



ORSAM WATER BULLETIN

Weekly Bulletin by ORSAM Water Research Programme

Events-News-Politics-Projects-Environment-ClimateChange-Neighbourhoods-Cooperation-Disputes-Scarcity and more



ORSAM WATER BULLETIN

29 October – 04 November 2012

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❖ **KRG signs \$135 million contract for water treatment**

Kurdistan signs \$135 million contract for water treatment ARBIL/ Aswat al-Iraq: Kurdish region municipality ministry signed a contract with Turkish STFA-FERNAS Company to treat drinking water problems in some of Arbil and Duhuk areas. The project will cost \$135 million to be financed by the Japanese loan to Iraq. 517

"KRG signs \$135 million contract for water treatment", November 2012, online at:
<http://www.waterworld.com/news/2012/10/26/kurdistan-signs-135-million-contract-for-water-treatment.html>

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❖ **President Ahmadinejad Inaugurates Large Dam in East Azarbaijan Province**

TEHRAN (FNA)- Iranian President Mahmoud Ahmadinejad on Thursday inaugurated the country's largest concrete dam in the Northwestern province of East Azarbaijan.

The dam is located some 39 km Northeast of the city of Mianeh and is to supply water for agricultural purposes in some 12,000 hectares of lands.

The arch 'Shahriar' dam is 207 meters long and 135 meters high with the capacity of storing some 700 million cubic meters of water.

It also provides 168 GW of electricity for provincial cities.

The dam would help develop industrial and agricultural projects in the region and provide jobs for local residents.

Iran is now viewed as a leading country in dam building. Iranian specialists now provide consultation services for the design and construction of various dams in different sizes.

According to the Iranian officials, many countries including Sri Lanka, Syria, and Tajikistan as well as African states have entered either dam construction or consultation projects with Tehran.

“President Ahmadinejad Inaugurates Large Dam in East Azarbaijan Province”, 01/11/2012, online at:

<http://english.farsnews.com/newstext.php?nn=9107116320>

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❖ **Shihristani, Iranian VP discuss upgrading mutual cooperation**

Baghdad, Oct 31 (AIN) –The Deputy Premier, Hussien al-Shihristani, and the Iranian Vice-President, Muhamadi Zada, discussed upgrading cooperation between the two countries."

A statement by Shihristani's office received by AIN "Shihristani received Zada at his office in Baghdad on Wednesday," noting that "They reviewed the developing cooperation in the fields of protecting the environment, confronting the desertification and making best use of the water resources."

"Shihristani stressed the suffering of the people in Basra province due to the shortage of potable water and confirmed the necessity of launching the enough water into the rivers close to the borders between the two countries," the statement added.

"He also called the regional countries to meet in Baghdad to present recommendations to confront the desertification," the statement continued.

"Shihristani, Iranian VP discuss upgrading mutual cooperation (alliraqnews)",31/10/2012, online at: http://www.alliraqnews.com/en/index.php?option=com_content&view=article&id=21692

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❖ **Qutaybah Jubouri demanding government to discuss water and security issues with Iran .**

Baghdad / NINA /--Head of Iraqiya Hurra coalition MP ,Qutayba Jubouri called on government and the Ministry of Foreign Affairs to discuss the outstanding issues of water and security with Iranian president Ahmadinejad who intend to visit Baghdad.

In a statement issued by his Office Jubouri said : "There are many outstanding issues between Iraq and Iran should be set on the table of negotiation during this which comes during holding an international conference against terrorism in Baghdad./ End

“Qutaybah Jubouri demanding government to discuss water and security issues with Iran .”, 02/11/2012, online at:
http://www.ninanews.com/english/News_Details.asp?ar95_VQ=GEGDFF

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❖ **Zebari, Tanaka discuss Iraq-Japan relations**

BAGHDAD, Oct 30 / Aswat al-Iraq: Iraqi foreign minister discussed today enhancing relations with the Japanese International Cooperation Agency.

In a statement, copy received by Aswat al-Iraq, Zebari held talks with Dr. Akihiko Tanaka, Chairman of the Agency to develop relations with Iraq.

The follow-up of the Iraqi-Japanese Joint Commission's deliberations were reviewed, which was held last May and the Japanese easy-termed loans.

The statement pointed out that the Japanese agency assisted to train 4253 Iraqis from ministries of oil, electricity, health, transport, agriculture, higher education, water resources and environment.

“Zebari, Tanaka discuss Iraq-Japan relations (Aswat al-Iraq)”, 30/10/2012, online at: <http://www.ninanews.com/english/index.asp>

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❖ Shehristani calls for establishing body specialized in combating desertification

Baghdad, Oct 31 (NINA) – Deputy Prime Minister for Energy, Hussein al-Shehristani, discussed with Iran Vice President for Environment, Mohammad-Javad Mohammadzadeh, means of bilateral relations in the field of protecting the environments and combating desertification through good use of waters.

A statement issued on Wednesday, Oct. 31, by the Deputy Prime Minister's Office said that the two discussed the suffering of Basra residents and border towns because of shortage of ' waters in the border's rivers between both countries.

The statement quoted Shehristani saying that Iraq has a large project to combat the desertification phenomenon through making a green belt from the north down to the south. He called on the area's related institutions to meet in Baghdad to come up with resolutions toward forming a regional body charged with combating the phenomenon of desertification.

For his part, Mohammadzadeh expressed his country's readiness to coordinate with Iraqi institution to combat desertification and treat salinity in the waters of Basra province.

“Shehristani calls for establishing body specialized in combating desertification (NINA)”, 31/10/2012, online at: <http://www.ninanews.com/english/index.asp>

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❖ Don't forget about Iraq

Editor's note: Michael Rubin is a resident scholar at the American Enterprise Institute and senior lecturer at the Naval Postgraduate School. The views expressed are his own.

Almost a year after the last American troops departed Iraq, Baghdad is changing. It is still tired and worn down after decades of dictatorship, sanctions and war. But outside the checkpoints and the blast walls that demarcate the International Zone where the American embassy sits, and most Americans and Iraqi politicians live, Iraqis are reclaiming their city.

U.S. efforts to reconstruct and develop Iraq have in many instances failed. Almost a decade after the initial shock and awe, Iraqis still lack steady electricity and drink tap water at their own risk, while poor drainage still leaves sewage running down streets when winter rains come. Still, not all was for naught: two successful projects – keeping the oil industry running and issuance of a new currency – have enabled Iraq to meet its payroll and jump start the economy.

Baghdad may lag behind the rest of Iraq – security and foreign investment have fueled an economic boom not only in Iraqi Kurdistan, but also across southern Iraq – but even the capital city's moribund economy is sparking to life. Korean and Japanese car dealerships dot Karrada and Baghdad's other central neighborhoods. Students lounge around and gossip at the University of Baghdad – a virtual ghost town at the height of the insurgency. Traffic lights are again working, even if Iraqis consider red lights strictly optional. Across the city, Baghdadis of all religious practices have started to return to restaurants. And new restaurants have sprung up to cater to them. Shiites, Sunnis, and Christians, all gather at the Lebanese Club, a two-year-old restaurant that brings live music to the banks of the Tigris. Old standbys like the Latakia Restaurant have recently expanded. As in the 1970s, families have once again returned to outdoor restaurants on Abu Nawas Street for carp barbecued in the traditional Iraqi fashion. Beer and whiskey are available, albeit from surreptitious vendors who say the police raids they face have less to do with imposing religious values and more to do with disputes over who should receive their bribes.

The first major Iraqi government projects will soon come online. A Tigris River water intake and purification plant should supply most of the city with clean drinking water within months. Crews are also actively landscaping, tree planting, and laying garden paths alongside the 25-kilometer Army Canal. The result will be a park that transforms Baghdad's social and cultural landscape.

Accusations Prime Minister Nuri al-Maliki has become a dictator are exaggerated. Certainly, he has sought to consolidate power in order to govern, but his authority still pales beside that of other Middle Eastern leaders, and adheres more to rule of law than his neighbors in Saudi Arabia, Jordan, Iran, Syria and even Turkey. It certainly is a healthy sign that Maliki's portrait remains conspicuously absent from public space. Unlike Masoud Barzani, his counterpart in Iraqi Kurdistan, Maliki understands Iraqis fought to bring Saddam's portrait down, not simply to replace it with another personality cult. Regardless, rather than second guess Maliki's rule, a better strategy would be to promote free elections in 2014. Returning the "independent" to the now-partisan Independent High Electoral Commission would be a good place to start.

Other problems abound. Oil prices subsidize a bloated state sector. Employees sit idle; most ministries could function with a fraction of their staff. Banking is rudimentary and corruption is endemic. Iraqis tell a joke about Maliki at the White House. "How much money does the average American make per year?" Maliki enquires. "\$48,000" responds Obama, "but it only costs \$11,000 to live." "What do they do with the extra \$37,000?" Maliki asks. "Well, we're a democracy so I don't ask," Obama says. Obama then turns the tables on Maliki. "We make on average \$3,900 per year," Maliki says, "but it costs \$5,000 to live." "Where do Iraqis get the extra \$1,100?" Obama asks. "I don't ask," Maliki explains, "because we're a democracy!"

[More from CNN: September deadliest month for two years](#)

It is unfair to label Maliki an Iranian puppet. Iraqis do embrace their Shiism openly, and billboards of grand ayatollahs abound. When it comes to the relationship between Arabs and Persians, nationalism trumps sectarian solidarity. During the Iran-Iraq War, hundreds of thousands of Iraqi Shiite conscripts fought their Iranian co-religionists; they did not defect to the Iranian side. Many Iraqis cheer the collapse of the Iranian currency not only for the blow it strikes to Iranian arrogance, but also for the opportunities it provides to buy low in Tehran and sell high in Baghdad.

Nor does Maliki's arrest and trial of Tariq al-Hashemi make Maliki a dictator or Iranian stooge. Iraqis – including from competitor Ayad Allawi's own Iraqiya list – acknowledge Hashemi's likely guilt; the justices who passed sentence came from a variety of political backgrounds. Rather than rally around a politician with blood on his hands, many Iraqis sought consistency: Iraqis

accuse Muqtada al-Sadr and Masrour Barzani, among others, of the same crimes and hope that they will also stand trial.

Maliki is a realist, however: With U.S. forces gone, he can no longer play Tehran and Washington off each other to preserve his own independent freedom of action. Iraqi negotiators said that no matter what they offered, the Obama administration would not take yes for an answer when it came to maintaining residual American presence.

Iraq is too important to ignore or forget. Constant American pressure has kept Hezbollah operative Ali Mussa Daqduq under house arrest, even after Iraqi courts ordered him released from prison. American pressure too has helped Maliki stand up to Iran and force down Syria-bound Iranian planes for inspection to ensure they are not carrying sanctions-busting arms to Bashar al-Assad's murderous regime.

Fear of the future looms in Baghdad, but so does excitement at the possibility that Iraq could emerge from the morass in which it now sits. Russians and Chinese are already pouring in to be a part of the future, but Americans are falling behind. Too many Americans appear willing to sacrifice Iraq's future upon the altar of their own antagonism toward George W. Bush. That would not only be tragic for Iraqis, but also for American national security.

“Don't forget about Iraq”, 31/10/2012, online at: <http://globalpublicsquare.blogs.cnn.com/2012/10/31/dont-forget-about-iraq/>

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❖ Sustainability technologies are recharging a water-deficit Middle East

With the Arabian Gulf accounting for 5% of the world's population but only 1% of the world's available water supply, conservation of water and re-use of wastewater are increasingly gaining attention, as are companies that operate in these fields.

The population of the GCC amounted to 47 million at the end of 2011, according to recent Qatar National Bank data. Global consultancy Booz & Company has estimated that the GCC states consume an average of 850 cubic meters of water per capita each year, compared with a global average of about 500 cubic meters. In Saudi Arabia, the largest country in the region, the figure stands at 950 cubic meters per person per year.

Zawya Projects data reveal that around USD 1.085 trillion of projects are in the design, bid or construction stage up to 2037 in the GCC. This means that these governments will need to find a long-term solution to provide water as well as dispose of and treat the huge amounts of wastewater generated; both in terms of future water shortage issues as well as achieving economic and environmental sustainability with solutions like public-private partnerships in the utilities sector. "GCC countries need to increase their use of treated wastewater. Re-use water, as it is also called, isn't used for drinking, but at one-third the cost of desalinated water, it is a good alternative for activities such as maintaining landscaping near public roads, irrigating non-food crops, district cooling, and cooling power-generation equipment at industrial facilities," according to the analysts at Booz.

