



# International Rivers and Lakes

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## **I. A new publication on groundwater international treaties: “Groundwater in international law: Compilation of treaties and other legal instruments.”<sup>1</sup>**

Groundwater is of high social, economic, environmental and strategic importance. It represents about 97% of the fresh water resources available on earth (excluding the water frozen in polar ice). The sustainability of aquifers (many of which are transboundary) is seriously threatened by pollution and over-exploitation.

Until recently, international water law had focused on surface water. Slowly, however, a body of rules dealing with groundwater is emerging, indicating a trend towards more comprehensive international regulation of this vital resource.

A new publication, *Groundwater in international law: Compilation of treaties and other legal instruments*<sup>2</sup>, by Stefano Burchi and Kerstin Mechlem, brings together binding and non-binding international law instruments that deal with groundwater in varying degrees and from different perspectives. Its aim is to report developments and innovations in the evolving field of international groundwater law. Stefano Burchi is a Senior Legal Officer and Kerstin Mechlem is a Legal Officer in the Development Law Service of the Food and Agriculture Organization of the United Nations (FAO).

## **II. Spain and Portugal in water conflict<sup>3</sup>**

Portugal has accused Spain of stealing its water as the two Iberian countries battle a drought that has seriously reduced levels in rivers flowing across their border. Portugal has demanded €6 million in compensation from Spain after levels of water in the Douro River had fallen below minimum flow limits established in a bilateral agreement. The sources of many of Portugal's big rivers are in Spain.

Portugal and Spain are experiencing their worst drought in 60 years, with reserves along the Douro in Portugal down to around 50% of normal levels as the summer begins. Reserves along the Arade River in the southern Algarve, Portugal, are down to 12% of normal levels, according to government figures last month. In Spain, reservoirs are down to 20% of normal levels, and rivers have lost about one third of their volume<sup>4</sup>.

Spain is facing many of the same problems it faced in the 1990s, when it experienced a five-year drought. Some government officials recognize that finding solutions is

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<sup>1</sup> Based on review by United Nations Educational, Scientific and Cultural Organization. International Hydrological Programme [http://www.unesco.org/water/ihp/publications/groundwater\\_law.shtml](http://www.unesco.org/water/ihp/publications/groundwater_law.shtml).

<sup>2</sup> *Groundwater in international law* is published in the FAO series Legislative Studies, no. 86, 2005, in cooperation with UNESCO.

<sup>3</sup> Based on review by Giles Tremlett in Madrid. The Guardian, 7 June 2005. <http://www.guardian.co.uk/international/story/0,3604,1500806,00.html>.

<sup>4</sup> Giles, Ciaran of the Associated Press. 20 June 2005. “Water Conflict Heats Up as Spain Parches with No Oasis in Sight.” Environmental News Network. <http://www.enn.com/water.html?id=199>

important not only for solving the current problem, but also for dealing with droughts in the future. One proposed solution is building an infrastructure of dams and pipes to transfer water from the north of the country to the drier regions in the south and central regions. Another solution calls for desalinization, coupled with more efficient water use and better water management.

Spanish officials have admitted that they have probably broken their 1998 agreement with Portugal intended to stop disputes over water.

"It is probable that we will have to pay," Jaime Palop, Spain's Director-General of Water, admitted to El País newspaper in June 2005.

The Portuguese government promised to start paying out compensation to farmers for losses caused by the drought.

### **III. Hungary aims to end tug of war with Slovakia over Danube Dam by late 2005<sup>5</sup>**

Budapest, June 13 (MTI) - Hungary would like to conclude expert talks with Slovakia on the contentious Gabčíkovo dam project before this year ends, but the approval of a final agreement could be delayed by the general elections to be held in both countries in 2006, reported the daily Magyar Nemzet paper in June 2005, quoting Hungarian negotiator Gabor Bartus. The two countries are negotiating at expert level on implementing the 1997 verdict of the International Court of Justice, Mr. Bartus told the daily Magyar Nemzet.

