



United Nations
Educational, Scientific and
Cultural Organization

WATER EDUCATION FOR SUSTAINABLE DEVELOPMENT



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Water education is the strategic entry point in ensuring integrated water resources management for sustainable development at all levels.

EDUCATION IS A KEY DIMENSION OF THE INTERNATIONAL RESPONSE TO THE WORLD'S WATER CRISIS, and can encourage changes in behavior to promote a more sustainable society, in terms of economic viability, social equity and environmental protection. Education for sustainable development concerns all levels, settings and types of education. It must therefore not be conceived as a stand-alone action, but rather as an integral part of any education system and capacity building strategy. Water education is often linked with poverty eradication, adaptation to climate change, provision of basic human rights, gender equality and indigenous cultures, among other key issues.

The United Nations Decade of Education for Sustainable Development (2005-2014)

UNESCO is the lead agency in the coordination and mobilization of the United Nations Decade of Education for Sustainable Development (DESD), which promotes the integration of the principles, values and practices of sustainable development into all aspects of education and learning. UNESCO's DESD actions include a thematic programme entirely dedicated to education for sustainable water management.

The DESD provides a new and forward-looking framework for cooperation on water education across different sectors. UNESCO and its external partners are working to strengthen learning at all levels, from young children to decision makers. This holistic approach makes the DESD key for the achievement of the Millennium Development Goals (MDGs) and also contributes to the objectives of the International Decade for Action "Water for Life" (2005-2015).

EDUCATION AND FRESHWATER ARE PRIORITY ISSUES FOR UNESCO AND THE INTERSECTORAL STRATEGY ON EDUCATION FOR SUSTAINABLE WATER MANAGEMENT involves the collaboration of UNESCO's programme sectors in a comprehensive integrated approach. Within UNESCO's broad mandate in the sciences, education, culture, communication and information, all units that actively work in the area of freshwater education have united in this effort.

This intersectoral approach ensures that all forms and levels of education are addressed from a holistic perspective.

Water education has to occur to occur at all levels to equip people with the skills, knowledge, and values required for positive societal responses for a sustainable future.

STRATEGIC OBJECTIVES

Higher education and professional development of water scientists, engineers, managers and decision makers

- Enhance tertiary education and training programmes by strengthening the education of a new generation of water managers and decision makers to encompass a holistic, integrated transdisciplinary approach to water resources.
- Promote national, regional and international networks for professional development and ready adoption of scientific research into university curricula.

Education and training of water technicians

- Facilitate the integration of principles and technologies for sustainable water supply and treatment, community-based water and sanitation services, and water conservation into Technical and Vocational Education and Training (TVET) of water technicians.
- Identify and promote professional development opportunities for water technicians through formal, non-formal, informal and on-the-job training.

Water education in schools

- Build the capacities of primary, middle and high school education systems to make water management projects a key part of the K-12 curriculum.

Community and stakeholder education

- Promote best management practices in linking water scientists and managers, community educators and NGOs to develop community-wide water conservation strategies as well as to develop community skills to take ownership of water resources management actions.

Water education for mass media professionals

- Provide targeted training to both water and media professionals e.g. journalists, editors, producers of radio, television, film and other media resources, to communicate water issues in a transparent and effective manner.



Strengthening tertiary water education and training through academic cooperation

UNESCO's University Twinning and Networking Programme (UNITWIN) seeks to advance research, training, and programme development in higher education by building university networks and encouraging inter-university cooperation.

Today, over 15 UNESCO Chairs and UNITWIN Networks are established in the field of water resources and sustainability, mostly in developing countries. These chairs actively contribute to the capacities of Member States and have a significant impact in key development domains such as water management, water sustainability, access to water in arid zones, and water and gender equality issues. They also build bridges between academia, the professional world and local communities, and between research outcomes and decision making related to water use and management.