According to Frost & Sullivan, another global consultancy, GCC governments have allocated more than USD 100 billion for investment in the water sector between 2011 and 2016 to improve desalination technologies, water networking and focus more on wastewater treatment and recycling.

"Water scarcity and rapid population growth have led the GCC region to invest in water infrastructure. The water infrastructure market is expected to grow at about 15% to 17% in the year 2013," Kshitij Nilkanth, program manager at Frost & Sullivan's environmental practice for the Middle East and North Africa, told Zawya.

These investments also present a strong growth opportunity for firms that specialize in the field.

"With the region focused on enhancing water-use efficiencies in line with the sustainable development commitments of the governments, we have been proactive in building strategic partnerships that promote water re-use while enhancing customer use efficiency," Nabil Habayeb, president and chief executive of GE for the Middle East, North Africa and Turkey, told Zawya.

"Today, we purify over 800 million liters of water daily for drinking, irrigation and municipal uses across MENA," Habayeb said.

Some of the key projects GE is involved in include providing of water and wastewater treatment systems for Jebel Ali Free Zone's Palm Water utility project, which also called for the long-term operation and maintenance of the USD 550 million project. The company has also opened a manufacturing facility and office complex in Dubai; the 38,000 square meter facility is the largest purpose-built water plant in the Middle East, serving 14 countries in the MENA region.

The Center of Excellence attached to the facility "will also share best practices related to water treatment, technologies and solutions aimed at increasing customers' efficiency", Habayeb said.

Other companies in the sector share GE's bullish view. "We view the GCC/MENA as a booming market for construction of water and wastewater treatment facilities as well as water management. Desalination, wastewater re-use applications and water saving solutions will lead the development and be the key drivers for water efficiency in the region," Emmanuel Gayan, director for Veolia Water in the Middle East, told Zawya.

"With a portfolio of more than 250 proprietary technologies including a vast number of reference plants in the region, the company has the flexibility to respond to the current as well as upcoming technological challenges," he said.

Veolia has seen an acceleration in government spending in all countries in the region, especially in the more populated ones such as Saudi Arabia, Iraq, and (since the formation of a post-revolution government) Egypt.

"In the past two decades, many of the GCC countries have witnessed increased infrastructural development and population growth that has put immense pressure on their water resources. Therefore, the GCC governments are looking for viable options to enhance water supply by various fund allocations and through private investors," said Frost & Sullivan's Nilkanth.

And Saudi Arabia tops that list, agrees Khaled Jame, a director at Hyder Consulting: "Saudi Arabia is spending billions of dollars. The metering systems are outdated, the pipeline systems need to be replaced and they are growing very fast in terms of population. We see tremendous demand rising for efficient wastewater treatment and technologies in the GCC."

Habayeb said GE is exploring water management solutions with its customers, including wastewater re-use, to ensure that the precious resource is managed in an efficient and sustainable manner. "Today, some of the most pressing water-related issues our customers face are associated with availability, quality, productivity, the environment and energy. GE has doubled its level of investment in clean research and development from USD 700 million in 2005 to more than USD 1.5 billion in 2010 to focus on helping our customers meet pressing energy and water challenges. One of the most promising efforts to stem the global water crisis is industrial and municipal water recycling.

"Recycling water reduces the nutrient loads from wastewater discharges into waterways, which in turn reduces and prevents pollution. Water recycling allows communities to become less dependent on groundwater and surface water sources, and can decrease the diversion of water from sensitive ecosystems. Every day, we invest in developing new technologies to meet industry challenges, from reducing the total cost of producing water to reducing waterborne diseases and to providing environmentally friendly chemicals," Habayeb said.

Technologies that Reduce Costs

Veolia's Gayan said technological innovation has made water treatment processes more efficient and brought down the cost of treating wastewater to standards required for more sophisticated re-use. "We foresee re-use of wastewater in industrial applications as becoming the norm in the Middle East, also due to government enforcing treated sewage effluent (TSE) use regulations in the region."

Gayan points to an example of innovation implemented at one of energy giant Shell's gas to liquids plants in Qatar. "A sustainable water management solution, zero liquid discharge, was put in place. The water produced in the transition from gas to liquid is led to an effluent treatment plant, where it is treated and re-used in the production process. Our patented technologies are used to ensure that no liquid effluent is discharged into the natural environment."

Nilkanth noted that with the growing demand for potable and non-potable water, water is re-used through polishing the secondary treated sewage. "Advanced wastewater treatment technologies such as membrane bio reactor (MBR) technology are likely to find increased usage in the next five years, as the demand for treated water for district cooling and landscaping increases. New pipe materials such as glass-reinforced plastic (GRP) and high-density polyethylene (HDPE) are gradually finding favor with the design consultants," he said.

GE and Veolia both see double-digit revenue growth from the region, in spite of economic reverses arising from the Arab Spring.

"Many countries in the GCC are also planning smart cities and green projects. This is expected to lead to upgradation of the existing treatment capacities and technological advancement in treatments such as usage of membranes," said Nilkanth.

"We forecast good potential for TSE, wastewater treatment and desalination in the GCC countries. Abundant opportunities are expected to be created in the desalination and wastewater treatment market benefiting the allied industries like membrane suppliers, water and wastewater equipment suppliers, technical consultants and pumps."

Jame added that the Hyder team looks for new technologies in relationship to SCADA (supervisory control and data acquisition), which refers to industrial control systems (ICS): computer systems that monitor and control industrial, infrastructure, or facility-based processes.

"We specifically look for wireless technology and leakage detection technology. Abu Dhabi is ahead of the game in terms of using automatic meter reading technology and that is also being implemented in other countries in the area. Again, leakage from the pipes and connections is another issue in the region - around 30% of water is lost due to leaking pipes. If you can control that amount, you can save lot of money," Jame said.

"Sustainability technologies are recharging a water-deficit Middle East", 31/10/2012, online at:

http://www.zawya.com/story/Sustainability_technologies_are_recharging_a_waterdeficit_Middle_East-ZAWYA20121031042359/

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❖ **'Israel's water infrastructure is secure, advanced'**

Massachusetts-based Jeffrey Rosen touts Israel’s security technology and understanding of water issues.

To protect water systems from both their own aging infrastructure and external “malevolent events,” countries must integrate advanced water monitoring systems into their infrastructure – an American water management expert said.

The expert, Jeffrey Rosen – a Massachusetts- based environmental informational specialist and senior scientist/statistician at Tetra Tech – has been responsible for conducting informational processing and managing water systems for years. Rosen has been in Israel for a week touring the country’s water sites and speaking at a conference on Wednesday sponsored by the local company Whitewater, a data monitoring and analytics firm for water infrastructure.

Using advanced informational systems in water infrastructure can allow for early detection of bad chemical concentrations, problems with system pressure or potentially broken pipes, Rosen explained.

“These systems help us correlate customer complaints like ‘my water doesn’t smell right,’” he said. Such technological precautions can oversee aging infrastructure and ensure that purposely injected chemicals like chlorine are being pumped fast enough and are flowing in proper quantities.

Not only can employing advanced informational systems protect a water system from age and routine glitches, they can also help prevent what Rosen calls “malevolent events” – incidents that have been increasingly worrying water professionals since September 11, 2001.

“On the rare occasion when there is an attack on the system, these systems can help us identify that something is wrong,” Rosen said. “I’m talking about attacks on water quality, and also attacks on the physical infrastructure.”

If water were to suddenly stop being delivered and people panicked, serious problems could occur both locally and countrywide.

“We still need to be vigilant about it,” Rosen said. “We’re making great headway in the ability of sensors and in our ability to process the data, and our ability to know when problems need to be addressed.”

While the technology for monitoring water systems and ensuring rapid responses is certainly available, countries must begin employing these innovations, Rosen stressed.

There are risks associated with hackers infiltrating such advanced computerized systems, but far less than a decade ago, as entrepreneurs have made the technologies extremely secure, according to Rosen.

“Water really needs to step up into a new level,” he said.

Whitewater, which Rosen acknowledged he often works with on his international projects, is one such company innovating these technologies.

“Israel is bringing lots of security technology on the one hand and an understanding of water on the other hand, as well as the needs of utilities to protect their assets and quality of water,” said Issey Ende, chief business officer of the quality and security division of Whitewater.

To both Israel and the United States, employing such technologies for monitoring every inch of their water systems is crucial, Rosen stressed.

“There’s a need for vigilance as there is a need for everything that Israel does,” he said. “The water systems are just another example.” That being said, Israel thus far is in a very good place in terms of its water infrastructural management, in Rosen’s opinion.

“Israel is definitely in the right direction,” he said. “[It] is probably more in the right direction than

any other country in the world.” While touring the country’s water sites, Rosen said he was impressed by new and innovative tests for microbiological contaminants, as well as the monitoring and data integration that he witnessed.

“It’s remarkable, the growth that I see in Jerusalem or Tel Aviv from when I was here six years ago,” he said.

Traveling around the country, Rosen said he felt that “a new movement” in water had taken root here that certainly rivaled that of the United States. Cooperation between the two countries would be vital to moving forward, as both need the same types of solutions, he explained.

“I don’t need to be in Israel to know that the Israeli water business is leading the world in many ways,” Rosen said.

“You have technologies here that many [countries] in the world copy and learn from.”

“Israel’s water infrastructure is secure, advanced”, 01/11/2012, online at: <http://www.jpost.com/Sci-Tech/Article.aspx?id=290058>

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❖ The Dead Sea is Shrinking Faster Than Ever

The Dead Sea has been drying up at a frightening pace for many years now – and the problem is only getting worse, reports [Bloomberg News](#). The ultra-salty lake that straddles Jordan and Israel dropped almost five feet over the last 12 months – the fastest decline since record-keeping began in the 1950s.

Israel’s Hydrological Service lays the blame for the shrinkage speedup on potash companies that pull water from the Sea. But the major culprit, as I reported [here](#) a while back, is Jordanian and Israeli farms and cities siphoning off water from the Jordan River, which has fed the Dead Sea for millenia. The Dead Sea’s shrinkage is a major problem. Over the past three decades, the sea’s shore has retreated as much as a mile, which hurts business at the hotels and spas dotting what used to be the sea’s beaches. Moreover, as the water retreats, it destabilizes the ground around it, spawning massive sinkholes that have devoured entire villages. Underground freshwater springs that feed nearby oases rich in wildlife are also being dragged down.

In response, officials are looking into building a \$10 billion, 110 mile canal to bring in water from the Red Sea. That effort, reports Bloomberg, continues to creep forward; new studies are due in the coming weeks. Here’s hoping someone comes up with a fix while there’s still a Dead Sea to save.

“The Dead Sea is Shrinking Faster Than Ever”, 29/10/2012, online at: <http://www.psmag.com/blogs/the-101/the-dead-sea-is-shrinking-faster-than-ever-48792/>

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❖ Dead Sea Dying at Record Pace

The level of the salty inland lake known as the Dead Sea has dropped a record 5 feet over the past year due to evaporation and extraction by industry in both Israel and Jordan.

Siphoning of the sea's Jordan River source for agricultural use has also contributed to the decline.

The storied body of water has been praised for its healing powers since biblical times and still attracts visitors from around the world.

Its shrinkage has been a major problem for decades, with its shoreline retreating as much as a mile in some spots

The process has destabilized the ground surrounding it, causing massive sinkholes that have devoured entire villages.

Gidon Bromberg, Israeli director of the Friends of Earth Middle East, is calling on Jordan and Israel to require agriculture and industry to pay a higher price for the water they pump out of the sea.

“Dead Sea Dying at Record Pace”, 02/11/2012, online at:

<http://www.earthweek.com/2012/ew121102/ew121102a.html>

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❖ **Israel ready to provide Azerbaijan with advanced technology on purification of sea water**

Israel is ready to share its experience with Azerbaijan on purification of sea water and provide the latest technology in this field. This was stated on Wednesday at a meeting with Azerbaijani journalists in the Israeli centre for water purification.

