

International Hydrological Programme

40th session of the IHP Bureau
(UNESCO-IHE, Delft, 13 – 15 June 2007)

REPORT ON IHP-VI THEMES AND CROSS-CUTTING PROGRAMMES

Item 5.1 of the provisional agenda

SUMMARY

The Bureau may wish to comment on the results reported in this document on the implementation of IHP-VI for the period June 2006 to April 2007, particularly in the light that 2007 is the concluding year of IHP-VI and that most of the activities are nearly finalized. No decision is required.

[Note: The previous document on IHP-VI results, i.e., document IHP/IC-XVII/Inf.6 on “Results of IHP-VI projects since the 16th session of the Intergovernmental Council of IHP (as of 31 May 2006), is available online at: <http://unesdoc.unesco.org/images/0014/001463/146358e.pdf>.]

INTRODUCTION

This document reports on the progress achieved in the implementation of IHP-VI during the period of June 2006 to April 2007. The progress from the inception of IHP-VI in January 2002 to March 2006 has been reported on in previous documents submitted to the IHP Bureau and Intergovernmental Council (the latest one was IHP/IC-XVII/Inf.6 presented to 17th session of the Council). Given that IHP-VI is reaching completion in 2007, this document reports virtually on the final stage of its implementation. It focuses on the activities financed from the Regular Programme. There are major on-going extrabudgetary activities executed by the IHP which contribute to the overall objectives of the UNESCO freshwater programmes and of IHP-VI in particular; these include those water related projects funded through the Flanders-UNESCO Trust Fund for the Sciences (FUST) focusing on arid and semi-arid zones issues, mainly in the African Continent, the UNESCO-Italian Ministry for the Environment project "Water Programme for Environmental Sustainability: "Towards Adaptation Measures to Human and Climate Change Impacts" and a number of others. These would merit separate reports. Likewise, detailed information on the International Flood Initiative and the International Sediment Initiative is given in document IHP/Bur-XL/10.

THEME I : GLOBAL CHANGES AND WATER RESOURCES

In the area of study of climate variability's impacts on water resources, the Assessment of Snow Glacier and Water Resources in Asia emerged as an active sub-topic (UNESCO Almaty and New Delhi). In addition to bringing together the scientific knowledge on the impacts of climate variability and change on snow and glacier resources in the region, the events and related studies involved informing decision-makers, professionals and other stake-holders of the relevance of the developments to water resources in the region. In Focal Area 1.3., the focus has been on preparing publications for different audiences.

Progress and results achieved from May 2006 – April 2007

Focal Area 1.1 **Global estimation of resources: water supply and water quality**
Focal Area 1.2 **Global estimation of water withdrawals and consumption**

- Follow up to the study on "Climate variability in the region and its influence on water resources in Sri Lanka and Nepal" was prepared. The study in Nepal focused on the ways and means to deal with the climate change and its influence on snow-cover and glaciers in the Himalaya. The Sri Lankan study is being followed up using a drought focused study in the Walawe Basin to ascertain short and long-term water availability and socioeconomic influence due to the climate change. Planning meeting on International Working Conference on "Response of Snow, Glaciers and Wetlands to Climate Change" was held (UNESCO New Delhi).
- The regional workshop "Assessment of Snow-Glacier and Water Resources in Asia" organized by UNESCO Almaty and the Regional Environmental Centre for Central Asia (CAREC), among others, with IHP and MAB support in November 2006 in Almaty, Kazakhstan gathered the scientific understanding of snow and glacier dynamics in mountainous areas and their role in runoff formation. The resulting Almaty Declaration drew attention beyond the scientific community to the glacier mass decline and potential impacts on water resources in Asia.
- In order to lend more visibility to the UNESCO-led WWAP in the region, Sri Lankan government organized a launching ceremony for the recently prepared National Water Development Report for Sri Lanka. A cooperation agreement has been reached and proposals developed to intensify activities at the Gagas River Basin at this designated HELP basin. UNESCO's taken a lead in the formation of UN-Water INDIA, a coordinating arrangement (UNESCO New Delhi).

- Knowledge was shared on water resources management in Asia and the Pacific through the organization of the 3rd Asia Pacific Association for Hydrology and Water Resources Conference entitled “Wise Water Resources Management towards Sustainable Growth and Poverty Reduction (Bangkok, October 2006) in conjunction with the 14th Regional Steering Committee Meeting for Southeast Asia and the Pacific and the International Symposium on Managing Water Supply for Growing Demand.
- A Regional Steering Committee for IHP in South Asia was formed in February 2006 as a coordinating mechanism for all IHP activities in South Asia, creating a condition for South-South exchange of information and knowledge.
- Improved public awareness about water conservation and scarcity in the Arab region was achieved through the organization of the workshop on efficient water demand management, 17-21 September 2006, Sharm El Sheikh, Egypt by UNESCO Cairo. The following publications/documents were produced:
 - a) Publication on Flood Risk and Vulnerability mapping: a case of Ratu River in Nepal (2007, with the International Centre for Integrated Mountain Development ICIMOD);
 - b) Brochures and advocacy material being prepared for the Science sector;
 - c) Draft Assessment report of the HKH-FRIEND;
 - d) Interactive CD on “Water Resources of Asia” (2006);
 - e) Briefing paper prepared for the Indian Parliament for the UN-WATER;
 - f) Sri Lanka Water Development Report”.

Focal Area 1.3 *Integrated assessment of water resources in the context of global land-based activities and climate change*

- In continuation of the Humid Tropics Programme, and the Ford Foundation funded a project entitled “Land Use Change, Watershed Services and Socio-Economic Impacts in the Western Ghats, India”, involving a completed scientific investigation addressing the global issue of the presently unknown hydrological impacts arising from reforestation of degraded lands in the humid tropics. A Technical publication on Hydrology and Watershed Services was produced synthesizing findings of these activities (UNESCO New Delhi).
- Tools of IWRM applications were enhanced in a number of Arab countries through the organization of the expert group meeting on IWRM in the Arab region, 24-25 March 2007 in Manama, Bahrain by UNESCO Cairo.
- The international conference on climate change and its impacts held in Ouagadougou from 22-27 January organized by Economic Commission for Africa and CILSS (Permanent Inter-State Committee to Combat Drought in the Sahel) with the participation of UNESCO Accra contributed to improving awareness of various stakeholders on the impacts of climate variability and change on water resources in West Africa and implication for management. Technical and scientific support has been provided for the preparation of the West African Action Plan on Climate change.
- Technical and scientific support was provided by UNESCO Accra for the preparation of synthesis papers on adaptation strategies for water resources management in West African basins in the context of climate change during a writing workshop organized by ENDA's (Environnement et Développement du Tiers Monde) environment and energy department in Dakar, Senegal in February 2007.
- Water resources management was improved by UNESCO Windhoek through (i) training two communities in Namibia on monitoring their groundwater resources (including monitoring equipment) and (ii) conducting a survey regarding the water users at Cuvelai Basin and holding an inception meeting for a Basin Management

Committee. The objective is to sensitize the community to take active role for the management of their water resources to benefit their livelihood in a sustainable manner.

