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### Water and Education for the Americas and the Caribbean

Strand: Best Practices for Advancing Environmental Education

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#### **Abstract**

The UNESCO<sup>1</sup> International Hydrological Programme and the Project WET<sup>2</sup> International Foundation have joined to develop and implement the Water and Education Programme for the Americas and the Caribbean, launched in March 2007. A General Guide for Teachers was developed for Spanish speaking countries and another one for the English speaking Caribbean. Workshops have been conducted in Mexico, Argentina, Chile, Guatemala, Panama, Jamaica and Uruguay.

The program is aimed to promote the awareness, knowledge and appreciation for water resources in the region. Its main tool is a broad water education guide, available in English and Spanish, divided in three major blocks: Reconnecting with Water; Water, Life and Health; and Water Management. The guide comprises more than 30 educationally sound, fun and creative activities. Topics range from the water cycle to non-point pollution, ecosystems, waste water treatment and climate change.

**Keywords:** Water education programme, educators, Americas, Caribbean, UNESCO-IHP, Project WET.

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<sup>1</sup> United Nations Educational, Scientific and Cultural Organization.

<sup>2</sup> Water Education for Teachers

## **Introduction**

According to the 4th World Water Forum Americas Regional Document (2006), the Americas is the water-richest part of the world, but most of the countries still face severe water quantity limitations in their arid and semi-arid territories, as well as water quality challenges. While the access to safe water is about 97% for urban residents and 78% for rural ones, access to proper sanitation is far from being complete, with coverage of around 86% for urban areas and 63% for rural ones. If we consider the large population of the region (estimated in 872 million), the above statistics mean that several million people have no access to safe water and/or sanitation. Besides this, other water-related issues, such as water governance and management, public health, water pollution, extreme hydrometeorological events, deforestation, and so on, are ubiquitous in the region.

To face these challenges, governments, international and non-governmental organizations, private institutions, and many communities, are making efforts to build capacities in multiple water emerging issues. Nevertheless, environmental education remains a forgotten priority. There have been many disperse, isolated efforts to strengthen environmental and even water education, but few have had success or continuity.

Recognizing the potential of international cooperation and capacity building to reduce many environmental and water issues, the UNESCO International Hydrological Programme (IHP) and the Project WET International Foundation signed a Memorandum of Understanding at the 4th World Water Forum, held in Mexico in 2006. The aim of which is to increase cooperation in the development of water

education programmes in Latin America and the Caribbean and to work together wherever possible.

UNESCO-IHP is an international scientific cooperative programme in water research, water resources management, education and capacity-building, and the only broadly-based science programme of the UN system related to water. IHP considers education as a vital tool to have a world in which people manage their water and environmental resources in a sustainable manner, and in which all sectors of society, particularly the poor, can enjoy the benefits of basic services. Thus, education is the key to integrated water resources management (IWRM), which allows countries to deal with water issues in a cost-effective and sustainable way.

The Project WET International Foundation is a nonprofit organization devoted to the development and publishing of water education programmes and a publisher of water education books and guides. Its programmes facilitate and promote awareness, appreciation, knowledge, and stewardship of water resources through the dissemination of classroom-ready teaching aids and the establishment of internationally sponsored Project WET programs. The mission of Project WET is to reach children, parents, educators, and communities of the world with water education (The Watercourse and the Council for Environmental Education, 2004).

Having formed a partnership, the first step was to develop, a General Guide for Educators (formal and non formal) from the Americas and the Caribbean, which could integrate a set of appropriate water education proposals for the region, taken from several successful programs and publications (see References). The guide was developed in Spanish and English in collaboration with specialists from the UNESCO-IHP National Committees and from the PWET network from Mexico,

Argentina, Chile, Costa Rica, Dominican Republic, Jamaica, Trinidad and Tobago, Bahamas, Saint Lucia, the United States of America and Israel. On 2007-2008 workshops were conducted in Mexico, Argentina, Chile, Argentina, Guatemala, Panama, Uruguay and Jamaica. Operation Guidelines have also been developed for the program and a network of "Host Institutions" is being built in the region. Up to January 2009, the Host Institutions are: in Mexico, the National Water Commission (CONAGUA), the Water Utility of the Municipality of Naucalpan (OAPAS Naucalpan) and the Fund for Environmental Communication and Education (FCEA); in Colombia, the Organization for Environmental Education and Protection (OpEPA) and in Central America, the Regional Water Resources Committee (SICA-CRRH). Letters of Agreement in process are: Argentina, Asociación Amigos de la Patagonia; Jamaica, Water Resources Authority; Uruguay, Education Ministry; Chile, Dirección General de Aguas and Costa Rica, Terra Nostra Association.