Today, most of the consumption of fresh water in Israel is produced through purification of sea water. The wastewater of Tel Aviv is also purified and directed into the sea and the desert, as well as the irrigation of crops.

The centre reported that these technologies are already used in many European countries and Israel is ready to share its experience with Azerbaijan in this field

“Israel ready to provide Azerbaijan with advanced technology on purification of sea water”, 31/10/2012, online at: <http://en.trend.az/capital/business/2082429.html>

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❖ Irrigation Minister: Egypt will avoid further disputes with Nile Basin countries

Minister of Irrigation and Water Resources Mohamed Bahaa Eddin said Saturday that ongoing work on the Grand Ethiopian Renaissance Dam in Ethiopia was still exploratory, and in a statement to Al-Masry Al-Youm added that Egypt is looking to avoid further disputes with Nile Basin countries after President Mohamed Morsy's visit to Ethiopia and Uganda.

Bahaa Eddin said that ministry experts have put forward proposals for better cooperation with Nile Basin countries, and that if Egypt approved the establishment of the dam, there would be a joint agreement stipulating that Egypt and Sudan's shares of the river water would not be affected.

Ethiopia embarked on the construction of the Renaissance Dam in mid-2011 amid fears on Egypt and Sudan's part that their shares of the Nile water would be affected. Ethiopia stressed though that the project would not have a negative impact on the downstream countries.

Bahaa Eddin added that the dispute between Egypt and Sudan on one side and other Nile Basin countries on the other was only the result of Egypt and Sudan's wishes to preserve their rights. Egypt and Sudan have agreed to present their joint agreement at the ministerial meeting of the Nile Basin countries expected to take place in November, and according to Bahaa Eddin, the initiative includes new mechanisms for the implementation of joint projects benefiting all Nile Basin countries.

The Nile Basin countries signed the Entebbe agreement in Uganda in mid-2011 concerning the redistribution of the Nile River waters.

Egypt and Sudan had previously taken the lion's share of the Nile's water in accordance with an agreement signed in 1929 under the British occupation.

A tripartite committee that represents the governments of Egypt, Sudan and Ethiopia is assessing the impact of Renaissance Dam on the water shares.

"Irrigation Minister: Egypt will avoid further disputes with Nile Basin countries", Egypt Independent, 28/10/2012, online at: <http://mideastenvironment.apps01.yorku.ca/?p=6179>

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❖ Supporting Egypt's wetlands and waterbirds through regional

North African wetlands constitute important stopover sites and wintering grounds for water birds breeding in Eurasia, including many globally threatened species.

In order to develop a regional program to support mid-winter surveys in the region, a workshop titled "Brainstorming on International Water bird Census in North Africa" was held in Tunis on 8-9 October, hosted by "Association Les Amis des Oiseaux (AAO)." Representatives of the Egyptian Ministry of Environment and Egypt's NGO Nature Conservation Egypt (NCE) attended.

The purpose of the workshop was to try to strengthen mid-winter counts in North Africa and rebuild a regional network weakened by poor coordination, information exchange, data storage and processing as well as lack of resources and manpower to conduct surveys.

"North Africa and the Middle East present a unique bio-geographic area sharing a common language and culture," commented Jean-Yves Mondain-Monval from the French Game and Wildlife Agency (ONCFS). "Water bird counts are an excellent vehicle to promote regional cooperation and develop ornithological capacity. The ultimate aim is to enhance conservation of habitats and water birds throughout the flyway."

Wed Abdel Latif, a bird specialist from the Egyptian Ministry of Environment, made a presentation about Egypt. "Surveys have been conducted in protected areas," he informed the participants. "There has been considerable capacity built in Aswan largely due to the efforts of Dick Hoak, a retired Dutch birder who has been visiting Aswan for the past 10 years helping with counts and training many good local birders."

Egypt has the most wetlands in North Africa but they are some of the least surveyed. The last major census of wintering water birds was performed in the late 1980s. Some Egyptian wetlands have never been surveyed in a comprehensive manner, including Lake Nasser and the Mediterranean and Red Sea coasts. Most counts have taken place on an irregular and ad-hoc basis.

According to an upcoming paper to be published by Sherif Baha el Din, a renowned birder and the founder of Nature Conservation Egypt, surveys over the years have revealed significant changes in

the composition of water birds both resident and migrant in the Egyptian wetlands. This indicates that major ecological changes have taken place.

“Water birds are good indicators of environmental health,” says Mondain-Monval. “Water bird counts are a useful tool to identify priorities. Annual surveys help us monitor trends in water bird populations and identify sites of importance.”

“There are applications for hunting management,” added Pierre Defos du Rau, also from the same agency. “Winter water bird surveys are one of the best means we have to monitor hunting. The information can be used to set hunting quotas.”

Countries around the world undertake mid-winter water bird censuses. The counts feed into the International Water bird Census (IWC) operated by Wetlands International. Since 1967, it has covered sites in more than 100 countries making it the largest global monitoring schemes, largely based on citizen science. The census monitors changes in the numbers and distributions of water bird populations at the flyway level.

“Water bird counts contribute to the implementation of international conventions such as the African Eurasian Water bird Agreement,” says Mondain-Monval. “As called for by the conventions, we are trying to strengthen cooperation in the Mediterranean Basin which is a very important region for wetlands and water birds.”

Tour du Valat, a research center located in the French southern region of Camargue, is one of the most active organizations involved in wetland conservation in the Mediterranean. Due to the support of Tour du Valat, ONSCF, the Regional Activity Center for Special Protected Areas and other international bodies there has been considerable capacity built in water bird counts in North Africa. Most countries have developed national teams and undertake annual counts.

Claudia Feltrup-Azafzaf, the executive Director of “Les Amis des Oiseaux” association explains that Tunisia has been doing well with the field work but must do more with data processing. Even Libya has produced an atlas of wintering water birds.

When asked about the benefits, she explains, that “water birds surveys are not an end in itself but a means to promote education, scientific research and conservation objectives.”

With a small grant from the French government, ONCFS has a three year project assisting Egypt to undertake winter water bird counts. “This is the last year; we hope the project will be extended” says Mondai-Monval. Surveys to date have covered part of Lake Nasser and Upper Nile Valley. It is still undecided which area the survey will cover this winter.

When hearing about the state of Egyptian wetlands, Stephen Flink of Wetland International assured that integrated wetland management is what is needed. “Biodiversity is one the key wetland resources,” he says. “It is surprising Egypt is not undertaking annual counts given its importance for wetlands.”

“Lack of support and resources are one of the biggest obstacles facing Egypt,” explains Abdel Latif. “For sustainability the surveys should be used as a tool helping with decision making and forming national policy.”

He also stressed that there needs to cooperate more with NGOs and universities. Most other countries in North Africa counts are undertaken by or in partnership with such bodies. He explains that one of the major constraints facing Egypt is the lack of professors with expertise in ornithology.

When asked how the situation can be improved in Egypt, he replied, “The involvement of international organizations is needed. “Flink was likewise surprised how birds and other wetland biodiversity was being overlooked by donors and conservation bodies. We have activities in deltas throughout the world, why not in Egypt?” he asked.

Mindy Baha el Din is an environmental consultant and a bird expert on the board of the NGO Nature Conservation Egypt. She is married to prominent conservationist and NCE founder Sherif Baha el Din.

“Supporting Egypt’s wetlands and waterbirds through regional cooperation” ,Egypt Independent, 28/10/2012, online at: <http://mideastenvironment.apps01.yorku.ca/?p=6181>

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❖ Anti-river pollution unit formed in Upper Egypt

CAIRO, Nov. 1 — An anti-Nile River pollution unit was formed in Luxor governorate, Upper Egypt to contain the leakage of oil slick, state media reported Thursday.

Aiming at a speedy response to an oil spill which pollutes the Nile river in Upper Egypt, the unit was authorized to regularly inspect any floating tourist ships or other facilities that discharge wastes into the river, said State Minister for Environment Affairs Mostafa Hussein Kamel.

“The unit has all powers to take legal procedures against violations,” added Kamel.

The oil spill in the Nile was first detected in Aswan on Saturday, and then it leaked into neighboring Luxor, Qena, Sohag and Asuit governorates, official news agency MENA reported.

Luxor governor Ezzat Saed told Xinhua on Thursday that “this is the first unit to be established in Egypt to prevent Nile contamination.” He added his governorate will train 15 people from those working in the environment protection institution to tackle the river crisis.

The Water and Sanitation Holding Company in Qena has stopped several water stations after the tests proved the water is not valid for drinking.

Adel Labib, governor of Qena, told Xinhua on Thursday that a paper-making factory in north Aswan was the source of the spill. As of now, investigations are still going on.

“Anti-river pollution unit formed in Upper Egypt”, 01/11/2012, online at: <http://www.nzweek.com/world/anti-river-pollution-unit-formed-in-upper-egypt-20331/>

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❖ Oil spill reflects negligence

THE oil spill that appeared early this week in the River Nile in Aswan Governorate reflects the level of negligence shown by different bodies in this country to the great river that forms the main source of drinking and irrigation water for Egypt.

Reports over the amount and nature of this spill have differed, with some putting it at a huge spill that covered around five square kilometres of the river surface, while others raised the area to more than 10 square kilometres. A paper production factory has been blamed and the finger also pointed at the governmentally owned sugar-cane factory of Edfu.

With the Nile flowing from the south to the north, different officials seem to have focused on spotting the movement of the polluting spill from one governorate to another, other instead of dealing with it and identifying the actual body responsible for this environmental disaster.

The only positive procedure taken by southern governors was to cut off the drinking water of the villages and towns on the river by preventing the intake of the drinking stations from the river, when the oil spill was moving through their governorates!

Such an economic disaster should push any government into reaching a radical solution while bringing the perpetrators to justice. Discharging industrial wastes into the river course should be made a crime against the national security and even a conspiracy against the public health that should be rigorously punished and the errant factory closed even if it proved to be governmental.

However, the only punishment expected for such an appalling deed would be a monetary fine and a warning of closure that will never be effected by the Ministry of the Environment that seems incapable of dealing with the innumerable repeated atrocities against the river.

If the government of post-revolution Egypt will not issue new legislation to ensure real protection of the River Nile against pollution and activate and strengthen the Ministry of Environment's role

accordingly, one should not expect anything good from this government in enhancing progress in this country.

“Oil spill reflects negligence”, 01/11/2012, online at:

<http://213.158.162.45/~egyptian/index.php?action=news&id=27954&title=Oil%20spill%20reflects%20negligence>

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❖ **Egypt's Nile hit with oil slick, more en route**

CAIRO: At least four water stations near Egypt's capital, Cairo, resumed operations on Saturday after having been closed after diesel oil from an oil slick was discovered in the Nile River, the Holding Company for Water and Wastewater reported.

It comes as the environment and oil ministries are attempting to deal with another oil spill in the central part of the country that is also heading toward Cairo.

The Environment Affairs Agency, the agency tasked with oil spill clean-up and monitoring told Bikyamasr.com on Saturday that they were uncertain of the damage, but were getting a response team in place to investigate the oil that appeared in the capital as well as prepare for clean-up operations from the spill that occurred near Minya in Upper Egypt and which is expected to hit the capital.

The HCWW said in an official statement that it “dealt with the slick using panels and logs to absorb oil as a precautionary measure.”

It is unclear what environmental or economic damage has been caused by the spills, and environment experts are calling for a more concerted effort by the government to ensure that spills do not occur on the Nile, Egypt's main source for agriculture and business.

“Egypt's Nile hit with oil slick, more en route”, 04/11/2012, online at: <http://www.bikyamasr.com/80151/egypts-nile-hit-with-oil-slick-more-en-route/>

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❖ **Yamuna pollution: Civic body set to present draft in SC**

GURGAON: The Municipal Corporation of Gurgaon (MCG) has prepared its draft report that it is supposed to file in the Supreme Court next week, regarding the steps taken by it to control the pollution in the Yamuna River. The next date of hearing in the case is October 30.

In the last hearing, the SC had said that the petition has been pending before it since 1994 primarily with one objective in mind: that the dirty Yamuna should be converted into a wholesome and clean Yamuna and its water in the entire region from Hathini Kund in Haryana to monitoring station at Taj Mahal, Agra, has to be pollution-free.