- Knowledge base on water harvesting was improved by conducting research in Namibia. The activities are part of the UNDAF Joint Programme between UNESCO, UNDP and FAO on Integrated Land and Water Resources Management and will lay the foundation for a pilot project on IWRM that will follow.
- In order to contribute to the assessment and better management of water resources in LAC under a global change scenario, through the Water Balance Programme, UNESCO Montevideo is supporting the generation/updating of water balances of the region by applying a common methodology. The Central American component is already being finished while the South America water balances are in progress. The preparation of the base document for the global change theme for the VI Inter-American Dialogue in Water Management was entrusted to UNESCO/IHP.
- Training courses for monitoring and assessing water quality in rivers using bio-indicators were developed in the LAC Region. As a joint initiative of HELP and Ecohydrology IHP Programmes.
- IHP provided expert contributions on groundwater and remote sensing to a new WMO/UNESCO Manual for Water Resources Assessment, aimed to mainly support national hydrological services. The UNESCO/WMO Handbook on Assessment is being updated jointly with WMO through an intra-active process involving the countries of the region both from Latin America and the Caribbean.
- The draft final report and results of the project "Assessment of Climate Change Impact on the Hydrological Cycle Elements in South-East Europe" were presented in the BALWOIS conference in Ohrid, FYROM in May 2006 and other scientific and professional events held mainly in the Balkans, disseminating the results not only to scientists but also to for example national and regional stakeholders and to the International Commission for the Protection of the Danube River.
- The publication "Influence of Land-use and Land Cover Change on Watershed Services and Socio-economic Impact in the Western Ghats region of India" (2006) was produced.
- Among other seminars/workshops/meetings, a writing workshop on reforestation-afforestation of degraded lands and the impacts on high and low flows", was held in Bangalore, India, in September and November 2006.

Major results in Theme 1 to date:

- Studies and events devoted to assessing climate variability's impacts on water resources, snow and glaciers was favourably developed, especially in Asia, reviewing knowledge and raising awareness.
- Chapters as expert contributions were provided to the new Manual for Water Resources Assessment in preparation, a collaborative effort of WMO and UNESCO.

Expected results until December 2007:

- Publication (in English and Russian) of the proceedings of the workshop "Assessment of Snow-Glacier and Water Resources in Central Asia"
- Involvement in the preparation for the first Asia-Pacific Water Summit December 2007, Japan.
- The latest knowledge in area of "Water and Climate" will be reviewed in an international conference in Helsinki, Finland, 3-6 September 2007.
- Central Asian preparation for the first Asia-Pacific Water Summit December 2007, Japan

- The book “Impacts of Reforestation of Degraded Land on Landscape Hydrology in Asian Region” will be published (in press 2007).

THEME 2: INTEGRATED WATERSHED AND AQUIFER DYNAMICS

The focus of Theme 2 during the reporting period has been on developing scientific, information resources, tools and methodologies for improved integrated watershed management, better knowledge on aquifer systems at different scales as well as preparedness and risk mitigation from extreme hydrological events. In the framework of the International Sediment Initiative, a global assessment of sediment transport is being carried out. The global mapping of groundwater resources by the WHYMAP consortium expanded by integrating hydrogeological environments and the recharge distribution. The inventory of transboundary aquifers in the framework of ISARM was initiated in new regions and IGRAC has developed the related global database. During the reporting period, the concept of the IFI and a mapping of the agencies in the consortium was initiated to work towards the overall objective of achieve capacities in countries for better understanding and handling of flood risk. Materials were produced improving the outreach of the initiative.

Progress and results achieved from May 2006 to April 2007

Focal Area 2.1: Extreme events in land and water resources management

- Following the first meeting of the Advisory Committee of the International Flood Initiative (IFI) held in WMO headquarters, Geneva, on 26th January 2007, UNESCO IHP Secretariat has produced an IFI flyer and a brochure to be distributed among the partner organizations and to the public. ICHARM acts as the Secretariat of IFI and development of a webpage to disseminate IFI activities has been initiated. In cooperation with the National Graduate Institute for Policy Studies and the Japan International Cooperation Agency, ICHARM designed a new master course program to produce the young professional experts on flood related disaster mitigation in developing countries with the ability to formulate comprehensive plans.
- Within the framework of studies of extremes events in the Asian region the UNESCO New Delhi office completed the first phase of the study on flood and drainage management in Kelani Ganga, Kalu Ganga and Bolgoda Basins in Sri Lanka and prepared a white paper on floods in South Asia (January 2007). Reports were also produced on flood Management Plan of Ratu River. Experts from the region were invited to meet in Roorkee, (India) in order to develop a better knowledge and understanding on social responses to floods in the region.
- Within the framework of the Groundwater for Emergency Situations (GWES) project, a methodological guide for the management, protection and use of groundwater resources has been published and several case studies were compiled. The guidelines have been disseminated and have been presented to other UN agencies and programmes dealing with disaster reduction. The Office in Beijing carried out a pilot research project on “The Emergency Water Supply in Beijing for Coping with the Consecutive Drought” under GWES initiative in collaboration with Chinese partners.

Focal Area 2.2: International river basins and aquifers

- Within the framework of the International Shared Aquifers Resources Management project (ISARM) regional and sub-regional networks of IHP National Committees and member states have contributed to the development of the inventory in the SADC region, West Africa region, Central Asia and the Caucasus region, Balkans region and the Americas (UNESCO/OAS Programme). Knowledge base of

transboundary aquifers was increased by convening the first ISARM SADC network. "Transboundary Aquifers in Asia with a special emphasis to China" was published. . A CD-Rom on ISARM/SADC has been prepared by IGRAC. IGRAC has developed further the ISARM web-portal. Case studies under the ISARM Programme are being developed, including ones on the aquifer systems Artibonito-Masacre, the Yrendá-Toba-Tarijeño and the most recent Ostua-Metapan (Guatemala-EI Salvador). Many activities to disseminate the advances of ISARM programme at regional and international level were supported like the ALHSUD meeting in Paraguay in 2006. With a view of starting ISARM-Asia, UNESCO Office Beijing with support from UNESCO-IHP initiated a pilot project in the Heilongjiang-Amur River basin between China and the Russian Federation implemented by Chinese governmental partners. During the 34th Congress of International Association of Hydrogeologists (IAH) October 2006, UNESCO Office Beijing organized a special session on Transboundary Aquifers with the participation of experts from Asia.

