Gaming	F.H.A. van Weert	International Groundwater Resources Assessment Centre (IGRAC), The Netherlands
	Towards a Regional Strategy for the Management of the Transboundary Aquifer Systems in the Americas	A. Rivera	Geological Survey of Canada, Canada
Topic 4.4, Tools and good practices for transboundary aquifer management Moderator: Pieter van der Zaag, UNESCO-IHE			
16:30-18:00	Transboundary Aquifers: Analysis of Negotiation for the Use of Groundwater Sources in the Communities, TheTotora, The Huaracila and Pomabamba District of Jesus, Province and Department of Cajamarca	G. Cruzado	National University of Cajamarca, Peru
	Comparing Conflict in Transboundary Aquifer Management: Some Insights from a Comparative Study between Spain and Australia	J. Story	Department of Regional Development and Lands, Western Australia
	The Use of Water Allocation Models in Managing Trans-boundary Water Resources: A Case from Palestine	M.N. Almasri	An-Najah National University, Nablus, Palestinian Authority

Debate, questions and answers after each session

DAY 3 (8 December)
Oral presentations (Technical sessions)



Wednesday 8 December

TOPIC 1 - Room XI

Topic 1.5, Global overview of transboundary aquifer systems <i>Chair: Friedrich Hetzel, BGR</i>			
9:00-10:30	Some Problems of Monitoring, Assessment and Management of Transboundary Aquifers	O. Podolny	Hydrogeoecological Research and Design Company 'KazHYDEC' (Ltd.), Kazakhstan
	Pedro Juan Caballero – Ponta Porã A Groundwater Transboundary Situation between Paraguay and Brazil	G. Schmidt	Federal Institute for Geosciences and Natural Resources (BGR), Germany
	Transboundary Water Resources of Lebanon: Monitoring and Assessment	A. Shaban	National Council for Scientific Research, Remote Sensing Center, Lebanon
	Preliminary Results of a Detailed Inventory of Transboundary Aquifers in Benin (West Africa)	F. Azonsi	Direction Générale de l'Eau, Benin

Topic 1.6, Global overview of transboundary aquifer systems <i>Chair: Stephen Foster, GW-MATE</i>			
11:00-12:30	Transboundary Resource and Good Neighbourhood: Case of Joint Management of Fossil Water Layer in the South	L. Djabri	Université Badji Mokhtar-Annaba, Algeria
	Groundwater Flow Connections in Palestine – Shared Aquifers Revisited	C. Messerschmid	Hydrogeologist, Palestinian Authority
	Transboundary Aquifers of Azerbaijan: Current Conditions, Challenges and Mitigation Possibilities	A. Alakbarov	Geological Institute, Azerbaijan

TOPIC 2 - Room XII

Topic 2.5, Managing transboundary aquifers: challenges and opportunities <i>Chair: Mr Charles Ngangoué, AMCOW -TAC</i>			
9:00-10:30	The Water Paradox: Is There a Sharing Crisis?	M. Kamruzzaman	Venice International University, Italy
	Managing Transboundary Aquifers: Lessons from the Field	M. Walter	Northwestern University, USA
	Cooperation on Africa's Transboundary Aquifers Sharing Benefits and Costs	W. Scheumann	German Development Institute, Germany
	Regulating Transboundary Groundwater: Big Challenges for Brazil	M.L. Navarro Lins Brzezinski	State University of Rio de Janeiro, Brazil
	Towards the Concerted Management of Hydrogeological Risks in the Iullemeden Aquifer System (IAS)	A. Dodo	Observatoire du Sahara et du Sahel