It directed the secretaries of the ministry of urban development in consultation with the ministry of environment and forests, ministry of irrigation and power, chief secretaries of the states of Haryana and Uttar Pradesh to file their personal affidavits, informing it about how many drains carrying domestic or industrial waste or any other waste in the entire territory join the river.

According to a source, in its draft report, the MCG has claimed that it treats around 80% of the sewage at the sewage treatment plant at Dhanwapur. "We will be informing the Supreme Court that we are doing our best to ensure that untreated water does not flow into the Yamuna. We are able to treat around 80% of the sewage that flows from various residential and commercial areas at the water treatment plant. We have got a survey done to rectify all the broken sewerage lines and drainage system in our jurisdiction so that the remaining 20% of the sewage water that we are not able to treat at present can also be treated," said an official.

“Yamuna pollution: Civic body set to present draft in SC”, 28/10/2012, online at:
http://articles.timesofindia.indiatimes.com/2012-10-28/gurgaon/34780059_1_yamuna-pollution-sewage-water-hathini-kund

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❖ Implementation of National Water Policy main priority: Rawat

Water resources minister says he will speed up programmes delayed due to environmental and other concerns

Water Resources Minister [Harish Rawat](#), who assumed charge of the ministry today, said his main priority would be implementation of the National Water Policy in coordination with the states and speed up programmes delayed due to environmental and other concerns.

But Rawat did not make any mention of the pressing concerns of his ministry with regard to the Cauvery Water dispute between Karnataka and Tamil Nadu, as well as the problems with Pakistan over Kishanganga and with Bangladesh over Teesta river water sharing.

"My first responsibility will be implementation of the National Water Policy which has been approved by the Parliamentary Committee. A meeting of the Inter-State Council will be held soon to sort out the complexities due to concerns of various states. A big challenge is how to coordinate with states on the complexities," Rawat told reporters soon after taking charge.

He maintained that he would work towards developing a mechanism through which the issues can be sorted out in a time bound manner. Legislations would also be passed where required to ensure this, he added.

On the issue of inter-linking of rivers, Rawat said he will look into the proposals which have come from various states and how environmental and other constraints can be dealt with.

He emphasised on the need for creating more awareness about aquifer mapping, presence of arsenic in underground water, over exploitation of water resource, pollution of water and recurring floods.

"Implementation of National Water Policy main priority: Rawat", 30/10/2012, online at:

<http://www.stumbleupon.com/su/1F53Au/business-standard.com/india/news/implementationnational-water-policy-main-priority-rawat/193596/on>

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❖ Water of life

Water availability and quality — or more accurately, the lack of them — are stifling economic growth and threatening business viability across the world. Whether or not they realise it, businesses of all kinds and sizes play a vital role in managing the world's scarce water resources.

According to the 2030 Water Resources Group (an offshoot of the World Economic Forum), global demand for fresh water will exceed supply by 40 per cent by 2030. That is a frightening prediction. It has disastrous implications for business, local communities and the environment. The 2030 Water Resources Group notes that while water crises are essentially local issues, they can quickly morph into global issues through their effect on the world's food and energy supply systems.

Water shortages are already common and getting worse.

In June 2012 the *Times of India* reported that New Delhi was reeling under severe water shortages. In 2008 Israel announced its worst water crisis since records began. In 2011 the EU reported that in many parts of Spain demand for water was three to 10 times higher than the available supply. In Australia, we have built a string of large desalination plants; six will be operating within the next twelve months. This is in an effort to 'drought proof' the water supplies of our major cities.

Across much of the world water supplies are being contaminated by raw sewage and other domestic and industrial wastes. The result is widespread sickness and death. In some places available water supplies are dwindling due to the depletion of groundwater resources and the mismanagement of river systems. This is increasing the uncertainty of water supply for many communities.

Like other sustainability megafactors, water scarcity creates risks and opportunities for business. Diminishing water supplies can disrupt — even shut down — business operations, power generation and the supply of key business inputs. Put simply: no water, no business. Similarly, business has to compete for limited water supplies with other users, including, most importantly of all, households.

Indeed water scarcities have already sparked conflicts between local communities and businesses. These disputes threaten corporate reputations and social licences to operate. For example, mining companies in Peru, Argentina and Chile have been affected by community protests over water entitlements. In one instance the company concerned relinquished entitlements over 3.9 million ounces of gold because of a water dispute. In India beverage manufacturers have been involved in similar disputes that in one case caused a bottling plant to close.

In Australia we are experiencing our own continuing disagreement over water allocations and use. The allocation of water resources in the Murray-Darling basin illustrates the problematic nature and complexity of many water disputes. At least the conflict over water in the Murray-Darling system

remains largely a war of words; many analysts predict water will be the source of many of the most serious and potentially violent conflicts within and between nations during the 21st century.

While there are risks, water scarcity also presents opportunities for business through investment in innovative and sustainable solutions.

The provision of desalination plants and the management of water supply, treatment and sewerage will grow in importance as less water is required for a growing population. There is scope for private business to deliver these services.

Businesses should analyse their exposure to water risks, internally and in their supply chain, and develop a response strategy. Better practice management of water by industry can increase efficiency and reduce costs, which provides financial benefits to companies and takes pressure off the water system.

Governments are already introducing measures to manage water supplies more effectively. These measures create new compliance obligations and/or cost increases for business.

For example, in 2008 Portugal started taxing major water users in agriculture and industry. In June of this year China announced it would impose higher water charges for water-intensive industries and encourage the use of recycled water. Singapore is pricing water to reflect its scarcity.

Business leaders are also collaborating on new solutions to our water problems. Thus the Rio+20 Conference on Sustainable Development last June made water one of its priority themes. Forty five leading transnational corporations attended the meeting, including CEOs from companies such as Coca-Cola, Dow Chemical, Levi Strauss, Nestlé, Royal Dutch Shell and Tata Steel. These business leaders not only reinforced the importance of attaining water sustainability, but also shared examples of corporate commitments, actions and public policy recommendations. Most notable was a call for water pricing to reflect a 'fair and appropriate resource value'.

It is against this background that KPMG recently examined how leading companies around the world are using their corporate responsibility or sustainability reporting to explain what, if anything, they are doing about important water issues. (The study, *Water Scarcity: A Dive into Global Reporting Trends* involved reviewing the reporting of the world's 250 largest companies based on the Fortune Top 500 together with the top 100 companies in each of 34 selected countries, including Australia.) The study came up with several key findings.

- Just over three quarters of the world's 250 largest companies now report in some manner on how they are managing water issues.

- Water use is more commonly reported on in those countries in which water scarcity is already a significant problem. Such reporting is less common in countries where water is comparatively abundant.
- One third of the global 250 disclose ‘water footprint’ data for their whole organisation while one in five do so for part of the business.
- Only three of the world’s 250 largest companies report on the water footprint of any part of their supply chain. None of them report on the water footprint for their entire supply chain.
- Fewer than half the global 250 mention specific plans to reduce their water use. Just over a quarter report they are treating waste or contaminated water.
- Sixty per cent fail to disclose any long-term strategy for dealing with water scarcities. Companies in the mining, automotive and pharmaceutical sectors are the most likely to report on such a strategy. By way of contrast, just 50 per cent of companies in the transport sector report on a water strategy.
- Only around one in 10 of respondent companies report that they are adapting their businesses to changes in water availability, or that they are mitigating the consequences of water scarcities.

In India all of the 100 largest companies examined as part of the KPMG study provided some kind of reporting on water matters. Other countries with high reporting levels (90 per cent of companies or better) were Israel, Taiwan, Greece, Spain and Portugal. A creditable 86 per cent of the Australian companies covered in the study reported on water issues.

The companies examined in the study are all relatively large (at least in the context of their domestic markets) and many are listed on a stock exchange. It is probably a fair assumption that smaller, private companies are less likely to possess effective water management and reporting policies and practices than their larger, publicly listed counterparts. Reporting practices will also reflect corporate governance standards in the various countries included in the survey and the sensitivity of investors and other company stakeholders to water-related matters.

Companies that possess long-term water management strategies that they fail to report should note that water is a growing concern for many stakeholders. Institutional investors are increasingly interested in how companies are mitigating their exposures to water risk. Companies that have yet to develop a long-term water management strategy are almost certainly increasing their overall risk profile and exposing their businesses to potential disruption. The first and most immediate step for these companies should be to develop an understanding of the organisation’s water footprint and those parts of the business at greatest risk from water-related problems.

It is not enough to measure water use within an organisation’s own fence line. Risks along the supply chain must be assessed as well. A recent study by KPMG in Japan, for example, showed that audio

and video manufacturers among the Nikkei 225 are particularly vulnerable to water scarcities via their suppliers of glass and paperboard packaging.

With a firm understanding of their water-related risks and pain points, executives can start to develop a robust and realistic response plan that sets targets for reductions in water consumption and the reuse of water as well as explaining how water risks in the supply chain will be managed and mitigated.

Companies concerned to improve their water management and reporting practices might find the following 10-point checklist useful.

- How well does your organisation understand its exposure to risks of water scarcity and contamination?
- Where do your biggest water risks lie?
- To what extent are your investors looking at your response to water challenges and do you understand investor concerns about water matters?
- Does your organisation possess a long-term strategy to manage or eliminate the risks arising from actual or potential water scarcities?
- What resources have been allocated to develop and maintain appropriate water strategies?
- How much water is used within your extended supply chain?
- What water-related metrics are most important to your business?
- Do you possess processes to verify internal and external water usage data?
- What plans are in place for integrating water-related corporate responsibility or sustainability data into your organisation's overall reporting framework?
- How is the organisation communicating its water strategy to key stakeholders?

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“Water of life”, 29 October-2 November 2012, online at: <http://www.ceoforum.com.au/article-detail.cfm?cid=12604&t=Chi-Woo--KPMG-Australia/Water-of-life/>

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❖ Use 'hydro-diplomacy' to avert future water conflict – experts

BANGKOK (AlertNet) - Population growth, urbanisation, industrialisation and climate change are putting pressure on the world's river basins, and “hydro-diplomacy” is essential if water-related conflicts are to be avoided, experts said on Wednesday.

Cooperation between countries and between different groups within countries, as well as improved political will and the larger participation of societies could help defuse tensions over water and improve governance of water resources, the experts said at a **conference** in Chiang Rai in Thailand, a nation that shares the waters of the Mekong River with Myanmar and Laos.

“Water is, let us face it, going to be humanity's crisis number one,” said Ambassador Gopalkrishna Gandhi, a former governor of West Bengal in India, which shares borders and rivers with Bangladesh.

“With global warming, population spikes and water-extraction intensification, river water and ground water are going to come under unprecedented strain,” he added.

Rapid population growth and increased industrial demand mean water withdrawals have tripled over the last 50 years, **according to figures from the United Nations.**

U.N. studies project that at least 30 nations will be “water scarce” in 2025, up from 20 in 1990. Eighteen of them are in the Middle East and North Africa but parts of **India, China and Pakistan** are also expected to face water shortages.

A country is judged to be “water scarce” when each person has access to 1,000 or fewer cubic meters of water a year.

“Allocation and sharing of water resources crosses political, spatial, cultural and economic boundaries,” said Aban Marker Kabraji, Asia regional director for the International Union for Conservation of Nature (IUCN), which organised the conference.

Diverse users, from farmers to industry and urban developers, are all competing for a limited resource, she said.

“Many technical water infrastructure solutions of the past are now seen to be unsustainable, and we need new ways to meet the demands of human growth while ensuring a sustainable future,” Kabraji said.

ENERGY-FOOD-WATER NEXUS

Because water, energy and food needs are increasingly inter-related, increasing transboundary cooperation on water – or the lack of it - will have wide ranging impacts, experts said.

For Torkil Jønch Clausen, the conference's keynote speaker, it is increasingly clear that water issues must be tackled from a wider perspective and by a wide range of people, not just water experts.

"Water's a human right. We need 50 litres per day for our basic needs. That is not a political problem. No country does not have that," said Clausen, a senior advisor to the Global Water Partnership and chair of the scientific programme of World Water Week in Stockholm.

"But every day the food we eat takes 50, 60 times that much water to produce," he said, and "in many cases in the world, the environment has paid the price for our production of food and energy."