- the UNESCO Chair / INWEB in Thessaloniki, Greece, completed the review of existing data on transboundary aquifers and published a database on transboundary karst on a web-GIS platform. An international UNECE-UNESCO-ISARM workshop was held in April 2007 in Thessaloniki, Greece to 1) jointly finalise the assessment of transboundary groundwaters in South Eastern Europe, and (2) to identify and coordinate related follow-up activities (UNESCO Venice).
- The GRAPHIC project has compiled a number of case studies on groundwater resources and climate change.
- Within the WHYMAP programme, the map showing the integration of hydrogeological environments and the recharge distribution has been developed.
- UNESCO-IHP has supported scientific symposia and conferences on groundwater issues in Karlovy Vary, Czech Republic (May 2006), Ciudad Real, Spain (June 2006), Dijon, France (June 2006), Barcelona, Spain (April 2007).
- An expert group was formed and concept developed for the group's work on transboundary river activities by involving ranking diplomats, coordinated by UNESCO New Delhi.
- The communication of Arab water professionals and institutions was enhanced through the organization of the regional conference on groundwater protection, 20-23 November 2006; Tripoli, Libya;
- National Training Course for Capacity Building on Groundwater Hydrology and its Management in Mongolia was organised June 2006 by the Mongolian IHP Committee in cooperation with UNESCO Beijing and the Japanese IHP Committee.
- The book Groundwater Dynamics in Hard Rock Aquifers was published (2007).

Focal Area 2.4: Methodologies for integrated river basin management

- The preparation of Practice Guidelines for IWRM implementation in Basins, Sub-basins and Aquifers (BSA) has been further developed and of a final workshop in order to finalize them..
- The book "Dynamic Programming Based Operation of Reservoirs: Applicability and Limits" was published under the Cambridge University Press/International Hydrology Series.
- An ISI concept was developed including analysis of sediment data at a global level. Several rivers have been studied as ISI case studies: The Yellow River; Yangtze River; Mississippi River; Rhine River; Danube River; Panama River; Nile River; Volga River; Zambezi River. Three reports have been prepared for the review of erosion and sediment related research of ISI; the technical and scientific review were undertaken and the documents are ready for publication . The ISI global erosion and sediment information system has been set up at IRTCES , content is being provided, including data on the case studies . An ISI training course took place in Villahermosa,

Mexico in March 2007. Moreover, ISI established a close collaboration with European Sediment Network (SedNet). The international sediment initiative conference was organized by UNESCO Cairo from 12 to 15 November 2006 in Khartoum, Sudan

- UNESCO is the key partner of the European Space Agency (ESA) in TIGER initiative which has the objective of developing sustainable satellite-based information services to support water resources management in Africa. The intermediate results of TIGER's North-South Technology Transfer projects were reviewed, demonstrating tailored Earth Observation based information services to support African water authorities in collecting water relevant information. : 20 scientists from 10 SADC countries were trained during a short training course on Remote Sensing for Integrated Water Resources Management that organized in November 2006 in the University of Western Cape by UNESCO Windhoek and Harare offices, strengthening the capacity of the Member States to apply remote sensing to support water resources management. UNESCO started hosting the TIGER Executive Bureau in its Nairobi Office,
- Publication and dissemination of Groundwater Resources Sustainability Indicators with a number of documented test case studies for further application to assess groundwater situations. First scoping was made for the development of indicators for socio-economic aspects of groundwater resources and their use.
- The state-of-the-art in the Management of Aquifer Recharge as the proceedings of the International Symposium on the Management of Aquifer Recharge (Berlin, June 2005) was published as a CD and on the web, and widely disseminated, containing more than 130 reviewed articles ..
- The UNESCO office in Windhoek has contributed to the improvement of the water resources management in Swaziland by aiding in the identification of stakeholders and the organization of a basin management committee. Knowledge base on water pollution was also improved by conducting research at a specific area where seepage from solid waste contaminates waters in Swaziland. A training programme for i participants from 10 SADC countries was organized on determining and managing environmental flows within the framework of IWRM
- Technical and scientific support and advocacy to the ECOWAS Water Resources Unit on the creation of a Water Observatory in West Africa and the definition of indicators for the monitoring of the implementation of the IWRM was provided by UNESCO Accra. A consultation document has been reviewed on these issues. The setting up of a thematic network on IWRM in West and Central Africa on the framework of the SIST (Système d'Information Scientifique et Technique) project managed by Agence Universitaire de la Francophonie was supported. Accra office is charged to run the network for 2007-2008 before it transfer to an existent network such as West and Central African FRIEND, and AMMANET (Network for the African Monsoon Multidisciplinary Analysis).
- The UNESCO Montevideo office has organized the itinerant course on "Integrated Management of Water Resources" in several countries in the region.
- In cooperation with the FRIEND Programme, a Workshop on Ecohydrology was held in the framework of the V World Conference (Havanna, Cuba, 23-25 November, 2006)

Major results in Theme 2 to date:

- IGRAC (The Netherlands) and Transboundary Aquifers Resources Center (Libya) were endorsed by the Executive Board of UNESCO for their establishment under the auspices of UNESCO.
- ISARM programme has documented the prevalence of transboundary aquifers in all of the western hemisphere, demonstrated by the imminent publication of the information resources from ISARM Americas

- A series of regional courses in the framework of ISI (Mexico, China and Argentina) was kicked off to develop regional capacity in sediment studies, including assessment of erosion and transport.
- The potential role of the reservoirs in aquifers has been highlighted for the Member States in their response to urgent global needs, including their value in emergency situations (GWES).
- WHYMAP showing the integration of hydrogeological environments and the recharge distribution has been developed

Expected results until December 2007:

