

WATER SCIENCES

Water is a vital resource for human health, prosperity and security, with crucial importance for sustainable development, including poverty eradication, gender equality, food security and the preservation of ecosystems. It has social, economic and environmental values that are interconnected and mutually supportive.

INTERNATIONAL COOPERATION, RESEARCH, MONITORING, EDUCATION AND CAPACITY BUILDING FOR THE STRENGTHENING OF WATER SECURITY FOR PEACE AND SUSTAINABLE DEVELOPMENT

Background and description

UNESCO's work in the water sciences is achieved through the UNESCO Water Family:

- 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

1. The International Hydrological Programme (IHP)

IHP is UNESCO's intergovernmental scientific programme devoted to water research, water resources management, education and capacity building. It was created in 1975, becoming the first and only intergovernmental freshwater initiative institutionalized in the UN system. The programme is implemented in phases developed through a comprehensive consultative process with its 168 IHP National Committees, international scientific organizations and other UN bodies, ensuring IHP's continuous relevance and its overall institutional coordination.

2. World Water Assessment Programme (WWAP)

WWAP, founded in 2000, is a UNESCO programme that produces the World Water Development Report (WWDR). WWDR is the United Nations System's flagship publication and UNESCO's most authoritative report on freshwater. WWAP, through WWDR, targets politicians and decision-makers by providing an accurate analysis of the state, use and management of the world's water resources, defining critical problems, and assessing the ability of countries to cope with water-related stress and conflict. WWDR is published annually since 2014.

3. UNESCO-IHE Institute for Water Education

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 1 institute jointly owned by UNESCO and the Government of the Netherlands.

4. Water-related category 2 centres

The expanding network of 28 established water-related centres under the auspices of UNESCO carry out research in different aspects of the water sciences and undertake a wide range of training, capacity building and outreach activities in support of implementing the IHP.

5. Water-related UNESCO Chairs

The 29 water-related UNESCO Chairs are established as teaching and research positions in the water sciences at universities or research institutes through the UNESCO university twinning and networking scheme (UNITWIN). The Chairs promote intellectual cooperation among institutions and academics to foster access to and sharing of knowledge on water within related natural, economic, and social sciences as well as in engineering.

A NEW EIGHT-YEAR PHASE: IHP-VIII

The seventh phase of IHP (IHP-VII) concludes by the end of 2013. Aligned with the new eight-year Medium-term Strategy of UNESCO (2014-2021), the eighth phase of the programme (IHP-VIII), themed "**Water security: Responses to local, regional and global challenges**", was prepared through a 3-year comprehensive consultation process with Member States.

During IHP-VIII, UNESCO will continue to promote and lead international hydrological research, facilitate education and capacity building, and support the policy needs of Member States within the priority areas they have identified as the six key knowledge areas of IHP-VIII. These are:

- Water-related disasters and hydrological changes
- Groundwater in a changing environment
- Addressing water security and quality
- Water and human settlements of the future
- Ecohydrology, engineering harmony for a sustainable world
- Education, key to water security

A NEW IMPLEMENTATION STRATEGY

UNESCO will deliver the results of IHP-VIII through three strategic axes:

Axis 1: Mobilizing international cooperation to improve knowledge and innovation to address water security challenges

Through this axis, UNESCO fosters alliances, builds intellectual exchange, and encourages knowledge sharing and operational partnerships for water security through:

- Joint activities of the broad network of IHP National Committees, category 1 and 2 institutes and centres, UNESCO Chairs and UNITWIN networks
- Comprehensive assessments of the world's freshwater resources and the provision of updated information for its management, through an improved annual (WWAP) World Water Development Report dedicated to specific topics of global importance on water issues

Axis 2: Strengthening the science-policy interface to reach water security at local, national, regional and global levels

Being at the forefront of freshwater science-policy interface, UNESCO, through IHP provides policy advice to Member States on freshwater governance to enhance water security. In this regard UNESCO efforts aim to:

- Reinforce the cooperation with existing institutions and national partners within its water family

UNESCO will reinforce its leading role within the UN system on various freshwater issues, such as interagency initiatives and other joint projects on water; the post-2015 development agenda, including the thematic consultations on water; global water assessments; and the coordination of internationally designated observances, such as the International Year of Water Cooperation 2013 and the World Water Day, among others.

The implementation of the IHP will continue to be supported by cross-cutting programmes and initiatives, some of them conducted jointly with other UN agencies and organizations:

- Hydrology for the Environment, Life and Policy programme (**HELP**)
- Flow Regimes from International Experimental and Network Data (**FRIEND**)
- International Flood Initiative (**IFI**)
- International Drought Initiative (**IDI**)
- International Sediment Initiative (**ISI**)
- From Potential Conflict to Cooperation Potential (**PCCP**)
- Joint International Isotope Hydrology Programme (**JIIHP**)
- Internationally Shared Aquifer Resources Management (**ISARM**)
- Global Network on Water and Development Information in Arid Lands (**G-WADI**)
- Urban Water Management Programme (**UWMP**)
- International Initiative on Water Quality
- World Hydrogeological Map (**WHYMAP**)
- Groundwater Resources Assessment under the Pressures of Humanity and Climate Change (**GRAPHIC**)

- Mobilize the scientific community, including local experts in developing countries, to build scientific consensus and provide guidance to policy makers for informed decision-making
- Pay specific attention to traditional and indigenous knowledge, gender-equality, social inclusion, and poverty eradication

Axis 3: Developing institutional and human capacities for water security and sustainability

Water security cannot be reached without the development of adequate human and institutional capacities, both within and outside of the water sector. Through IHP, UNESCO-IHE, water-related centres, and water-related Chairs, UNESCO activities in this regard aim to:

- Strengthen water education at all levels, including formal and informal education, guidance on the development and evaluation of water education curricula, assistance on educational policies and the development of educational materials
- Continue to build multisectoral activities and involve a broad series of partners as well as programmes
- Support the establishment and strengthening of national, regional and international water-related institutions and their networking.



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