Agriculture is responsible for two-thirds of global water withdrawals, he said. It takes 1,500 litres of water to produce one kilo of cereals and 10 times that to produce a kilo of meat, a significant problem as demand for meat continues to rise, particularly in developing nations such as China.

Forty percent of food, excluding food used for biofuel, is produced on irrigated land and irrigation needs also are expected to increase, he said.

In India, 20 percent of all electricity is used for irrigation, he said, with the government's subsidised energy policy has resulted in declining groundwater levels in some regions.

He told AlertNet that said he and others were disappointed that the Rio+20 sustainable development summit, held in June in Brazil, had not done enough to emphasize the importance of water as a critical building block of any "green economy," particularly as it is key to both food and energy issues.

"Unless you get the concerned societal sectors to actually take on water management, (changes are) not going to happen," he said.

GLOBAL FRAMEWORK LACKING

Still, Clausen is optimistic.

If crop losses during production and in terms of food waste can be reduced and other smart measures taken, "we can certainly feed 9 billion people with both food and energy," he said.

"But it does require that we improve our governance. In my view, the threat is not a water crisis but a crisis of good water governance," he said.

Building an effective structure to manage water resources may require construction of a global water treaty, some experts said.

Worldwide there are more than 250 transboundary river and lake basins shared by over 145 countries, yet few of them are governed by basin agreements and treaties. The world lacks a legal framework that could manage transboundary waters “in an equitable manner,” said Khaled M. AbuZeid, director of technical programmes at the Arab Water Council.

Only 27 countries, including six in Asia - have ratified or joined the **1997 U.N. Watercourses Convention** after 15 years. The convention would only come into force if 35 out of 194 U.N. countries ratify it.

“Nothing will be more effective for reaching a consensus on transboundary water management agreements than for the riparian states to sit together and exercise hydro-diplomacy” – essentially putting political differences behind themselves and putting mutual benefits ahead, AbuZeid said.

“Technically feasible, economically viable, environmentally sound, and socially acceptable solutions are possible,” he insisted.

But to make it happen, countries need the political will to balance national interests and benefits from shared water, he said.

“Use 'hydro-diplomacy' to avert future water conflict – experts”, 31/10/2012, online at:

<http://www.stumbleupon.com/su/15iNIN/www.trust.org/alertnet/news/use-hydro-diplomacy-to-avert-future-water-conflict-experts>

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❖ **The New “Battery of Asia?”**

Laos intends to build more than 70 dams along tributaries of the Mekong River. While there are rich profits to be made, is the cost too high?

International concerns about Lao’s plans to massively dam the Mekong River and its tributaries have again been brushed aside by the authorities in Vientiane who have announced new contracts worth about \$1.0 billion to build three dams.

The dams will feed a hydropower plant on two tributaries of the Se Kong River, just 100 kilometers from Laos’ southern border with Cambodia. The Se Kong flows into the Mekong from the Bolaven Plateau which then feeds into the Lower Mekong Delta.

However, no environmental impact assessments are known to have been done and the incident has further stoked tensions between Laos and conservation groups and regional countries already angered with Vientiane and its attitude towards the construction of the U.S. \$3.8 billion Xayaburi Dam to be built 150 kilometers downstream from the old royal capital city of Luang Prabang,

The Xe-Namnoy will be constructed by South Korean firm SK Engineering & Construction and will be aimed at producing 400 megawatts of electricity from water flowing from a height of 630 meters.

According to media reports, SK Construction expects to earn about U.S.\$30 million a year from fees while the South Korean state-run firm Korean Western Power will operate the dam until 2045. After that control will be handed over to Laos.

More importantly, conservationists now say that Laos intends to build more than 70 dams along tributaries of the Mekong River, significantly higher than previously thought.

Plans for a possible 11 dams have long been known, but International Rivers says that of the 70 dams, eight were currently under construction on the Xe Kaman and Xe Kong rivers, another 15 are intended for the Sekong River basin and a further seven on the Nam Ou River.

Laos is enjoying a purple patch. The upcoming Asia-Europe Meeting (ASEM) will be the most important diplomatic event in Laos since the communist takeover in 1975. It is also on the verge of joining the World Trade Organization (WTO). Massive rail, road and airport projects are also in the works.

And authorities are convinced the tiny landlocked country will get rich quick by turning itself into the “battery of Asia” using its steep mountains and caverns and the abundant rivers that flow through them to feed hydropower plants which will produce enough electricity to allow Laos to export it to its neighbors.

However, independent reports on food security have been consistent. One prepared by the [International Center for Environmental Management for the Mekong River Commission \(MRC\)](#) found that 11 dams could cut fish resources by more than 40 percent.

The impact of 70 dams on the 60 million people who depend upon the Mekong for their livelihoods is impossible to measure at this stage and getting straight answers out of any of the countries involved has proven almost impossible.

The Mekong River countries– Thailand, Cambodia, Laos and Vietnam– had agreed last December not to proceed with Xayaburi until a trans-boundary impact study was made among the communities living downstream.

The World Wildlife Fund and International Rivers want Xayaburi scrapped, labeling it an environmental disaster that will alter the river’s patterns and impact on fish catches. This came amid increasing concerns over Chinese dams built further upstream that have already been blamed for recent droughts along the Mekong with water shortages causing conflict within farming communities.

Pressure from the United States and Australia – both significant financial backers of the MRC – added to the momentum over Xayaburi. Japan offered to fund the impact study but to date it has not been initiated. Laos paid lip service to these concerns but proceeded with construction anyway.

This probably has more to do with Thailand. Thai company C.H. Karnchang has been contracted to construct the 1,206-megawatt Xayaburi dam over the next eight years while the Electricity Generating Authority of Thailand (EGAT) will buy 90 percent of the power on completion.

90 percent of the electricity generated at Xe-Namnoy will also be sold to Thailand while some reports suggest deals are being made to sell power to Cambodia.

This has changed the geopolitical makeup of the region with deals between Laos and Thailand upsetting traditional ties between Laos and Vietnam. Hanoi – with food security in the Mekong Delta as its primary concern – had been unusually vocal in its opposition to Xayaburi.

The controversy has also left its mark on the other side of the world. Finnish engineering company Pöyry Group produced a report claiming designs for Xayaburi had met dam construction standards as laid down by the MRC. Cambodia and Vietnam rejected the report a year ago.

Pöyry was then forced to issue [a public statement](#) denying allegations made in a complaint filed to the Finnish government by 15 civil society groups claiming Pöyry had engaged in unethical behavior in the Mekong region.

They said Pöyry’s actions had violated [OECD guidelines for Multination Enterprises](#), a global standard for corporate responsibility that all Finnish companies are obliged to adhere to.

Further, under the Laos government’s own laws regulating development projects it must publicly release all assessments made on such projects. Failure to release any reports on Xe-Namnoy would be a breach and should be a major concern for contractors [and bankers](#) prepared to sign off on the deal.

Only Laos seems unequivocal in its right to get rich quick by damming the Mekong. Few others with any modicum of common sense seem to agree.

“The New “Battery of Asia?””,01/11/2012, online at:

<http://www.stumbleupon.com/su/2DtT9B/thediplomat.com/2012/11/01/laos-is-damning-the-mekong-river/?all=true>

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❖ Asia–Pacific Analysis: Solving the water dilemma

The Pacific islands are surrounded by water, yet inhabitants face severe water shortages.

Crispin Maslog *highlights potential solutions.*

As we approach the end of the 'Water for Life' Decade in 2015, concerns over [water](#) availability in the Pacific island nations have taken an urgent turn.

In October last year, big headlines about two idyllic South Pacific island nations, Tokelau and Tuvalu, which are facing a water crisis, made a splash in the Asia–Pacific region. After six months without rainfall they were running out of fresh water fast and had declared a state of emergency.

The situation was so bad that the New Zealand Red Cross had to come to the rescue, "mobilising 2,000 collapsible water containers, hand sanitisers, tarpaulins used to capture rain [and] two emergency desalination units". Schools were closed as residents conserved what little water they had and prayed for rain. [1]

It seems ironic that the 14 Pacific island nations are surrounded by a limitless body of water and yet the nine million people inhabiting them are facing water shortages.

A unique challenge

Only six months ago (April, 2012), The UN Environment Programme (UNEP) highlighted the unique freshwater challenge facing these island nations. UNEP said that the almost total reliance on rain-fed [agriculture](#) on these islands had put their economies and livelihoods at risk.

It reported that "access to improved drinking water sources in Fiji and Papua New Guinea (at 40 per cent and 47 per cent, respectively) is about half the global average". [2]

While water scarcity in these nations is more intense, the problem applies worldwide. An ever-increasing global population and rapid economic development in emerging economies are translating to increased demand for food and energy.

Water is a vital component in the production of both, and withdrawals from the world's rivers, lakes and aquifers now exceed the rate at which nature can replenish them. For example, rainwater used in crop irrigation is taken from the same supply used for drinking and household needs.

Agricultural pollution from fertilisers and pesticides further reduces the amount of freshwater fit for human consumption. And [climate change](#) promises unpredictable changes in freshwater availability.

For residents of islands with no surface water or substantial groundwater reserves, unreliable rainfall is the only natural source of water — leaving the islands in a vulnerable position.

Low-lying islands are the most vulnerable. Six of these — Kiribati, the Republic of the Marshall Islands, Nauru, Niue, Tonga and Tuvalu — have no substantial surface water resources. Only Niue and Tonga have groundwater resources.

On the other hand, there is intense rainfall and runoff in the large volcanic islands, like Fiji and Papua New Guinea, which lead to flooding on the coastal plains. But the excess water there cannot be transferred to the water-starved smaller islands spread across the Pacific, because it is impractical and costly to do so.

The way forward

How do you solve this dilemma? Unfortunately, there is no proverbial silver bullet — but multiple silver bullets might work.

One part of the solution is better water allocation. This requires wiser decisions about who gets water, how much and when. In an ideal world, such decisions would balance economic efficiency, social equity and, of course, environmental sustainability.

But ours is not an ideal world. Water withdrawals are often governed not by these considerations, but by immediate human needs. And when water becomes scarce, environmental sustainability is the first consideration to go — long-term benefits sacrificed for short-term needs.

The water resources in the Pacific island nations are currently managed on an island-by-island basis. Long-term and coherent policy frameworks, as well as integrated management approaches, need to be developed.

This means that island nations must think "ridge to reefs" — managing water from the highlands to the lowlands — when drafting and implementing conservation plans, protecting watersheds, greening islands and growing mangroves in coastal areas. This will help conserve the environment and limit water loss.

Another part of the solution is to invite investors for surface water projects, and develop water conservation and recycling on a nationwide scale — following the example of the Caribbean's Virgin Islands to put in place rainwater catchment laws and infrastructure. Rainwater harvesting provides an independent water supply and will supplement the main supply, which in the big islands comes from groundwater and small lakes and rivers.

These nations, now more than ever, should also explore how new technologies and policy solutions can help. Desalination is an expensive option. It has worked in the Middle East but may not be feasible on these islands on the same scale until a low-budget version becomes widely available. Some countries, like Singapore, are now working on this technology. [3]

Better water management, an integrated environmental conservation programme, and a serious search for small-scale desalination technology using solar energy, might be the multiple silver bullets the islands need to solve this dilemma.

“Asia–Pacific Analysis: Solving the water dilemma”, 29/10/2012, online at:
http://www.stumbleupon.com/su/11Q4QW/www.scidev.net/en/south-east-asia/opinions/asia-pacific-analysis-solving-the-water-dilemma.html?utm_source=twitter.com&utm_medium=worldresources&utm_campaign=socialmedia

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❖ **Kalabagh Dam is against KP interests: CM**

NEWSHERA: Khyber Pakhtunkhwa Chief Minister Ameer Haider Hoti on Saturday said the building of Kalabagh Dam was against the interests of Khyber Pakhtunkhwa (KP).

“We will not accept the construction of the controversial dam at any cost. It will harm the Pakhtuns,” he remarked while addressing a public gathering in Daag Ismailkhel village in Nowshera district where former district nazim and Pakistan People’s Party (PPP) leader Daud Khattak announced joining the Awami National Party (ANP).