Hungary and Czechoslovakia signed a contract on building two dams along their common border in 1977: one in Gabčíkovo, now in Slovakia, and another at the Hungarian town of Nagymaros. After large-scale environmental protests in the late 1980s, Hungary defaulted on its commitment to build its part of the twin dam project. In response, Czechoslovakia diverted a portion of the river to operate the Gabčíkovo hydroelectric plant in late 1992, a few months before the Czech Republic and Slovakia became separate states.

Hungary and Slovakia turned to the International Court of Justice to find a remedy for their claims in the shared Danube area. Slovakia sued Hungary for breaching the contract, while Hungary counter-sued Slovakia for endangering the riparian ecosystem by diverting 80% of water from the river.

The Hague Court ruled in favour of neither party, pushing the situation to a protracted deadlock. Negotiations were resumed after a two-year silence in 2004.

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<sup>5</sup> Based on article reported by the Hungarian News Agency. Health and Environment Section. 13 June 2005. "Hungary aims to end tug of war with Slovakia over Danube dam by late 2005 – paper." <http://english.mti.hu/default.asp?menu=1&theme=1&search=0&cat=7&whole=0&words=&fromd=..&today=..&start=36>

According to a Hungarian calculation presented at the talks, Slovakia has covered about 70% of the costs of construction and Hungary about 30%, Mr. Bartus said. This calculation could help the two countries establish what share of the electricity Hungary is entitled to from the output of the Gabčíkovo hydroelectric power plant. Hungary, however, had indicated previously that, instead of electricity, it would prefer improved water flow in the old riverbed to halt environmental damage. "This way the calculation could become the basis of a water-sharing agreement," Bartus said.

#### **IV. Bosnia and Herzegovina: Preventing municipal pollution of transboundary rivers<sup>6</sup>**

A new World Bank-supported project will help the government strengthen the capacity of local utilities and reduce pollution from municipal sources into the Bosna and Neretva Rivers. For Bosnia and Herzegovina, the Neretva River is a source of hydropower, drinking water and irrigation. Pollution from both of the rivers reaches the Danube River, as well as the Adriatic and Mediterranean Seas.

The Water Quality Protection Project for Bosnia and Herzegovina (2005-2010) will be funded by a grant from the Global Environmental Facility (GEF) of US\$8.9 million (€7.4 million) with expected contributions from the borrower and others equivalent to US\$11.37 million (€9.39 million). The implementing agency is the Ministry of Agriculture, Water Management and Forestry.

The project will:

- Develop a Wastewater Improvement Plan;
- Help cooperation with institutions in Croatia and Serbia and Montenegro;
- Build a network of public and private institutions for wastewater treatment; and
- Target investments in innovative low-cost wastewater treatment methods.

#### **V. Water sovereignty and the NAFTA in Canada**

The inclusion of water resources in the Canada-U.S. Free Trade Agreement and the North American Free Trade Agreement (NAFTA) is a controversial issue in water-rich Canada. Canada contains between 5.6% and 20% of the world's freshwater supply<sup>7</sup>. There is disagreement among Canadian citizens, interest groups, governments and

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<sup>6</sup> The World Bank Group, News and Broadcast. 7 June 2005. Bosnia and Herzegovina Receives Grant to Protect Neretva and Bosna Rivers from Municipal Pollution. <http://web.worldbank.org/WBSITE/EXTERNAL/NEWS/0,,contentMDK:20530880~menuPK:34463~pagePK:34370~piPK:34424~theSitePK:4607,00.html>

<sup>7</sup> Estimates of freshwater depend on whether ice and other unavailable or unusable sources are included.

businesses about whether this resource should be treated as a commodity (and sold in international markets), or conserved as a natural resource with an important ecological function<sup>8</sup>.

Water's inclusion in the NAFTA effectively compromises Canada's sovereignty over its own water resources. NAFTA principles apply any time that water is used in a commercial context by a United States entity (for example, in industrial processes, for power generation, for bottling as a beverage or for irrigation)<sup>9</sup>.

