

### **Why an International Year of Water Cooperation?**

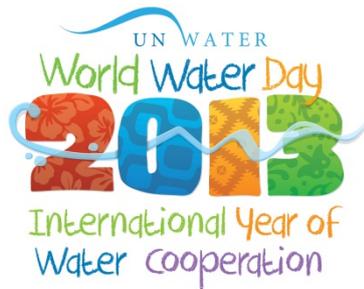
In December 2010 the United Nations General Assembly declared 2013 as the United Nations International Year of Water Cooperation, following a proposal by Tajikistan. World Water Day, celebrated each year on 22 March, will be dedicated to the same theme. UNESCO\* was appointed by UN-Water to coordinate the Year and Day in view of the Organization's multi-dimensional mandate in the natural and social sciences, culture, education and communication and its long-standing involvement in programmes contributing to the sustainable management of the world's freshwater resources.

Water, a vital resource unlike any other knows no borders. For instance, 148 countries share at least one transboundary river basin.

As rapid urbanization, climate change and growing food needs put ever-increasing pressure on freshwater resources, the objective of the Year is to draw attention to the benefits of cooperation in water management. It will serve to highlight successful examples of water cooperation and explore key issues, including water diplomacy, transboundary water management and financial cooperation.

[Official website](#)

\* In coordination with the United Nations Economic Commission for Europe (UNECE) and with the support of United Nations Department of Economic and Social Affairs (UNDESA).



## **What is water cooperation?**

Contrary to common belief, good examples of water cooperation greatly outshine water-related conflicts. The Indus Waters Treaty signed by India and Pakistan in 1960 survived three major conflicts and is still in force today.

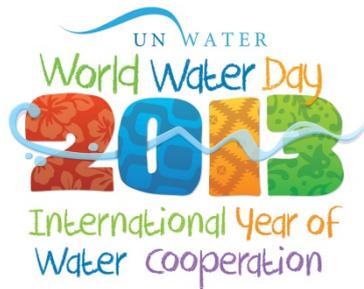
The potential for water cooperation is great and its benefits, whether in economic, social or environmental terms, are considerable. All water systems are extremely complex, be they management systems at the local or national level, internationally shared river basins or parts of the natural hydrological cycle. Managing these systems requires multiple actors, from users and managers to experts from various disciplines and decision-makers.

Cooperation is crucial not only to ensure the sustainable and equitable distribution of water but also to foster and maintain peaceful relations within and among communities. At the government level, different ministries can cooperate and mainstream awareness on water management into other sectors; at the community level users can cooperate through water users' associations; at the transboundary level joint management institutions can help to distribute and protect shared resources; and at the international level the various UN agencies can work together to promote the sustainable management of water worldwide.

Cooperation mechanisms vary in terms of decision-making structures, levels of participation and rules and regulations. They can take the form of informal agreements or formal institutions, and they range from a simple exchange of information to joint management mechanisms.

**[International Hydrological Programme](#)**

**[From Potential Conflict to Cooperation Potential](#)**



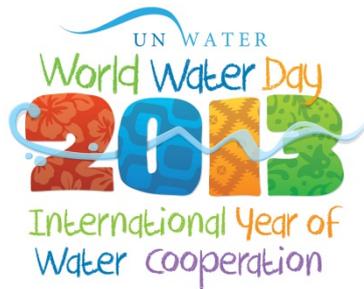
## **Water and UNESCO**

UNESCO has developed a series of entities focusing on water since it first began to address water-related issues in 1956. The International Hydrological Programme (IHP), created in 1975, was the first intergovernmental initiative on freshwater in the United Nations system. This programme relies on a network of 18 water-related centres and 29 UNESCO water-related chairs; it is built on three tracks: hydrological science, education and capacity building. Notably, the From Potential Conflict to Cooperation Potential Programme (PCCP) operates within IHP by offering support to transboundary resource users wishing to implement joint and equitable management of their shared resources.

UNESCO's water family includes other entities such as the UNESCO-IHE Institute for Water Education in Delft (Netherlands), the largest post-graduate water education facility in the world.

The World Water Assessment Programme (WWAP) is a UN-Water programme hosted by UNESCO with a secretariat in Perugia (Italy). WWAP coordinates the production of the World Water Development Report on the state of water resources with contributions from its 31 members of UN-Water. Starting in 2014, WWAP will produce yearly water development reports on specific themes as well as a global report every five years.

The implementation of the International Hydrological Programme is also based on crosscutting programmes and initiatives, some of which are managed jointly with the World Meteorological Organization (WMO) or the United Nations University (UNU), such as Hydrology for the Environment, Life and Policy (HELP), Flow Regimes from International Experimental and Network Data (FRIEND) and the International Flood Initiative (IFI).



