

**NATIONAL REPORT ON IHP RELATED ACTIVITIES FOR  
THE 19<sup>TH</sup> SESSION OF THE IHP INTERGOVERNMENTAL COUNCIL  
PARIS, JULY 2010**

**UNITED KINGDOM**

**1. ACTIVITIES UNDERTAKEN IN THE PERIOD JULY 2008 – MAY 2010**

**1.1 Meetings of the IHP National Committee**

**1.1.1 Decisions regarding the composition of the IHP National Committee**

Two meetings of the United Kingdom National Committee for the IHP were held during the reporting period; on 6 March 2009 and 3 March 2010. Since its formation in 2007 (through the merger of the UK National Committee for the IHP and the UK Inter-Departmental Committee on Hydrology) the *UK Committee for National and International Hydrology* (UKCNIH) has acted as the UK National Committee for the IHP. The committee comprises representatives from UK bodies with a major stake in hydrology and water resources research; the current organisations represented are detailed in Table 1.

**Table 1** Representation on the *UK Committee for National and International Hydrology* (as of May 2010)

Natural Environment Research Council (NERC)
Centre for Ecology and Hydrology (CEH)
Department of the Environment, Food and Rural Affairs (DEFRA)
Department for International Development (DFID)
Department for Transport (DfT)
Welsh Assembly Government
Scottish Government
Northern Ireland Environment Agency (NIEA)
Department of Agriculture and Rural Development, Northern Ireland (DARDNI)
Scottish Environment Protection Agency (SEPA)
Environment Agency (EA)
Met Office
British Geological Survey (BGS)
IHP Flow Regimes from International Experimental and Network Data (FRIEND)
IHP Hydrology, Environment, Life and Policy (HELP)
IHP Water and Development Information for Arid Lands (G-WADI)
IHP International Sedimentation Initiative (ISI)
UK interests in UNESCO Ecohydrology projects
UNESCO Centre of Water Law, Policy and Science, Dundee
UK Committee of the International Association of Hydrological Sciences (IAHS)
UK in WMO Commission for Hydrology (WMO-CHy)
British Water
UK Water Industry Research (UKWIR)
British Hydrological Society (BHS)

The Natural Environment Research Council (NERC) Centre for Ecology and Hydrology (CEH) continues to provide the UK IHP secretariat with Professor Alan Jenkins remaining as chair of the UKCNIH and Dr. Harry Dixon replacing Gwyn Rees (in 2009) as its secretary.

### 1.1.2 Status of IHP-VII activities

#### IHP-VII Themes:

The UK is able to contribute towards IHP activities through a number of current research programmes at a national and international scale. Table 2 outlines a number of examples of activities by UK researchers pertinent to Phase VII of the IHP.

**Table 2** UK participation in/contribution to IHP-VII

<b>THEME 1: ADAPTING TO THE IMPACTS OF GLOBAL CHANGES ON RIVER BASINS AND AQUIFER SYSTEMS</b>	
Focal Area 1.1	<p>Quantification of land-surface/climate feedbacks at different scales using the Joint UK Land Environment Simulator (JULES); focus of West Africa and northern India through the European Union Sixth Framework Programme for Research and Technological Development (EU-FP6) Integrated Project Water and Global Change (WATCH). Other activity includes: evaluation of regional simulations of snow cover by a land-surface model and investigation of the effects of climate change on soil erosion.</p> <p><i>Centre for Ecology and Hydrology / UK Met Office</i></p> <p>Research on the Tweed HELP basin, Scotland, to refine knowledge of the efficacy of natural techniques in sustainable flood management and to develop scenarios which couple land cover change vis-a-vis climate change impact on surface water-groundwater interactions across scales. Specific activities include headwater catchment flow monitoring and modelling the hydrological effects of river channel restoration.</p> <p><i>Dundee UNESCO IHP-HELP Centre</i></p>
Focal Area 1.2	<p>Analyse to quantify and predict components of the current and future global water cycle and related water resources states. Evaluation of uncertainties and clarification of overall vulnerability of water resources related to societal and economic sectors. Specific activities include; continued development of an improved model for assessment of global and regional water resources (Global Water Availability Assessment model, GWAVA); application of GWAVA to assess impacts of changing climate and water demands across South America (EU-FP6 project TWINLATIN); ongoing applications focusing on European (EU-FP6 project SCENES) and global assessments (EU-FP6 project WATCH).</p> <p><i>Centre for Ecology and Hydrology</i></p> <p>Research into improved rainfall disaggregation methods, and impact on floods and water resources, particularly groundwater dominated systems.</p> <p><i>Imperial College London</i></p>
Focal Area 1.3	<p>Research into the effects of rural land management on flooding, groundwater flooding, and new tools for urban flood management as part of the UK NERC Flood Risk from Extreme Events (FREE) research programme and the UK Engineering and Physical</p>