One example of the controversy is water flooding in Canada's oil fields. Before capping a wellhead, petroleum companies routinely inject water to recover the last 10 to 15 percent of oil and gas. In cases where the petroleum company has predominantly U.S. investors, NAFTA rights available to them include continuity of use, proportional sharing, no price discrimination, no interruption of normal channels of supply, and treatment equal to that of Canadian companies. Finally, NAFTA Chapter 11 confers the right to compensation from the Canadian government for lost profits to the U.S. company should any of these rights be denied<sup>9</sup>.

Another controversial issue is bottling water resources for sale in international markets. At least two cases have occurred in which state governments first issued permits for bulk shipment of water (to the Nova Group in Ontario for shipments to Asia and Sun Belt Water, Inc. in British Columbia for shipments to Southern California), then revoked the permits after public outcries. A project to bottle water from Gisborne Lake in Newfoundland has also caused controversy. Advocates of the project focus on the much-needed jobs and economic stimulation that would result, while opponents focus on the ecological consequences of disrupting the lake and the economic consequences of allowing water to become a tradable market commodity<sup>10</sup>.

To date, discussion of the sovereignty and public policy implications of the inclusion of water resources in the trade agreements has been reduced to partisan politics and anti-NAFTA rhetoric. This approach has proven ineffective in resolving the issue<sup>9</sup>.

In March 2002, a group of Canadian farmers initiated a movement to lead the discussion to exempt water from the NAFTA. The Canada-wide campaign was started in order to develop farm "voice" and farm "authority" in the dialogue to reclaim sovereignty over Canada's water resources. The Farmers Resolution to Exempt Water from the NAFTA takes its strength from the many individual farm organizations that support it: commodity groups, breed associations, farmers' institutes, women's institutes and 4-H clubs. The message of the farmers' group is that Canada must have sovereignty and discretion over the management of its water resources in perpetuity<sup>9</sup>.

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<sup>8</sup> CBC News Online. Selling Canada's water. 25 August 2004.

<http://www.cbc.ca/news/background/water/>

<sup>9</sup> Based on: Holm, Wendy R. "The taking and return of Canada's water." Opinion. The Western Producer. 12 May 2005.

<sup>10</sup> Karroum, Mohammed. April 1999. "U.S.–Canada Water Case." Trade and Environment Database Case Studies. American University School of International Service. <http://www.american.edu/TED/water.htm>

To accomplish this, Wendy Holm argues that the solution is equally simple: water must be added to the list of goods, services and investments explicitly exempted from the terms of NAFTA, similar to raw logs and certain species of fish from the Maritimes.

Already, over 200 farm groups from across Canada have passed the Resolution. The objective is to collect resolutions from 1,000 farm organizations across Canada. Once this solid, non-partisan platform has been constructed, Canadians will be encouraged to jump aboard and stand together with Canada's farmers in defense of water sovereignty<sup>9</sup>.

Defining the role and jurisdiction of markets in the allocation of freshwater is a challenge that faces Canada. At this point, it is unclear whether water will be regulated as a tradable commodity under international trade agreements, or whether water will be regulated by the Canadian government as a natural resource.

## **VI. Jordan, Israel, Palestinians agree on action to save shrinking Dead Sea<sup>11</sup>**

SOUTHERN SHUNEH, Jordan -- Jordan, Israel and the Palestinian Authority have agreed to proceed with a three-year feasibility study to save the Dead Sea, which is currently evaporating at a rapid rate. The Dead Sea, shared by Jordan, Israel and the West Bank, is the lowest point and contains the saltiest water in the world.

The surface level of the sea has fallen an average of between 0.8<sup>12</sup> and 1 metre per year for at least the past 20 years because of evaporation and possibly the diversion of rivers by Syria and Israel. Geological experts warned that the drop in the water level would also increase the possibility of earthquakes.

Meeting on the sidelines of the World Economic Forum on the Jordanian shore of the Dead Sea, officials said that the \$15 million feasibility study would start this year and is expected to finish in 2008.

"Our goal is to help stop the decline of the Dead Sea. Jordan, Israel and the Palestinian Authority will enjoy the fresh water and the area will become fertile," Israeli Cabinet Minister Benjamin Ben Eliezer said.

Jordan appealed last year for international assistance to help save the sea and its fragile ecosystem.