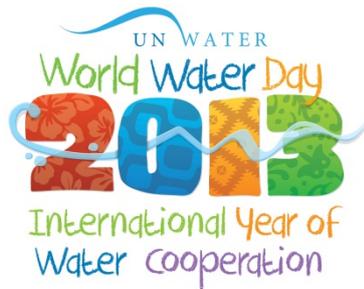
## **UN-Water**

UN-Water, an inter-agency mechanism that was formally established in 2003 by the United Nations High Level Committee on Programmes, is the result of a long history of close collaboration among UN agencies. It was created to add value to UN initiatives by fostering greater cooperation and information-sharing among existing UN agencies and outside partners. UN-Water focuses its efforts on:

- Providing information, policy briefs and other communication materials for policy-makers and managers who deal with water-related issues, directly or indirectly, and for the general public.
- Building the knowledge base on water issues through efficient monitoring and reporting systems, and facilitating access to knowledge through regular reports and by providing online access.
- Providing a platform for discussions across the UN system to identify key global water management challenges, analyse options to address these challenges and ensure the availability of reliable information and sound analysis to inform the global policy debate on water.

Today, UN-Water comprises 31 members of the UN system and 27 outside partners.

The United Nations General Assembly (UNGA), in its resolution A/RES/65/154 declaring 2013 International Year of Water Cooperation, invites the Secretary General, in cooperation with UN-Water, to organize appropriate activities for the Year.



## **KEY MESSAGES FOR IYWC**

*Water cooperation is key to security, poverty eradication, social equity and gender equality*

Inclusive and participatory governance of water and cooperation between different user groups can help to overcome inequity in access to water, enhance water security and overcome water scarcity and thus contribute to poverty eradication and to improving living conditions and educational opportunities, especially for women and children.

*Water cooperation generates economic benefits*

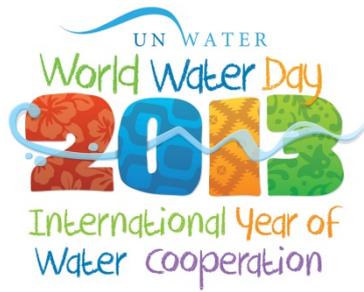
All economic activities depend on water. Cooperation can lead to a more efficient and sustainable use of water resources, including through joint management plans creating mutual benefits and better living standards.

*Water cooperation is crucial to preserve water resources and protect the environment*

Water cooperation supports the sharing of knowledge concerning the scientific aspects of water including data and information exchange, management strategies and best practices and knowledge about the role of water in preserving ecosystems, fundamental to human wellbeing and sustainable development.

*Water cooperation builds peace*

Access to water can be a source of a conflict, but it is also a catalyst for cooperation and peace building. Cooperation on such a practical and vital issue as water management can help overcome cultural, political and social tensions, and can build trust between different groups, communities, regions or states.



## **Milestone Events**

**11 February** – Kick off meeting at UNESCO Headquarters, Paris (France)

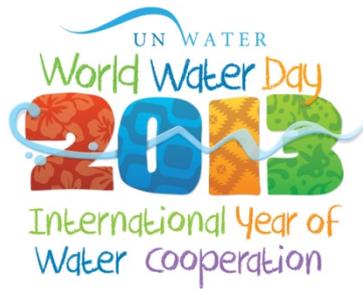
**22 March** – World Water Day. Events in The Hague (Netherlands) and New York (United States)

**May** – 2<sup>nd</sup> Asia-Pacific Water Summit, Bangkok (Thailand)

**1-6 September** – World Water Week, Stockholm (Sweden)

**September** – Conference on Water Cooperation in Tajikistan

**8-11 October** – Water Summit 2013 in Budapest (Hungary)



## **Facts and figures related to IYWC**

### **Increasing demand**

85% of the world population lives in the driest half of the planet.

780 million people do not have access to clean water and almost 2.5 billion do not have access to adequate sanitation.

Six to eight million people die annually from the consequences of disasters and water-related diseases.

Various estimates indicate that, based on business as usual, ~3.5 planet Earths would be needed to sustain a global population achieving the current lifestyle of the average European or North American.

Global population growth projections of 2–3 billion people over the next 40 years, combined with changing diets, result in a predicted increase in food demand of 70% by 2050.

Over half of the world population lives in urban areas, and the number of urban dwellers grows each day. Urban areas, although better served than rural areas, are struggling to keep up with population growth (WHO/UNICEF, 2010).

With expected increases in population, by 2030, food demand is predicted to increase by 50% (70% by 2050) (Bruinsma, 2009), while energy demand from hydropower and other renewable energy resources will rise by 60% (WWAP, 2009). These issues are interconnected – increasing agricultural output, for example, will substantially increase both water and energy consumption, leading to increased competition for water between water-using sectors.

