



United Nations
Educational, Scientific and
Cultural Organization



International
Hydrological Programme

HELP

HYDROLOGY FOR THE ENVIRONMENT,
LIFE AND POLICY



HELP

- ▶ A TRANSDISCIPLINARY INITIATIVE OF UNESCO'S INTERNATIONAL HYDROLOGY PROGRAMME
- ▶ A NEW APPROACH TO INTEGRATED WATER RESOURCE MANAGEMENT
- ▶ FOCUSING ON RESULTS AT THE BASIN LEVEL
- ▶ MAKING SCIENTISTS, POLICY MAKERS, WATER MANAGERS AND STAKEHOLDERS WORK TOGETHER
- ▶ A PLATFORM FOR SHARING WATER KNOWLEDGE AND EXPERTISE
- ▶ AN INTERNATIONAL NETWORK OF:
91 BASINS SPREAD OVER 67 COUNTRIES
600+ ORGANISATIONS
1000+ INDIVIDUALS

International Hydrological Programme
Division of Water Sciences

1 THE **HELP** PROGRAMME



Red dots show location of HELP basins.

HELP is a cross-cutting and **transdisciplinary** initiative of the United Nations Educational, Scientific and Cultural Organization (**UNESCO**) led by the International Hydrological Programme (**IHP**).

HELP is creating a new approach to integrated catchment management through the creation of a **framework** and the provision of a **platform** for water law and policy experts, water resource managers and water scientists to work together on water-related problems. The HELP initiative has established a **global network** of catchments to improve the links between hydrology and the needs of society.

OUR CONCEPT

HELP is mediating multiple interplays between hydrological science on one side and the economic, environmental, social and cultural realities on the other side so as to harness both scientific expertise and local knowledge to solve complex problems at the river basin level.



The HELP Concept of Integrated Water Resource Management (adapted from HELP Panama).

HOW WE WORK

From the **technical** perspective, the broad objectives of HELP are to strengthen field-oriented, experimental hydrology using the drainage basin as unit of analysis. Water related physical (hydrological, climatological and ecological) and non-physical (technical, sociological, economical, administrative and legal) observations are made in the catchments to address the most critical policy and management issues.

From an **operational** perspective, the programme is fully user-driven and takes into account policy needs for ecologically sustainable development. Science, policy and management groups are actively involved in the setting of the policy- and research agenda and in the review of policy and management practices to ensure that the scientific findings will benefit societal needs.

“The HELP program, true to its name, is very helpful in promoting the best practice in integrated water resource management by sharing ideas from all over the world.”

Awadhesh Prasad, Australia



Access to water, West Sumatra, Indonesia, © Declan Hearne.



Monitoring nutrient flux in the South Creek in Australia, © Saud Akbar.



Water is a major women's issue, © iStockphoto.com/MissHibiscus.

2 THE HELP ACTION AREAS

Water **Communication** and **Public Participation** are central to all our activities connected with the following **HELP Action Areas**:



Training Course on Developing Capacity of NGOs for the Practical Implementation of IWRM in Malaysia, © R. Elfithri.

WATER & CLIMATE CHANGE

Any changes in climate, especially rainfall, are amplified by the hydrological system. Nevertheless, technical advances and scientific research in the field of climate change are not being translated into information useful to water managers and policy-makers world wide.

To improve this situation, HELP complements the global data that the scientific community provides with in situ hydrological observations in representative research catchments around the world.

“[HELP] demonstrates how stakeholder involvement and cooperation between different groups can be achieved.”

Lotta Andersson, Sweden

WATER & ECOSYSTEM SERVICES

A balance has to be found between the protection of crucial ecological services and the human needs for water.

HELP is integrating economic valuation methods for ecosystem services in the decision-making processes in order to achieve cost-effective allocations of scarce water for the protection of the environment. HELP also assists in identifying, describing and modelling hydrological impacts of land-use change and is testing theoretical results against real world situations.

WATER & HUMAN HEALTH

Millions of people die annually from diseases caused by unsafe drinking water, lack of sanitation and water for hygiene and billions are at risk due to water-borne diseases.

HELP provides the coordination between the scientific community, local government and stakeholders in order to take appropriate measures to prevent, control and reduce water pollution and mitigate the impacts on sanitation and drinking water.

WATER, FOOD & ENERGY NEXUS

Agriculture currently accounts for around three-quarters of global water consumption and an increasing proportion of agricultural outputs are now being used for energy production. There is much scope for improving water and energy efficiency in agriculture as well as in promoting clean development mechanisms for energy at various levels.

HELP is assisting efforts to introduce technical innovations to the social, political and institutional structures in order to adopt green and clean food and energy production cycles in a river basin.