The World Bank is planning a conference for donors in July 2005 to raise funds for the feasibility study, said Zafer Alem, secretary-general of the Jordan Valley Authority, a state-run Jordanian agency in charge of developing the area surrounding the Dead Sea. The location of the conference has not yet been announced.

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<sup>11</sup> Based on: U.S. Water News Online. May 2005.  
<http://www.uswaternews.com/archives/arcglobal/5jordisra5.html>

<sup>12</sup> Yechieli, *et al.* 1998. Will the Dead Sea die? *Geology*. V26(8): 755-758.

The study will focus on the impact of water conveyance from the Red Sea, which shares a valley with the Dead Sea. The Red-Dead Sea canal project, which is expected to cost more than \$1 billion, would exploit the 1,320-foot difference in altitude between the two seas.

Ben Eliezer said the three parties want to ensure that the Dead Sea will not be harmed by the Red Sea project, which is still being negotiated.

"The project involves three parties and our hope is that an era of peace is coming to our region," the Israeli minister said at the opening of a panel to discuss the survival of the sea.

If implemented, the 248-mile desert area between the two seas would benefit from the fresh water flowing through the region to transform it into an agricultural hub for the benefit of the three countries. A desalination project is also envisioned to provide drinking water for the Jordanian capital, Amman. Israel and the Palestinian Authority territories could also benefit from the increased availability of drinking water.

## **VII. CEC Secretariat recommends development of a factual record on Lake Chapala<sup>13</sup>**

Montreal, 1 June 2005 — On 18 May 2005, the Mexican Secretariat of the Commission for Environmental Cooperation (CEC) notified the CEC Council that it recommends the development of a factual record on a submission regarding Lake Chapala, in Jalisco, Mexico. The CEC was established under the North American Agreement on Environmental Cooperation (NAAEC) to address environmental issues in North America from a continental perspective, with a particular focus on those arising in the context of liberalized trade. The Council, the organization's governing body, is composed of the top environment officials of Canada, Mexico and the United States. The citizen submissions mechanism of the CEC enables the public to play a whistle-blower role on matters of environmental law enforcement. Under Article 14 of the NAAEC, any person or non-governmental organization may submit to the Secretariat a claim alleging that a NAFTA partner is failing to effectively enforce its environmental law.

In their submission of 15 August 2003 to the CEC Secretariat, the Submitters<sup>14</sup> asserted that the government of Mexico is failing to effectively enforce its environmental laws, conferring water management functions upon the federal executive branch and empowering the public to participate in the development and execution of the country's environmental policy and in the enforcement of environmental laws.

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<sup>13</sup> Based on an article at the website of the North American Commission for Environmental Cooperation. [www.cec.org/citizen](http://www.cec.org/citizen).

<sup>14</sup> The Fundación Lerma-Chapala-Santiago-Pacífico, Sociedad Amigos del Lago de Chapala, Instituto de Derecho Ambiental, Vecinos de la Comunidad de Juanacatlán, Jalisco, Comité Pro-Defensa de Arcediano, Amigos de la Barranca, Ciudadanos por el Medio Ambiente, Amcresp and Red Ciudadana.

The submission asserts that the public participated in various consultations on basin problems, but that the results of those consultations are not reflected in the implementation of plans and policies intended to maintain the environmental integrity of the watershed. It asserts further that federal authorities have allowed decisions of the Lerma-Chapala Watershed Council (Consejo de Cuenca) to take effect, but without formally adopting them so groups like the Submitters can challenge them in administrative proceedings.

The Submitters also claim the Arcediano dam project on the Santiago River should not have been approved prior to addressing the pollution of the river, and assert that the authorities did not properly process complaints of Juanacatlán residents with respect to monitoring and remediating pollution of the river. In its response, the Government of Mexico argues that the submission should be dismissed and states that part of its contents should be deemed confidential. It argues that criteria for the sustainable use of water were considered in the Arcediano dam project, in that the project was required to comply with measures set forth in its environmental impact statement and ruling. The Government of Mexico further claims that it enforced these criteria, for example by deciding to locate the dam on the Santiago River instead of the better preserved Verde River. The Government of Mexico notes that both rivers contain polluted waters.