Topic 2.6, Managing transboundary aquifers: challenges and opportunities <i>Chair: Annukka Lipponen, UNECE</i>			
11:00-12:30	The Guarani Aquifer and its Systems: About Rules Profusion and Implementation Scarcity for Groundwater	C.G. Caubet	University of Brasília, Brazil
	Legal and Institutional Framework in the Management of the Transboundary Aquifer Systems of the Americas	J. T.S. Kettelhut	Brazilian National Coordinator – ISARM-Americas, Brazil
	Developing a Typology of Conflict in Transboundary Aquifer Management: Some Insights from Practical Local Case Studies	E. Lopez-Gunn	Water Observatory, Marcelino Botin Foundation, Spain
	Socio-Economic, Environmental, and Climate Changes Aspects of Transboundary Aquifer System in the Americas	O.C. Tujchneider	Universidad Nacional El Litoral, Santa Fe, Argentina

Debate, questions and answers after each session

DAY 3 (8 December)
Oral presentations (Technical sessions)



Wednesday 8 December

TOPIC 3 - Room III

Topic 3.5, Transboundary aquifers, our common resource : the equitable sharing of an invisible resource <i>Chair: Stephen Mc Caffrey, University of the Pacific</i>			
9:00-10:30	International Law and its Role on the Sharing of Transboundary Water Resources	A. Tanzi	University of Bologna, Italy
	Buried Treasure or Buried Hopes?: The Status of Mexico-U.S. Transboundary Aquifers and International Law	G. Eckstein	Texas Wesleyan School of Law; International Water Law Project; USA
	A Critical Analysis of the 2008 Draft Articles on the Law of Transboundary Aquifers in the European Context	F. Loures / M. Tignino	World Wildlife Fund (WWF), USA / University of Geneva, Switzerland
	Regional Transboundary Groundwater Management: a Comparative Analysis between the European Union and the Mercosur Normative System	A.C.L.M. Franca	Federal University of Paraíba, Brazil / University of Geneva, Switzerland

Topic 3.6, Management of transboundary aquifers in water scarce regions <i>Chair: Stefano Burchi, AIDA</i>			
11:00-12:30	Transboundary Water and Transboundary Aquifers in the Middle East: Opportunities for Sharing a Precious Resource	R. Klingbeil	United Nations Economic and Social Commission for Western Asia (UN ESCWA)
	Dig Deep: Conflict Prevention through Protection of Vital Human Water Needs	C. Leb	University of Geneva, Switzerland
	Transboundary Aquifers with Non-Renewable Water Call for Specific Management Policies	D. Pennequin	Bureau de recherches géologiques et minières (BRGM), France
	International Shared Aquifers in Arab countries	C. Ksia	League of Arab States

TOPIC 3 - Room III

Topic 3.7, Effective Governance and institutions <i>Chairman: Michael van der Valk, IHP National Committee of The Netherlands</i>			
9:00-10:30	Sustainable Development of Inter-state Aquifers in Australia: the Legal and Institutional Tools	J. McKay	University of South Australia, Australia
	International Institutional Framework to Allocate Groundwater, US-Mexico Border	M. E. Milanés-Murcia	University of the Pacific, USA
	Moving toward the Guarani Aquifer Management: the Brazilian Case	P.C. Villar	São Paulo University, Brazil
	Towards Transboundary Aquifer Management in Southern Africa	G. Christelis	Department of Water Affairs and Forestry, Namibia

Topic 3.8, Effective Governance and institutions <i>Chair: Abdin Salih, University of Khartoum</i>			
11:00-12:30	Effective Governance of Transboundary Aquifers through Institutions – Lessons Learned from River Basin Organizations	S. Schmeier	Hertie School of Governance , Germany
	What Lessons Can Be Learned for the Management of Non-Recharging Transboundary Groundwater from Transboundary Petroleum Law?	S. M.K. Saleh	University of Dundee, Scotland, United Kingdom
	Juggling Water: Transboundary Issues Facing the Guarani Aquifer	D.N. Cassuto	Pace Law School; Brazil-American Institute for Law and Environment (BAILE), USA
	Uruguay River Basin: The Possibility of Benefit Sharing and Cooperation for Transboundary Waters Between Argentina and Uruguay	M. Onestini	Centro de Estudios Ambientales (CEDEA), Argentina

Debate, questions and answers after each session

DAY 3 (8 December)
Side event: GEF & UNESCO-IHP
*Cooperation on Transboundary Aquifer
Management Projects*



The Global Environment Facility (GEF) and UNESCO's International Hydrological Programme (IHP) have established a successful cooperation on Transboundary Aquifer Management during the last decade.

