



International Hydrological Programme

18th session of the Intergovernmental Council
(Paris, 9 – 14 June 2008)

IHP-VI IMPLEMENTATION EXECUTIVE SUMMARY

Item 10.1 of the provisional agenda

SUMMARY

This document presents an executive summary of the report on the implementation of the Sixth Phase of IHP (2002-2007), highlighting major achievements of Themes and cross-cutting programmes. A comprehensive report on progress and results achieved in the implementation of the Sixth Phase of IHP (2002-2007) since the 17th session of the IHP Intergovernmental Council, covering the period from June 2006 to 31 December 2007, is presented in document IHP/IC-XVIII/Inf.9.

Decision required: paragraph 18.

INTRODUCTION

1. This document presents an executive summary of the report on the implementation of the Sixth Phase of IHP (IHP-VI, 2002-2007), highlighting major achievements of Themes and cross-cutting programmes. A comprehensive report on progress and results achieved in implementation of IHP-VI since the 17th session of the IHP Intergovernmental Council (Paris, June 2006) until the end of the IHP-VI, covering the period from June 2006 to 31 December 2007, is presented in document IHP/IC-XVIII/Inf.9. The progress in the IHP-VI implementation in the periods between the previous sessions of the IHP Bureau and Intergovernmental Council held during 2002-2008 were duly reported to the 17th session of IHP Intergovernmental Council and the 40th and 41st sessions of IHP Bureau, as contained in documents IHP/IC-XVII/Inf.6, IHP/Bur-XL/9 and IHP/Bur-XLI/13, which are available online at: <http://unesdoc.unesco.org/images/0015/001532/153289E.pdf>; <http://unesdoc.unesco.org/images/0014/001463/146358E.pdf>; and <http://www.unesco.org/water/ihp/bureau/41st/13.pdf>.

2. The present report contains only regular programme activities, contributing to the implementation of IHP-VI. IHP-related extrabudgetary activities implemented by the IHP and Field Offices are reported in document IHP/IC-XVIII/Inf.10. This report is complemented by: Progress report on recent IHP initiatives and programmes (IHP/IC-XVIII/Inf.13); UNESCO-IHP involvement in the 5th World Water Forum (IHP/IC-XVIII/Inf.16); and IHP's role in the International Decade for Action - "Water for Life" (2005-2015) (IHP/IC-XVIII/Inf.17).

3. Projects and activities implemented during IHP-VI, addressing a broad range of topics under five Themes and cross-cutting programmes, resulted in significant contributions to science, knowledge and capacity building in the fields of hydrology and water resources. During IHP-VI, IHP's cooperation, network and partnerships with international organizations, academia and partners have significantly been expanded and strengthened.

THEME 1: GLOBAL CHANGES AND WATER RESOURCES

4. This theme addressed impacts of global changes on water resources and responses to these changes. The following three Focal Areas were addressed under Theme 1:

Focal Area 1.1: Global Estimation of Resources: Water Supply and Water Quality

Focal Area 1.2: Global Estimation of Water Withdrawals and Consumption

Focal Area 1.3: Integrated Assessment of Water Resources in the Context of Global Landbased Activities and Climate Change

5. Major achievements of projects and activities implemented under this theme are highlighted below:

- Knowledge and information dissemination was enhanced through the scientific contribution to the Third World Water Development Report of WWAP on a number of key topics, including: the assessment of the resource, both surface and groundwater; the formulation of appropriate indicators; and the management of shared waters.
- Better understanding of climate change was achieved by actively participating in international and regional efforts addressing climate change impacts on water resources through IHP programmes such as: International Flood Initiative (IFI) and FRIEND, dealing with hydrological extreme events; Groundwater Resources Assessment under the Pressures of Humanity and Climate Changes (GRAPHIC); and regional activities addressing glacier mass decline and potential effects on water resources in Asia and South America. Contributions were provided to major events such as in the International Conference on "Climate Change and Its Impacts on the

West African Sub-region” , in which IHP was selected in the core task team for the preparation of the West Africa Action Plan on Climate Change.