Water availability is expected to decrease in many regions. Yet future global agricultural water consumption alone is estimated to increase by ~19% by 2050, and will be even greater in the absence of any technological progress or policy intervention.

Water for irrigation and food production constitutes one of the greatest pressures on freshwater resources. Agriculture accounts for ~70% of global freshwater withdrawals (up to 90% in some fast-growing economies).

Shifting diets from predominantly starch-based to meat and dairy require more water. Producing 1 kg of rice, for example, requires ~3,500 L of water, 1 kg of beef ~15,000 L, (Hoekstra and Chapagain, 2008). This dietary shift is the greatest to impact on water consumption over the past 30 years, and is likely to continue well into the middle of the twenty-first century (FAO, 2006).

About 66% of Africa is arid or semi-arid and more than 300 of the 800 million people in sub-Saharan Africa live in a water-scarce environment – meaning that they have less than 1,000 m<sup>3</sup> per capita (NEPAD, 2006).

### **The impact of climate change**

The IPCC predicts that water stress will increase in central and southern Europe, and that by the 2070s, the number of people affected will rise from 28 to 44 million. Summer flows are likely to drop by up to 80% in southern Europe and some parts of central and Eastern Europe.

The cost of adapting to the impacts of a 2°C rise in global average temperature could range from US\$70 to \$100 billion per year between 2020 and 2050 (World Bank, 2010). Of this cost, between US\$13.7 billion (drier scenario) and \$19.2 billion (wetter scenario) will be related to water, predominantly through water supply and flood management.

### **A resource without borders**

Water is not confined to political borders. An estimated 148 states have international basins within their territory.

There are 276 transboundary river basins in the world (64 transboundary river basins in Africa, 60 in Asia, 68 in Europe, 46 in North America and 38 in South America).

One hundred eighty-five out of the 276 transboundary river basins, about two-thirds, are shared by two countries. 256 are shared by 2, 3 or 4 countries (92,7%), and 20 out are shared by five or more countries (7,2%), the maximum being 18 countries sharing a same transboundary river basin (Danube).

The Russian Federation shares 30 transboundary river basins with riparian countries, Chile and United States 19, Argentina and China 18, Canada 15, Guinea 14, Guatemala 13, and France ten.

Africa has about one-third of the world's major international water basins. Virtually all sub-Saharan African countries, as well as Egypt, share at least one international water basin.

Depending on how they are counted, there are between 63 (UNEP, 2010) and 80 (UNECA, 2000) transboundary river and lake basins on the African continent.

Most rich nations are maintaining or increasing their consumption of natural resources (WWF, 2010), but are exporting their footprints to producer, and typically, poorer, nations. European and North American populations consume a considerable amount of virtual water embedded in imported food and products. Each person in North America and Europe (excluding former Soviet Union countries) consumes at least 3 m<sup>3</sup> per day of virtual water in imported food, compared to 1.4 m<sup>3</sup> per day in Asia and 1.1 m<sup>3</sup> per day in Africa (Zimmer and Renault, n.d.).

Land grabbing is another increasingly common phenomenon. Saudi Arabia, one of the Middle East's largest cereal growers, announced it would cut cereal production by 12% a year to reduce the unsustainable use of groundwater. To protect its water and food security, the Saudi government issued incentives to Saudi corporations to lease large tracts of land in Africa for agricultural production. By investing in Africa to produce its staple crops, Saudi Arabia is saving the equivalent of hundreds of millions of gallons of water per year and reducing the rate of depletion of its fossil aquifers.

Nearly all Arab countries suffer from water scarcity. An estimated 66% of the Arab region's available surface freshwater originates outside the region.

Pollution knows no borders either. Up to 90% of wastewater in developing countries flows untreated into rivers, lakes and highly productive coastal zones, threatening health, food security and access to safe drinking and bathing water. Eighty-five percent of used water worldwide is not collected or treated, 83 – 90% in developing countries.

### **Cooperation, a contrasted reality**

There are numerous examples where transboundary waters have proved to be a source of cooperation. Nearly 450 agreements on international waters were signed between 1820 and 2007 (OSU, 2007).

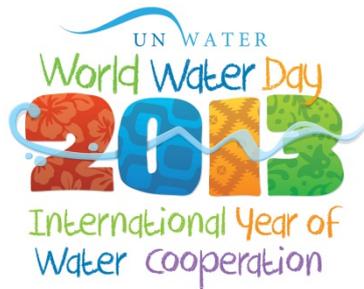
Over 90 international water agreements were drawn up to help manage shared water basins on the African continent (UNEP, 2010).