	<p>Sciences Research Council (EPSRC) Flood Risk Management Research Consortium (FRMRC).</p> <p><i>Imperial College London</i></p> <p>Dissemination of the results of the EU-FP6 funded project BRAHMATWINN, enhancing capacity to carry out a harmonised integrated water resources management approach in headwater river systems of alpine massifs already impacted from climate change.</p> <p><i>Dundee UNESCO IHP-HELP Centre</i></p> <p>Legal input into the WMO/GWP Associated Programme on Flood Management. Contribution to WMO HelpDesk for Integrated Flood Management by provision of legal support to Member States through the HelpDesk mechanism.</p> <p><i>Dundee UNESCO IHP-HELP Centre</i></p> <p>Quantification of the social and economic impacts of floods and droughts in light of anticipated or predicted changes in land-use and climate. Example activities include: Evaluation of the association between weather types and flood occurrence across Europe (European Union COST-733 Action). Analysis of river flow drought frequency, extent and spatial coherence, including the generation of a catalogue of hydrological and meteorological droughts across Europe (contributions under EU-FP6 project WATCH). Development of national approach for assessing the impacts of climate change on high river flow across Britain, underpinning national policy on climate change for the Flood Management community.</p> <p><i>Centre for Ecology and Hydrology</i></p>
Focal Area 1.4	<p>Research in palaeohydrology and renewable/non-renewable resources and management and related policy issues.</p> <p><i>Oxford University</i></p> <p>Membership of the scientific committee for UNESCO ISARM conference on Transboundary Aquifers providing legal input.</p> <p><i>Dundee UNESCO IHP-HELP Centre</i></p> <p>Research into the responses of European groundwater systems to climate change and land use impacts as part of EU Seventh Framework Programme (EU-FP7) project, GENESIS.</p>
Focal Area 1.5	<p>Research into climate change effects in Yemen and contributions to International Conference on Water Resources and Climate Change in the MENA Region (Muscat, 2008).</p> <p><i>Imperial College London</i></p>

## **THEME 2: STRENGTHENING WATER GOVERNANCE FOR SUSTAINABILITY**

Focal Area 2.1	<p>Co-convened a Transboundary Water seminar with UNESCO Paris at the Stockholm World Water Week (2009), involving broad range of global stakeholders; involvement in several panels at the Stockholm Water Week including UNU-INWEH panel on Shared Lakes and Governance.</p> <p><i>Dundee UNESCO IHP-HELP Centre</i></p>
Focal Area 2.2	<p>Development and dissemination of results of comparative studies into governance, legal regimes for good water governance, and indicators for governance, working with stakeholders at basin and</p>

