



## **International Hydrological Programme**

17<sup>th</sup> session of the Intergovernmental Council  
(Paris, 3 – 7 July 2006)

# **REPORT ON UNESCO-IHP'S PARTICIPATION IN THE FOURTH WORLD WATER FORUM**

Item 14.4 of the provisional agenda

### **SUMMARY**

This document is intended to inform the IHP Intergovernmental Council of UNESCO's involvement in the Fourth World Water Forum, which took place in Mexico City from 16 to 22 March 2006, and of its main outcomes.

## INTRODUCTION

1. The Fourth World Water Forum (WWF4) was organized in Mexico City from 16 to 22 March 2006. Its overarching theme was “Local Actions for a Global Challenge”, focusing on the means for implementation of the related Millennium Development Goals. It was attended by over 14,000 registered participants. As a result of UNESCO’s wide-ranging activities in water, the Organization enjoyed high visibility throughout the Forum. In particular, it played the lead role in the launch of the second edition of the *World Water Development Report* (WWDR2), the main output of the coalition of 24 UN agencies constituting the World Water Assessment Programme (WWAP), and in the launch of the UN-Water celebrations of the 2006 World Water Day (WWD) on 22 March, whose theme this year was “Water and Culture”. Water and associated ecosystems is the principal priority of UNESCO’s Science Sector and the IHP is its main vehicle. During the course of the Forum, it was widely recognized that UNESCO has the strongest and widest-ranging freshwater programme in the UN system.

2. The World Water Forum is organized every three years by the World Water Council (WWC), an NGO in consultative status with UNESCO, and the host Government, together with numerous partners. It is the premier global freshwater event. The Forum aims to raise awareness on water issues worldwide and seeks to enable multi-stakeholder participation and dialogue to influence water policy-making at a global level. UNESCO, which has been involved with WWC since its creation in 1996, was re-elected as a member on the Board of Governors of WWC during its Fourth General Assembly (Mexico City, 14-15 March 2006), just prior to the Fourth World Water Forum. UNESCO is the only UN agency on the 36-member Board.

## UNESCO’s DELEGATION

3. The UNESCO delegation was led by the Director-General and the Assistant Director-General for Natural Sciences and included staff of the International Hydrological Programme (IHP) from Headquarters and the Field, the UNESCO-IHE Institute for Water Education (UNESCO-IHE) and the UN system-wide World Water Development Programme (WWAP). The IHP contingent constituted over a half of the UNESCO delegation. Effective support from the Bureau of Public Information (BPI) and the UNESCO Mexico Office ensured high visibility for the Organization and smooth logistical arrangements.

## THEMATIC EVENTS AND RELATED ACTIVITIES

4. Some 260 thematic and training sessions were run during the course of the Forum, as well as a number of artistic and other side events. UNESCO was involved in over 40 of these events, as detailed in the Annex 1 to this document. These included thematic sessions, training and educational activities (especially at the Learning Centre of the Forum), cultural events and a number of side-events. There were five predetermined major themes plus five cross-cutting perspectives. The highlights and main conclusions of IHP events in WWF4 are presented in Annex 2. UNESCO’s participation in the WWF4 was reported to the 174<sup>th</sup> Session of the Executive Board of UNESCO in the document 174 EX/INF.12 and the report was very well received by the Board members.

5. UNESCO was also the convenor or co-convenor of thematic sessions and a number of side-events, and conducted training sessions in the Learning Centre. These sessions were clustered in particular around groundwater management, urban water issues, transboundary water cooperation, ecohydrology and integrated water resources management. Sessions were convened together with partners such as the Italian Ministry of the Environment and the Territory, the Global Environment Facility, the World Meteorological

Organization, the United Nations Environment Programme, the Organization of American States and the International Water Association.

6. The Director-General opened two of the Organization's thematic sessions: "Groundwater and risk management: coping with water scarcity, climate change and emergency situations" and "A collaborative approach among international agencies for effective flood management – the International Flood Initiative (IFI)". At the latter, the Director-General thanked the Japanese Government and the Public Works Research Institute (PWRI) for their generous support for IFI. PWRI hosts the newly-established International Centre for Water Hazard and Risk Management (ICHARM) under the auspices of UNESCO in Tsukuba, Japan; this Category II Centre will act as the global facility responsible for IFI.