- Knowledge dissemination and capacity building were strengthened through the development of training materials and courses in specific fields of hydrology in collaboration with other international organizations such as training on isotope hydrology with IAEA, the “Manual for Water Resources Assessment” with WMO, and on remote sensing applied to water resources with the European Space Agency.
- Capabilities of the international hydrological community were strengthened through the establishment and implementation of the inter-agency programme Joint International Isotopes in Hydrology Programme (JIHP) under the auspices of the IAEA in cooperation with UNESCO.

THEME 2: INTEGRATED WATERSHED AND AQUIFER DYNAMICS

6. Theme 2 addressed on dynamics of hydrological cycle and interactions of all elements of hydrological systems. Four Focal Areas were addressed under Theme 2:

Focal Area 2.1: Extreme Events in Land and Water Resources Management

Focal Area 2.2: International River Basins and Aquifers

Focal Area 2.3: Endorheic Basins

Focal Area 2.4: Methodologies for Integrated River Basin Management

7. Major achievements of projects and activities implemented under this theme are highlighted below:

- The multi-agency initiative “International Flood Initiative” was launched and a framework for the implementation of IFI was developed. Its implementation was significantly enhanced with the establishment of ICHARM in Tsukuba, Japan, which became the focal point of IFI. The regional IFI-LAC component was launched.
- The International Sediment Initiative (ISI) was launched with its Secretariat hosted at IRTCES in China. Within the framework of the ISI, the concept of GEST was developed and available case studies and database will be linked with it.
- The IHP initiative on Internationally Shared Aquifers Resources Management (ISARM) was consolidated and expanded with vigorous regional components; the inventory and assessment of transboundary aquifers were finalized in the Americas and SEE and were initiated in Africa and in Asia. Technical support and scientific advice was provided to the United Nations International Law Commission in the preparatory aspects of an international instrument on transboundary aquifers.
- State-of-the-art and Practice Guidelines for IWRM implementation in Basins, Sub-basins and Aquifers was developed and two major publications on water resources systems analysis were produced.

THEME 3: LAND HABITAT HYDROLOGY

8. Theme 3 addressed on water resources management in various environments and hydrological interactions in different geographical and climatic regions. Five Focal Areas by geographical classifications were identified under Theme 3:

Focal Area 3.1: Drylands

Focal Area 3.2: Wetlands (ecohydrology activities is reported under this Focal Area).

Focal Area 3.3: Mountains

Focal Area 3.4: Small Islands and Coastal Zones

Focal Area 3.5 Urban Areas and Rural Settlements

9. Major achievements of projects and activities implemented under this theme are highlighted below:

- Capabilities for improved water resources management in arid and semi-arid regions throughout the world were enhanced with the launching of the global network G-WADI on Water and Development Information for Arid Zones, which was significantly expanded and strengthened, particularly in Asia. The Water Centre for Arid and Semiarid Zones of Latin America and the Caribbean (CAZALAC), established in La Serena, Chile, contributed considerably in that region.
- Ecohydrology was further developed as an interdisciplinary approach at landform/land use scale. The Scientific Advisory Committee and Task Forces of the IHP ecohydrology programme were established. The social dimension was incorporated into a new mission statement and strategy. Demonstration projects and regional activities on ecohydrology in LAC and SEE were launched. The European Regional Centre on Ecohydrology, UNESCO category 2 centre, was established.
- Improved monitoring approaches for mountain biosphere reserves were developed in cooperation with the MAB programme; glacier mass decline was addressed regionally in South America (Andes mountains) and in Asia (mainly in mountains ranges of Central Asia and the Hindu-Kush-Himalayas).
- Knowledge and understanding of submarine aquifer discharge along coastal zones was expanded through an IOC-IHP project. Significant regional activities on the potential of sea water desalinization in LAC and studies on coastal zone water resources management the Indian subcontinent were carried out. Methodologies for the protection and management of coastal aquifers and groundwater dependent ecosystems in the Mediterranean were developed.
- The scientific basis and knowledge base applicable to urban water management in the various regions of the world was demonstrably expanded through nine projects executed by IHP's Urban Water Management Programme. An international symposium on urban water (Paris, September 2007) provided a forum for dissemination of the project results. The deliverables include the publication of the UNESCO-IHP Urban Water Series. The Regional Centre on Urban Water Management (RCUWM-Tehran), UNESCO category 2 centre, was established.