	<p>global scales. (EU-FP6 projects: BRAHMATWINN and STRIVER; EU-FP7 projects: LIVEDIVERSE and GENESIS). These projects build capacity and develop better legal and administrative frameworks.</p> <p><i>Dundee UNESCO IHP-HELP Centre</i></p> <p>Technical assistance to the Government of India to address the issues of intra-sectoral water demands and overall water resource planning and management (World Bank Indian Hydrology Project Phase II).</p> <p><i>Centre for Ecology and Hydrology</i></p>
Focal Area 2.3	<p>Provision of input to World Economic Forum through Global Agenda Council on Water Security regarding the economic importance of water, so as to enhance financing in the sector (Dubai WEF summit; Davos Economic Summit).</p> <p><i>Dundee UNESCO IHP-HELP Centre</i></p>
Focal Area 2.4	<p>Research to develop methods for assessing and strengthening governance arrangements at the international (transboundary) level (EU-FP6 projects BRAHMATWINN and STRIVER; EU-FP7 project LIVEDIVERSE).</p> <p>Evaluation of the role and relevance of the 1997 UN Watercourses Convention in strengthening the management of international watercourses as a shared responsibility, in collaboration with World Wildlife International and other international partners.</p> <p><i>Dundee UNESCO IHP-HELP Centre</i></p>
Focal Area 2.5	<p>Jointly convened a conference on the <i>Intersections for Energy and Water Law</i> (Calgary, 2009) with University of Calgary and McGeorge University to look at water/energy nexus in a number of watersheds around the world.</p> <p><i>Dundee UNESCO IHP-HELP Centre</i></p>

### **THEME 3: ECOHYDROLOGY FOR SUSTAINABILITY**

Focal Area 3.1	<p>Research into the ecology &amp; conservation of East African soda lakes and fauna.</p> <p><i>University of Leicester</i></p> <p>Assessment of the capabilities of alternative land covers on the landscape hydrology through an integrated science perspective (surface water-groundwater-ecohydrology).</p> <p><i>Dundee UNESCO IHP-HELP Centre</i></p> <p>Qualitative estimates of the environmental impacts of scenarios of future climate and water demand at a pan-European scale (EU FP6 project SCENES).</p> <p><i>Centre for Ecology and Hydrology</i></p>
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### **THEME 4: WATER AND LIFE SUPPORT SYSTEMS**

Focal Area 4.1	<p>Research into the management of agrochemicals in a Scottish HELP basin.</p> <p><i>Dundee UNESCO IHP-HELP Centre</i></p>
Focal Area 4.3	<p>Further development of integrated urban water management; including institutional strengthening of the African Municipal water companies in order to address the Millennium Development Goals.</p> <p><i>Imperial College London</i></p>

Focal Area 4.4	Major experimental and modelling study on impacts of rural land management on flooding (NERC FREE research programme and EPSRC FRMRC). <i>Imperial College London</i>
<b>THEME 5: WATER EDUCATION FOR SUSTAINABLE DEVELOPMENT</b>	
Focal Area 5.1	Numerous tertiary water education and professional development activities are provided in the UK by a range of academic institutions. Examples of particular relevance to the IHP include: Master of Laws courses in <i>Water Law</i> and <i>Water Governance and Conflict Management</i> (taught at Dundee UNESCO IHP-HELP Centre and UNESCO IHE). Masters degree in <i>Water Resources Management and Law</i> with the United Nations University Institute for Environment and Health (to commence in January 2011). Short courses and training provision are provided at tertiary and professional level. <i>Dundee UNESCO IHP-HELP Centre</i>
Focal Area 5.2	Contributions to a training needs assessment of staff responsible for hydrological data in Lake Victoria basin (Lake Victoria Basin Commission/World Bank Project). Capacity building of hydrological staff in state ministries as part of World Bank Indian Hydrology Project Phase II. <i>Centre for Ecology and Hydrology</i> Professional training on water regulation for Malawi delegation; devising a new multi-sector regulatory framework for water and energy. <i>Dundee UNESCO IHP-HELP Centre</i>

The UK continues to play an active role in the cross-cutting and associated programmes of the IHP. Current involvement includes that detailed below.

#### **Cross-Cutting Programmes:**

##### **FRIEND**

The UK continues to play a leading role in the FRIEND Programme providing support and research contribution to FRIEND initiatives worldwide through the activity of many hydrologists from across the country. Gwyn Rees (CEH) represents UK interests on the Steering Committee of EURO-FRIEND, and is member of the Steering Committee of HKH-FRIEND. Dr. David Hannah (University of Birmingham) coordinates the Project Group 3 (Large Scale Variations) of EURO-FRIEND, one of four sub-projects of EURO-FRIEND. Helen Houghton-Carr (CEH) continues to represent the UK on the Steering Committee of Southern Africa FRIEND while Harry Dixon (CEH) acts as a Regional Coordinator of the EURO-FRIEND European Water Archive (EWA).