7. The UNESCO-IHP publication "Capacity Building for Ecological Sanitation" was launched on 18 March in a session devoted to ecological sanitation. The book "La Cultura del Agua - Lecciones de la América Indígena" (The Culture of Water: Lessons from Indigenous America), published within the framework of UNESCO's Water and Culture Programme for Latin America and the Caribbean, was launched at a press conference. The UNESCO/IHP-LAC Technical series was launched during the Forum, and copies of the El Salvador and Peru water balances were distributed. The draft version of the Map of Arid, Semiarid, Sub-humid Zones of Latin America and the Caribbean, jointly developed by CAZALAC and UNESCO/IHP-LAC, was presented and exhibited. The latest version of the aquifers map, produced within the framework of the UNESCO OAS ISARM Americas programme, was presented, including the aquifer inventory for the Americas. The educational kit of the Water and Education Regional Programme for LAC, consisting in three illustrations showing the water cycle, was also presented.

## **WORLD WATER DAY 2006 AND LAUNCH OF THE SECOND ISSUE OF WORLD WATER DEVELOPMENT REPORT**

8. The final day of the Forum, 22 March 2006, was in many ways its most significant. It was organized in three parts: the celebration of World Water Day 2006 and the launching of WWDR2 by the Director-General on behalf of the UN system; the closing ceremony for the Forum; and the conclusion of the Ministerial segment. The celebration of World Water Day, the launch of the Report and the closing ceremony of the Forum were held in succession in the main plenary hall. The Ministerial segment was held in parallel in other halls. The well-attended plenary session, held under UNESCO's lead, was web-cast (see [www.unesco.org/water/webcast](http://www.unesco.org/water/webcast)) and received much media coverage that gave high visibility to the Organization.

9. As UNESCO was the lead agency for the WWD 2006 celebrations, the Assistant Director-General for the Natural Sciences spoke on behalf of UNESCO, and thus the UN system, at the opening segment. A documentary film specifically produced by UNESCO for the occasion, "El agua y la cultura" (Water and Culture), was projected. The film highlights the importance of the cultural dimension in the use and management of water resources, as well as the role of water in various religions.

10. Several parallel cultural events related to the WWD theme were organized, among them two photographic exhibitions: 'Los pies en el agua', by Vivian Bibliowicz, in the Universidad del Claustro de Sor Juana Ines de la Cruz, and 'AQVA', by Massimiliano Lattanzi, at the Museo del Carmen. UNESCO also contributed to the First International Water and Film Event, held during WWF4, which featured more than 150 water-related films and spots in local cinemas, the laureates being screened on the evening of 22 March at another location. The session "Water and Cultural Diversity: Mediating for Sustainable

Development”, part of the WWF4 thematic programme and a high profile session held in the largest hall, was convened by UNESCO-IHP on 20 March. After the session, UNESCO co-organized a press conference jointly with the Secretariat of the WWF4 on the topic ‘Water and Cultural Diversity’ and presented several publications issued by UNESCO Headquarters and the UNESCO Montevideo Office.

11. The WWDR is the main output of the WWAP whose Secretariat is based in UNESCO. WWAP produces this comprehensive report on the status of the world’s freshwater resources on behalf of and in cooperation with 24 UN agencies and entities involved in water resources management. The second issue of the Report is entitled “Water: a Shared Responsibility” and its key messages were presented by the Director-General in his address. IHP contributed to the WWDR2 in particular to chapters on the status of the world’s water resources (Chapter 4), for which IHP shared the responsibility with WMO, and to the chapter Sharing Water (Chapter 11). UNESCO-IHE was responsible for the chapter Enhancing Knowledge and Capacity (Chapter 13).

12. The adoption of a Ministerial Declaration was debated during the Ministerial segment. The UN system was not involved in the process that led to the formulation of the Declaration, or in the negotiations that led to its adoption. The Declaration reaffirmed internationally adopted principles and commitments with respect to the achievement of water development targets. No new commitments were made. The debate around the Declaration proved controversial with respect to the inclusion of a statement recognizing humanity’s right to water. Prolonged debate among the representatives of governments led to a delay in the adoption of the Declaration until after the closing ceremony; eventually, the Declaration was adopted without the “right to water” statement.

## **OTHER HIGHLIGHTS**

13. The Director-General had the opportunity to address a number of prominent Latin American, Spanish and other Mediterranean water officials on the evening of 20 March 2006 during the course of a dinner offered in his honour by the Spanish Minister of the Environment, Ms Cristina Narbona.