Students in the San Pedro HELP Basin, © Anne Browning-Aiken.



Capacity Building in Malaysia, © R. Elfithri.

“HELP has promoted stakeholder participation and consultation from the initial stage of decision making.”

Jiebin Zhang, China

EMPOWERING STAKEHOLDERS

Expanding demands for water are certain to increase the competition among uses and users and thus the potential for conflicts. Competition among the consumer sectors (agricultural, industrial, urban, environmental...) also feeds into the positions taken by political entities towards cooperation with neighbours.

HELP is facilitating the decision-making processes with the provision and interpretation of sound hydrological data and the definition of indicators that assist with determining legal entitlement, facilitation of dispute avoidance, and monitoring compliance.

WATER EDUCATION

The best water manager is the water user, therefore public education is probably the most effective, long-term way to affect change at the lowest unit of water management, whether it is at home, in the field, or at work.

HELP therefore includes a component of public education that is casting scientific findings in forms and formats that make them accessible to those members of the public who need this information.

3 THE **HELP** NETWORK

AFRICA

Atbara, Ethiopia, Eritrea and Sudan
Blue Nile, Ethiopia and Sudan
Bouregreg, Morocco
Draa, Morocco
Ewaso Ngiro, Kenya and Tanzania
Gash, Ethiopia and Sudan
Greater Ruaha, Tanzania
Lake Navaisha, Kenya
Mandaratsy, Madagascar
Nakambe, Burkina Faso
Olifants, South Africa
Thukela, South Africa
Upper Oueme, Benin
White Volta, Ghana



HELP meeting in Guadiana, Portugal, © Shahbaz Khan.



Linking river basin environmental management with livelihood issues in Africa, © iStockphoto.com/Torsten Karock.

AUSTRALASIA

Burdekin, Australia
Fitzroy, Australia
Motueka, New-Zealand
Murray-Darling, Australia
Nadi, Republic of Fiji
Ord, Australia
Talise, Vanuatu
Tully-Murray, Australia



Reforestation worker, Philippines, © Cristeta G. Gallano.

ASIA

Aral Sea, Central Asia
Brahmani-Baitarani, India
Chirchik, Uzbekistan
Davao, Philippines
Gagas, India
Indus, Pakistan
Irtys, China, Kazakhstan and Russia
Kabul River, Afghanistan and Pakistan
Kaluvelly, India
Kumho, Republic of Korea
Lake Peipsi, Estonia and Russia
Langat, Malaysia
Northern Forests, Iran
Syrdarya, Central Asia
Tarim, China
Upper Kaligandaki, Nepal
Walwe, Sri Lanka
Western Sumatra Islands, Indonesia
Yasu, Japan

EUROPE

Alento, Italy
Bode, Germany
Dee, UK
Don, UK
Douro, Portugal and Spain
Dragonja, Slovenia
Eden, UK
Eman, Sweden
Frome-Piddle, UK
Guadiana, Portugal and Spain
Herault, France
Karjaanjoki, Finland
Mesta-Nestos, Bulgaria and Greece
Motala, Sweden
Oona-Blackwater, Ireland
Pang-Lambourn, UK
Pays de Savoye, France
Pilica, Poland
Rhone, France
Saale, Germany
Severn, UK
Tern, UK
Thames, UK
Tweed, UK
Upper Danube, Central Europe
Welland, UK

MIDDLE EAST

Barka, Sultanate of Oman
Khilil-Besor, Israel and Palestinian Territories
Litani, Lebanon

LATIN AMERICA & THE CARIBBEAN

Carapa, Paraguay
Chaguana, Ecuador
Cuyaguaje, Cuba
Elqui, Chile
Jequetepeque, Peru
Panama Canal, Panama
Pipiripau, Brazil
Reventazon-Parisimina, Costa Rica
Sao Francisco Verdadeiro, Brazil
Tacuarembó, Uruguay



Student field trip, USA, © Anne Browning-Aiken.

NORTH AMERICA

Cupatitzio, Mexico
Lowa-Cedar, USA
Lake Champlain, Canada and USA
Lerma-Chapala, Mexico
Luquillo Mountains, Puerto Rico
Mystic, USA
Patzcuaro, Mexico
Saint John, Canada and USA
Upper San Pedro, Mexico and USA
Upper Washita, USA
Willamette, USA

4 THE HELP FORUM

The HELP Forum (www.helpforum.ning.com) is a user-driven web platform for sharing knowledge and experience across the international network of HELP basins. Built upon a social networking infrastructure, it allows our members to interact among each other and link to the programme. Over 150 HELPs have joined the Forum since its introduction in September 2009.