As the main funding mechanism for international environmental projects, the GEF implements projects through its six focal areas. The GEF International Waters (IW) focal area targets transboundary water systems, such as river basins with water flowing from one country to another, groundwater resources shared by several countries, or marine ecosystems bounded by more than one nation.

Within the UN system UNESCO has a unique role of promoting science, education and culture for human advancement and sustainable development. The Organization's ability to translate cutting edge scientific knowledge into new pathways to sustainability, to mobilize and enhance local science, to bring together the academic world and the development community represent key assets for the GEF as it faces the ever evolving challenges of global environmental sustainability in a context of changing climatic conditions and global economics.

Having recognized the importance of sustainable and equitable management of internationally shared groundwater resources, and the strong capacities of UNESCO-IHP in this field, the GEF entrusted UNESCO-IHP with the execution of a number of projects under their International Waters focal area. To date, a portfolio of GEF groundwater projects has been built up.

The side event is aimed at presenting GEF Transboundary Aquifer Management Projects executed by UNESCO-IHP. The first session will be dedicated to the presentation of the methodology for the global assessment of transboundary aquifers, developed by a UNESCO-led groundwater expert group in the framework of the GEF Transboundary Waters Assessment Programme (TWAP). The second session will provide an insight into various regional and global projects at different stages of implementation.

SESSION 1	
9:00 -9:10	<p>Chair Alfred Duda, GEF International Waters <i>Opening and introductory remarks</i></p>
9:10 -9:20	<p>Alice Aureli, UNESCO-IHP <i>Introductory remarks</i></p>
9:20 -9:40	<p>Andrea Merla UNESCO-IHP Introduction to the GEF-UNEP global project <i>Development of the Methodology and Arrangements for the GEF Transboundary Waters Assessment Programme - TWAP</i></p>
9:40 -10:00	<p>Frank van Weert / Holger Treidel, IGRAC /UNESCO-IHP <i>Presentation of the TWAP Methodology for the Assessment of Transboundary Aquifers</i></p>
10:00 -10:30	<p>Discussion and feedback on the presented methodology</p>
10:30- 11:00	<p>Break</p>
SESSION 2	
	<p>Chair Vladimir Mamaev, UNDP-GEF</p>
11:00 -11:15	<p>Jac van der Gun, UNESCO - IHP GEF-UNEP global project <i>Enhancing the Use of Science in International Waters Projects to improve Project Results - IW:Science</i></p>
11:15 -11:30	<p>Jacob Burke, FAO GEF-FAO global project <i>Groundwater Governance: A Global Framework for Country Action</i></p>
11:30 -11:45	<p>Neno Kukuric, IGRAC GEF-UNDP regional project <i>Protection and Sustainable Use of the Dinaric Karst Aquifer System - DIKTAS</i></p>
11:45 -12:00	<p>Philip Beetlestone and Phera Ramoeli, SADC GEF-IBRD regional project <i>Groundwater and Drought Management in SADC - Tools Developed for Transboundary Aquifer Management</i></p>
12:00-12:15	<p>Andrea Merla, UNESCO-IHP GEF-IW:LEARN global project <i>Groundwater and portfolio learning in GEF IW 5</i></p>
12:00-12:30	<p>Discussion and closing of side event</p>

DAY 3 (8 December) Plenary sessions



Overview

14:00 – 16:00 HIGH LEVEL ROUNDTABLE
 16:00 – 16:15 UN-Water Special presentation
 16:30 – 18:00 CLOSING CEREMONY

Wednesday 8 December

PLENARY SESSION (Afternoon)

HIGH LEVEL ROUNDTABLE: "The UNGA Resolution (A/RES/64/292) on 'The Human Right to Water and Sanitation' and its link with the management of shared transboundary groundwater resources"

