

UNITED KINGDOM

NATIONAL REPORT ON IHP RELATED ACTIVITIES

1. ACTIVITIES UNDERTAKEN IN THE PERIOD JULY 2006- MAY 2008

1.1 UK IHP National Committee

1.1.1 Decisions regarding the composition of the IHP National Committee

Two meetings of the UK-IHP Committee were held during the reporting period: on 6 February 2007 and 19 February 2008. The 2007 meeting was the first of the merged UK-IHP National Committee and the UK Interdepartmental Committee on Hydrology. It was agreed that the new committee be named the “UK Committee for National and International Hydrology” (UKCNIH). Membership of the committee has been expanded to include UK-based representatives of key IHP programmes (FRIEND, HELP, G-WADI, and ISI) and other organisations involved in national hydrology. A list of organisations represented on the committee is given in Table 1. Prof. Alan Jenkins, Science Director (Water) at the Centre for Ecology and Hydrology (CEH), Wallingford, remains Chairman of the Committee; Gwyn Rees (CEH) is its Secretary.

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

Table 1. Organisations represented on the UK Committee for National and International Hydrology (as of February 2008)

1.1.2 Status of IHP activities

FRIEND (Contact: Gwyn Rees)

The UK was instrumental in the establishment of FRIEND in 1985 and its scientists continue to play a leading role in the project. UK interests are represented on the Steering Committees of Northern European FRIEND (NE-FRIEND) and Hindu Kush-Himalayan FRIEND by Gwyn Rees (CEH). Gwyn is also on the Steering Committee of the WMO Global Runoff Data Centre. David Hannah (University of Birmingham) is coordinator of the Project Group 3 (Large Scale Variations) of NE-FRIEND, one of the four sub-projects of NE-FRIEND. Helen Houghton-Carr (CEH) represents the UK on the Steering Committee of Southern Africa FRIEND. UK scientists have participated in many FRIEND activities, as follows:

- Several UK scientists attended the 5th FRIEND Conference, 26 November-1 December, 2006, Havana, Cuba. Of the 117 papers presented at the conference, 16 were by UK scientists. The papers were published in IAHS Publication No. 308, "Climate variability and Change – Hydrological Impacts". UK scientists also contributed to the report, "FRIEND- A Global Perspective" (Servat, E., Demuth, S. (Eds.)) which provides a review of research and capacity building in FRIEND.
- David Hannah attended the NE-FRIEND Database meeting, at the Federal Institute of Hydrology, Koblenz, Germany, on 5-6 March 2007.
- Several UK scientists attended the FRIEND-convened "Hydrological Extremes: control, spatial & temporal variability, and regional patterns", session at the European Geosciences Union, Vienna, Austria, 19 April 2007, and the Low Flow and Drought (Project Group 2) meeting that followed on 21 April 2007.
- UK FRIEND participants also attended "Climate change and hydrological extremes: floods and droughts", the Third International Conference on Climate and Water, in Helsinki, Finland, on 3-6 September 2007
- David Hannah convened a Project Group 3 workshop, "Large-scale hydrological variation and teleconnections", at the University of Birmingham, in November 2007
- Helen Houghton-Carr attended the Steering Committee of Southern Africa FRIEND in, Dar Es Salaam, Tanzania, in October 2007.
- Gwyn Rees and Alan Gustard attended the Steering Committee of Hindu Kush-Himalayan FRIEND in Kathmandu, Nepal, November 2007

Forthcoming FRIEND events include:

- Summer School on Hydrological Drought, Trieste, Italy, June 2008
- Climate change and disasters. XIIIth World Water Congress, Montpellier, France, 1-4 September 2008
- Low Flow and Drought meeting. Joint AMHY-NE-FRIEND, Bratislava, Slovakia, 10-12 September 2008
- Hydrological Extremes in a Small Basin. 12th Biennial Conference of the Euro-Mediterranean Network of Experimental and Representative Basins (ERB 2008), Cracow, Poland. 18-20 September, 2008. NE-FRIEND Project Group 5.
- 6th International FRIEND Conference, Marakech, Morocco, planned autumn 2010.