One of the main aims of the programme is to create regional "poles of excellence and innovation" which create the critical mass and human capacity necessary for research activities and advanced training in priority areas. Through the pooling of resources and expertise, these poles create synergies between universities, training centres, foundations, and public and private enterprises through innovative joint projects. Moreover, they help developing countries to build local capacity for dealing with complex water management issues.

Addressing water education needs and research by regional and global action

The international network of water-related centres under the auspices of UNESCO contributes to UNESCO's overall mission by addressing water security and water-related challenges through regional and global action. The centres develop new knowledge, innovative technologies, collaborative interdisciplinary scientific research, networking, and training and capacity development, within the framework of the International Hydrological Programme. They also foster South-South and North-South technical cooperation through national, regional and international research projects and collaborative training programs.

The centres are created by the initiative of host Member States, which ensure the operations of the centres. Due to its relevance, the network has been expanding rapidly, with over 20 centres currently operational or under consideration for establishment. The network operates under a comprehensive coordination strategy.

Each centre works within a determined geographic scope on a specific focal area, such as water issues in arid and semi-arid regions, risk management, sedimentation, urban water management, and water law and policy, among others. The centres serve as catalysts for addressing global and regional research needs, and provide a unique opportunity for building capacities through the education and training of communities, technical staff, local water managers, scientists and policy makers.



Building capacities in the water sector through specialized education and research

UNESCO-IHE Institute for Water Education is the largest postgraduate water education facility in the world and the only institution in the UN system authorized to confer accredited masters-level and doctoral degrees independently. The Institute has been an integral part of UNESCO since 2003.

The mission of UNESCO-IHE is to contribute to the education and training of professionals and to build the capacities of sector organizations, knowledge centres and other institutions active in the fields of water, infrastructure and the environment, in both developing countries and countries in transition.

In its fifty-year history, the Institute has provided postgraduate education to more than 13,000 water professionals from 162 countries. More than 50 doctoral degrees have been awarded, and numerous research and capacity building projects have been carried out throughout the world.

Alumni often reach senior positions in their home countries and become internationally recognized experts. Many have made significant contributions to the development of the water and environmental sectors. UNESCO-IHE graduates remain part of a global network of alumni, guest lecturers, experts and focal points in renowned knowledge centres.

UNESCO-IHE's main activities include:

Education, Training and Research for water sector professionals, engineers, scientists, consultants and decision makers working in the water, environment and infrastructure sectors.

Water Sector Capacity Building for water sector ministries and departments, municipalities, water boards and water utilities, universities, training and research institutes, industries, non-governmental and private sector organizations.

Partnership Building and Networking for knowledge centres, public and private sector organizations.

Standard Setting for Education and Training for water-related academies, universities, and other education and training agencies in the water sector.

Policy Forum on Water for UNESCO Member States, National Committees of the International Hydrological Programme and other organizations.

UNESCO-IHE focuses its activities on five themes: Water Security, Environmental Integrity, Urbanization, Water Management and Governance, and Information and Communication Systems.





INTERGOVERNMENTAL COOPERATION ON FRESHWATER

UNESCO's International Hydrological Programme (IHP) is the only intergovernmental programme of the UN system entirely devoted to water research, management, and education and capacity building. With a network of over 150 National Committees, IHP is currently in its seventh phase (2008-2013), entitled "Water Dependencies: Systems under Stress and Societal Responses". IHP is the lead partner in UNESCO's thematic programme on education for sustainable water management of the DESD.

Water education is an integral part of IHP's crosscutting programmes FRIEND and HELP which are working with local communities and scientists to bring together a transdisciplinary integrated effort needed to address water challenges. FRIEND aims to improve understanding of hydrological variability and similarity across time and space through the mutual exchange of data, knowledge and techniques at the regional level. HELP is fostering a dialogue between the natural, social and human sciences, essential for a better understanding of the possible impacts of global changes and to better prepare societal responses, set up preventive actions and develop adaptation measures. Particular attention is paid to gender issues, cultural values, local knowledge, historical factors, human rights and the needs of developing countries.