14. The UNESCO stand and the adjacent WWAP stand attracted many visitors during the course of WWF4, with many UNESCO materials being distributed. In addition, the outputs of various UNESCO projects, such as the materials on water and co-operation (‘PCCP: from Potential Conflict to Co-operation Potential’), were distributed during the relevant topic sessions and special events as well as at the UNESCO stand. The UNESCO Office for Latin America and the Caribbean shared a booth with other water education programmes of the world in the Global Water and Education Village. The “demo” of an electronic game on sharing water resources and on climate change was presented in different workshops as well as at the UNESCO stand.

15. A Memorandum of Understanding was signed by UNESCO-IHP and the Project Water Education for Teachers (WET International) on 18 March 2006 to strengthen collaboration and improve water education for children in the Latin America and the Caribbean region. In parallel to the official programme of WWF4, a number of project meetings and fund-raising discussions were held with different partner organizations.

## **VISIBILITY**

16. UNESCO’s presence, particularly related to the launching of WWDR2 at WWF4, received considerable coverage from international and national (Mexican) radio broadcasters and Mexican television and international press agencies. On the occasion of

WWF4, UN-TV disseminated a report on water and heritage conservation which it organized with the UNESCO Office in Mexico. The concluding event of WWF4, the celebration of WWD and the launch of WWDR2, was web-cast live with 4,000 simultaneous connections. On WWD, the Director-General of UNESCO was interviewed by the largest TV broadcaster in Mexico, Televisa, for its main evening news programme. Key UNESCO staff also gave numerous interviews to national and international media on UNESCO's involvement in freshwater and related topics.

17. The Bureau, at its 39<sup>th</sup> session (Delft, 3-5 May 2006), expressed its satisfaction with the substantive role played by IHP in the 4<sup>th</sup> World Water Forum and with the visibility and recognition of UNESCO's lead within the UN system in the area of freshwater. The Council may wish to endorse the Bureau's statement.



## ANNEX I



## UNESCO AT THE 4<sup>TH</sup> WORLD WATER FORUM Mexico City, 16 – 22 March 2006

**FRIDAY, 17 MARCH****Framework Theme 1 Sessions – Water for Growth and Development**

Time	Session #	Title	Venue	Convener(s)
11:15 – 13:15	FT1.24	Groundwater resources management and protection in Africa	Casa del Diezmo 2	UNESCO-IHP, UNEP, OSS, CEDARE, DWAF/RSA, UWC
	FT1.27	New concepts and tools for capacity building to achieve the MDGs	Casa Montejo 2	UNESCO-IHE
14:30 – 16:30	FT1.39	Shared groundwater resources for sustainable development	Casa Montejo 2	UNESCO-IHP, OAS, GEF, IGES
16:45 – 18:45	FR1.20	Megacities: Paradigms for urban water management	Casa del Diezmo 2	UNESCO-IHP, COLMEX

**Training Course – The Institute @ WWF4**

Time	Course #	Title	Venue	Convener(s)
14:30 – 19:00	CP0014	How to model flood for sustainable development	Room 3 (CEDOM)	UNESCO-IHE

**Side Events**

Time	Title	Venue	Convener(s)
12:00 – 13:00	Demo and interactive workshop: Electronic game on the challenges of managing shared water resources	Global Water Education Village	UNESCO-IHP, UNESCO-IHE
16:30 – 18:30	Demo and interactive workshop: Electronic game on the challenges of managing shared water resources	2 <sup>nd</sup> Children's Water Forum	UNESCO-IHP, UNESCO-IHE