Members

All members of the HELP Programme are offered a profile page on the HELP Forum, where they can upload their curriculum, basin affiliations, photos, documents and other relevant information. The profile information can be accessed through the internal search engine which allows for localization of expertise within the HELP Programme.

Basins

Every HELP Basin has an interactive page on the HELP Forum, where members can join, network and communicate with other members involved in the basin.

Events

The HELP Forum offers a list of conferences, workshops and other meetings that relate to the HELP Action Areas and the HELP Basins. This allows for the localisation of expertise and the possibility for further training, education and exchange.

Forum

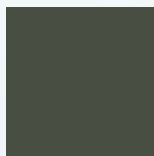
Members can raise concerns, ask questions, give feedback and discuss all relevant topics in the discussion fora, integrated to the HELP Forum.

Photos

Members can upload photos, maps and graphics related to their basins and share them with other HELP members across the network.

"Everything in this platform is really easy and user-friendly! [...]
It is a great way to strengthen our network and stay in touch."

Eda R. Soto, Panama





"Congratulations with the
 establishment of this platform, its
 such a great move. HELP is now a
 step forward..."
Rahmah Elfithri, Malaysia

5 FOCUS

Below are examples of hydrological, environmental, livelihood and policy issues in selected HELP basins, illustrating HELP action in the field.

“Hope to be more in touch with colleagues solving similar issues through the HELP network. Am now deeply advocating ‘Water for All’ on a major platform for governance.”

Leo Avilla III, Legislator Davao City Council, Philippines

Davao River Basin, Philippines

Situated in the southeast of Mindanao island with a mild, tropical climate, this basin supplies the city of Davao with drinking water. The main issues in this basin are:

- ▶ Unregulated extraction of ground water
- ▶ Flashfloods, landslides and soil erosion

Past experiences of interaction with local authorities and stakeholders have led to the conclusion that the lack of sound scientific data was seriously impeding the decision making processes. HELP is filling

this information gap by providing ecohydrological data that guides legislators and policy makers in the crafting of relevant and meaningful ordinances and policies and forms the basis of water education for communities, stakeholders and mass-media professionals.

Guadiana River, Portugal & Spain

This basin is characterized by a sub-humid to dry and semi-arid Mediterranean climate and has a very high variability of rainfall.

- ▶ The construction of Dams and changing climatic conditions are affecting the ecological balance in the basin.
- ▶ The European Water Framework Directive is being implemented in the basin and new water pricing policies have to be found.

HELP is engaging decision makers and stakeholders in a constructive dialogue and contributes to the integration of scientific information in regional water management and land use planning.



Fieldwork in Davao, Philippines, © Cristeta G. Gallano.

Panama Canal Basins, Panama

Precipitation in the region is high but unevenly distributed over the year.

Main issues are:

- ▶ Rapidly growing water demand and increasing pollution
- ▶ Insufficient drinking water provision and wastewater treatment in rural areas

The Panama Canal HELP network is establishing a geographical information system which allows for the monitoring of natural resources and links this information to remote sensing data in order to support decisions made on the integrated management of locally available water resources.



Dam near the Miraflores Locks, Panama, © iStockphoto.com/ngirish.

Lake Naivasha Basin, Kenya

The Naivasha lake and wetlands are in a semi-arid region with high rainfall variability. Main issues in the basin are:

- ▶ Uncontrolled water abstraction, pollution and over fishing threaten the balance of the fragile ecosystem
- ▶ Absence of sustainable management strategies

HELP is assisting the Lake Naivasha Riparian Association with strengthening the water abstraction licensing procedures and implementing monitoring, education and awareness programmes.



Reforestation Programs at Panama Canal Basin, Panama, © Eda Ruth Soto.

Murray-Darling Basin, Australia

This basin accounts for 40% of Australia's national agricultural output and it is characterized by low rainfall and high climatic variability.

- ▶ Falling groundwater levels and rinsing land and water salinity
- ▶ Altered seasonality of flows has negative impacts on the environment

Key outputs of HELP related projects in the basin include improved collaboration between research agencies and policy making/management bodies as well as economic valuation methods for ecosystem services.

Contact information

► **Global HELP Coordinator**
Prof. Dr. Shahbaz Khan

Chief, Water and Sustainable Development Section

INTERNATIONAL HYDROLOGICAL PROGRAMME (IHP)

UNESCO/Division of Water Sciences (SC/HYD)

1 rue Miollis

75732 Paris Cedex 15

France

Tel: (+33) 1 45 68 45 69

Fax: (+33) 1 45 68 58 11

Email: s.khan@unesco.org

www.unesco.org/water/ihp

► **Global HELP Network**

www.helpforum.ning.com