Yet 60% of the world's 276 international river basins lack any type of cooperative management framework (De Stefano et al., 2010).

UN-Water conducted a global survey in 2011 to determine progress towards sustainable management of water resources using integrated approaches. Preliminary findings from the analysis of data from more than 125 countries show that there has been widespread adoption of integrated approaches with significant impact on development and water management

practices at the country level: 64% of countries have developed integrated water resources management (IWRM) plans, as called for in the Johannesburg Plan of Implementation, and 34% report an advanced stage of implementation. However, progress appears to have slowed in low and medium Human Development Index (HDI) countries since the 2008 survey.

Source: United Nations World Water Development Report 2012.



## **Water cooperation in practice**

### **Sharing water, a potential source of conflict**

Water competition has led to increased water conflicts in China, particularly over the past two decades. Conflicts within countries have dominated since 1990, with more than 120 000 water-related disputes in China alone during this period. Direct conflict most commonly arises at the local level and is often based on the construction of a dam, ambiguous water withdrawal rights or deteriorating water quality\*.

Some researchers believe that between 70% and 80% of Yemen's rural conflicts are about water. The situation is affected by a growing population, poor water management, illegal well drilling and influx of Somali refugees. Exacerbating the conflict is the fact that Yemen is one of the world's most water-scarce countries\*.

### **Examples of the peaceful resolution of water-related conflicts**

#### The Valencia Water court

Every Thursday at midday in the cathedral square in Valencia (Spain), at the first strike of twelve on the bell, an "alguacil" or constable comes out of an adjoining building. He is followed by eight men dressed in the long black shirts traditionally worn by farmers in the region. They are members of the ancient institution of the *Tribuna del Agua*. In public hearings, the court settles disputes on the distribution of water among the eight channels that irrigate the 17,000 hectares of land from the huertan where citrus fruits, rice, grapes and peaches are grown for the Spanish and international markets. It was inscribed on UNESCO's Representative List of the Intangible *Cultural* Heritage of Humanity.

[Valencia Water wisdom, UNESCO Courier article](#)

[The Council of Wise men](#)

[Lake Titicaca](#)

Twenty years ago, Bolivia and Peru created the Bi-national Autonomous Authority of Lake Titicaca recognizing the importance of the joint management of the lake. This institution aims to defuse potential water-related conflicts and foster cooperation.

### Treaty for the Dniester Basin

In November 2012, the Republic of Moldova and Ukraine signed the bilateral Treaty on Cooperation on the Conservation and Sustainable Development of the Dniester River Basin. The new Treaty identifies principles and provides a framework for cooperation on water pollution prevention and control, water flow regulation, and conservation of biodiversity.

### Arab Ministerial Water Council

Arab States are using various cooperation mechanisms to manage their shared water resources in a water-stressed region, such as the Arab Ministerial Water Council. It held its first ministerial session in June 2009, in Algiers. The Council defined a strategy for 2010-2030.

### Mekong River Basin

The Mekong River Basin illustrates the complex relations between states and rivalry among water institutions. Transboundary water conflicts have generally been contained in this basin but the growth of water scarcity due to environmental and developmental factors could undermine this delicate balance in the future.

### A Joint Commission between Canada and the United States

Canada and the United States of America share many river basins and some of the largest lakes in the world. Established under the 1909 Boundary Waters Treaty between the US and Canada, the International Joint Commission helps the governments of both countries find solutions to manage their shared waters.

### An expert network in the Nile Basin

The Nile Basin Initiative's Socio-Economic and benefits Sharing Project (2010) aims to build a network of professionals, experts, representatives from the public and private sectors, academics, and sociologists from across the basin to explore benefit-sharing schemes.

### The Indus Water Treaty

The Indus Water Treaty, signed between Pakistan and India in 1960, has survived three major conflicts and remains valid today.

### The Guarani Aquifer

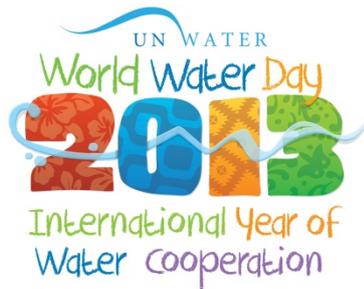
The Guarani aquifer is shared by Argentina, Brazil, Paraguay and Uruguay. In August 2010, the presidents of the four countries signed an agreement for cooperation on extending knowledge of the aquifer and identifying critical areas. The four countries have committed themselves to promote the conservation and environmental protection of the Guarani Aquifer System to ensure equitable use of its water resources.

\* Source: United Nations World Water Development Report, March 2012

[More information on the From Potential Conflict to Cooperation Potential \(PCCP\) programme](#)

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