**SATURDAY, 18 MARCH**

**Framework Theme 2 Sessions – Implementing Integrated Water Resources Management**

Time	Session #	Title	Venue	Convener(s)
11:15 – 13:15	FT2.02	Integrated management and governance: A framework for making empowerment a reality	Casa Montejo 4	ICLEI, AWB, WWAP, CONAGUA
	FT2.07	Implementation of IWRM in National Plans (Part I)	Valparaiso 1	WWAP, USAID
	FT2.33	Advancing local actions in basins, sub-basins and aquifers (BSA) through comprehensive IWRM learning and local networks	Casa Montejo 1	UNESCO-IHP, INE, EC
14:30 – 16:30	FT2.19	Implementation of IWRM in National Plans (Part II)	Valparaiso 1	WWAP, UNESCWA, UNESCAP, WB
	FT2.36	Public participation and basin solidarity	Salon Iturbide 3	INBO, ELIIW, Académie de l'Eau, UNESCO-IHE
16:45 – 18:45	FT2.20	Implementation of IWRM in National Plans (Part III)	Valparaiso 1	WWAP, DGIRH, CEDARE, CCAD, NGOs, CONAGUA
	FT2.29	Synthesis of the 4 <sup>th</sup> Forum's works on international waters Transboundary basin management: Regional consensus as a driving force for progress and development	Salon Iturbide 3	Montréal, OIE, SYKE, UNESCO, OAS, Green Cross, ANBO, CILA, CONAGUA
	FT2.38	Ecosystem and ecohydrology approaches to integrated water resource management	Valparaiso 2 & 3	UNESCO-IHP, UNEP, OAS, ILEC

**Training Course – The Institute @ WWF4**

Time	Course #	Title	Venue	Convener(s)
14:30 – 19:00	CP0014	How to model flood for sustainable development	Room 5 (CEDOM)	UNESCO-IHE

**Side Events**

Time	Title	Venue	Convener(s)
13:00 – 14:30	Special event : Problems and solutions of the Aral Sea Basin	Palacio del Canal, Banamex	Government of the Republic of Tajikistan, UNESCO-IHP
19:00 – 20:30	Project WET International Foundation's Sponsors and Partners Reception. Signature of MoU between UNESCO and WET.	Palacio del Canal, Banamex	WET International

**SUNDAY, 19 MARCH****Framework Theme 3 Sessions – Water Supply and Sanitation for All**

Time	Session #	Title	Venue	Convener(s)
16 :45 – 18 :45	FT3.24	Emerging sanitation paradigms-economics and capacity building in eco-sanitation (ecosan)	Casa Montejo 1	UNESCO-IHP, GTZ, IWA

**Training Courses – The Institute @ WWF4**

Time	Course #	Title	Venue	Convener(s)
08:00 – 13:00	CP0016	The water message game, or how to build, maintain and/or regain trust in negotiations over shared water resources	Room 1 (CEDOM)	UNESCO-IHE, UNESCO-IHP
08:00 – 19:00	CP0019	How To initiate and facilitate online learning in water management	Room 4 (CEDOM)	UNESCO-IHE, multiple organizations
	CP0022	How to use a advanced modeling system in urban groundwater management	Room 3 (CEDOM)	University of Aberdeen (UK), UNESCO-IHP

**Side Events**

Time	Title	Venue	Convener(s)
13:00 – 18:00	Special session on the Tigris Euphrates Initiative for Cooperation	Palacio del Canal, Banamex	The Euphrates Tigris Initiative for Cooperation (ETIC), Kent University, UNESCO-IHP
17:00	Presentation of the EU SWITCH project	UNESCO stand n°86, World Water Fair, Banamex	NWP, UNESCO-IHE

**MONDAY, 20 MARCH****Framework Theme 4 Sessions – Water Management for Food and the Environment**

Time	Session #	Title	Venue	Convener(s)
14 :30 – 16 :30	FT4.28	Water education for children and youth	Casa del Diezmo 3	WET, UNESCO-IHP, IMTA, WRAT
	FT4.30	Fostering sustainability in arid and water scarce zones through local actions	Salon Iturbide 2	MOET Italy, UNESCO-IHP, IDS, GEF
	FT4.32	Water and cultural diversity: Mediating for sustainable development	Valparaiso 1	UNESCO-IHP, JCAS, NIH Japan

Time	Session #	Title	Venue	Convener(s)
	FT4.39	Multi-stakeholder in local conflict mitigation	Casa Montejo 4	ICRC, UNESCO-IHP
	FT3.45	Governance as a key factor for Integrated Water Resources Management (IWRM) in major metropolises	Salon Iturbide 3	GEMEX, Metropolis, WWAP, UCLG
16:45 – 18:45	FT4.20	Capacity development strategies and social learning among stakeholders for a sustainable irrigation and drainage sector	Casa Montejo 2	UNESCO-IHE, FAO/IPTRID, ICID

#### Training Course – The Institute @ WWF4

Time	Course #	Title	Venue	Convener(s)
08:00 – 13:00	CP0025	How To Assess Environmental Flows for Rivers	Room 2 (CEDOM)	UNESCO-IHE