The aim of the guide is to generate, beginning in childhood, increased awareness about water and its sustainable management (through fun, creative and hands-on activities), facilitating, at the same time, the teacher's work to foster the appreciation, knowledge and stewardship for water resources.

The UNESCO/WET Water and Education programme, has the mission to help countries of the Americas and the Caribbean to develop, implement and evaluate water education programmes addressed to teachers and non formal educators. Water and Education's vision is "To empower children in Latin America and the Caribbean through sound education for action, in order to contribute to integrated and sustainable water management". This will also contribute to the United Nations decades "Water for Life" and "Education for Sustainable Development", besides

stressing the UNESCO-IHP Intergovernmental Council Resolution to Member Countries to strengthen water education programmes at the primary and secondary levels.

### **Guide characteristics**

The book is comprised of 32 educational proposals divided in three major topics:

1. **Reconnecting with Water.** Children are already familiar with water. The aim of this section is to help them reacquaint themselves with it and to develop deeper knowledge and a broader perspective. Water physical and chemical characteristics; hydrological cycle components; relationships between atmosphere, geosphere and hydrosphere; and water as natural resource, are the main themes in this block.
2. **Water, Life and Health.** This part promotes awareness about the role of water as fundamental element to ecosystems maintenance and to guaranteeing food and health for people and wildlife.
3. **Water Management.** It focuses on sustainable water management and the importance of societal participation and commitments to face the daily and extraordinary water-related challenges.

The guide is designed in a teacher-friendly format, including a cross-reference chart, detailed procedure for each activity, suggested age, required time and materials, key words, related topics, additional references, suggestions for evaluation, etc. In addition, the guide includes five posters representing the hydrological cycle in different geographic contexts: three for the Americas and two for the Caribbean to be used along with several proposals of the guide. The purpose is

to encourage students to identify the different uses of water and conflict situations in the context of the hydrological cycle. A glossary is also included.

## **Results**

The Spanish guide was launched in March 2007 and the English one, for the English speaking Caribbean, in 2008. Workshops for more than a thousand educators have taken place in Mexico, Argentina, Chile, Jamaica, Guatemala, Panama and Uruguay. Complementary educational materials have been developed in Mexico and Argentina. It is expected that the Host Institutions network will increase in the near future. Further information about the Programme and its Operational Guidelines can be found at [www.unesco.org.uy/phi/aguayeducacion](http://www.unesco.org.uy/phi/aguayeducacion) and [www.projectwet.org](http://www.projectwet.org).

## **Conclusions**

Capacity building, international cooperation and networking are fundamental to face the severe environmental and water crisis that we all are already experiencing. Environmental issues are global issues, which require informed decisions and commitment from everyone at local level.

At the beginning of the 20th century, the world's population was about 1.5 billion. By 2006, just a hundred years later, an estimated of 6.5 billion people inhabit the Earth (UNFPA, 1999; 2006). Deforestation rates are about 13 million hectares per year (FAO, 2005), mainly due to conversion of forest to agricultural land (to feed the Earth's 6.5 billion people). Humankind has altered the balance between people and ecosystems, and must take urgent measures to reestablish such balance.

Environmental education, with emphasis in water topics, can make an important contribution to face this challenge.

In the UNESCO/WET joint programme, Water and Education for the Americas and the Caribbean, an interdisciplinary group from different countries worked together to create an educational proposal which could become a water education common starter along the Americas region. These efforts resulted in the development of the General Guide for Educators, which considers environmental and water education as a crosscutting perspective instead of something related only with natural sciences.

The UNESCO-IHP and the Project WET International Foundation will continue to promote environmental and water education. In this regard, diverse visionary public and private potential sponsors will be approached to support the Water and Education programme for the Americas and the Caribbean. This programme will hopefully empower the citizens of the region to better cope with water issues and to facilitate integrated and sustainable water management, and foster the development of water education programmes in other regions of the World.

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- Chile: Dirección General de Aguas;
- Costa Rica: Instituto Costarricense de Electricidad; Instituto Meteorológico Nacional; Asociación Terra Nostra;
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- USA: US Geological Survey;
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  - Project WET Foundation: [www.projectwet.org](http://www.projectwet.org)