THEME 4: WATER AND SOCIETY

10. Theme 4 addressed complex relationships between people and water resources, in particular how to manage water resources in an equitable, sustainable and ethical manner. The following five Focal Areas were addressed under Theme 4:

Focal Area 4.1: Water Civilization and Ethics

Focal Area 4.2: Value of Water

Focal Area 4.3: Water Conflicts – Prevention and Resolution

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

Focal Area 4.5: Public Awareness Raising on Water Interactions

11. Major achievements of projects and activities implemented under this theme are highlighted below:

- The knowledge base and awareness on socio-cultural interrelations between water and society were improved, and the importance of the historical and cultural dimensions of water showcased. Several high-level international conferences and symposia on water history fostered research and dialogue. IHP, in cooperation with COMEST, provided ethical guidance on water management through publication of thematic volumes on Water Ethics and a booklet on ethics and water governance.
- General understanding of related issues was enhanced through publications and

awareness-raising events such as World Water Day 2006 on “Water and Culture”, a short course on water history at UNESCO-IHE, and sessions on water and cultural diversity at two previous World Water Fora.

- The theoretical and applied knowledge base on “virtual water” in water management was expanded, and the concept was introduced in the Inter-American Dialogue in Water Management. The understanding of the value of water was amplified by case studies in Africa, LAC and India. Several projects on the impact of water related extreme events and water pollutants were carried out, notably in Asia.
- IHP’s PCCP initiative contributed to enhancing capacities of governmental and institutional stakeholders worldwide to prevent and resolve water related conflicts, and promoted the understanding of water as a catalyst for peaceful cooperation. PCCP maintains an extensive network of experts and institutions, including partnerships with UNESCO-IHE and the Centre for Law, Policy and Science at University of Dundee, UK, under the auspices of UNESCO.
- IHP disseminated results of its work to all relevant audiences, and thereby significantly contributed to raising global awareness on the importance of sustainable water resources management. IHP developed a corporate image for all of UNESCO’s water activities. IHP, in collaboration with UN DESA, spearheaded in 2003 the campaign for the International Year of Freshwater. IHP produces and maintains a newsletter in English, French and Spanish and disseminated numerous publications, increasing the outreach of IHP’s actions.

THEME 5: WATER EDUCATION AND CAPACITY BUILDING

12. Theme 5 addressed all levels and aspects of water education, information transfer and training. Four Focal Areas were implemented under Theme 5:

Focal Area 5.1: Teaching Techniques and Material Development

Focal Area 5.2: Continuing Education and Training for Selected Target Groups

Focal Area 5.3: Crossing the Digital Divide

Focal Area 5.4: Institutional Development and Networking for WET

13. Major achievements of projects and activities implemented under this theme are highlighted below:

- The capacities of UNESCO to serve Member States in the fields of freshwater education and capacity building were strongly enhanced by the establishment of UNESCO-IHE Institute for Water Education, as a UNESCO category 1 Institute. IHP assumed the responsibility of lead partner for the water education programme of the United Nations DESD. A UNESCO Water Education Working Group was established and a work plan for water education at all levels was developed for the DESD.
- IHP’s networking, capacity development and training capabilities were greatly strengthened by the establishment of eight UNESCO category 2 water-related centres during the period 2002-2006. The 34th session of the UNESCO General Conference in 2007 approved the creation of five additional centres.
- Tertiary water education was enhanced via the establishment of five new water-related UNESCO Chairs and a UNITWIN Network, focusing on: environment and water resources, water resources sustainability, hydrogeology, sustainable water management, sustainable groundwater management, and sustainable management of water and conflict resolution.
- Water education resources were enhanced via the development of materials and courses within the framework of the first four IHP-VI themes, both at headquarters and all regions, complementing the efforts within Theme five.
- The capacities of Member States in the area of water information management were

reinforced by the launching of the UNESCO Water Portal, which constituted a major milestone in IHP's communication strategy.