#### Side Events

Time	Title	Venue	Convener(s)
12:00 – 13:00	Demo and interactive workshop: Electronic game on the challenges of managing shared water resources	2 <sup>nd</sup> Children's Water Forum	UNESCO-IHP
17:30 – 21:30	Partnership event on the Tigris Euphrates Initiative for Cooperation	Palacio del Canal, Banamex	The Euphrates Tigris Initiative for Cooperation (ETIC), Kent University, UNESCO-IHP

### TUESDAY, 21 MARCH

#### Framework Theme 5 Sessions – Risk Management

Time	Session #	Title	Venue	Convener(s)
14 :30 – 16 :30	FT5.09	Groundwater and risk management: coping with water scarcity, climate change and emergency situations	Casa Montejo 3	IGRAC, UNESCO-IHP, RGWB
16:45 – 18:45	FT5.18	Space-based water observations - Alliances for providing information essential for managing the World's water resources	Casa del Diezmo 3	IAHS, IGOS, UNESCO-IHP, ESA
	FT5.33	The manifold dimensions of groundwater sustainability	Casa Montejo 2	RAS, NGWA, IGM Spain, UNESCO

**Training Course – The Institute @ WWF4**

Time	Course #	Title	Venue	Convener(s)
08:00 – 13:00	CP0026	How to make use of simulation games to formulate and evaluate an integrated river basin : case study – the LIBRA Simulation Game	Room 4 (CEDOM)	UNESCO-IHE

**WEDNESDAY, 22 MARCH****World Water Day (WWD) | Launch of the 2<sup>nd</sup> World Water Development Report**

Time	Title / Event	Venue	Organizer(s)
10:00 – 10:30	World Water Day (WWD) celebration – theme 'Water and Culture' Screening of documentary film "Water and Culture"	Hotel Camino Real	UNESCO
10:30 – 10:45	Address by the Director-General of UNESCO, on behalf of the United Nations, on the occasion of World Water Day and the launch of the 2 <sup>nd</sup> World Water Development Report	Hotel Camino Real	UNESCO and UN partners
10:45 – 12:00	Launch of the 2 <sup>nd</sup> World Water Development Report Intervention of countries participating in case studies (Ministerial level) Documentary screening on case study in the State of Mexico Intervention of donor countries (Ministerial level)	Hotel Camino Real	UN WWAP (24 UN Agencies and Commissions)

**World Water Day Side Events**

Title / Event	Venue	Organizer
Photo exhibition : 'AQVA' by Massimiliano Lattanzi, from 17 to 31 March	Museo del Carmen	UNESCO, Italian Cultural Institute, CONAGUA
Photo exhibition : 'Feet in the Water' by Vivian Bibliowicz, from 16 to 31 March	Claustro Sor Juana	UNESCO
Public screening of the laureates of the 'First International Water and Film Event'	Zocalo Tlapan	UNESCO, Secretariat Water and Film Event

## EXHIBIT BOOTHS

**UNESCO**, Stand #86 (UN Pavilion at the World Water Fair), 16-22 March, from 11.00 to 19.00

- International Hydrological Programme (IHP) of UNESCO
- UNESCO-IHE Institute for Water Education
- Book / poster display, publications, multi-media resources

**UNESCO Office for Latin America and the Caribbean** (the Global Water and Education Village), 16-22 March, from 11.00-19.00.

- Book / poster display, publications

**UN WWAP**, Stand #88 (UN Pavilion at the World Water Fair), 16-22 March, from 11.00-19.00

- A joint effort of 24 UN agencies and commissions through the UNESCO-led and hosted WWAP
- Launching of the 2<sup>nd</sup> World Water Development Report “Water, a shared responsibility”
- Documentation on WWAP activities, education posters, brochures and the Executive Summary of the Report will be made available at the stand

ANNEX II

**SUMMARY OF IHP EVENTS AT THE 4<sup>TH</sup> WORLD WATER FORUM  
Mexico City, 16 – 22 March 2006**

**Framework Theme 1 Sessions – Water for Growth and Development**

***Groundwater resources management and protection in Africa***

Conveners: UNESCO-IHP, United Nations Environment Programme (UNEP), Sahara and the Sahel Observatory (OSS), Center for Environment and Development for the Arab Region and Europe (CEDARE), Department of Water Affairs and Forestry of the Republic of South Africa (DWAF), University of Western Cape

The general objective of the session was to work towards a groundwater protection strategy suitable to Africa's physical and socio-economic environment. This was achieved through of the continent perspective of the situation laid out by the keynote speaker. Three case studies on groundwater vulnerability were presented from the UNEP/UNESCO project on cities in 11 countries. The session concluded that the greatest success for groundwater protection and equitable management will be achieved by linking to other projects in the region and to sanitation programs. The session called for an assessment of groundwater policy and legislation status, and the development and piloting of general policy principles and possible framework legislation.