- An overview report on IHP activities related to floods will be prepared within the IFI framework. Better coordination between the GWES project group activities and ICHARM activities developed through a joint meeting to be held in Tsukuba, Japan.
- A guide to application of satellite data in groundwater investigations provided through the completion of a manual by ITC (International Institute for Geo-Information Science and Earth Observation); case studies on groundwater resources and climate change for publishing compiled (5th GRAPHIC Expert Group meeting, Colorado, September 2007) -a new call for case studies will be made through the IHP National Committees; the WHYMAP Groundwater resources of the world wall map at the scale 1:25 million and the six continental maps will be finalized; the book "Groundwater Modeling and Management" will be published (New Delhi); a round table on Groundwater and Ecosystems will be held during the 35th IAH Congress (Lisbon, September 2007).
- The inventory of transboundary aquifers of the Americas from the first phase of the UNESCO/OAS ISARM-Americas will be published and launched in the next coordination meeting to be held in Canada in September. The ISARM inventory of transboundary shared aquifers in West Africa will be initiated in Cotonou in June 2007
- Appropriate governance mechanisms and joint management initiatives for transboundary groundwater will be addressed by a UNESCO-UNESCWA session; a session on Transboundary Aquifers in the SADC region in Africa will be held at the Stockholm Water Week in August 2007.
- Approval of the project proposal "Conjunctive Use of Transboundary Surface and Groundwater for Sustainable Management of the Lake Chad Basin Ecosystems", presented by UNESCO Nairobi for GEF support .
- Establishment of IGRAC in Utrecht, the Netherlands and the Transboundary Aquifers Resources Center in Tripoli as centres under the auspices of UNESCO.
- A UNESCO Chair in Groundwater Monitoring and Sustainable Groundwater Management established at the Institute of Geo-ecology, Mongolian Academy of Sciences, Ulaanbaatar, Mongolia.
- The State-of-the-Art review on needs and directions in IWRM in Basins, Sub-basins and Aquifers finalized and the structure and content of the guidelines designed through 2nd Expert Group Meeting (Paris, June 2007); book "Water for Our Children: System Methods and Tools for better Management of Water Resources" (provisional title) edited for publication
- In the framework of ISI: production of a preliminary document on global evaluation of sediment transport; scientific reports on case studies in the final phase finalized; the three volumes on erosion and sediment related research in the framework of ISI are planned for publication; publishing of the SedNet book series volume "Sediment management at river basin scale" acknowledging the scientific contribution from ISI; a series of training courses carried out , including La Plata, Argentina , August 2007 and Berne, Switzerland, October 2007, with a major contribution by Switzerland.

- The formulation of a roadmap for sediment management in the Danube EU Water Framework Directive River Basin Management Plan will be addressed through the “Sediment balance for the Danube River” project, a major European contribution to the ISI, to be funded by UNESCO Venice during 2007-2008 (Italian Contribution).

THEME 3: LAND HABITAT HYDROLOGY

The land habitat hydrology activities have covered all stipulated areas, but having three main thrusts in line with IHP emphases: (i) water resources management in arid and semi-arid zones, mainly through G-WADi, as reported under Focal Area 3.1; (ii) the mainstreaming of ecohydrological approaches, as reported under Focal Area 3.2; and (iii) urban water management, which deals with issues of increasing currency, as reported under Focal Area 3.5. Two other major topics under this theme are mountains (Focal Area 3.3) and coastal zones and small islands (Focal Area 3.4), in which IHP has developed numerous activities in cooperation with the MAB programme and that have been vigorously pursued at regional scale where they respond to the regional priorities. The subject of glaciers, which falls under “Mountains” has been partially reported under Focal Areas 1.1 and 1.2, relating them to global changes and have been cross-referenced.

Progress and results achieved from 31 May 2006 until 30 April 2007

Focal Area 3.1: Drylands

- The growing involvement of LAC is being coordinated with CAZALAC, including the launching of proposal on rain water harvesting in the region. The Arab regional G-WADI Network organized itself as an umbrella network consisting of the Arab Networks on Wadi Hydrology and the Ground Water Protection. Pilot schemes have been developed in India and China.
- How hydrology in the Mediterranean region has been deeply modified during the last decades was shown in a side event of the international conference Future of the Drylands (Tunis, June 2006), co-organized with Institut de recherche pour le développement (IRD)
- A comparison of water harvesting practice in Asia-Middle East-Mediterranean was made in a workshop held in Aleppo, Syria in November 2006 with the International Center for Agricultural Research in Dry Areas (ICARDA) which resulted in the development of a series of informative case studies, which will be made accessible on the G-WADI website.
- Trainers were trained on "Application of Models and New Techniques in Groundwater Management in Arid and Semi-arid Regions" in a workshop organized in Karaj, Iran, July 2006 by UNESCO Tehran with partners
- Pressing issues in Southern Asia were the focus of the 3rd International Groundwater Conference held in February 2007 at Centre for Agricultural and Rural Development Studies, Tamil Nadu Agriculture University.
- The in-country process of validation of the Map of Arid and Semi-arid Zones is being carried out in Latin America jointly with CAZALAC.
- Applied research and adaptation of relevant technology of water resources management in the arid lands was the focus of the 10th international Water Technology Conference held in March 2007 in Sharm El Sheikh, Egypt

Focal Area 3.2: Wetlands

The report on Focal Area 3.2 has been expanded to include the report on the Ecohydrology programme.

- A new mission statement and strategy for the Ecohydrology Programme was developed by the Scientific Advisory Committee (SAC) on Ecohydrology at its meeting at La Plata, Argentina in March 2007. Task Forces on: (i) Coastal Zones (ii) Assessing Impacts of Global Change on Aquatic Ecosystems (iii) Social Sciences (iv) Education and Capacity-building (v) Demonstration Projects were launched at a meeting in June 2006. Information-dissemination efforts were strengthened by launch of website.
- The regional component on Ecohydrology in LAC was strengthened as a result of the SAC meeting in La Plata, Argentina. A visit to the Lago Lacar demo site during the meeting allowed the site activities to be examined by the international experts
- A new edition of the Master course in Ecohydrology “Environmental Evaluation of Hydrologic Systems” offered by the La Plata University has started in March 2007,
- Transborder scientific cooperation in the Polesie region was enhanced through implementation of the Japanese Funds-in-Trust project on conservation of water resources and biological diversity in the wetland of Polesie. The countries involved are Belarus, Poland and Ukraine.
- A special section of the Elsevier Estuarine Coastal and Shelf Science was dedicated to "Applying the Ecohydrology approach to the Guadiana estuary and coastal areas: lessons learned from dam impacted ecosystems".
- A Regional Workshop was organized in Tulcea (Danube Delta), Romania, dedicated to “Eco-hydrology and Sustainable Development in Deltas, Estuaries and Lagoons”. The UNESCO Working Group on Estuarine and Coastal Eco-hydrology met as a side event. Other sites have expressed their readiness to be associated to the experimental and dissemination goals of the Working Group. These include the Castelo Bay in Croatia, the Evros Delta in Northern Greece, the Danube Delta in Romania and the Volga Delta in Russia (these 2 deltas being also MAB Biosphere Reserves).