With respect to water quality monitoring in the Santiago River, the Government of Mexico asserts that it relies on the National Water Quality Monitoring Network (Red Nacional de Monitoreo de la Calidad del Agua), and that it has developed a comprehensive basin cleanup program that includes the Santiago River. The government asserts that it enforces the law through the Office of the Federal Attorney General for Environmental Protection (Procuraduría Federal de Protección al Ambiente—Profepa) and the National Water Commission (Comisión Nacional del Agua—CNA), and that the Watershed Councils cannot make binding decisions on behalf of the National Water Commission.

After reviewing the submission in light of the Mexican government's response, the Secretariat notified the Council that it believed that the development of a factual record was warranted. The Secretariat found that the submission raises central questions on the Mexican government's effective enforcement of the environmental laws on the operation of the Lerma-Chapala Watershed Council, on whether the Watershed Council's decisions are given authoritative effect without formal action by the National Water Commission, and on what measures have been adopted to restore the balance of the Santiago River ecosystem based on the monitoring of the river's water quality. A factual record would shed light on the functions and effects of the Watershed Council and its agreements, focusing on cases referenced in the submission, and whether public participation requirements are met through the Watershed Council or other means. The factual record would clarify how the opinions of groups such as the Submitters are considered not only in the adoption but also in the implementation of plans and policies. As regards the restoration of the balance of the Santiago River ecosystem, the factual record would provide information on the measures taken in response to the anomalies found during the



monitoring of river water quality, including, as applicable, information on the Arcediano dam project.

The Secretariat informed the Council of its recommendation on 18 May 2005, and in early June, was able to provide public notification of the determination and to present its reasons in the public registry. The Secretariat will prepare a factual record in connection with the submission if the Council, by a two-thirds vote, instructs it to do so.

### **VIII. Water wars: A review of water scarcity and water conflict<sup>15</sup>**

Columnist and former Economic Advisor to the Government of Macedonia, Sam Vaknin, reviews global water scarcity and the likelihood of water-related conflicts. Starting with his personal experience of water scarcity growing up in Israel, Vaknin highlights the world's well known transboundary water conflicts from Mexico-USA to Central Asia. He then presents both sides of the argument of whether scarcity will lead to water-related conflicts. Vaknin believes market solutions and water recycling have the potential to prevent conflicts. His final conclusion is that "There is no reason to assume that water would cause more warfare than oil or national pride," but that water scarcity is a cause of other problems, including dislocation, ethnic tension and impoverishment. . "It is in fending off these pernicious, all-pervasive, and slow-acting social processes that we should concentrate our efforts".

### **IX. Officials say Mexico has paid half its water debt<sup>16</sup>**

HARLINGEN, Texas -- Mexico has signed over some 268,000 acre-feet of water from two binational Rio Grande reservoirs, eliminating over half of its long-standing water debt to the United States, Texas officials said.

The transfers were made less than two weeks after Governor Rick Perry of Texas and other state officials announced that Mexico had agreed to pay "every drop" of a debt that had been chilling relations between South Texas and Mexico.

A 1944 treaty dictates that Mexico and the United States share water from the Rio Grande and Colorado River. But Mexico began falling behind on its releases of Rio Grande water as a drought set in 12 years ago, and by 2002 Texas farmers were struggling.

Kathleen Hartnett White, chairwoman of the Texas Commission on Environmental Quality, said the transfers signaled "Mexico's sincere intentions to meet its future

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<sup>15</sup> Based on article at the International Water and Sanitation Centre website, 31 May 2005.  
<http://www.irc.nl/page/23924>

<sup>16</sup> Based on article at U.S. Water News Online. April 2005.  
<http://www.uswaternews.com/archives/arcrights/5offisayx4.html>

obligations to retire the debt on time and on schedule." She said more than 210,000 acre-feet had been transferred from the Amistad Reservoir north of Del Rio and more than 56,000 acre-feet had been transferred from Falcon Lake reservoir in Zapata County.