14:00-16:00

Chairs

Mr E. Candioti, Ambassador; Member of the UN International Law Commission (UNILC)
Mr G. Santa Clara Gomes (tbc), President of the Interministerial Commission on the Limits and Watershed between Portugal and Spain

Facilitator

Mr A. Szöllösi-Nagy, Rector, UNESCO-IHE, Institute for Water Education, Delft

Panelists

Mr A.W. González, Embassy of Argentina to the UN, Vienna
Mr P.C. Groux Canedo, Ambassador of Bolivia, Permanent Delegate at the Bolivian Permanent Delegation to UNESCO
Ms A. Le Strat, Deputy Mayor of Paris, responsible for water, sanitation and canal management; President of *Eau de Paris*
Mr S. McCaffrey, Full Professor at the University of the Pacific Mc George School of Law and former Member of the International Law Commission
Ms D. Mitterrand, President of *France Libertés - Fondation Danielle-Mitterrand*
Mr S. Puri, International Association of Hydrogeologists, IAH
Ms L. Salamé, Programme Specialist, UNESCO-PCCP
Mr H. Smets, Member of the Academie de l'Eau, President of the *Association pour le Développement de l'Economie et du Droit de l'Environnement*
Mr A. Tanzi, Full Professor of International Law, University of Bologna, and Chairman of the Legal Board of the UNECE Water Convention

16:00-16:15

Special presentation UN-Water

Launching 'UN-Water Activities Information System (UNW-AIS): a UN-Water Coordination on Transboundary Waters' by Dr. R. Ardakanian, Director of UN-Water Decade Programme on Capacity Development (UNW-DPC).

16:00-16:30

Coffee Break /Poster Session

CLOSING CEREMONY

16:30-18:00

Chair

Ms G. Kalonji, Assistant Director General, UNESCO

Mr S. Lee, Chairperson of the Council of UNESCO-IHP

Conference Report and Recommendations

Mr B. Varady, University of Arizona

Mr A. González, Embassy of Argentina to UN, Vienna

Special addresses

Mr P. Quevauviller, European Commission, Research Directorate General

'The EU perspective for the management of transboundary aquifers and the compliance with the Groundwater Directive'

Mr A. Duda, Senior Adviser International Waters, GEF

'The importance of transboundary aquifers management in the GEF International Waters'

Final remarks

Mr W. Struckmeier, President, IAH

Mr B. Kante, Director, UNEP-DELC

Mr M. Campos, Chief, IWRM, OAS

Mr C. Yamada, Ambassador, UN International Law Commission 'Special Rapporteur' on the 'Law of Transboundary Aquifers',
Special Advisor of the Minister of Foreign Affairs of Japan