Focal Area 3.3: Mountains

- Support was given to the UNESCO IHP-LAC Snow and Ice Working Group activities, such as the Regional Conference: “Climate Change and Shrinking of Glaciers in the Andean Region; Consequence for Water Resources Management” and the international EPIC FORCE workshop in Ushuaia, Argentina,
- The Planning meeting on International Working Conference on “Response of Snow, Glaciers and Wetlands to Climate Change 27-31 March 2007
- The activities addressing climatic variability and change and their impacts on snow and glaciers carried out by the Almaty and New Delhi, which also contribute this Focal Area, are reported under Focal Areas 1.1 and 1.2.

Focal Area 3.4 : Small Islands and Coastal Zones

- The contributions that the IHP Programme could make to the Global Environmental Facility (GEF) ongoing initiatives in small islands were explored at the GEF/STAP workshop on “SIDS, groundwater and interlinkages” (Port of Spain, Trinidad & Tobago, November, 2006).
- Within the Small Islands Voice cross-cutting project the process known as community visioning, significant strides have been made in several Pacific islands and in the Caribbean; a series of activities were organized to promote community participation in environmental, developmental and social issues in Maldives
- A Coastal Zone Environment and Sustainable Development conference was held February 2007 in New Delhi, India.

- Fifteen national and international participants at Assistant Professor or PhD level from Bangladesh, Viet Nam, Thailand, India, Kenya, and Egypt were trained in mangrove ecosystem management through the UNU-INWEH-UNESCO International Training Course: Coastal Biodiversity in Mangrove Ecosystems held in June 2006 at Annamalai University, Tamil Nadu, India.
- The book on “Water and Ecosystems: Managing Water in Diverse Ecosystems to ensure Human Well-Being” was published, representing the outcome of a UNU/UNESCO seminar that reviewed the capacity of countries to manage water resources in given ecosystem to improve living conditions for the populations concerned.
- Several activities on the use of Ecohydrology approaches to coastal areas through pilot projects are common to Focal Area 3.2 and are reported there.

Focal Area 3.5 Urban Areas and Rural Settlements

- The IHP urban water management programme has made great strides through its nine projects covering the span. Up to twelve key publications, containing scientific treatises, guidelines and training material, are being finalized and many are ready to be published; they range from topics of “Data requirements and management for integrated urban water management”, to “Aquatic habitat in the urban environment”. Eight workshops and various other meetings were held in this pursuit.
- A landmark monograph on “Urban Water Conflicts: An analysis on the origins and nature of water-related unrest and conflicts in the urban context” was launched in the World Urban Forum in Vancouver in June 2006.
- A Training of Trainers Manual on Integrated Urban Water Management was finalized in collaboration the Regional Centre on Urban Water Management (RCUWM-Tehran) with support of the Tehran and New Delhi UNESCO Offices. RCUWM continued its vigorous regional and international action through various projects, conferences, courses and workshops; among them: International Workshop on "Flash Floods in Urban Areas and Risk Management", Muscat, Oman, September 2006; and a major International Conference on "Water Resources Management in the Islamic Countries", Tehran, Iran, February 2007.
- The UNESCO New Delhi Office Organized a youth Conference on Wastewater Management in January 2007
- The UNESCO/UNEP project on Assessment of Pollution Status and Vulnerability of Water Supply Aquifers of African Cities, carried out in 11 selected African cities, concluded that pollution of groundwater sources had reached critical levels, though they continue to be a poorly understood and managed resource. Based on the project, the book “Groundwater Pollution in Africa” was published. A project proposal for AMCOW was prepared on capacity building towards risks awareness, management and protection of groundwater in Africa, targeting 20 Sub-Saharan countries; it was submitted to AfDB for funding.

Major results in Theme 3 to date:

- The global network G-WADI on Water and Development Information for Arid Zones has continued its strengthening and global expansion: in addition to the existing Asian G-WADI, the Arab G-WADI regional network has been set up and activities in Lac have started in earnest; in addition a number of high quality international events have been carried out by G-WADI.
- The Ecohydrology programme has established five Task Forces covering the scope of the programme and its action has gathered substantive strength across several regions, particularly during the reporting period in LAC.

- Scientific research on glaciers in the Central Asia subregion have received a substantial thrust, especially with the support of the UNESCO Almaty Office.
- Coastal zone and small island water management activities led by IHP have been especially evident in the Caribbean and the Indian subcontinent. The IHP-MAB cooperation has produced valuable results in coastal zone ecosystem management.
- The urban water management (UWM) programme has continued its solid progress geared to producing the envisaged deliverables in its IHP-VI projects. A series of over 10 books covering various aspects of integrated urban water management are on their way to publication, a major symposium underlining not only what is now available to member States and other stakeholders, but what are the new directions that will be addressed by IHP during the next phase is set to be held soon. Regional actions were strengthened through RCUWM-Tehran, which now is a solid reality in an international setting.

Expected results until December 2007:

- The state-of-the-art in groundwater modelling focusing on arid and semi-arid areas will be reviewed in a G-WADI workshop to be held in Lanzhou, China in June 2007, producing reference case studies and other materials for dissemination.
- The Asian G-WADI regional network will evaluate new proposals for pilot basins, including those on Chu river basin, Kyrgyzstan and Vakhsh River Basin, Tajikistan, to expand the network for exchange of experience.
- As a part of the G-WADI web resources development, IHP will together with University of California Irvine and SAHRA (Sustainability of semi-Arid Hydrology and Riparian Areas) is making available remotely sensed data on precipitation and other data sets at user-selected spatial and temporal resolutions. Likewise, SAHRA will continue to provide free e-mail news service on arid lands from sources in different languages.
- The G-WADI: Country Assessment for India will be completed
- A Seminar on Rainwater Harvesting and Water Management will be held in November 2007 at Nagpur, India
- The VI Coordination Meeting of the Snow and Ice working group will be held in May 2007 in Mexico with the support of IHP.
- Forging partnerships and developing funding proposals in order to efficiently implement further scientific research on ecohydrology will be the main focus of the Scientific Advisory Committee and the Task Forces on Ecohydrology at its first joint meeting in November 2007,.
- Scientific background for a Polesie regional ecological network focusing on the Valleys of the Bug and Pripyat Rivers is expected to be set up.
- The IHP-VI Urban Water management Programme will have completed and made available to Member States its deliverables, including a number of books within an Urban Water Series , such as: (i) Data Needs: Urban Water Planning and Management; (ii) Urban Groundwater Management; (iii) Urban Water Processes and Interactions; (iv) books on urban water management in different climates for each climate (Humid Tropics, Arid and Semi-arid, Cold); (v) Sustainable Urban Water Management for Aquatic Habitats: Science, policy and practice; (vi) Urban Water Services: Interactions and *complementarities*; plus an operational Urban Water Education Training and Technology Transfer (UWETTT) web-platform
- The International Symposium "New Directions in Urban Water Management" to be held in September 2007 in Paris will have allowed through discussion of the IHP-VI products plus the infusion of insights from external sources that will allow a fresh overview of needs in the field that can be reflected in IHP-VII implementation.