UK scientists have participated in a range of FRIEND activities over the reporting period, including:

- David Hannah, Gwyn Rees and Harry Dixon attended the EURO-FRIEND workshop on the European Water Archive, at the Federal Institute of Hydrology, Koblenz, Germany (2008).
- Lectures on Hydrological Data Management were given by Gwyn Rees at the WATCH Summer School on Hydrological Droughts (Trieste, Italy, 2008).

- Several UK scientists attended the FRIEND workshop on Low Flow and Drought at the Comenius University, Bratislava (Slovakia, 2008).
- David Hannah and Christel Prudhomme (CEH) convened session at the 2009 General Assembly of the European Geophysical Union (EGU) on *Large-scale hydrology: understanding and predicting hydrological variations*.

Several UK scientists plan to attend the forthcoming 6th International FRIEND Conference, *Global Change: Facing Risks and Threats to Water Resources*, to be held in Fez, Morocco, October 2010 and David Hannah is a member of the International Organising Committee.

Significant UK research contributions to the FRIEND programme have been conducted over the reporting period, examples of which include:

- Investigation of the role of basin properties as modifiers of climate signals in river flows (*CEH/University of Birmingham*).
- Research focusing on the impact of large-scale climate-hydrology interactions on the UK, Turkey and Mediterranean (*CEH/University of Birmingham*).
- Study of the spatial coherence of drought in Europe using indicators of rainfall and stream flow deficit (*CEH/Walker Institute, University of Reading/JBA Consulting*).
- Research evaluating the association between circulation types and flood occurrence across Europe. Relationships were assessed using data from the FRIEND European Water Archive and circulation types from weather type catalogues developed within the EU COST-733 Action (*CEH*).

## **HELP**

The Dundee IHP HELP Centre for Water Law, Science and Policy, a Category 2 Centre under the auspices of UNESCO, is the European Regional Coordinating Unit for the HELP programme. In coordinating the European HELP Basins, the centre seeks to actively engage with the HELP agenda in the UK and Europe.

Over the reporting period UK activities in relation to HELP have included:

- Dr Sarah Hendry and Dr Alistair Rieu-Clarke (University of Dundee) contributed to the HELP seminar *Strengthening Water Governance for Sustainability* (Evora, Portugal, 2009).
- A workshop on *Water Management for Development* was held as part of a wider meeting hosted by UNESCO Scotland on *Good Practice in International Development* (Edinburgh, 2009).
- Sarah Hendry published an article in the Journal of Water Law, looking at how water law, policy and science are combined under a HELP approach.
- Sarah Hendry and Professor Mike Bonell visited some of the active UK HELP basins in 2009 to develop possible research agendas and improve communication amongst the basins.
- To mark the 2010 World Water Day the Dundee IHP HELP Centre (with the support of UNESCO Scotland) hosted a successful interactive online e-conference entitled *Scottish HELP Online Pilot Project: Interactive Ning Gathering (HELP-SHOPPING)* (March 2010).
- The University of Leicester (Dr David Harper) continue to jointly coordinate two HELP basins, the Welland (UK) and Lake Naivasha (Kenya).

Other active HELP basins within the UK include; the Don, Eden, Tweed, Dee and Thames.