Mr A. Szöllösi-Nagy, Rector, UNESCO-IHE

Mr C. Ngangoué, Chair, AMCOW-TAC

Mr J.A. Tejada-Guibert, Director a.i., UNESCO Division of Water Sciences

Mr R. Missotten, Executive Secretary, UNESCO-IGCP

Ms A Aureli Responsible Groundwater Activities, UNESCO-IHP

DAY 1, 2 and 3 (6, 7 and 8 December)
Poster sessions



Monday 6, Tuesday 7 and Wednesday 8 December

During Coffee Breaks

Recharge Mechanism To North-Western Sahara Aquifer System (NWSAS) Using Environmental Isotopes	S.A. Al-Gamal	University of Engineering and Technology (UET), Taxila, Pakistan
Tools for the Management of Large Transboundary Aquifers: OSS Experience	M. O. Baba Sy	Sahara and Sahel Observatory (OSS)
TRIFINIO: Transboundary Aquifer Systems in the Upper Lempa River Basin, El Salvador, Guatemala and Honduras, in Central America	M.S. Buch	Trinacional Commission for the Trifinio Plan, Guatemala
Scaldwin Project : Sustainable Aquifer Management	F. Crastes de Paulet	BRGM, Service Géologique Régional Nord, France
International Groundwater Management in the Amazon Transboundary Aquifer System: An Analysis to the Implementation of the United Nations International	P. Diaz	The Johns Hopkins University, USA
Assessment of the Groundwater Quality Status and Vulnerability of the Coastal Aquifer Systems of Benin, Nigeria and Togo (West Africa)	A. Edet	University of Calabar, Nigeria
Prospective Regulatory Environmental Services Provider for Aquifer Recovery	N.H. Elnwisy	Suez Canal University, Egypt
Fresh Groundwater Resources in Georgia and Management Problems of the Transboundary Artesian Basins	M. Gaprindashvili	Ministry of Environmental Protection and Natural Resources, Georgia
Anthropogenic Change of Transboundary Syrdaria River Regime	G.E. Glazirin	National University of Uzbekistan, Uzbekistan
The Shared Resources in the North-Western Sahara Aquifer System (Algeria-Tunisia-Libya): The Use of Environmental Isotopes (Algeria Part)	A. Guendouz	Blida University, Algeria
Transboundary Aquifers in the State of Punjab, India	S. Gupta	Central Ground Water Board, India
Management of Transboundary Aquifers of Kuwait: A Cooperative Approach	K. Hadi	Kuwait Institute for Scientific Research, Kuwait
Artesianism State of Intercalary Continental Drillings in Guerrara Region (Southeast of Algeria)	S. Hadj-Said	Université Kasdi Merbah, Algeria
The Challenge of Transboundary Aquifer Resources Management in the Azerbaijan Republic - Multidisciplinary and Multifunctional Approaches	Y. Israfilov	Geology Institute, National Academy of Sciences, Azerbaijan
Climatic Indicators and Their Influences on Rainfall and Temperature	M. Kamruzzaman	University of South Australia, Australia
Typologies of Groundwaters in Basins Shared between Ethiopia-Kenya, Ethiopia-Sudan and Ethiopia-Djibouti and their Transboundary Implications	S. Kebede	The Mawari Project Coordination Office, CIFEG
Effects of Land Use Change on Surface Water Regime - Case Study Orumieh Lake of Iran	S. Khalighi Sigaroodi	University of Tehran, Iran

DAY 1, 2 and 3 (6, 7 and 8 December)
Poster sessions



Monday 6, Tuesday 7 and Wednesday 8 December

During Coffee Breaks

Transboundary Aquifer within the Mining Areas – the Case Study of the Upper Silesian Coal Basin	K. Labus	Silesian University of Technology, Poland
ISARM and the Role of UNESCO-IUGS-IGCP Project 523 – GROWNET	S. Limaye	ISARM and the Role of UNESCO-IUGS-IGCP Project 523 – GROWNET
The Features of Formation of Araks Basins Rivers Runoff (in Armenia) and Regularities of Spatial-Temporal Distribution	V.G. Margaryan	Yerevan State University, Armenia
International Research Collaboration as a Tool for Water Resource Management in the Lake Chad Basin	B. Ngounou Ngatcha	University of Ngaoundéré, Cameroon
Evaluation of Groundwater Recharge to the Transboundary Aquifer along the Maritsa River	T. Orehova	Bulgarian Academy of Sciences, Bulgaria
Development of a Hydrological Transboundary Model for the Lower Jordan Valley, Israel, Palestine, Jordan	T. Rödigier	Helmholtz-Centre for Environmental Research UFZ, Germany
Effect of Paleo-Recharge on Large Regional Scale Groundwater Systems in Arid and Semi-arid Regions	P. Rousseau-Gueutin	Flinders University, Australia
The North West Sahara Aquifer System: the Complex Management of a Strategic Transboundary Resource	G. Sappa	"Sapienza" University of Rome, Italy
New Scientific Information on the Southwest Part of the Gondo plain (Burkina Faso)	A.N. Savadogo	Université de Ouagadougou, Burkina Faso
Regional Features of Sustainable Use of Fresh Groundwater in Europe (on the Specific Example of Belarus)	O. Shershneyov	Francisk Skorina Gomel State University, Republic of Belarus
Transboundary Aquifer of Northern Thailand	F.S. Singharajwarapan	Chiang Mai University, Thailand
The Muskau Arch Geopark (Poland, Germany) – An Opportunity of Transboundary Water Environment Protection and Monitoring	S. Skoczyska-Gajda	Silesian University of Technology, Poland
Ecological Risks Assessment and Hydro Energy of the Kyrgyz Republic	A.K. Tynybekov	Kyrgyz Russian Slavonic University, Kyrgyz Republic
Transboundary Aquifers: Ramsheh Plain Technical and Social Analysis	M. Torfeh	Isfahan Regional Water Board, Iran
Water Balancing and Power Generation Using Topographical Advantages (Hidden Potentials between the Transboundary Aquifers)	P.N. Vidhale	Vidyabharti College, Camp Amravati Maharashtra, India
Nanosafety as a New Direction of Transboundary Biomonitoring	V.A. Zolotarev	Russian Academy of Sciences, Russian Federation
Origin of Salinity of Water Resources: Climatic and Anthropogenic Impacts (Western Morocco)	L. Zouhri	Institut Polytechnique LaSalle Beauvais, France