Provincial Minister for Information Mian Iftikhar Hussain, ANP Khyber Pakhtunkhwa President Senator Afrasiab Khattak, Secretary Information Arbab Tahir Khalil, ANP Nowshera president Ahrar Khattak and others were present on the occasion. “We neither accepted the Kalabagh Dam in the past nor will agree to its construction in the future,” he said in categorical terms.

The chief minister said Diamer-Bhasha and Munda dams should be built as there was consensus on their construction. “We will resist the move through political and constitutional struggle if any decision was imposed on us. Three provinces have also opposed the Kalabagh Dam and any move to pave way for its construction will harm the unity and cohesion,” he cautioned.

Pledging to respect the judiciary, he also urged the courts not to touch controversial issues.

He said the ANP-led government had honoured the pledges made to the people and had undertaken record uplift projects in the province. “We gave identity to the Pakhtuns,” he opined.

The chief minister said his party won rights for the Pakhtuns under the 18th Amendment. He said efforts were being made to explore gas and oil reserves in the province. “The time is not far off when the Pakhtuns will not go abroad for jobs,” he hoped.

In his address, Senator Afrasiab Khattak said the ANP would achieve victory in the next general election and form the government. He said his party had started introducing reforms about the future of the Pakhtuns.

About the next general election in Pakistan, he asked the people to vote for honest people who could take better decisions about their future and restore peace in the country. “If the nation made any wrong decision, it will change the political scenario in the region,” he warned.

Speaking on the occasion, Mian Iftikhar Hussain said he believed in serving the masses irrespective of their political affiliations. He said that the militants were now targeting shrines, mosques and other public places in desperation.

The minister said the ANP was fighting for the survival of the Pakhtuns and the acts of terror could not dampen their enthusiasm.

“Kalabagh Dam is against KP interests: CM”, 04/11/2012, online at: <http://www.thenews.com.pk/Todays-News-7-140928-Kalabagh-Dam-is-against-KP-interests-CM>

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❖ Construct Mambilla, Katsina-Ala Hydropower Dams To Check Flood

The Nigeria Society of Engineers (NSE) on Friday urged government to hasten the design and construction of Mambilla and Katsina-Ala hydropower dams as a measure to control floods in the areas.

Alhaji Mustapha Shehu, President of NSE, made the position of the society known in Asaba, while addressing newsmen.

Shehu said that the objective of the briefing was to put forward the position of the society on the recent flooding in the country and offer lasting solution to the phenomenon.

He said hastening the design and construction of the 2,600MW Mambilla and the 60MW Katsina-Ala hydropower dams would also produce electricity and provide flood control on River Benue from Cameroon.

Shehu, represented by the Vice-President of NSE, Chief Otis Anyeaji, advised that dams already studied should be reviewed, relocated and implemented downstream of Lokoja and upstream or downstream of Onitsha in Anambra.

He recommended that the Federal Government should pursue the installation of four new hydro-turbines in the available pits in Kainji as the machines in Kainji dam had outlived their design lives.

Shehu said that since the civil works had already been completed, the installation would lead to more economic flood control on the River Niger.

The NSE president further recommended that government should hasten the dredging of River Niger and River Benue, the Kainji Lake reservoir which had never been dredged since 1964 as well as Kainji and Jebba dams.

He stressed that the dams should be dredged to design levels and thereafter be dredged every five years, while the dredged out-stands from the dams and rivers should be evacuated from the vicinity to safe locations.

He also said an appropriate river bank protection should be immediately developed that would also result to the development of other economic activities, such as fishing and tourism.

He further called for adequate resources to be committed to the maintenance of dams in the country so as to preserve a safe operational state of the nation's dam so as to avoid future failure of dams.

He also called for a joint conference on harmonising and sharing hydrological data and warning system for appropriate emergency response with all the relevant agencies and Cameroon.

Shehu said the current flooding of communities on the banks of River Niger and River Benue had shown how vulnerable the country was to the impact of natural disasters.

He said the severity of the flood was as a result of the panic release of large amounts of water from Lagdo dam, which caused an unusual rise in the water level along the course of River Benue.

He said most of the Benue and Niger courses lacked curtailment structures and hence unprotected and resulted to the water becoming uncontrollable and over-running the banks.

Shehu said the lack of proper information sharing, such as hydrological and operational data among dam agencies in Nigeria and Cameroon, made it impossible to predict risks and develop mitigation measures.

“Construct Mambilla, Katsina-Ala Hydropower Dams To Check Flood – NSE”, 03/11/2012,online at:
http://leadership.ng/nga/articles/39121/2012/11/03/construct_mambilla_katsinaala_hydropower_dams_check_flood_nse.html

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❖ Mekong hydropower project gets a boost

Steps are proceeding for the \$3.8 billion Xayaburi dam despite assurances from Laos that the project was on hold pending studies into environmental effects on the Mekong River

VIENTIANE, Laos, Nov. 1 (UPI) -- Steps are proceeding for the controversial \$3.8 billion Xayaburi dam in Laos despite assurances that the hydropower project was on hold pending further studies into possible environmental effects on the Mekong River.

Austrian technology company Andritz said Thai construction company CH. Karnchang had placed an order worth \$324 million-\$388 million for electromechanical equipment for the Xayaburi, following an international tendering process.

Andritz said start-up is scheduled for the end of 2019.

In collaboration with European experts, the Lao government has generally approved the project on the basis of accompanying measures addressing ecological and social aspects," Andritz said in a statement.

A ruling last December by the Mekong River Commission -- comprised of Laos, Thailand, Vietnam and Cambodia -- called for the project to be delayed until a comprehensive environmental study can properly identify potential risks.

The longest river in Southeast Asia, the Mekong stretches 3,000 miles to the South China Sea and is home to more than 700 species of freshwater fish, including the endangered Mekong catfish. The Lower Mekong supports nearly 60 million people who depend on it for their livelihood, says the World Wildlife Fund.

About 95 percent of the dam's 1,260-megawatt capacity is intended for export to Thailand, which is financing the project. Thailand would operate the dam, turning it over to Laos after 30 years.

Ame Trandem, Southeast Asia program director for California water rights group International Rivers, says Laos has no right to build the 1,285-megawatt dam because Cambodia and Vietnam haven't agreed to the project.

"Right now, it is impossible to say it is going to benefit the Lao people ... for past projects, there is no evidence that the revenue has benefited the community. Andritz should be reconsidering its involvement in this," Trandem was quoted as saying by The Phnom Penh Post.

Furthermore, conservationists say that Laos wants to build more than 70 dams along the Mekong's tributaries, much higher than the 11 dams that have long been known about, says a report in The Diplomat magazine.

International Rivers says that of those 70 dams, eight are under construction on the Xe Kaman and Xe Kong rivers and an additional 15 are intended for the Sekong River basin and a further seven on the Nam Ou River.

Lao Deputy Minister of Energy and Mines Viraphonh Viravong last week affirmed the country's commitment to hydropower.

"There is no question of (Laos) not developing its hydropower potential," he said in a Post report.

"Mekong hydropower project gets a boost", 01/11/2012, online at: http://www.upi.com/Business_News/Energy-Resources/2012/11/01/Mekong-hydropower-project-gets-a-boost/UPI-75911351796230/

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❖ **Damming the Mekong river**

Laos admits work is going ahead on a controversial dam

THE Mekong river, snaking its way through the heart of South-East Asia, has long sustained the world's biggest and most productive inland fishery, supplying protein for around 65m mainly poor people from four riparian countries, Laos, Thailand, Cambodia and Vietnam. But scientists warn that this ecosystem is gravely threatened by the Lao government's rush to exploit its water resources, egged on by Thai, Chinese and European energy companies.



The decision by Laos to push ahead with the giant Xayaburi dam makes it the first of what could prove to be a cascade of 11 proposed dams on the lower Mekong. Because the decision fails to take account of the consequences for downstream countries, it has raised tensions with neighbours. Having long pretended otherwise, the Lao government recently asserted that construction was forging ahead, and indeed was on schedule. That prompted a warning from the president of Vietnam, Truong

Tan Sang, that “tensions over water resources are not only threatening economic growth in many countries, but also presenting a source of conflict”.

Cambodia and Vietnam have jointly called upon Laos to observe an agreement in December 2011 by the Mekong River Commission (MRC) to wait for further scientific study about the impacts of dams on the lower Mekong (dams already exist much higher up, in China, but their downstream impacts are limited). The MRC, made up of the four riparian states, is supposed to operate within a framework of mutual co-operation and consultation. But with a consortium of Thai banks backing Ch. Karnchang, the Thai construction company behind the dam, there is in effect an alliance between Thailand and Laos, dividing the commission down the middle.

With the MRC in disarray, some hope that an Asia-Europe summit in the Lao capital, Vientiane, on November 5th-6th will provide a chance for governments opposed to the Xayaburi dam to put pressure on the host nation. Many marvels of the Mekong face being wiped out, including the Mekong giant catfish and the Irrawaddy dolphin, as well as the spectacular Khone waterfall. Scientists say the stakes could not be higher. Philip Hirsch at the University of Sydney predicts that the loss of the fish catch for millions of Asia’s poorest people will prove larger than the entire freshwater catch of Europe and West Africa combined.

The United States and Finland, the largest donor to the MRC, are among nations urging Laos to wait for more scientific data on the likely transboundary impacts. The Lao energy ministry has turned for justification to the work of international energy firms that include Colenco, a Swiss consultancy, Poyry, a Finno-Swiss power company, and Team Consultants of Thailand. But Jian-hua Meng of the WWF, a conservation group, argues that the standard of work done by Colenco for the Xayaburi proposal would be “highly unlikely” to be acceptable back in Switzerland. Meanwhile the Finnish parent company of Poyry has been blacklisted for corruption by the World Bank, and NGOs have urged Finland to investigate the Swiss arm for alleged violation of OECD guidelines in dealing with the Lao government.

“Damming the Mekong river”, 03/11/2012, online at: <http://www.economist.com/news/asia/21565676-laos-admits-work-going-ahead-controversial-dam-river-elegy>

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❖ Scrutiny over Finnish firm's ties to Xayaburi

After a number of complaints over a Finnish company Pöyry's involvement in the Xayaburi dam project, the Finnish government seems to be turning a serious attention on the matter.

The Finnish government will investigate multinational consulting and engineering firm Pöyry over its involvement in Laos's Xayaburi dam project, writes the Phnom Penh Post.

The newspaper revealed a letter from Finland's Ministry of Employment and the Economy yesterday. The letter, dated October 16, states that a complaint filed by 15 NGOs in June "requires further consideration and . . . will be examined".

The complaint alleges the Pöyry group, based in Finland, contravened that nation's responsible business standards – and wasted public funds – by undertaking consulting work that supported the proposed hydro-electric dam project on the Mekong River, despite it being opposed by Cambodia and Vietnam.

"According to the [complaint] . . . Pöyry should have contacted the Mekong Commission prior to carrying out the actual work to establish the commitments made by Lao PDR under the Mekong Agreement of 1995," the letter states.

Under that agreement, Laos, Thailand, Cambodia and Vietnam must agree to hydro projects on the Lower Mekong.

Cambodia has been a vocal opponent of the Xayaburi dam because of its potential and unaddressed impacts on the Kingdom's fishing and agricultural communities.

Pöyry has been criticised for concluding in a report commissioned by Laos last year that Xayaburi was "principally in compliance" with Mekong River Commission requirements.

Environmental groups say Laos has used the report to justify proceeding with the project, despite no agreement from Cambodia or Vietnam.

Otto Bruun, campaign manager at Finland's Siemenpuu Foundation, one of the complainants, said Poyry had encouraged movement on Xayaburi, despite concerns that the project's impacts had not been fully studied.

"This is a part of a larger pattern of unethical behaviour in Pöyry's overseas operations," Bruun said.

Finnish Labour Minister Lauri Ihalainen, whose name is on the letter, could not be reached for comment. Pöyry did not immediately respond to emailed questions from the Post.

“Scrutiny over Finnish firm’s ties to Xayaburi”, 01/11/2012, online at:
http://www.scandasia.com/viewNews.php?coun_code=kh&news_id=11416

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❖ **Mega-dams in China's earthquake zones could have “disastrous consequences”**

The row over the safety of large dam cascades in earthquake-prone south-west China is heating up following revelations that 48% lie in zones of high seismic hazard.