Within this framework, IHP and its partners are synthesizing case studies and carrying out strategic planning of water education practices to strengthen water education at all levels. The secretariat regularly organizes workshops and convenes working groups in water education. In 2008, IHP launched a UNESCO Tertiary Water Education Grants Programme targeting students from developing countries, mostly at the masters level. IHP work also involves the development of educational materials and tools, support to pilot curricula, and the organization of targeted training and e-learning courses aimed at a wide audience. In order to disseminate the latest news and resources on freshwater issues, it hosts UNESCO's water portal (www.unesco.org/water).

WATER ASSESSMENT: INFORMING THE DECISION MAKING PROCESS

The World Water Assessment Programme (WWAP) is the flagship programme of UN-Water. Hosted and led by UNESCO, WWAP monitors freshwater issues in order to provide recommendations, develop case studies, enhance assessment capacity at the national level and inform the decision making process. Its primary product, the *World Water Development Report*, is a triennial comprehensive review providing an authoritative picture of the state of the world's freshwater resources, and aims to provide decision makers with the tools for sustainable use of water resources. Case study development provides a platform for institutions responsible for water resources education and management to work together, and facilitates dialogue among decision makers and stakeholders. This helps strengthen national capabilities in tackling current and emerging water issues, as well as for performing local or national assessments and monitoring progress towards achieving targets.



STRENGTHENING TECHNICAL AND VOCATIONAL EDUCATION AND TRAINING

Many developing countries are experiencing a rising gap between labor market demand in key sectors and the supply of adequately trained and qualified professionals. Serious skills shortages have emerged within the water supply and sanitation sectors. The UNESCO-UNEVOC International Centre for Technical and Vocational Education and Training plays a key role in bridging this skills gap and in meeting new labor market demands linked to the introduction of new technologies, trades and competencies in order to address the needs of water management, supply and sanitation systems.

Through the UNEVOC network of over 270 UNEVOC Centres across UNESCO Member States, UNESCO-UNEVOC supports the development of skills, and technical and organizational capacities which aim to enhance quality of life by improving access to safe drinking water and sanitation services.

FACILITATING INFORMATION EXCHANGE IN SCHOOLS

Water education is one of the priority themes of UNESCO's associated schools around the world. The UNESCO Associated Schools Project Network (ASPnet) comprises some 8500 educational institutions in 180 countries, ranging from preschools, primary and secondary schools to technical and vocational, and teacher training institutions. Its overall mission is to contribute to quality education through ASPnet flagship activities such as the Baltic Sea, Danube River, Great Volga River Route, Sandwatch, and the Western Mediterranean projects, as well as the first ASPnet Project on Water Education in the Arab region.

UNESCO's Associated Schools test innovative pilot water education tools and help generate discussion between students and teachers worldwide. ASPnet's good practices contribute to raising student and educator awareness of the impact of water-related issues and provide information on how they can act to increase responsible behavior toward water resources and consumption.

THE MEDIA AS PARTNERS IN SUSTAINABLE DEVELOPMENT

Public debates in the media, including parliamentary broadcasting, help to shape and mobilize public opinion and participation in the sustainable management of water resources. UNESCO, through its work in communication and information, has produced a model training and resource kit that is being used to enrich journalism and media training on freshwater issues among others. Additional resource material is available on transboundary water issues. UNESCO also provides support to the International Water Film events. All of these can help to impart essential and credible knowledge on water management issues, increase public debate, promote transparency and foster the creation of quality media programmes by professional media who vest an interest in sustainable development.

HOW WE WORK



UNESCO headquarters, where the effort to strengthen water education at all levels is led by the IHP secretariat, together with the DESD Coordination Section, ASPnet International Coordination, the UNITWIN and Chairs Section, the Communication and Information Sector, and other UNESCO bodies.



UNESCO-IHE Institute for Water Education



UNESCO-UNEVOC International Centre for Technical and Vocational Education and Training



World Water Assessment Programme



UNESCO's Regional and Cluster Offices



Water-related Centres under the Auspices of UNESCO



UNESCO's Water-related Chairs

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