Water

"Of all the social and natural crises we humans face, the water crisis is the one that lies at the heart of our survival and that of our planet Earth.[1]" - UNESCO Director-General Koïchiro Matsuura

Water is a driving force for sustainable development, vital to all living organisms and ecosystems, and essential to human health, food production, and social and economic development. Yet pollution, population growth, over consumption, climate change, and poor water management are decreasing both the quantity and quality of available water. If current trends continue, two out of every three people will suffer moderate to severe water shortages by 2025. Leading up to the 2002 World Summit on Sustainable Development (WSSD), United Nations (UN) Secretary General Kofi Annan proposed the WEHAB Initiative, highlighting Water and sanitation, Energy, Health, Agriculture and Biodiversity and ecosystem management as five key areas where concrete results are both necessary and attainable[2]. Political commitment, education, and community action will be key to more sustainable patterns of water conservation and use.

Safe Drinking Water and Sanitation

Without safe water and sanitation, people cannot lead healthy, productive lives. More than one billion people lack access to safe drinking water and more than twice that number lack adequate sanitation.[3] This has life-threatening consequences - more than two million people in developing countries, most of them children, die each year from diseases caused by lack of access to safe drinking water, inadequate sanitation and water-borne diseases.[4] Water scarcity is a gender issue. Women bear primary responsibility for water collection in many cultures; water scarcity means more time and energy spent by women collecting water and less on productive economic efforts. Girl-children may also be taken out of school to help meet household needs or care for those who have fallen ill - often leading to lower literacy levels, diminished well-being and constrained economic opportunities[5].

Water for Food and Rural Development

Water is essential for agricultural production and rural development to improve food security, ensure human well being and secure livelihoods. Most freshwater - about 70 percent globally - is used for agriculture. Most irrigation systems are highly inefficient, with up to 60 percent wasted due to evaporation or return flow to groundwater aquifers or rivers.[6] If this lost water is not effectively managed, it can cause further environmental and health risks, including lower crop yields and loss of productive land by water logging, and standing surface water - promoting the transmission of malaria and other water-borne diseases.

Fisheries, including mariculture and aquaculture, are also an important source of food, protein, and employment for many people. Yet, world fish stocks are being threatened by over fishing, habitat loss and degradation. To meet food and livelihood needs while sustaining water ecosystems, fisheries must be managed to maximize the yield of aquatic food organisms in an environmentally sound manner. This requires the conservation of water quality and quantity, as well as the protection or restoration of breeding areas.

Water Pollution Prevention

Pollution is further reducing freshwater resources. Some two million tons of industrial, human, and agricultural wastes per day are disposed of in receiving waters. The poor are the worst affected, with half of the population in developing countries exposed to polluted water sources.[7] These figures may rise as populations grow and move in search of limited water for themselves and their animals; better livelihoods; and food sources. By 2025, three-quarters of the earth's population may live within 100 kilometres of the sea, putting immense pressures on coastal ecosystems. Pollution also affects the health of humans, plants and wildlife, and destroys wetlands

[1] *"UN Report Warns of Diminishing Water," Washington Post, March 6, 2003.*
[2] *UN Secretary General, "Towards a Sustainable Future" 14/05/2002.*
[3] *UN-World Water Assessment Programme (WWAP),* World Water Development Report 2003*: 5*
[4] *WHO/UNICEF,* Global Water Supply and Sanitation Assessment *(Geneva: WHO/UNICEF, 2000.)*
[5] *UN-WWAP,* World Water Development Report 2003.
[6] *WEHAB Working Group,* A Framework for Action on Water and Sanitation, *Geneva: UN, 2002.*
[7] *UN-WWAP,* World Water Development Report 2003*:10.*

and other ecosystems. Increased monitoring and use of environmental impact assessments, wastewater quality requirements, and the development of legislative frameworks are needed to prevent pollution.

Disaster Mitigation and Risk Management

Environmental damage leads to an increasing risk of natural disasters, with floods increasing where deforestation and soil erosion prevent natural water attenuation and droughts occurring where wetlands are drained and lands cleared. Between 1991 and 2000, more than 665,000 people died in 2,557 natural disasters, of which 90 percent were water-related. Ninety-seven percent of these deaths occurred in developing countries with the very poor, the elderly, women and children the worse-affected.[8] Risk-mitigation investment and the redirection of resources into prevention will offer significant economic benefits, as well as reductions in the loss of life.

International Commitments

International conferences and commitments in the past decades have highlighted the threats that water shortages pose to human health, economic development, and environmental quality. The international community pledged in the 2000 Millennium Development Goals and at the 2002 WSSD to reduce by half the proportion of people without access to safe drinking water and basic sanitation by 2015. Additional commitments affecting water conservation and use were made in the 2002 WSSD Plan of Implementation including efforts to:

- Develop integrated water resources management and water efficiency plans by 2005;
- Improve sustainable agricultural production and food security;
- Reduce resource degradation, pollution and waste; and
- Support disaster management, including observation and early warning systems, assessments, prevention, preparedness, response and recovery; among others.

Moreover, the UN General Assembly Resolution 55/196 proclaimed 2003 as the International Year of Freshwater to increase awareness of the importance of sustainable freshwater use, management and protection, designating UNESCO and the UN Department of Economic and Social Affairs as the lead agencies to promote the year. At the 3rd World Water Forum, 22-23 March, 2003, Governments, non-governmental organisations (NGOs) and the private sector built on the outcomes of recent conferences and the UN Secretary General's WEHAB Initiative to make more than 100 new commitments related to water. The *World Water Development Report* - a periodic, comprehensive review of the state of the world's freshwater resources coordinated by UNESCO on behalf of the twenty-three UN agencies concerned with freshwater - was also officially launched during the Forum.

UNESCO's Role: Water and Education for Sustainable Development

Water education is recognized as a strategic entry point to developing a new ethic for water governance. Education for Sustainable Development (ESD) promotes the awareness of positive and negative impacts of human activities on the water cycle in order to avoid degradation and the unsustainable use of water resources. Moreover, ESD disseminates existing indigenous knowledge and expertise and shares innovative approaches and best practices that are relevant to local conditions. The International Year of Freshwater, 2003, the International Hydrological Program (IHP), the recently released report of the World Water Assessment Programme and the International Oceanographic Commission (IOC) are examples of the many UNESCO-related programmes producing useful ESD materials for formal and informal educators. And more materials are in the development stage, as UNESCO's Executive Board recently approved the elaboration of an educational program for the sustainable use of fresh water resources. The recent establishment of the UNESCO-IHE Institute for Water Education in Delft, the Netherlands, has significantly raised UNESCO's capabilities in this area.

UNESCO has a dual role in relation to ESD: first as a substantive implementer of ESD - accelerating education reforms and coordinating activities of multiple stakeholders to implement ESD at international, regional, and country levels. UNESCO also acts as the lead agency in the promotion of the Decade on Education for Sustainable Development (2005-2014). To meet the environmental and human needs for water, aggressive efforts will need to be undertaken to improve current access to water supplies and sanitation, and reorient water resources planning and management towards sustainable development. The Decade offers an opportunity for UNESCO and its partners to collaborate on water-related programmes share educational resources, and coordinate training and human resource development to manage water for a sustainable future.

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[8] *Ibid.*