THEME 4: WATER AND SOCIETY

During the reporting period, IHP-VI continued to work for the increase of knowledge and enhanced awareness of the complex socio-cultural interrelations between water and societies throughout history and in present times, among water practitioners and the interested public. The role of water as a major factor for the development and expression of cultural diversity was highlighted, for example, in producing and disseminating awareness raising material on the occasion of World Water Day 2006 under the theme “Water and Culture”, led by UNESCO-IHP.

The work continued on facilitating multi-level and interdisciplinary dialogues between various groups of shared water resources users. It encouraged cooperation around the management of shared water resources through the development of, educational material and applied research. These activities brought together groups of users and professionals which are otherwise usually confined to their disciplinary or geographical boundaries.

Progress and results achieved from June 2006 to April 2007

Focal Area 4.1: Water Civilization and Ethics

- The IHP disseminated results of its work through all relevant audiences and using a variety of channels. This included the development of a corporate image for all of UNESCO's water activities, the maintenance of an internet-based Water Portal and the IHP website, newsletters, and printed publications. The public awareness of socio-cultural water interactions was continuously enhanced.
- The knowledge base on and awareness of indigenous water cultures has been enhanced with the start of the second preparatory phase of the Atlas of Water Cultures for LAC, involving Paraguay, Uruguay and Mexico. Awareness of indigenous knowledge was improved through the preparation of the book “Water and Indigenous Peoples” in Spanish.
- Recognition of gender issues in water resources sciences and IWRM was promoted through the first phase (started in May 2006) of the IHP-LAC "Water and Gender for Latin America" Working Group including representatives from Argentina, Brazil, Chile, Mexico, Paraguay, Uruguay.
- Research capacity increased through the continued preparation of the History of Water and Civilization book series project, notably through networking, international working group meetings and the organization of a preparatory symposium for the volume “Water and Humanity”, held during the annual meeting of the Society for American Archaeology in Austin, Texas on 26 April 2007.
- The awareness of the role of culture for better water management for development and peace among various stakeholders from Cote d'Ivoire, Ghana, Togo and Benin was improved during a symposium organized in Accra.

Focal Area 4.2: Value of Water

- IHP contributed to increasing the knowledge base on the cultural value of water through the elaboration and completion of the modules Mediterranean basin, North and Sub-Saharan Africa for online publication in the planned Network for Water Anthropology.
- Theoretical and applied knowledge base was expanded through the study “Virtual Water as a tool for Water Resources Management”, covering Argentina and Uruguay.
- Better understanding provided of the “Value of groundwater in New Delhi, India” through a case study. Knowledge of “Wastewater Management in the National

Capital Region of India” improved and disseminated through the case study’s implementation and preparation of a report.

Focal Area 4.3: Water Conflicts – Prevention and Resolution

- IHP’s PCCP strengthened stakeholder capacity to prevent and resolve water related conflicts by developing education materials and expertise on ‘Conflict Prevention and Cooperation in International Water Resources.’ Initial courses were held in Maputo and Cape Town in late 2002, and have been subsequently tailored for trainings in other regions: courses have been offered in Latin America and Southeast Europe:
- IHP-LAC worked on the implementation of the relevant activities in its own region. It offered support to improve the capacity of decision makers, experts, and trainers to launch a transition process from potential conflict to cooperation potential among countries sharing water resources. It has therefore developed an educational kit on “Conflict Prevention and Cooperation in Water Management in Latin America”; it supported various related workshops. It organized a pilot course to evaluate the educational kit, which was consequently improved and printed to be re-used in local universities.
- A similar exercise was organized in Southeast Europe. Participants from almost all the South-eastern European countries, forming a multidisciplinary group, attended a pilot-course on Co-operation and Prevention of Conflicts in the Management of Transboundary Waters in South East Europe (Thessaloniki, Greece, October 2006). The feedback was again used to improve the related PCCP’s educational materials.
- In order to communicate the results of the Lake Titicaca case study originally written in Spanish, PCCP undertook its translation and publication in English. The publication reflects the opportunities for dialogue, access to data and information that the PCCP exercise provided.
- An international multi-disciplinary group of experts assessed PCCP’s achievements since its launch (2001), and made recommendations to set the stage for its future activities.

Focal Area 4.4: Human Security in Water-Related Disasters and Degrading Environments

The results reported under the Focal Area 2.1, essentially from IFI and GWES, contributed also to this Focal Area.

- Data availability was improved on radionuclide and heavy metal contents in the environment of each of the three South Caucasian countries (Armenia, Azerbaijan, Georgia) via the project “Towards an assessment of Rivers Kura-Araks basin radioactivity” conducted by UNESCO Moscow (MOS).
- Access to safe drinking water was enhanced in schools for underprivileged children in India by distributing water purification units.

Focal Area 4.5: Public Awareness Raising on Water Interactions

- The IHP disseminated results of its work through all relevant audiences and using a variety of channels. This included the development of a corporate image for all of UNESCO’s water activities, the maintenance of an internet-based Water Portal and the IHP website, newsletters, and printed publications. The public awareness of socio-cultural water interactions was continuously enhanced.
- Capacities of the Inter-American Water Resources Network were enhanced to work as a network of networks for building and strengthening water resources partnerships among nations, organizations, and individuals; to this end IHP-LAC participated in

the Eighth Water Information Summit (WIS-8) - Linking and Strengthening Information Networks for Water and the Environment (Brasilia, 5-7 June, 2006) and in the Meeting for the Organization of the upcoming VI Inter American Dialogue (Guatemala City, 12-17 August, 2007) that took place in Washington DC, USA, 14-15 September 2006.