HELP (Contact: Pat Wouters)

The Dundee UNESCO Centre for Water Law, Science and Policy (see also 1.4), is the European Regional Coordinating Unit for the HELP programme. There are some 20 European HELP basins. Academic staff members (Alistair Rieu-Clarke and Mike Bonell) represented the Dundee HELP Centre at the South Africa Southern Symposium (November 2007), where HELP basins from around the world gathered to see what lessons could be learned from the South. Another member of staff, Sarah Hendry, went to the UNESCO-SILA technical workshop on wetlands at Annecy in January where she presented papers on the Tweed catchment. Sarah Hendry, with Professor Alan Werritty, Director of Research, attended a meeting of the Regional Coordinating Units for the HELP Programme in Paris in May.

Dr David Harper (University of Leicester) is joint coordinator of two HELP Basins in the Welland (UK) and Lake Naivasha (Kenya). In the Welland, research focuses on sources and effects of phosphorus from agriculture. In Naivasha, attention is paid to understanding the impact of alien species and direct human impact on the ecosystem. Dr Harper attended two HELP meetings to present details of these two basins: the first in Johannesburg ('Lessons from the Southern Hemisphere', November 2007); and the second Annecy ('International Workshop on Wetlands', January 2008).

G-WADI (Contact: Mike Edmunds)

UNESCO's programme for Water and Development Information for Arid Lands – a Global Network (G-WADI) has now been running for three years. The strategic objective of G-WADI is to strengthen the global capacity to manage the water resources of arid and semi-arid areas. While core funding has been provided by UNESCO, and substantial support has been provided by individuals, institutions and governments, this work has been facilitated and enhanced by grants from DFID, through HE the Ambassador to UNESCO, for the last 2 years. Principal achievements may be summarized as:

Web site. A web site has been developed with help from University of Arizona's NSF-funded SAHRA initiative. This is the main platform for dissemination and includes a global water News Watch in many languages, information resources, and the home for G-WADI network projects. The site also provides access to software and software libraries. www.g-wadi.org

Global rainfall data. Limitations of data are a major constraint for arid areas. G-WADI is promoting access to remotely sensed global data products, including near real-time rainfall distributions from University of California's PERSIANN system.

Hydrological modelling. At a workshop was in Roorkee, India, in 2005 world experts addressed the need for models to support water management in arid and semi arid areas and provided training to professionals from major arid regions of the world. Training material was provided through the web site, a book is in press, and software is available.

Chemical and isotopic tracers. Environmental tracers can be used to better understand water origins and movement, groundwater residence times, groundwater recharge, salinity and pollution. A workshop in Oxford in 2005 provided guidance on best practice; case studies are available through the web-site.

Water Harvesting. A workshop held in Aleppo, Syria in 2006 brought together experts from several countries (including India, Pakistan, Iran, Yemen, Syria) with long histories of traditional techniques of rainwater conservation, as well as International agencies. NGOs from India who are pioneering bottom up water harvesting schemes were also represented. This was probably the first time that experience had been shared across this region. Material will be available through the web-site and a series of regional training events is planned.

Groundwater modelling. A workshop was organized in Lanzhou, China, in June 2007 to review state of the art techniques for modelling groundwater. This was attended by global experts, who provided training to participants from 22 countries. The workshop aimed to further stimulate the G-WADI Asian network.

Development of regional networks and local collaboration. One of the prime achievements over the three years has been to stimulate networking across a number of regional (UNESCO) centres. Thus, the Roorkee workshop was a catalyst to setting up an Asian regional grouping (including India, Pakistan, Iran, China and the Central Asian republics), which has now established its own programme of activity, including training workshops and the sharing of data and local management experience.

ISI (Contact: Des Walling)

Des Walling is a member of the ISI Steering Committee and is actively involved in several ongoing ISI activities. No formal meetings of the ISI Steering Committee were held in 2007, but a meeting of part of the Committee will be held in Berne, Switzerland in April 2008 and a full Committee meeting is scheduled to be held in China in November 2008. A number of Training Workshops in Asia and Latin America are also being planned for 2008 and 2009.

Meetings held under the auspices of ISI during 2006-08 include:

- The 1st International Sediment Initiative Conference and Steering Committee meeting, Khartoum, Sudan, November, 2006.
- An International Conference on Erosion and Torrent Control as a Factor in Sustainable River Basin Management, Belgrade, Serbia, September, 2007.
- Training Workshops in Argentina and Mexico

Good Progress is being made with the River Basin Case Studies and it is hoped that several of these will be published in the near future. ISI is also currently involved in contributing to the UN World Water Assessment Program and the 3rd Edition of the World Water Development Report.