The Chinese government has approved a number of large dam cascades in the south-west of China. But not everyone agrees that the plans are safe.

Earlier this year, Canadian NGO Probe International published a report called “Earthquake Hazards and Large Dams in Western China”, by John Jackson, a pseudonym. Probe International describes the author as a “geologist with a detailed knowledge of western China who must remain anonymous”. He reportedly has four decades experience studying earthquakes and seismic faults.

For the report, Jackson looked at 130 sites in western China where dams have been built, are under construction or proposed, cross-referencing dam locations with maps of seismic hazard. The rivers affected include the Yarlung Zangbo, Parlung Zangbo, Nu River, Lancang, Yalong, Dadu, Min and Yellow rivers.

Read also: Death of Three Gorges Dam architect marks end of an era

He found that 48.2% of the dams were in zones of high to very high seismic hazard, while 50.4% were in zones of moderate seismic hazard. Only 1.4% were located in zones of low seismic hazard. The report argues that the rapid rate of dam construction in areas of high seismic hazard in western China could have disastrous consequences for both the economy and the people.

Since its publication, the report has drawn widespread academic and industry interest in China. In August, Zhang Boting, deputy secretary of the China Society for Hydropower Engineering, issued a written response in which he stressed that safety precautions are taken when dams are built in areas at risk of earthquakes. He added that reservoirs can trigger small earthquakes, releasing energy that might otherwise build up and cause large quakes. In other words, dams actually reduce earthquake risks.

Jackson and Zhang's positions couldn't be further apart.

Did a reservoir cause the Wenchuan Earthquake?

What the critics worry about is reservoir-induced seismicity (RIS): the idea that the pressure created by the weight of the reservoir water, and the infiltration of water into fissures can cause rockfalls, landslides and tremors, and even set off more destructive earthquakes. This view has been fiercely debated among scientists both inside and outside China over the last four years, since a link was drawn between the magnitude-eight Wenchuan earthquake in Sichuan in 2008 and the Zipingpu reservoir.

The large Zipingpu reservoir lies on China's Min River. Between September 2005 and the moment the earthquake struck in 2008, it was filled three times and emptied twice. "A Human Trigger for the Great Quake of Sichuan" was how one article published in US magazine Science in 2009 described the filling of the Zipingpu Reservoir.

Some experts have rejected this analysis, pointing out that water from the reservoir could not have penetrated to the source of the Wenchuan Earthquake, which was 14 kilometres deep, and that RIS would not be able to trigger an earthquake of such magnitude. The most powerful RIS quake ever recorded measured 6.3 on the Richter scale.

In his dismissal of Jackson's research, Zhang quoted Ji Shaocheng, a professor at Polytechnique Montreal's Department of Civil, Geological and Mining Engineering, on the link between rock strata and earthquakes: "Strong rock means strong quakes, weak rock means weak quakes, and soft rock means no quakes". Zhang added that the intrusion of water under high pressure can weaken strong rock and make weak rock soft, so filling a reservoir is very likely to result in weaker earthquakes.

But those who blame Zipingpu for the Wenchuan disaster have their own evidence. In December 2008, the journal Seismology and Geology published a paper by researchers from the China Earthquake Administration's Institute of Geology, Japan's National Institute of Advanced Industrial

Science and Technology and the Sichuan Earthquake Bureau. That study drew the preliminary conclusion that the filling of the Zipingpu Reservoir did have a clear effect on the Longmenshan central and range-front faults. The paper described the possibility that this had caused the 8.0 magnitude earthquake to occur sooner than it would have otherwise as a “scientific question which should not be avoided and is worth further research.”

In April 2009, Hu Xianming, chief engineer at the Sichuan Earthquake Bureau added to this evidence. He found, based on a study of 262 minor tremors in the Zipingpu Reservoir area between August 2004 and December 2007, that the Wenchuan-Shuimo tremor cluster caused by the reservoir and the subsequent 8.0 magnitude earthquake had the same origin.

Then there is the risk of natural earthquakes – as opposed to those triggered by the reservoirs – hitting the proposed dam cascades on the Jinsha, Lancang, Yalong and Nu rivers.

China’s south-west lies in the Himalayan earthquake region, the world’s most active tectonic zone. According to John Jackson, large dams built in such high-risk areas will be at threat from naturally occurring earthquakes, and going ahead with construction is an extraordinarily risky experiment.

Zhang Boting, meanwhile, says that as long as dams are kept away from the faults themselves, the risks are negligible: “There’s nothing you can do about fault lines, and that’s why dams are always built elsewhere. To date, no dam has failed due to an earthquake anywhere in the world.” He believes that as long as the distribution of earthquakes is known and dams are not built directly over faults, planners can guarantee safety through earthquake-resistant construction.

But seismologist Ma Wentao points out that the maps of earthquake risk currently used by engineers are based on historical information about earthquakes and seismic activity. Due to inaccuracies in earthquake monitoring and a lack of monitoring of active faults, along with a scarcity of historical records in many regions, it is very hard to accurately map faults and estimate earthquake risk, Ma says.

Seismic research "only just getting started"

Research into RIS in China only started in 1963. In 2004, the China Earthquake Administration set up China's first network of digital seismic monitoring stations designed to monitor RIS across a number of reservoirs in the Wu River basin. The Earthquake Monitoring Regulations, implemented the same year, specifically required that all dams capable of inducing earthquakes of 5.0 magnitude or over – in other words dams more than 100 metres high, or reservoirs of 500 million cubic metres in volume – should have dedicated seismic monitoring networks. In 2007, methodology for RIS risk evaluation was issued by the China Earthquake Standards Technology Commission, the first of its kind.

An expert at the Institute of Geology, who did not wish to be named, says that research on RIS in China is “only just getting started” and mainly focuses on areas of low seismic activity; there have been no in-depth studies in medium or high risk areas. Another geologist familiar with the seismology field in China says that RIS in western China only started to be taken seriously after the Wenchuan Earthquake.

Lei Xinglin, deputy director of the Tectonic Physics Laboratory at the Institute of Geology has written that, in the right circumstances, a reservoir may directly trigger a major quake, and “the risk is greater with big dams of over 100 metres in height.”

Jackson urges the Chinese government to commission third-party research into the risks of building dams in earthquake-prone regions and to consider possible changes to the current plans for cascade development. Otherwise, he says, “in the up to 150-year life span of these large dams, China will be plagued by the earthquake risks brought by this highly dangerous method of developing energy.

“And then, the only solution may be to stop using the dams, with China paying a huge economic price.”

“Mega-dams in China's earthquake zones could have “disastrous consequences””, 29/10/2012, online at: <http://www.chinadialogue.net/books/5261/en>

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❖ Improving China's Yellow River: Why Business And Government Need To Work Together

The Yellow River has played a critical role in the growth and prosperity of Chinese civilization for thousands of years. But today, the Yellow and the people who depend on it face severe challenges. Stress of limited water resources, pollution, and flooding pose significant risks to communities and businesses that rely on the river. As these stresses grow, China's water managers and users face the daunting challenge of implementing policies that balance economy, ecology, and community.

At the Yellow River Commission's annual Forum in September, water experts from government, research institutes, the private sector, and NGOs gathered to discuss problems facing the Yellow and potential solutions for better water management. One sentiment that came through loud and clear is that the only way to improve the Yellow is for government and business to collaborate—not clash.

The Role of Government: Set a Clear Agenda

Yellow River Water Risk Atlas

The Yellow River's combination of growing water stress and economic development inspired WRI's Aqueduct team to choose it as the prototype basin for the Aqueduct water risk mapping approach. High-resolution Yellow River basin water risk maps based on the best available local data can be accessed from the Basin Maps section of the [Aqueduct Water Risk Atlas](#).

At the Forum, it was clear that the relationship between Chinese companies and government is evolving when it comes to water issues. The government is dealing with the complex and pressing challenge of water resource management by setting ambitious goals, adopting a set of “three red lines” in its 2011 No.1 Policy document for achieving water security. These red lines include:

1. **Controlling overuse of water resources development and utilization**– annual total volume of water use in China will be limited to 700 billion cubic meters by 2030.
2. **Improving the efficiency of water use**– new standards will guarantee that the most economic and agricultural value possible is obtained from water use.

3. **Controlling pollutants discharged into water function zones**— new regulations will limit the total volume of major pollutants discharged into rivers and lakes.

Significant changes will need to take place with the support and enforcement of the Chinese government in order to meet these three red lines. A strengthened legal system, [improved water use monitoring](#), and more abundant data are all critical to meeting the country’s water security goals.

The Role of Business: Thrive through Innovation

This year’s [Yellow River Forum](#) also saw unprecedented participation by companies, for which [water risk](#) and water resource management is undoubtedly emerging as a critical concern. During the Forum, several case studies highlighted ways that companies have successfully improved their water management and the benefits they have seen as a result. Examples of innovative water management include:

1. **The Integrated Chishui River Basin Management:** The [Chishui River](#)—the primary water source for Chinese beverage companies including Moutai, Langjiu, and others—runs 500 kilometers along the border of Guizhou and Sichuan provinces, covering an area of 20,000 square kilometers. In 2004, Guizhou Environmental Protection Bureau, partnering with the World Wildlife Fund, launched an [Integrated Chishui River Basin Management effort](#). The initiative successfully engaged relevant stakeholders from government and the private sector to participate in protecting the Chishui River. For example, the Moutai Group set up a “Green Fund,” investing several billion RMB to build wastewater treatment systems to mitigate pollution within the Chishui River basin.
2. **Pollutant Reduction Opportunities Analysis Tool:** The Yellow and other rivers in China suffer from [severe water pollution](#). In fact, only about 60 percent of the country’s rivers [meet China’s minimum water quality requirements](#). WRI, alongside partners including Tsinghua University and the ADM Capital Foundation, has developed an analytical tool called the Pollutant Reduction Opportunities Analysis (PROA) in order to help achieve [strict water pollutant discharge targets](#). PROA is a designed to help Chinese decision-makers select the most cost-efficient options for reducing ammonia, nitrogen, and other discharges into their waterways.

Their Common Need: Better Information

The Chinese government and businesses have taken encouraging steps towards improving the Yellow River, but there's still more work to do. Governments, companies, and communities in the Yellow River basin and other threatened basins around the world have a common need for more and better data. China's government needs data on where water is being used, how it's being used, and what condition it's in in order to meet its three water security red lines. To justify investments in smarter water management strategies, businesses need more robust information about how water risks can impact their bottom lines and the benefits of intervention.

Addressing this tremendous appetite for better water data is the core objective of WRI's [Aqueduct project on measuring and mapping water risk](#). In January of 2013, Aqueduct will release a new version of its water risk mapping tool, which will bring together the best available data on water risk from around the world. By providing better and more accessible data on how water risk varies around the world, Aqueduct will empower governments and companies alike to make better informed water management decisions in the Yellow River and beyond.

"Improving China's Yellow River: Why Business And Government Need To Work Together", 30/10/2012, online at: http://insights.wri.org/aqueduct/2012/10/improving-chinas-yellow-river-why-business-and-government-need-work-together?utm_campaign=socialmedia

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❖ Support the Murum Dam blockade

The Penans have been blockading against the construction of the 944MW Murum Dam since Sept 26, 2012. More than 1,600 of them from eight Penan villages (including one Kenyah Badeng longhouse) are affected by the construction of the dam which is now about 70% completed.

Sarawak Energy Berhad (SEB), contractors and private companies involved in the project have been forced to use ferryboats or tugboats through the Bakun Dam reservoir to transport goods, machines, building materials etc. to the Murum Dam site.

This is a new and different factor compared to the campaign against the Bakun dam in previous years. While we had built a campaign against the Bakun dam in the past, there was no action by the indigenous peoples affected on a scale comparable to the Murum dam blockade.

The Penan communities affected by the Murum dam have shown a commitment to defend their rights and Malaysians must give them full solidarity and support their struggle in all possible ways.

The Murum Penan communities are among the poorest in Malaysia. They have traditionally been hunter-gatherers but shifted to a more settled, agriculture-based way of life approximately 40 years ago.