***Shared groundwater resources for sustainable development***

Conveners: UNESCO-IHP, Organization of American States (OAS), Global Environment Facility (GEF), Institute for Global Environmental Strategies (IGES)

The session provided through presentation of local actions an overview of the status of management and protection of shared groundwater resources. The session presented the results of a Global Environment Facility (GEF) funded project in Africa, case studies in Asia with emphasis on water and cities, and the inventory of the 62 transboundary aquifers in the Americas (ISARM). Among the key messages of the session, it was concluded that governments and stakeholders need to be working in a much higher level of coordination to bring the relevant players together. It was also recognized that a strong legal basis and strong institutions (e.g. transboundary commission) are crucial for effective transboundary cooperation.

***Megacities: Paradigms for urban water management***

Conveners: UNESCO-IHP, El Colegio de México (COLMEX)

The objectives of this session were to illustrate and explore novel approaches and advances for the improved integrated and sustainable urban water management, particularly in cities in developing countries. In particular, to examine the interrelationship between urban settlements and the river basins which it affects seeking synergies between local and/or regional stakeholders to improve the conditions of river basins and to address the regional impacts and results of local initiatives and ) and the reasons for their success or failure.

It was recognized that capacity building is a key factor for the achievement of the water-related MDG's and in general for the sustainability of human settlements, particularly through the international scientific and professional programmes and institutions, and commitments and partnerships for future action. Greater exposure – and a higher awareness as a result - of the international water community to novel approaches and tools in support of integrated urban water management and planning is required.

**Framework Theme 2 Sessions – Implementing Integrated Water Resources Management**

***Advancing local actions in basins, sub-basins and aquifers (BSA) through comprehensive IWRM learning and local networks***

Conveners: UNESCO-IHP, Instituto Nacional de Ecología (Mexico), European Commission

The following key messages/observations were endorsed in the session: Experiences from the HELP Pilot Basins should be regularly assessed to support structured learning and IWRM implementation processes. Thus monitoring mechanisms need to be implemented with appropriate indicators and bench marking in tune with political realities. Institutional arrangements ideally responding to a common vision of stakeholders, and guaranteeing the continuity of the relates efforts need to be developed to enable this to happen on a broader front across administrative, national, linguistic and other borders.

***Ecosystem and ecohydrology approaches to integrated water resource management***

Conveners: UNESCO-IHP, UNEP, OAS, International Lake Environment Committee Foundation (ILEC)

The session introduced local actions that have demonstrated successes using the ecosystem and ecohydrology approaches in IWRM, namely, Pilica River, Poland; Lake Naivasha, Kenya; and Sao Francisco River Basin, Brazil. The need to further develop and implement demonstration activities was noted, and the organisations involved in the session will play strategic roles in sustaining and reinforcing these activities, and work towards upscaling the results of these activities to different scales and in different parts of the world.

**Framework Theme 3 Sessions – Water Supply and Sanitation for All**

***Emerging sanitation paradigms-economics and capacity building in eco-sanitation (ecosan)***

Conveners: UNESCO-IHP, Deutsche Gesellschaft fuer Technische Zusammenarbeit (GTZ), International Water Association (IWA)

The main objectives of the session were to showcase ecosan solutions and to discuss with participants a strategy for scaling up of training and capacity building measures for ecosan. Some of the recommendations from the sessions emphasized that although several technical options / systems exist to implement sustainable sanitation solutions, there is a need for continued innovation to meet future challenges and for trained personnel for successful application. In particular, decision makers need a more informed basis (criteria) on which to advocate for sustainable solutions - resulting local actions will be more appropriate when system boundaries are clearly defined and the set of sustainability criteria are adequately broadened.