- The project on *Enhancement of environmental awareness on freshwater management among youth* reinforced awareness among young people through preparing and disseminating dedicated illustrative posters, booklets, handouts in Armenia, Azerbaijan, Georgia and workshops. Networking among young people is being promoted and guidelines for the sustainable continuation of the accomplished actions are being developed through a newly established working group.
- Awareness on water scarcity was raised through events organized in India (New Delhi and Mumbai) and Sri Lanka on World Water Day 2007. Sound water resource management was promoted through initiating a Water Awards for Excellence with the Water Digest. Awareness of young people was raised via a Conference on Wastewater Management targeting youth in a side event of the New Delhi Sustainable Development Summit.
- Awareness of various stakeholders improved on the place of culture for a better management of water resources for development and peace in the cluster countries (Cote d'Ivoire, Ghana, Togo and Benin) during a symposium on Water and Culture organized in Accra 15-16 February 2007 and opened by the Director General of UNESCO.
- Networking, regional cooperation and experience exchange fostered by the project "Linking Indigenous Knowledge and Modern Science in the Kavango Region" to arrive at a holistic approach to Integrated Water Resource Management across the Okavango River Basin.
- Awareness on societal water interactions in the Congo basin raised through IHP's and the UNESCO Africa Department's joint contribution to the book "Congo River".

Major results achieved in Theme 4 to date:

- The indigenous water cultures have been highlighted through the preparation process of the Atlas of Water Cultures in LAC and the book "Water and Indigenous Peoples".
- Production of two region specific courses on transboundary water management and conflict prevention, for Latin America and Southeast Europe
- Training of, 12 trainers and, 34 mid and high level professionals, in Latin America and Southeast Europe

Expected results until December 2007:

- Further information on water-related indigenous knowledge in Mexico, Uruguay and Paraguay disseminated. Participation and involvement of minority groups in the development of water science and management promoted and knowledge about gender as crosscutting issue in IWRM in the LAC region further increased. Information on indigenous knowledge disseminated the book "Water and Indigenous Peoples" in Spanish.
- Research and educational capacity increased and knowledge expanded in the field of water history through the continued preparation of the History of Water and Civilization book series project, notably through networking, international working group meetings and the support to the organization of the International Conference "Pasts and Futures of Water", forthcoming in June 2007 in Tampere, Finland.

- Cooperation on water resources strengthened among nations, organizations, and individuals, and IHP-LAC National Committees. Awareness for environmentally sound freshwater management among youth in Azerbaijan further increased.
- Capacity of Member States in LAC and other key players enhanced to manage shared water resources and to anticipate, prevent, and resolve water conflicts
- UNESCO Moscow with the support of the Coca-Cola HBC Eurasia will enhance environmental awareness targeting effective water and wetlands ecosystems management in the Volga delta in the Russian Federation by implementing a demonstration project.
- Findings of the two days symposium on Water and Culture organized in Accra, Ghana from 15-16 February will be disseminated through the publication of proceedings, and best practices on "Linking Indigenous Knowledge and Modern Science in the Kavango Region".

THEME 5: WATER EDUCATION AND CAPACITY BUILDING

Theme 5 is currently being reoriented to benefit from the opportunity created by the selection of UNESCO-IHP to lead the "Education for Sustainable Water Management" thematic area of the UN Decade of Education for Sustainable Development (DESD). Such reorientation also intends to further implement 166EX-Decision 3.6.1, anticipates a potential water education theme within IHP-VII and is being operationalized as a follow-up to resolution XVII-12 of IHP Intergovernmental Council, which called for the establishment of a Working Group on Water Education to advise the work of UNESCO on this area. Further information on these developments is available on document IHP/Bur-XL/18.

Progress and results achieved from June 2006 to April 2007

Focal Area 5.1: Teaching techniques and material development

- Water education techniques improved and educational materials developed in order to strengthen stakeholders understanding of water issues and behaviours towards resources.
- A "Water and Education Guide for Educators from the Americas and the Caribbean" was published and a strategy for a joint UNESCO-WET (Water Education for Teachers) educational kit on water for children was developed by UNESCO Montevideo. In Brazil, water education materials for DESD were produced and distributed.
- A programme on the enhancement of environmental awareness, targeting effective water and wetlands ecosystems management of the Volga delta, has been initiated by UNESCO Moscow with support from the private sector.
- The development of education and learning materials on water issues addressing school children in China has started via a UNESCO proposal under the bilateral agreement between the government of Italy and the People's Republic of China on Sustainable Water Integrated Management (SWIM).
- UNESCO Doha has established an expert team to develop a water education kit in collaboration with the Qatar Scientific Club.
- In the framework of the MOS project on enhancement of environmental awareness on freshwater management among youth, guidelines for the promotion of youth networking on water issues are being prepared in Azerbaijan, following a campaign with workshops, illustrative posters, booklets and handouts, in close cooperation with the Ministry of Youth and Sport.

Focal Area 5.2 ***Continuing education and training for selected target groups***

- The capacities of Southeast Asia scientists were strengthened via a seminar on aquifer recharge and training courses on the use of isotope methods in hydrology and oceanography basics organized by UNESCO Jakarta and various partners in the region.
- Water resources management was improved by (1) training participants from 10 SADC countries on a short training course on environmental flows, and by (2) training two communities on monitoring techniques of groundwater resources, within the UNDAF framework in Namibia.
- Materials for the training of government resource persons on water management were developed by UNESCO Islamabad and partners.
- Support was provided to African and Asian Scientists to participate in the 8th Kovacs Colloquium on “Frontiers in Flood Research”, the 3rd International Symposium on Transboundary Waters Management, and the 3rd Asia Oceania Geosciences Society Annual Meeting.

Focal Area 5.3 ***Crossing the Digital Divide***

- Further development and expansion of the UNESCO Water Portal were undertaken in order that it may better serve as an effective modality for knowledge dissemination, diffusion and exchange on UNESCO’s water activities and water-related programmes. The regular dissemination of a newsletter – in English, French and Spanish – contributed to bridging the gap between info-rich and info-poor societies, particularly those in least developed countries.

Focal Area 5.4: ***Institutional development and networking for WET***

- The institutional framework for water education was strengthened by the inclusion of a thematic area on Education for Sustainable Water Development on the Action Plan for the DESD. A work plan for the implementation of the thematic area and an issues paper were drafted. International networking on WET improved under the constitution of a UNESCO Working Group on Water Education and Capacity Building for Sustainable Development.

Major results in Theme 5 to date:

- The publication of the “Water and Education Guide for Educators from the Americas and the Caribbean” demonstrates an integrated holistic approach and involvement of multiple partners organisation in the preparation process.