Ecohydrology (Contact: David M Harper)

Dr Harper has been working with local communities in the area of Lake Naivasha (Kenya) - an IHP Ecohydrology Demonstration Site - to restore riparian vegetation to mitigate high sediment input. Between 2006-7 he chaired the Task Force on Demonstration Sites, which met in Brazil (Parana river site) in December 2007. Dr Harper is also coming to the end of a Darwin Initiative-funded project on the ecology & conservation of East African soda lakes and lesser flamingos. In November 2007, he led an expedition to the south Rift of Kenya, to investigate the Ewaso Njiru river system which forms 50% of the inflow to lake Natron, the only breeding site in East Africa for lesser flamingos and which is under threat by major proposals to build a soda ash extraction plant.

1.2 Activities at national level in the framework of the IHP

1.2.1 National/local scientific and technical meetings

The British Hydrological Society (BHS) organises many technical meetings and workshops at national and regional level in the UK, which attract contributions from both the academic (universities and research institutes) and operational sectors. Recent events have included: River restoration and naturalisation (24 Jan 2008); Climate change: scenarios, impacts and adaptation (20 Feb 2008); Urban Flood Risk (13 Mar 2008); Weather radar rainfall (19 Mar 2008); Flood Risk Issues in Northern Scotland (25 Mar 2008).

1.2.2 Participation in IHP Steering Committees/Working Groups

Prof Alan Jenkins represents the UK-IHP Committee on the UK National Commission for UNESCO Natural Sciences Committee and is member of two working groups it has set-up: WG1, Input to the UNESCO Natural Sciences Programme; and WG4, Increased Cooperation and Coordination amongst International Science Programme Chairs in the UK.

UK nominated scientists were elected to the following boards/committees of the IHP in 2006: Des Walling elected to governing board IRCTES; David M Harper was elected to governing board for ERCE; Alan Jenkins was elected to the IHP Bureau elected from Region 1.

1.2.3 Research/applied projects supported or sponsored

The EU is an increasingly important source of the funding of UK IHP activity. For example, an EU-FPVI project called WATCH (Water and Global Change) helps UK scientists contribute to FRIEND, and the EU Twinn-bas initiative facilitates activity in South America, Asia and Africa.

NERC, the Economic & Social Research Council (ESRC) and the UK Department for International Development (DFID) have joined forces to establish the “Ecosystem services & poverty alleviation” (ESPA) research programme - a multi-disciplinary research programme that addresses how to achieve sustainably managed ecosystems contributing to poverty reduction and wellbeing improvements 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/programmes

Close links are maintained by the UKCNIH to many international organizations and programmes. The UK representative on the **WMO** Commission for Hydrology, Dr Ann Calver (CEH), is a member of the UKCINH, as is the Chair (Prof. Ian Cluckie) of the UK national committee for **IAHS**. Prof. Pat Wouters has been appointed to the **Global Water Partnership** Experts Group. She recently returned from Bahrain, where meetings were held on GWP Strategy 2009-2013.

1.2.5 Other initiatives

The UK plays a leading role in **SPLASH** - the European Union Water Initiative European Research Area Network (EUWI Era-Net) - a consortium of 15 ministries, funding agencies and national research authorities from 11 European countries. SPLASH aims to improve the effectiveness of European funded research on water for development and to develop the capacity of local organizations to coordinate and communicate research activities and thus contribute to achieving the Millennium Development Goals (MDGs). Areas of potential research collaboration include water supply, sanitation, integrated water resource management including transboundary issues, water and food, environment, health, gender etc. For more details see: <http://www.splash-era.net/>

African Water (www.africanwater.net), another EUWI project involving the UK (CEH), aims to raise awareness in Africa and Europe of the opportunities for collaboration in research. Encouraging African involvement in research projects of EU-FPVII will hopefully benefit IHP initiatives, such as Southern African FRIEND.