**Framework Theme 4 Sessions – Water Management for Food and the Environment**

***Water education for children and youth***

Conveners: Water Education for Teachers (WET), UNESCO-IHP, Instituto Mexicano de Tecnología del Agua (IMTA), Water Resources Agency (Taiwan)

As noted in the session's proceedings, continuing education of youth, educators, citizens, and water resource professionals is important and can take place in a variety of forms. Symposia, posters, books, learning expeditions and classroom teaching are just a few methods that can be employed. A clear need for more directed efforts to link water scientists with water educators to blend the knowledge and expertise of both groups was recognized.

***Fostering sustainability in arid and water scarce zones through local actions***

Conveners: Ministry of the Environment and Territory of Italy, UNESCO-IHP, Institute of Development Studies (IDS), GEF

This session – drawing particularly on the experiences of the Water Programme for Africa funded by Italy and on the G-WADI network (Water and Development Information for Arid Lands) - disseminated information on new technologies focusing on four main themes: wastewater treatment for re-use of drainage water for irrigation; integrated water resources management; managing groundwater recharge; exploitation of brackish water and desalination. Lack of additional available water resources has lead policy makers to reach out for demand management tools. Desalinated brackish and sea water and wastewater in agriculture can be feasible solutions for securing and enhancing water supplies in semi-arid areas. The role of managed aquifer recharge was recognized in 1) helping curtail overexploitation of aquifers in coastal areas as well as 2) improving water quality. The session called for demonstration projects to foster development of local research expertise, scientific knowledge, institutional development, training programs for professionals, and training of operators.

***Water and cultural diversity: Mediating for sustainable development***

Conveners: UNESCO-IHP, Japan Center for Areas Studies (JCAS), National Institute for the Humanities (Japan)

This session highlighted the importance of understanding and considering the cultural aspects of water issues. It presented examples of mediation and communication means suitable for advancing sustainable development of water resources. Promoting best practices and community empowerment through the respect of cultural diversity is crucial for both, the identity of local communities and water resource management. Mediation, understood as a process facilitating the exchange and understanding between

the actors of sustainable development in the scientific, political and public sphere, is essential in helping societal partners to agree on common aims or reconciling their differences. The actions and projects presented in the session took a holistic and ethics-driven approach to promote exchange: between local, national and international actors of the water sector; and among various knowledge platforms, based on cultural diversity, territories, gender, generations, scientific disciplines. Two IHP projects contributed to the session, the Network of Water Anthropology (NETWA) and Water and Culture: Lessons from the American Indian Cultures (run by IHP-LAC).

#### ***Multi-stakeholder in local conflict mitigation***

Conveners: International Committee of the Red Cross (ICRC), UNESCO-IHP

ICRC's interventions in conflict and post-conflict situations presented in the session guarantee the right of vulnerable populations to have an equitable and safe access to water. Synergies between ICRC and UNESCO should be found in this area of activity. The session concluded that UNESCO can facilitate and reinforce ICRC's actions by a) training and educating populations at war, b) encouraging and nurturing dialogue, and c) supporting data gathering and sharing.

#### **Framework Theme 5 Sessions – Risk Management**

##### ***Groundwater and risk management: coping with water scarcity, climate change and emergency situations***

Conveners: IGRAC, UNESCO-IHP, Research Group of Water Balance (Japan)

The session highlighted and discussed groundwater in the context of risk management, mainly from the perspective of groundwater availability. The focus was on water scarcity, either steadily developing in poorly water-endowed environments under human and/or climatic pressure, or caused by disasters. Experience from many of the presented examples such as inventorying and monitoring of fresh groundwater resources of the South Indian Coast after the Tsunami of 2004 and the effects of flooding of Labe River in the Czech Republic feeds to the global IHP project "Groundwater for Emergency Situations" (GWES), which aims to propose effective methodologies for identifying groundwater resources of low vulnerability to extreme and/or catastrophic climatic and geological events and human impacts.

##### ***Collaborative approach among international agencies for effective flood management - International Flood Initiative (IFI)***

Conveners: Public Works Research Institute (PWRI), World Meteorological Organization (WMO), UNESCO, United Nations University (UNU)

The purpose of this session was to jointly agree upon the revised version of the IFI Concept paper and to organize the coordination of the planned activities of the participating organizations. The discussions at first include an introduction of non-structural means into flood damage mitigation. The need for Integrated Flood Management has been discussed and widely agreed. At the second part of discussions, the methodologies, advanced technologies (application of neural network as one of the hydroinformatics tools) and how to influence the global political agenda such as proposing a new MDG (i.e., to half the population by 2015 that is negatively affected from the floods). It was generally agreed that case study examples of good balance, mix and match between human needs and nature conservation should be studied, collected and disseminated as good practices of integrated flood management.