Expected results until December 2007:

- The experience gathered during IHP-VI plan execution, including the integration of UNESCO-IHE into this task, will be fully reflected in the IHP-VII strategic and implementation plans.
- Water education capacities and networking strengthened at all levels by the development of a comprehensive plan for water education under the framework of DESD.

Cross-cutting Programme: FRIEND - Flow Regimes from International Experimental and Network Data

Background - The FRIEND - Flow Regimes from International Experimental and Network Data -programme is an international collaborative study intended to develop, through the mutual exchange of data, knowledge and techniques at a regional level and a better understanding of hydrological variability and similarity across time and space. The advanced knowledge of hydrological processes and flow regimes gained through FRIEND helps to improve methods applicable in water resources planning and management. The Programme established 8 regional subgroups including more than 140 countries and addresses a large variety of technical water related issues and addresses the five themes of IHP VI.

Objectives - The key objective is to improve the scientific understanding of hydrological processes and variability across time and space in various geographical regions.

- Develop analytical tools and databases
- develop new cross-disciplinary networks
- Extend the global coverage of FRIEND

Selection of results:

Education and Training - Education and training activities in water resources management, low flow and droughts were developed in African, Latin American and Asian countries. Training course on data collection and database management were also performed to establish a common database and web interface for Latin America, Caribbean and Mediterranean countries institutions.

Technical outcomes -Various technical documents, proceedings and reports in the field of water resources management, extreme events and climate change were published for researchers, general public and policymakers. These publications are available online on the new UNESCO FRIEND website. A Guideline for flood design and emergency procedures for policy-makers were developed in Asian countries. In cooperation with WMO a manual on the estimation and prediction of low flows has been written. The manual has a practical approach targeted to meet the needs of National Hydrological and Meteorological Services.

FRIEND development - Following the 5th FRIEND world conference in Cuba (November 2006), cross disciplinary networks within the FRIEND community on specific issues such as droughts, floods or basin sedimentation were enlarged and new contacts with institutions and researchers in Central Asia and Africa were established for a possible increase of the network coverage. It is foreseen to merge FRIEND and HELP projects to achieve synergies in various regions. A group was established to link up with IAHS-PUB on regionalization and estimation of uncertainties. The European Drought Center has been a major outcome of FRIEND Programme acting as a vehicle to transfer knowledge and skills on low flows and droughts between researcher and the user community. A thematic link between the different FRIEND groups has been established. The functioning of HKH-FRIEND was reviewed, resulting in agreement about several important milestones to improve for its operation and in developing a joint HKH-Central Asia FRIEND Group.

Cross-cutting Programme: HELP - Hydrology for the Environment, Life and Policy

Background - The goal of HELP is to contribute social, legal, economic and environmental benefits to communities through sustainable and appropriate use of water by deploying hydrological science in support of improved integrated catchment management. It addresses the five themes of IHP VI. The Programme, created in 1999, established a global network of 67 catchments distributed into 56 different countries.

Objectives - The initiative seeks to address the most critical policy and management issues at water-basin level and to strengthen experimental hydrology and science-policy research in basin management.

- Increase the number of basins in the network
- Support twinning/clustering of HELP basins
- water managers, water policy-makers and water resource lawyers involved
- Establish Water Centers on specific water related issues

Selection of results from Regional Coordinating Units:

South America - Training course for students on best practices management in watershed and implementation of the Watershed Sustainability Index developed in the Brazilian HELP basin and based on hydrological, environmental, social and political factors were performed successfully. Database management courses and development of standards for biological data were implemented to improve technical data collection and exchanges.

Europe - Through the Strategic Research Development Grant, the Dundee Centre... has been awarded £1.66 M to recruit new staff internationally for the Centre to increase research capacity.

North America - Transboundary basin twinning approved request to the International Network of Basin Organizations (INBO) between Mexican and Arizona stakeholders and decision-makers of the San Pedro HELP basin with their counterparts in Greece and Bulgaria in the Mestos/Nestos HELP Basin.

South Pacific - The funding bid to the twin basin network and exchange of stakeholders between the Murrumbidgee (Australia) and the Davao (Philippines) HELP catchments was successful. Preparation of a feasibility study to establish a HELP Centre for Water and Food Security under the auspices of UNESCO at the Charles Stuart University, in Australia (Category II).

ANNEX

ABBREVIATIONS AND ACRONYMS

ALHSUD	Asociación Latinoamericana de Hidrología Subterránea para el Desarrollo
DESD	Decade on Education for Sustainable Development
EU	European Union
FAO	Food and Agriculture Organization
FRIEND	Flow Regimes from International Experimental and Network Data
GEF	Global Environmental Facility
GEF/STAP	Scientific and Technical Advisory Panel of the Global Environmental Facility
GRAPHIC	Groundwater Resources Assessment under the Pressures of Humanity and Climate Changes
G-WADI	Global Network – Water and Development Information for Arid Lands
GWES	Groundwater in Emergency Situations
HELP	Hydrology for the Environment, Life and Policy
HKH-FRIEND	Hindu Kush- Himalayan FRIEND
IAH	International Association of Hydrogeologists
IAHS	International Association of Hydrological Sciences
ICHARM	International Centre for Water Hazard and Risk Management.
IFI	International Flood Initiative
IGRAC	International Groundwater Resources Assessment Centre
IHP	International Hydrological Programme
INWEH	International Network on Water, Environment and Health of the United Nations University
IRTCES	International Research and Training Centre on Sedimentation and Erosion
ISARM	International Shared Aquifer Resource Management
ISI	International Sedimentation Initiative
IWRM	Integrated water resources management
LAC	Latin America and the Caribbean (region)
MAB	Man and the Biosphere (UNESCO programme)
NGO	Non-governmental organization
OAS	Organization of American States
PCCP	From Potential Conflict to Co-operation Potential
PUB	Prediction in Ungauged Basins
SADC	Southern African Development Community
TIGER	Initiative led by the European Space Agency on the use of space technology for water resource management in Africa
UN	United Nations
UNDAF	United Nations Development Assistance Framework
UNDP	United Nations Development Programme
UNECE	United Nations Economic Commission for Europe
UNEP	United Nations Environment Programme

UNESCO	United Nations Educational, Scientific and Cultural Organization
UNESCO-IHE	UNESCO-IHE Water Education Institute
UNESCWA	United Nations Economic and Social Commission for Western Asia
UNITWIN	University Twinning and Networking Scheme
UNU	United Nations University
WHO	World Health Organization
WHYMAP	Worldwide Hydrological Mapping Assessment Programme
WMO	World Meteorological Organization
WWAP	World Water Assessment Programme
WWDR	World Water Development Report