1.3 Educational and training courses

1.3.1 Contribution to IHP courses

1.3.2 Organization of specific courses

1.3.3 Participation in IHP courses

See above/below

1.4 Cooperation with the UNESCO-IHE Institute for Water Education and/or other UNESCO centres

Dundee UNESCO Centre for Water Law, Science and Policy (see also 1.1.2 HELP)

The Dundee UNESCO Centre for Water Law, Science and Policy was officially launched as an IHP-HELP Centre in November 2006. The Centre aims to become a world leader in integrating law, policy and science to address water challenges of the 21st century. Academic staff include: Professor Patricia Wouters, Director; Professor Alan Werritty, Director of Research; Professor David Livingstone; Professor Mike Bonell; Dr Alistair Rieu-Clark; Andrew Allan; Dr Michael Hantke-Domas; Sarah Hendry; and Dr Tom Ball. The Centre's activities fall within three main areas:

Promoting excellence in research in water in Scotland. Professor Werritty and Dr Ball have expertise in flooding in Scotland, with projects covering Coastal Flooding, Flood Warning Benefits, and the Flood Damage Insurance Database. Professor Wouters participated with a Scottish-wide group of Higher Education Institutions working on water/development.

The Millennium Development Goals and Global Change. The Centre works on ways to assist with the realisation of the MDGs for water, both water resources and water services. Professor Wouters has been named to the Global Water Partnership Experts Group. Professor Werritty has been appointed to the UN experts' group on floods and hazards and recently attended their meeting in Seoul. Professors Wouters and Werritty attended the UNESCO Centres meeting in Delft (June 2007) and will take forward collaboration with other Centres.

The Centre also contributes to two projects under the EU Twinn-Bas initiative: "Brahmatwinn" and "STRIVER". These projects involve research in Cambodia, Vietnam, India, Norway, Spain, Portugal, South Africa, Costa Rica, Bhutan with the Dundee Centre responsible primarily for the water law aspects. Both are transboundary projects involving IWRM, and best practice in governance.

HELP Programme. See Section 1.1.2

Future Plans

The Centre should now be in a position to take forward its agenda of research excellence in all of these areas, and provide international leadership not just in the disciplinary areas but in interdisciplinary research and the integration of the best science with the development of sound policy and good legal frameworks. The Centre will be responsible for the Scottish coordination of international symposia on water security jointly with American Water Resources Association, European Water Partnership, and Global Water Partnership- Brussels in September 2008. Professor Wouters is also coordinating the Water Law input of the World Water Assessment Programme for the World Water Development Report 3. Dr Hantke-Domas Dr Hantke-Domas leads the SUEZ Research Contract which examines transparency in water services contracts; the preliminary findings from this work will be presented at the 5th World Water Forum (Istanbul, March 2009).

The Dundee HELP Centre and the IHE Delft UNESCO Centre and the UNESCO PCCP have a tri-partite agreement to implement the first collaborative graduate degree programme in Water Conflict Prevention (first intake 2008). Students will study at both Delft and Dundee

and the programme will start to run in the autumn. The Dundee Centre is currently also developing an innovative executive style LLM in Water Law to begin in January 2009. These programmes are of course squarely within the aims and objectives of the IHP.

1.5 Publications

No list is maintained of IHP-related publications.

1.6 Participation in international scientific meetings

1.6.1 Meetings hosted by the country

1.6.2 Participation in meetings abroad

See above

1.7 Other activities at regional level

1.7.1 Institutional relations/cooperation

The UK-IHP Committee and Turkish IHP National Committee jointly convened a **Regional Meeting of Electoral Group I** of the IHP in Istanbul on 20-21 September, 2007. The meeting attracted 28 participants from 15 countries. Minutes of the meeting can be obtained from the Secretary of the UK-IHP Committee.

1.7.2 Completed and ongoing scientific projects

See above

2. FUTURE ACTIVITIES

2.1 Activities planned until December 2009

See above. UK scientists are very much involved in preparations for “Water: A vital Resource under Stress – How Science can help.”, the 8th IAHS Scientific Assembly, Hyderabad, India, 7-12 September 2009.

2.2 Activities foreseen for 2010-2011

UK scientists intend to continue their participation in various IHP initiatives, including FRIEND, HELP, ISI and G-WADI, as resources permit.

2.3 Activities envisaged in the long term

Future UK activity within the IHP will conform to UKNCIH long-term priorities: the advancement of knowledge and understanding through hydrological research; the development of tools and methods to improve the assessment and management of water resources in gauged and ungauged catchments; and the education and training of young hydrologists, both in developing countries and in the UK.