CROSS-CUTTING PROGRAMMES

FRIEND - Flow Regimes from International Experimental and Network Data

14. The Flow Regimes from International Experimental and Network Data (FRIEND) programme is an international collaborative study intended to develop knowledge and techniques at a regional level and a better understanding of hydrological variability and similarity across time and space.

15. Major achievements of activities implemented under FRIEND are highlighted below:
- Knowledge base on hydrological variability of flow regimes and hydrological extremes was enhanced by preparation and publication of manual on the estimation and prediction of low flows, in cooperation with WMO.
 - Knowledge and information dissemination and capacity building were strengthened through the development of course materials and delivery of courses, as well as the publication and dissemination of the global FRIEND report and technical publications, including a text book on droughts and over 420 scientific papers and reports.
 - Global FRIEND network was expanded through the establishment of new regional networks e.g. AMIGO in Latin America and Caribbean and of a European Drought Centre, which acts as a vehicle to transfer knowledge and skills on low flows and droughts between researcher and the user community and to contribute to the European Water Framework Directive.
 - Understanding of trends in hydrological time series was improved through assessing climate change impacts and associated policy guidance provided in a scientific report to EC and European Parliament in 2007 for developing EU Water Scarcity Policy.
 - Research capacity was enhanced through development and dissemination of software for low flow prediction, flow forecasting, small hydropower design and drought and water resource analysis in HKH and Southern Africa region.

HELP - Hydrology for the Environment, Life and Policy

16. IHP initiative on Hydrology for the Environment, Life and Policy (HELP), established in 1999, is a cross-cutting programme designed to create a new approach to integrated basins management.

17. Major achievements of activities implemented under HELP are highlighted below:
- The global HELP network was expanded and consolidated through the establishment of new HELP basins, and knowledge dissemination was enhanced by focusing the research agenda on: climate change impacts on water resources; wetlands; participatory modelling and community involvement; and water quality.
 - Knowledge base was enhanced through contributions by the IHP-HELP International Centre on Water Law, Policy and Science at the University of Dundee, UK in 2006.
 - UNESCO's role in enhancing water sciences was strengthened through major HELP conferences and regional events, promoting the implementation of HELP principles and interdisciplinary research. The Pacific HELP Symposium in New Zealand, resulted in the Pacific Regional Action Plan for Sustainable Water Management.
 - Best practices in watershed management were promoted and disseminated through training courses on the implementation of the Watershed Sustainability Index, developed the Brazilian HELP basin and based on hydrological, environmental, social and political factors.

- Knowledge dissemination and capacity building on technical data collection and exchange were strengthened through training courses and the development of standards for biological data.

DRAFT RESOLUTION

18. The Council may wish to adopt a resolution along the following lines:

The Intergovernmental Council of UNESCO's International Hydrology Programme,

1. *Having considered* the documents IHP/IC-XVIII/9 and IHP/IC-XVIII/Inf.9 on the implementation of the Sixth Phase of IHP (IHP-VI, 2002-2007);
2. *Takes note* with satisfaction of the successful implementation of IHP-VI and of achievements resulted from numerous projects and activities carried out, addressing a broad range of water-related topics and contributing to the sustainable use and management of world's water resources, as well as to the internationally agreed goals such as the MDGs;
3. *Commends* the IHP Secretariat for its efforts and substantial work in coordinating and implementing the IHP-VI projects and activities;
4. Likewise *commends* the IHP Secretariat for its work towards the strengthening of the implementation capability during the period 2002-2007 through the notable expansion of the network of UNESCO water-related centres and chairs, the creation of additional staff posts in the field and other initiatives;
5. *Thanks* IHP partner institutions and experts for their cooperation in IHP-VI;
6. *Requests* the IHP Secretariat to publish a comprehensive report on IHP-VI implementation, and to prepare necessary arrangements for an external evaluation of IHP-VI;
7. *Invites* Member States to make voluntary financial contributions to the evaluation of IHP-VI;
8. *Invites* IHP National Committees to contribute in-kind and with funds to the comprehensive report on IHP-VI implementation.