## **Associated Programmes:**

### **G-WADI**

The involvement of UK scientists in the development of the G-WADI programme continued between 2008 and 2010. Professor Mike Edmunds (University of Oxford) and Professor Howard Wheeler (Imperial College London) continue to serve on the G-WADI steering committee and have been involved in coordination of activities in Asia, Africa, Middle East and North Africa and South America. UK contributions over the reporting period include:

- Mike Edmunds has led an initiative promoting the formation of an African G-WADI and development of activities in the science to policy areas.
- Howard Wheeler has led the promotion of Groundwater Modelling activities, including co-editing a forthcoming book on *Groundwater Modelling in Arid and Semi-arid Areas* (Wheeler, H.S., Mathias, S.A., and Li, X., (eds.), 2010, International Hydrology Series, Cambridge University Press/IHP, in press). This publication results from the 2007 G-WADI workshop (Lanzhou, China).
- Both Mike Edmunds and Howard Wheeler contributed to the recent G-WADI workshop on *Water – Science, Policy and Capacity Building* (Dakar, April 2010), supporting capacity development in Sub-Saharan Africa.

### **ISI**

The UK has maintained involvement in ISI over the reporting period. Professor Des Walling (University of Exeter) continues to act as a member of the ISI Steering Committee and is actively involved in several ongoing ISI activities. He is a member of the recently formed ISI Core Steering Group and attended its first meeting in March 2010 (Bern). Other recent UK contributions have included:

- On behalf of ISI, Des Walling contributed a section on Erosion and Sediment Loads to the 3<sup>rd</sup> World Water Development Report.
- A World Water Assessment Programme side publication series paper on *The Impact of Global Change on Erosion and sediment Transport by Rivers: Current Progress and Future Challenges* was published in 2009 as an output of the ISI programme, authored by Des Walling.
- Des Walling presented a paper at the ISI co-sponsored LANDCON Symposium on *Global Change – Challenges for Soil Management* (Serbia, 2009).
- ISI, represented by Manfred Spreafico and Des Walling, contributed to a UNESCO IHP workshop on *Adapting to the Impact of Global Change on River Basins and Aquifer Systems* (UNESCO, Paris, 2008).
- ISI was co-sponsor of the *International Workshop on Erosion, Transport and Deposition of Sediment* (Berne, Switzerland, 2008). Des Walling presented a paper on 'Investigating the changing sediment loads of the world's rivers: problems and findings'.
- Des Walling contributed to the ISI/IAHS/WASER *Sediment Problems and Sediment Management in Asian River Basins* workshop at the IAHS/IAHR Scientific Assembly (Hyderabad, India, 2009).
- Des Walling is a member of the Advisory Council of the *International Research and Training Center on Erosion and Sedimentation* (IRTCES). In this role he attended the meeting of the 7th Advisory Council (Beijing, 2008), held in association with the ISI Steering Committee meeting.

### **Ecohydrology**

Dr David Harper (University of Leicester) represents UK interests in the UNESCO Ecohydrology Programme on the UK Committee for National and International Hydrology (Section 1.1) and is a member of the International Committee of the IHP Ecohydrology Programme. He continues to play a leading role in research activities in

the area of Lake Naivasha (Kenya) – an IHP Ecohydrology Demonstration Project. Several UK authored papers on this area were contributed to the recent *International Symposium on Ecohydrology for Water Ecosystems and Society in Ethiopia* (Addis Ababa, Ethiopia, 2009). David Harper was a member of the symposium's International Advisory Committee. David also co-edited the publication *Ecohydrology: Processes, Models and Case Studies* (Harper, D., Zalewski, M. and Pacini, N., (eds.) 2008, CAB International), considering the concepts of Ecohydrology as developed under previous phases of the IHP.

### **ISARM**

The Dundee UNESCO Centre for Water Law, Science and Policy (see Section 1.4) are represented on the Scientific Committee for the forthcoming ISARM conference on *Transboundary Aquifers* (Paris, December 2010).

## **1.2 Activities at national level in the framework of the IHP**

### **1.2.1 National/local scientific and technical meetings**

The UK hydrological community continues to convene a comprehensive range of national and local scientific and technical meetings. The British Hydrological Society (BHS) is a UK national society for the advancement of hydrology. The society's membership is drawn from both the academic (universities and research institutes) and operational sectors. The society holds regular national and regional scientific and technical meetings related to Hydrology. Over the reporting period numerous meetings have been held focusing on topic such as *Hydromorphology and Ecology of Lakes*, *Spatial Planning and Hydrology* and *Emerging Challenges in Flood Hydrology*, while a National Hydrological Symposium was held in September 2008.

