



United Nations
Educational, Scientific and
Cultural Organization

Natural
Sciences
Sector

UNESCO science

for Sustainable Development

WATER SCIENCES

Water is central to global ecosystems and is a vital resource for life, human health, prosperity, security and sustainable development. It has social, economic and environmental values that are interconnected and mutually supportive.

INTERNATIONAL COOPERATION, RESEARCH, MONITORING, EDUCATION AND CAPACITY BUILDING FOR THE GENERATION OF KNOWLEDGE ABOUT WATER ECOSYSTEMS AND THE SOUND MANAGEMENT OF THE WORLD'S WATER RESOURCES

Background and description

UNESCO's work in the water sciences is built around five pillars which include:

- The International Hydrological Programme (IHP)
- The World Water Assessment Programme (WWAP)
- UNESCO-IHE Institute for Water Education
- UNESCO Water-related Centres
- UNESCO Water-related Chairs

IHP is the only intergovernmental programme of the UN system devoted to water research, water resources management, education and capacity building. The programme, tailored to UNESCO Member States' needs, is implemented in six-year phases – allowing it to adapt to a rapidly changing world.

WWAP, founded in 2000, is the flagship programme of UN-Water. Hosted by UNESCO, WWAP aims to assess and report on the state, use and management of the world's freshwater resources, define critical problems and assess the ability of nations to cope with water-related stress and conflict. Its primary product, the UN World Water Development Report (WWDR), is produced every three years and launched in conjunction with the World Water Forum.

The UNESCO-IHE Institute for Water Education in Delft, the Netherlands was established in 2003. It carries out research, education and capacity building activities in the fields of water, environment and infrastructure. It is a UNESCO category I institute jointly owned by UNESCO and the Government of the Netherlands.

UNESCO's water-related centres carry out research in different aspects of the water sciences under the auspices of UNESCO.

UNESCO water-related Chairs are established as teaching or research positions in the water sciences at universities or research institutes around the world through the UNESCO university twinning and networking scheme (UNITWIN).



MAIN PROGRAMMES AND ACTIVITIES

1. International Hydrological Programme (IHP)

A New Six-year Phase: IHP-VII

Water Dependencies: Systems under Stress and Societal Responses

The new phase of IHP will continue to promote and lead international hydrological research, facilitate education and capacity development and enhance governance in water resource management. The aim of these efforts is to help meet the UN Millennium Development Goals (MDGs) on environmental sustainability, water supply, sanitation, food security and poverty alleviation.

The results achieved during this phase will be action-oriented and policy-relevant so that all of IHP's audiences – governments, the scientific community and civil society – can benefit from them.

THEMES

- Adapting to the impacts of global changes on river basins and aquifer systems
- Strengthening water governance for sustainability
- Ecohydrology for sustainability
- Water and life support systems
- Water education for sustainable development

ACTIVITIES

- Promoting leading edge research that provides timely and appropriate policy-relevant advice to Member States
- Facilitating education and capacity development responding to the growing needs linked to sustainable development
- Enhancing governance in water resource management to achieve ecosystem sustainability

CROSS-CUTTING PROGRAMMES

FRIEND (Flow Regimes from International Experimental and Network Data)

An international research programme that helps to set up regional networks for analyzing hydrological data through the exchange of data, knowledge and techniques at the regional level.

HELP (Hydrology for the Environment, Life and Policy)

A new approach to integrated catchment management by building a framework for water law and policy experts, water resource managers and water scientists to work together on water-related problems.

ASSOCIATED PROGRAMMES

IFI (International Flood Initiative)

An interagency initiative promoting an integrated approach to flood management which takes advantage of the benefits of floods and the use of flood plains, while reducing social, environmental and economic risks.

ISI (International Sediment Initiative)

An initiative to assess erosion and sediment transport to marine, lake or reservoir environments aimed at the creation of a holistic approach for the remediation

and conservation of surface waters, closely linking science with policy and management needs.

PCCP (From Potential Conflict to Cooperation Potential)

A project facilitating multi-level and interdisciplinary dialogue in order to foster peace, cooperation and development related to the management of shared water resources.

JIIHP (Joint International Isotope Hydrology Programme)

A programme facilitating the integration of isotopes in hydrological practices through the development of tools, inclusion of isotope hydrology in university curricula and support to programmes in water resources using isotope techniques.

ISARM (Internationally Shared Aquifer Resources Management)

An initiative to set up a network of specialists and experts to compile a world inventory of transboundary aquifers and to develop wise practices and guidance tools concerning shared groundwater resources management.

G-WADI (Global Network on Water and Development Information in Arid Lands)

A global network whose primary aim is to build an effective global community to promote international and regional cooperation in the arid and semiarid areas.

UWMP (Urban Water Management Programme)

A programme that generates approaches, tools and guidelines which will allow cities to improve their knowledge, as well as analysis of the urban water situation to draw up more effective urban water management strategies.

WHYMAP (World Hydrogeological Map)

An initiative to collect, collate and visualize hydrogeological information at the global scale to convey groundwater-related information in an appropriate way for global discussion on water issues.

2. World Water Assessment Programme (WWAP)

The first edition of the WWDR (2003) *Water for People, Water for Life* concentrated on evaluating progress made since the Rio Summit and on developing effective assessment methodologies. Issues examined include human stewardship of freshwater – policies, legislation, social programmes, economic approaches and management strategies through which we seek to achieve water sustainability.

The second edition (2006) *Water: a Shared Responsibility* presented a comprehensive picture of freshwater resources in all regions and most countries of the world as it tracked progress towards the water-related targets of the UN Millennium Development Goals.

The third edition (2009) *Water in a Changing World* addresses water issues in the context of climate change, the Millennium Development Goals, groundwater, biodiversity, water and migration, water and infrastructure, and biofuels, among others.

3. UNESCO-IHE Institute for Water Education

The Institute is the largest international postgraduate water education institute in the world, and one of the few institutions in the UN system authorized to confer accredited MSc degrees and promote PhDs. Its mission is to contribute to the education and training of professionals and to build the capacity of sector organizations, knowledge centres and other institutions active in the fields of water, the environment and infrastructure, in developing countries and in countries in transition.

FOR FURTHER INFORMATION CONTACT:

Division of Water Sciences
Natural Sciences Sector
UNESCO - 1, rue Miollis
75732 Paris cedex 15 - France
ihp@unesco.org
www.unesco.org/science