At one point, Mexico owed 1.2 million acre-feet. By the announcement of an agreement, abundant rains had allowed Mexico to pay the debt down to 733,000 acre-feet. The agreement gave Mexico credit for 155,000 acre-feet. "Let there be no doubt, the water is under our control and on our way to Rio Grande Valley growers, ranchers, farmers and residents," White said.

White's agency oversees the water rights program, which controls usage of U.S. water from the Rio Grande and other waterways.

Carlos Rubinstein, the Rio Grande watermaster, said that the transfers increased U.S. holdings in the reservoirs by 8.1%.

While pleased to be assured of enough water for upcoming growing seasons, some Rio Grande Valley farmers say they fear that Mexico will continue to pay the water only when it rains.

"We have to recognize that right now everything is rosy, but the long-term problem is still going to be there," said Wayne Halbert, manager of the Harlingen Irrigation District. "Mexico doesn't have a plan for meeting the terms of the treaty on a regular basis. They're still in the mode, 'We'll look and see each year.' When things look bad, they're going to say, 'We don't have the water.' When things are flooding, they're going to say, 'Well look here, we're the good guys.' "

Cristobal Jaime Jaquez, General Director of Mexico's National Water Commission, said recently that his country has opened state water utilities to some private investment and is curbing excess demand and modernizing dams to use water more efficiently.

## **X. Plans announced to restart desalinization plant near Yuma<sup>17</sup>**

TUCSON, Ariz. -- Environmentalists and water officials have announced a plan to get a desalination plant near Yuma up and running again without hurting a valuable marsh in Mexico's Colorado River Delta.

The 60-acre plant, which originally cost some \$250 million, has been completely dry for over a decade. Persistent drought, however, has led many water users in the United States to advocate bringing the plant back into operation as an alternative to further draining of Lake Mead for meeting treaty obligations with Mexico. However, re-starting the plant would reduce water supply to the 40,000-acre Colorado River delta (the Cienega de Santa Clara).

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<sup>17</sup> Based on article at U.S. Water News Online. May 2005.  
<http://www.uswaternews.com/archives/arcsupply/5plananno5.html>

Biologists say the Cienega -- declared a biosphere reserve by Mexico in 1993 -- has become a vital stopover for birds traveling the "Pacific Flyway." It provides habitat for more than 95 bird species, including the endangered Yuma clapper rail.

A 1944 treaty requires the United States to send Mexico about 10% of the Colorado's average flow. The plant was built between 1975 and 1992 to meet that obligation. Its design uses reverse osmosis to treat brackish water flowing off Arizona's Wellton-Mohawk farming district. It then returns the cleaner, less saline water to the Colorado River and sends the reject stream of brine to Mexico in a canal parallel to the river.

The new plan, which needs state and federal approval, calls for pumping groundwater from waterlogged areas near Yuma to provide an alternate supply to the delta. It also calls for using the desalination plant to provide water to cities and businesses on either side of the border. The plan was drafted by four conservation groups as well as water officials from the Central Arizona Project, the Arizona Department of Water Resources, city of Yuma and Bureau of Reclamation.

## **XI. Time has come for jointly managing U.S.-Mexico border's surface and groundwater resources<sup>18</sup>**

Since the start of U.S.-Mexican negotiations over the border area, water has been the source of conflict and concern, yet political and infrastructural barriers historically have blocked the effectiveness of dealing with water issues. Population growth, trade, and development in the border area are raising demands on water resources and related infrastructure throughout the region.

Continued drought and strain on the resources has led to recent initiatives from organizations, universities, and regional authorities that could alter perceptions and management of border-area water. These initiatives build on the underutilized concepts of integrated water resources management, transboundary approaches to water management, and binational cooperation.

A move beyond data collection and sharing toward common management techniques still needs acceptance, yet border area projects of recent years are demonstrating the viability of cross-border efforts. Transboundary approaches are critical to increasing water management efficiency and important in decreasing the potential for future conflict over water in the border region.

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<sup>18</sup> Based on: McHugh, Rachel. 9 May 2005. Time's come for jointly managing border's surface, underground water. Americas Policy ([www.americaspolicy.org/commentary/2005/0505tbwater.html](http://www.americaspolicy.org/commentary/2005/0505tbwater.html)).