##### ***Space-based water observations - Alliances for providing information essential for managing the World's water resources***

Conveners: International Association of Hydrological Sciences (IAHS), Integrated Global Observing Strategy (IGOS) Partnership, UNESCO-IHP, European Space Agency (ESA)

The session demonstrated through examples that the use of satellite data and emerging Earth Observation (EO) analysis tools in conjunction with river basin and aquifer simulation models holds much promise in overcoming deficiencies in water management that result from a lack of relevant data. The Group on Earth Observations (GEO) and other international partnerships were recommended to be used to promote the development and application of EO from satellites and in-situ measurement networks to water management at all levels. Among the recommendations, the participants urged governments to support the development of partnerships, research programs, integrated data systems and demonstration projects to advance capabilities for using EO. Plans need to be made for North-South and South-South

partnerships to develop capacities. The factors that limit access to high-resolution EO data should be reviewed.

***The manifold dimensions of groundwater sustainability***

Conveners: Royal Academy of Sciences (RAS), National Ground Water Association (NGWA), Instituto Geológico y Minero Spain, UNESCO

The main goal of the session was to debate the Alicante Declaration, which is the action agenda that resulted from the debates held during the International Symposium on Groundwater Sustainability held in Alicante, Spain in January 2006. The call for action from this session was to make the promise held by groundwater a reality which requires responsible use, management and governance of groundwater. In particular, actions need to be taken by water users, who sustain their well-being through groundwater abstraction; decision makers, both elected and non-elected; civil society groups and associations; and scientists who must advocate for the use of sound science in support of better management.

**Side events**

***Demo and interactive workshop: Electronic game on the challenges of managing shared water resources***

Conveners: UNESCO-IHP

At the Mexican Olympic Centre two workshops were organized for the youngsters who are attending the 2nd Children's World Water Forum. During these workshops the Demo of the electronic game on climate change and the challenges of managing shared water resources could be played online. With this demo the children could develop their own game and by doing so, we received a lot of input on how this game should look like, and what elements the children like or not.

***Special event : Problems and solutions of the Aral Sea Basin***

Conveners: Government of the Republic of Tajikistan, UNESCO-IHP

Different IGOs and NGOs already involved in the Aral Sea basin, exchanged views on the way around the crisis of that basin. They talked about transparency and accountability, participatory processes, scientific thinking, regional cooperative approach, multi-sectoral orientation.

***Training course: The water message game, or how to build, maintain and/or regain trust in negotiations over shared water resources***

Conveners: UNESCO-IHE, UNESCO-IHP

This training course was organized around a role play that teaches about competitive behaviour in reaching co-operative water agreements. It demonstrated to the participants the crucial importance of trust in negotiations. It showed them how costly distrust can be in water related negotiations.

***Training course: How to use a advanced modeling system in urban groundwater management***

Conveners: University of Aberdeen (UK), UNESCO-IHP

The objective of this training course was to show the recent developments and applications of a new generation of modelling, planning and sustainable urban groundwater management tool: UGROW (Urban Groundwater Management Model) which includes quality and quantity components. The development of this model is part of the IHP-VI activities on Urban Water Management.

***Special session on the Tigris Euphrates Initiative for Cooperation***

Conveners: The Euphrates Tigris Initiative for Co-operation (ETIC), Kent University and UNESCO-IHP

This session brought together the official delegations of Iraq (led by the Minister of Water Resources) and Turkey (led by the Director General of State hydraulics Works) to the Forum. It provided them with opportunities for dialogue regarding the issues of sustainable development in the Euphrates-Tigris region. They both expressed their willingness to co-operate with each other and with the ETIC team.

***Partnership event on the Tigris Euphrates Initiative for Cooperation***

Conveners: ETIC, Kent University and UNESCO-IHP

This session brought together the Iraqi Minister of Water Resources and the Syrian Minister for Irrigation. It provided them the possibility to discuss the ETIC in the presence of donors and to explore grounds for building partnerships. They both agreed to co-operate with each other and with the ETIC team.