PILOT COURSE (9-10 December)

Integrated Transboundary Groundwater Management

Tools and Methods



Like the First Pilot Course that ran in Thessaloniki in October 2008, this Second Pilot Course aims to provide the multidisciplinary information necessary to enable water practitioners - be they political, legal, scientific or technical experts - to improve the sustainable management of transboundary aquifers.

The course analyzes several case studies, presented and commented by internationally known experts from the field; this analysis is then followed by a series of round-table discussions. In the last session, a role-play aims at consolidating the methods and tools developed during the course.

The course reviews transboundary groundwater issues in different contexts: the case of countries with non concurrent administrative and hydrological boundaries; the case of the European Union, and the case of countries free from political conflict. The case of countries experiencing political conflict will be considered through a role-play based on a fictitious case study.

INSTRUCTORS

Course Task Force

Mr Jean Fried, University of California, Irvine, USA, *UNESCO Senior Consultant, Course Chair and Co-Rapporteur*

Mr Jacques Ganoulis, UNESCO Chair and Network INWEB, Aristotle University, Thessaloniki, Greece, *Course Rapporteur and Co-Chair*

Mr Neno Kukurić, IGRAC, Utrecht, The Netherlands, *Course Moderator*

Ms Raya Stephan, UNESCO Senior Consultant, Paris, France, *Coordinator of the legal part*

Keynote Speakers

Mr Michael E. Campana, Oregon State University, Corvallis, USA

Mr Gabriel de los Cobos, Geological Survey of Geneva, Switzerland

Mr Daniel Olago, University of Nairobi, Kenya

Mr Philippe Quevauviller, Free University of Brussels (VUB), Belgium

Ms Léna Salamé, Programme Specialist, UNESCO-PCCP, Paris, France

Experts

• Science

Ms Ofelia Tujchneider, Universidad Nacional del Litoral, Santa Fe, Argentina

Mr Jan Scherfig, University of California, Irvine, California, USA

• Law

Mr Gabriel Eckstein, Texas Wesleyan University School of Law, Fort Worth, Texas, USA

Ms Lilian del Castillo Laborde, Universidad de Buenos Aires, Argentina

• Water Policy and Economy

Ms Sharon Megdal, University of Arizona, Tucson, Arizona, USA

• Water Policy and Law

Ms Jennifer McKay, University of South Australia, Adelaide

PILOT COURSE (9-10 December)
 Integrated Transboundary Groundwater Management
Tools and Methods