### **1.2.2 Participation in IHP Steering Committees/Working Groups**

UK researchers continue to be involved in wide range of IHP Steering Committees and Working Groups. In relation to the cross-cutting and associated programmes of IHP, UK scientists serve on, amongst others, the committees of FRIEND, HELP, Ecohydrology, G-WADI and ISI (see Section 1.1.2).

The UK continues to maintain strong links with the UNESCO Division of Water Sciences. Over the reporting period CEH hosted a visit by members of the IHP Secretariat to the CEH headquarters in Wallingford (July 2008) and Professor Alan Jenkins (CEH) visited UNESCO Paris in July 2009. The UK continues to collaborate with other National Committees in IHP Region 1, providing contributions to meetings and other initiatives.

Nationally Alan Jenkins, as Chair of the UKCNIH, represents UK involvement in the IHP on the UK National Commission for UNESCO Sciences Committee and is a member the commission's working group on *Increased Cooperation among UNESCO Intergovernmental/International Scientific Programmes in the UK*. The Group meets regularly to share information, feedback and discourse on key ISP activities and priorities. It identifies opportunities for shared action, including raising the visibility of and strengthening UK participation in UNESCO programmes. It also provides coordinated input on relevant policy issues to the UK National Commission for UNESCO, UNESCO globally and UK Government.

### **1.2.3 Research/applied projects supported or sponsored**

The European Union continues to be an important source of funding for UK research activities contributing to the IHP. For example, the European Union Sixth Framework Programme for Research and Technological Development (EU-FP6) Integrated Project Water and Global Change (WATCH) provides opportunities for UK scientists to contribute to the FRIEND programme. The Centre for Ecology & Hydrology is the main coordinating institute for the WATCH project, heading a consortium of 25 leading research centres in climate change and hydrological science throughout Europe.



Within the UK the Natural Environment Research Council (NERC), the Economic & Social Research Council (ESRC) and the Department for International Development (DfID) have jointly established the *Ecosystem Services for Poverty Alleviation* (ESPA) research programme, a multi-disciplinary programme that will address how to achieve sustainably managed ecosystems. This work aims to contribute to reducing poverty and improving well being in developing countries. Details of the programme can be found at: <http://www.nerc.ac.uk/research/programmes/espa/>.

#### **1.2.4 Collaboration with other national and international organizations and/or programmes**

Close links are maintained between the UK National Committee for the IHP (UKCNIH, see Section 1.1) and other international organizations and programmes. Dr Ann Calver continues to represent UK involvements in the WMO Commission for Hydrology (WMO-CHy) and UK scientists continue to be actively involved in a wide range of WMO initiatives. Professor Howard Wheater (Imperial College London) was recently elected as Vice-Chair of the Global Energy and Water Cycle Experiment (GEWEX) Scientific Steering Group and is also a member of the UKCNIH. Linkages with the IAHS are maintained through Professor Ian Cluckie (Swansea University), Chair of the UK National Committee for IAHS. Several UK scientists contributed to the 8<sup>th</sup> IAHS Scientific Assembly/37<sup>th</sup> IAH Congress (Hyderabad, India, 2009).

The British Geological Survey (BGS) have been actively involved in the IAH/UNESCO IHP sponsored initiatives related to the continued development of the global network on Managed Aquifer Recharge (MAR), driven by the IAH Commission on MAR. Ian Gale (BGS) is co-chair of IAH-MAR and BGS maintain the commission's website. Specific activities over the reporting period include contributions to both the UNESCO/IAH-MAR Network meeting to identify objectives and activities for MAR-NET (Bangkok, Thailand, 2009) and the MAR-NET launch at 8<sup>th</sup> IAHS Scientific Assembly/37<sup>th</sup> IAH Congress (Hyderabad, India, 2009).