Thursday 9 December

Room VI, Fontenoy Building - 9:00-18:00

Introduction	
9:00-9:15	Alice Aureli , ISARM Coordinator, UNESCO-IHP Jean Fried , Chairperson and co-Rapporteur, UNESCO-IHP
Presentation of the methodology of assessment of transboundary aquifers	
9:15-9:30	Neno Kukuric , Moderator, IGRAC
SESSION 1: Administrative vs. hydrological boundaries within a given country	
	Chairperson Jean Fried , UNESCO Moderator Neno Kukuric , IGRAC
9:30 -10:00	Keynote presentation <i>Mississippi vs Memphis; the curious case of the Memphis sand aquifer</i> Michael Campana , Oregon State University
10:00 -	Expert Panel presentations after the keynote
11:00 -	Break
11:15 -	General discussion
SESSION 2: Transboundary groundwater issues within an association of countries, evolving towards a federal organization, the case of the European Union	
	Chairperson Jacques Ganoulis , INWEB Moderator Neno Kukuric , IGRAC
14:00 - 14:30	Keynote presentation <i>The EU Groundwater regulatory framework and its application to transboundary groundwater bodies</i> Philippe Quevauviller , Free University of Brussels
14:30 -	Expert Panel presentations after the keynote
15:30 -	Break
15:45 -	General discussion
17:00-	Task Force meeting

PILOT COURSE (9-10 December)
 Integrated Transboundary Groundwater Management
Tools and Methods



Friday 10 December

Room XVI, Miollis Building - 9:00-17:00

SESSION 3: International transboundary groundwater issues 'without' a political conflict

	<p>Chairperson <i>Jean Fried</i>, UNESCO</p> <p>Moderator <i>Neno Kukuric</i>, IGRAC</p>
9:00 -9:30	<p>Keynote presentation <i>The Transboundary Aquifers of Kenya: their characteristics, status, management, and legislative, socio-economic and political contexts for their wise and sustainable use</i> Dan Olago, University of Nairobi</p>
9:30 -10:00	<p>Keynote presentation <i>The transboundary aquifer of the Geneva region (Switzerland and France): a successful 30-year management between the State of Geneva and French border communities</i> Gabriel de los Cobos, Geological Survey of Geneva</p>
10:00 - 11:00	Expert Panel presentations after the keynote
11:00 -	Break
11:15 -	General discussion

SESSION 4: International transboundary groundwater issues 'with' a political conflict situation: Role-Play on a fictitious example

14:00-16:00	<p>Role-play Director Lena Salamé, UNESCO-PCCP</p> <p>Chairperson Jacques Ganoulis, INWEB</p>
16:00-	Break

SESSION 5: Course Evaluation and Conclusion

16:30-18:00	<p>Chairperson Alice Aureli, UNESCO-IHP</p> <p>Task Force Members Jean Fried, UNESCO, <i>co-Rapporteur</i> Jacques Ganoulis, INWEB, <i>co-Rapporteur</i> Neno Kukuric, IGRAC, <i>Moderator</i> Raya Stephan, UNESCO-IHP, <i>Coordinator of the legal part</i></p>
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Organizer



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African Ministers Council on Water (AMCOW)
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Bureau de recherches géologiques et minières (BRGM), France
Food and Agriculture Organization of the United Nations (FAO)
Global Environmental Facility - International Waters (GEF-IW)
Global Water Partnership (GWP)
International Association of Hydrogeologists (IAH)
International Association of Hydrological Sciences (IAHS)
International Groundwater Resources Assessment Centre (IGRAC)
International Network of Basin Organizations (INBO)
National Groundwater Association (NGWA), USA
Organization of American States (OAS)
Stockholm International Water Institute (SIWI), Sweden
United Nations Economic Commission for Europe (UNECE)
United Nations Economic and Social Commission for Western Asia ((UN ESCWA)
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United Nations Water Decade Programme on Capacity Development (UNW-DPC)
United Nations World Water Assessment Programme (UN-WWAP)
World Water Council (WWC)
United Nations Convention to Combat Desertification (UNCCD)
UNEP Division of Environmental Law and Conventions (UNEP-DELIC)
UNESCO International Geoscience Programme (UNESCO-IGCP)

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