Professor Pat Wouters (Dundee UNESCO IHP-HELP Centre) serves on the International Advisory Committee for the United Nations University Institute of Water, Environment and Health (UNU-INWEH) and is a member of the Global Water Partnership Technical Experts Committee; the World Economic Forum Global Agenda Council on Water Security and the SUEZ Foresight Advisory Committee. She is also co-chair of the Legal Experts Group of the World Water Assessment Programme.

#### **1.2.5 Other initiatives**

### **1.3 Educational and training courses**

See other areas of report, including current educational initiatives by the Dundee UNESCO Centre for Water Law, Science and Policy.

#### **1.3.1 Contribution to IHP courses**

#### **1.3.2 Organization of specific courses**

#### **1.3.3 Participation in IHP courses**

### **1.4 Cooperation with the UNESCO-IHE Institute for Water Education and/or international/regional water centres under the auspices of UNESCO**

#### **Dundee IHP-HELP Centre for Water Law, Science and Policy**

The Dundee UNESCO Centre for Water Law, Science and Policy was officially launched as a Category 2 IHP-HELP Centre under the auspices of UNESCO in November 2006. The Centre aims to become a world leader in its field and find new ways of effectively integrating law, policy and science to address water challenges of the 21<sup>st</sup> century. The Centre's activities fall within the following main areas, all of which are relevant to IHP-VII:

- a) Promoting excellence in research in water in Scotland.
- b) The Millennium Development Goals and Global Change.

- c) The HELP Programme and the IHP
- d) Water Law Water Leaders: education and training

Whilst the Centre's activities relate to a broad range of the themes of IHP-VII, there is a clear focus on governance in many areas. Examples of specific contributions to IHP-VII by the Dundee Centre are included in Table 2 (Section 1.1.2).

IHP-VII Theme 5: Water Education for Sustainable Development (tertiary education) is of high relevance to the centre's work. The collaborative graduate degree programme in *Water Governance and Conflict Resolution*, delivered by the Dundee Centre and UNESCO IHE, continues to be implemented. The Masters degree in *Water Resources Management and Law* with the United Nations University Institute for Environment and Health is to commence in January 2011.

The Dundee UNESCO HELP Centre is the European Regional Coordinating Unit for the HELP programme; details of some recent initiatives in this area are given in Section 1.1.2.

## **1.5 Publications**

No list is maintained of publications related to the IHP. See other sections of report for examples of related publications.

## **1.6 Participation in international scientific meetings**

### **1.6.1 Meetings hosted by the country**

UK scientists have led and contributed to numerous international scientific meetings in relation to the IHP over the reporting period, both in the UK and abroad. See other sections of the report for examples of these meetings.

### **1.6.2 Participation in meetings abroad**

See other sections of report.

## **1.7 Other activities at regional level**

### **1.7.1 Institutional relations/cooperation**

### **1.7.2 Completed and ongoing scientific projects**

See other sections of report.

## **2. FUTURE ACTIVITIES**

### **2.1 Activities planned until December 2010**

See other sections of the report. Other forthcoming activities include:

- Dundee UNESCO Centre for Water Law, Policy & Science, *International Law and Transboundary Freshwaters Symposium and Workshop 2010: Global, national and regional strategies for promoting security and sustainability within a rapidly changing world – Water for All* (Dundee, UK, 21-24 June 2010).
- British Hydrological Society Third International Symposium, *Role of Hydrology in Managing Consequences of a Changing Global Environment* (19-23 July 2010, Newcastle upon Tyne, UK).
- British Geological Survey contribution to IAH/UNESCO IHP MAR-NET seminar to be held at Stockholm World Water Week (5-11 Sept 2010).
- Several UK scientists are to contribute to the forthcoming 6th International FRIEND Conference, *Global Change: Facing Risks and Threats to Water Resources*, to be held in Fez, Morocco, October 2010 (see Section 1.1.2).

### **2.2 Activities foreseen for 2011-2012**

### **2.3 Activities envisaged in the long term**

UK scientists intend to continue their participation in the IHP, contributing to a wide range of initiatives and programmes (including FRIEND, G-WADI, HELP, ISI) as funding permits.