They rely on subsistence-based farming and hunting, fishing and gathering of forest products and the occasional sale of in-season fruit. Their livelihood has been adversely affected by low farm productivity and rapidly declining forest resources because of plantation and dam building projects.

Bakun Dam fiasco

The Sarawak state government with federal government support, has been carrying out highly irresponsible economic projects to the detriment of the environment, the indigenous peoples' lives and the long-term interest of the Sarawak and Malaysian tax payers.

The 2400MW Bakun dam project has already proven to be a major fiasco not only in terms of insufficient demand for its electricity generated but a disaster for the 10,000 indigenous peoples who were displaced from their traditional ancestral land to the slum conditions of the resettlement scheme

at Sg Asap. Those who cherish their heritage and human rights would describe their fate as ethnocide if they have seen for themselves the conditions at Sg Asap.

The total energy demand in the whole of Sarawak is only 1000MW so the government has been trying to attract the biggest energy guzzlers such as aluminium smelters which happen to be the most toxic as well. Another investment is a coal-fired power station to take up the excess energy. These environmentally polluting industries are then touted as part of the Sarawak Corridor of Renewable Energy (Score).

In fact, hydro-electric power dams and toxic aluminium smelters are all industries rejected by the developed countries. None of these countries, especially Australia, wants to have toxic industries in their own backyard. But the Sarawak State Government is willing to have these mega projects for rather dubious purposes.

The desperate chase for investments to take up the excess Bakun energy after the dam has been built shows a total lack of economic feasibility studies which should have been done before the dam was built. Is it surprising therefore that many Score contracts have been given to companies owned by members of Chief Minister Taib's family?

As if this Bakun dam fiasco was not enough, the Sarawak state government intends to build 12 mega dams in all which will strip the state of its rainforest and displace even more indigenous communities. The Murum dam is the first of these 12 dams.

The dam construction is being supervised by China Three Gorges Corporation and built by Chinese dam builder Sinohydro. After their massive investments in the Three Gorges project, you can be sure these Chinese companies are hungry for investments in other hydropower projects in Sarawak.

With such a large development scheme, international best practice calls for a "strategic environmental and social assessment." Such an assessment looks at the overall impact that a large development scheme can have as was done for the proposed "Greater Mekong Sub-region" energy network by the Asian Development Bank. No such strategic economic, environmental and social assessment has been conducted for Score.

If the Bakun dam project is to be any guide, the Sarawak government's energy demand forecasts appear to be based more on nothing more than wishful thinking rather than detailed feasibility

studies. Malaysian taxpayers, be warned that all these mega projects will entail an onerous debt burden on the Sarawak and Malaysian public. You can be sure that there will be electricity tariff hikes after the 13th general elections.

There are many energy alternatives for Sarawak beyond large hydroelectric power projects such as small-scale hydropower, solar and other forms of renewable energy, energy efficiency measures, more efficiently run and managed power plants, among others.

Above all, such environmentally friendly power projects respects the indigenous peoples' lifestyles while efforts can put into helping them with better transport systems, marketing channels and other forms of development they may require.

Dam violates international standards

The Murum dam project is in violation of the international standards on indigenous rights as guaranteed in the UN Declaration on the Rights of Indigenous Peoples (UNDRIP), of which Malaysia is a signatory.

The Murum dam is nearing completion but the resettlement report is still being withheld. As for the Bakun dam, all studies related to the projects have not been transparent. The affected Penan and Kenyah have stated that they have never been asked for consent as demanded by the UNDRIP.

The project developer, Sarawak's state-owned electricity generating company, Sarawak Energy Berhad (SEB) has not provided indigenous communities with an opportunity to grant or withhold their "free, prior and informed consent" for the project as required by UNDRIP.

Even in cases where there was agreement, however, it was neither FREE from coercion; the resettlement plan was not made known to the indigenous peoples PRIOR to the start of the construction, and they were not INFORMED by access to information about the project's impacts.

The social and environmental impact assessment (SEIA) for the Murum project is seriously flawed. International standards – including the Equator Principles and the IFC Performance Standards- universally require that the SEIA must be completed during the design phase, before the government approves the project and before construction begins.

This was not the case with the Murum Dam Project. The SEIA process did not even begin until after construction on the project was already underway. The Sarawak government has not yet disclosed the Murum Dam Project's SEIA to the public or to the affected communities.

Indigenous peoples' demands

Without transparent access to the crucial information at the centre of this project, the affected communities were placed in an unfair situation when the Sarawak government asked them to negotiate a resettlement package. The monthly allowance to be paid after resettlement falls below the poverty level and ends after four years.

However, the state government turned down the other demands of the Penan, which included compensation of RM500,000 for each family for the loss of their customary land. Their other demands were 30,000 hectares of land for every village, 25 hectares for every farming family, education for their children, a community development fund and rights to their land that is not submerged by the dam waters.

The indigenous communities affected by the Murum Dam project have already issued a memorandum describing how the government could still remedy the situation.

“Support the Murum Dam blockade”, 29/10/2012, online at:

<http://www.freemalaysiatoday.com/category/opinion/2012/10/31/support-the-murum-dam-blockade/>

❖ Water Wars Over Mekong Dams an Unlikely Future

Cooperation, not conflict, is the real story of hydropower development in the Mekong. Recent reports in the regional media speak of rising tensions over dams on the Mekong mainstream. One official went so far as to suggest the possibility of “water wars”. A look at the record of cooperation over water in the Mekong indicates this is highly unlikely to happen. History shows that when it comes to water, cooperation is the norm among the Mekong countries and far outweighs incidents of conflict.

The 2nd Mekong Forum on Water, Food and Energy in Hanoi (13-14 November) is one more example of that cooperation. Senior government officials from the four countries will sit down with representatives from the hydropower sector, researchers, NGOs, M-Power research fellows, and experts in a range of scientific disciplines to discuss the connections between water, food and energy, and how those relationships shape development, economic growth, livelihoods and environmental sustainability.

“Disagreements over dams don’t have to end in conflict,” says Kim Geheb, Mekong Basin Leader for the Challenge Program on Water and Food. “Most discussions about dams tend to degenerate into a contest of pro and anti facts. That’s not what this forum is about,” says Geheb. “This is a space for open dialog based on the premise that all issues can be resolved in a fair and transparent manner.”

In light of recent media coverage, this may sound like a utopian ideal. The arguments for and against dams are well known. More dams would bring Mekong countries much needed income by generating power for domestic use and sale to neighboring countries and would spur agricultural growth through irrigation and help mitigate floods and droughts. On the other side, dams radically alter the environment and can lead to upheaval in traditional water-related livelihoods. A particular concern in the Mekong is the loss of local fish stocks, which are a major source of income and food for millions of people, many of whom live below the poverty line.

“These are the kinds of pressures that increase the potential for conflict but don’t necessarily lead to conflict” says Mark Giordano, one of the principal researchers involved in the Basins At Risk project. Basins At Risk was initiated in 2002 by researchers at Oregon State University. One of the main project outputs was the International Water Events Database, a library of documented cases of conflict or cooperation in 144 river basins worldwide. Collaboration carried over to the International

Water Management Institute when Giordano moved from Oregon State to IWMI where he is the research Theme Leader for Water and Society.

“We now share a database of the largest treaty collection in the world,” says Giordano.

Since 1952, there have been 166 water related events recorded in the Mekong River Basin. Each event is rated on a scale from -7 (a formal declaration of war) to +7 (voluntary unification into one nation).

Mekong countries have an impressive record of cooperative action on water related issues. In all those years, which include the years of the American War, there have been only 15 instances of events rated -1 or -2 (mild/strong verbal expressions at an official level). Eighty events rate from +2 to +6 on the scale. One of the +6 events was the 1995 Agreement on the Cooperation for the Sustainable Development of the Mekong River Basin, which resulted in the creation of the Mekong River Commission.

The Hydropower Forum in Hanoi will focus on the connections between food, water and energy and how those relationships shape development, economic growth, livelihoods and environmental sustainability.

The Forum is convened by the CGIAR Challenge Program on Water and Food and is co-hosted by the

Institute for Water Resources Planning; the Ministry of Agriculture and Rural Development, Vietnam; and the International Water Management Institute. The Challenge Program is a partner of the CGIAR Research Program on Water, Land and Ecosystems. The event is funded through a grant from the Australian Government through AusAID.

“Water Wars Over Mekong Dams an Unlikely Future”, 01/11/2012, online at:

<http://mekong.waterandfood.org/archives/1240>

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❖ **Cambodia approves Lower Sesan 2 hydroelectric dam**

Cambodia's government has approved a controversial hydroelectric dam on a tributary of the Mekong River.

The joint venture involves Cambodian, Chinese and Vietnamese investment of \$781m (£488m) and is due to be completed within five years.

The project in northern Stung Treng province is known as Lower Sesan 2.

Environmental campaigners say the dam will damage the river's biodiversity and devastate the livelihoods and homes of thousands of people.

A government statement said the approval came after eight years of study into the possible environmental and social consequences.

It said Prime Minister Hun Sen had ordered new homes to be built for an unspecified number of families who would be resettled for the project.

Activist Meach Mean, of the 3S Rivers Protection Network (3SPN), estimated that more than 50,000 people would be affected by the dam.

He called on the government to organise a public forum to discuss concerns before going ahead.

"We are surprised by the approval," he told AFP news agency.

"We don't know clearly about the process to build the project. We are really concerned about the impact on the people's livelihoods, water, and ecology system."

In September, a report by UN human rights envoy Surya Subedi also raised concerns about the dam, saying communities did not believe they had been adequately consulted about the project.

Damming the Mekong River has causes widespread controversy in South East Asia.

Although hydroelectric dams allow countries to generate vast amounts of electricity, they also threaten massive changes to the ecosystem across the Mekong basin.

In 1995, Cambodia, Laos, Thailand and Vietnam set up the Mekong River Commission to help manage and co-ordinate use of the river's resources.

“Cambodia approves Lower Sesan 2 hydroelectric dam”, 02/11/2012, online at: <http://www.bbc.co.uk/news/world-asia-20184447>

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❖ Environmentalists slam govt for privatising drinking water

The authorities deny the claim but plan to tax water for domestic and agricultural use. Water Resources Board says fees will protect water quality. For activists, it is "gross violation of the human rights of the citizens of Sri Lanka."

Colombo (AsiaNews) - The Sri Lankan government wants to privatise drinking water, this according to the People's Movement for Right to Water, an environmental group that includes scholars and water management experts.

The authorities have rejected the group's claim but activists point out that the government is planning to amend the 1964 Water Resource Board Act introducing a tax on this 'holy good', which, in their view, would be a "gross violation of human rights of the citizens of Sri Lanka."

"We firmly demand that any regulatory mechanism should be democratically set up," the group said at a press conference at the Library Council Auditorium in Colombo.

Recently, the Water Resources Board (WRB) proposed to impose fees ranging from 7,500 to 15,000 rupees (US\$ 50 to 75) to dig traditional or tube wells to obtain water for drinking and agriculture. For the WRB, the measure is necessary to protect the resource.

However, environmentalists believe the measure is the first step towards privatising water management. For them, the proposal is a similar to the Water Resource Management Policy for Commodification and Privatization of Drinking Water, which was approved in March 2000 by the then UNP government (currently main opposition). A draft policy proposal was released on 25 July 2002 but was eventually shelved due to strong public opposition.

The issue goes back to 1995 when the World Bank advised Sri Lanka on how to raise extra revenue.

"One such form was to levy a price for water," said Thilak Kariyawasam, an environmentalist with the Sri Lanka Nature Group.

"They were of the view that if the water distribution were to be privatised, then such an aim could be achieved. [. . .] Based on such haphazard advice our officials started to formulate wrong policies and measures concerning our water resources".

On 28 July 2010, Sri Lanka voted in favour of Resolution 64/292 of the United Nations, which defines the right to water and to health as human rights because they are intrinsic to them.

For this reason, "we firmly believe that imposing taxes on water through the proposed amendments to the Water Resource Board Act of 1964 amounts to a gross violation of the human rights of the citizen of Sri Lanka," said Professor Hemantha Vithanage.

"Environmentalists slam govt for privatising drinking water", 30/10/2012, online at: <http://www.asianews.it/news-en/Environmentalists-slam-govt-for-privatising-drinking-water-26228.html>

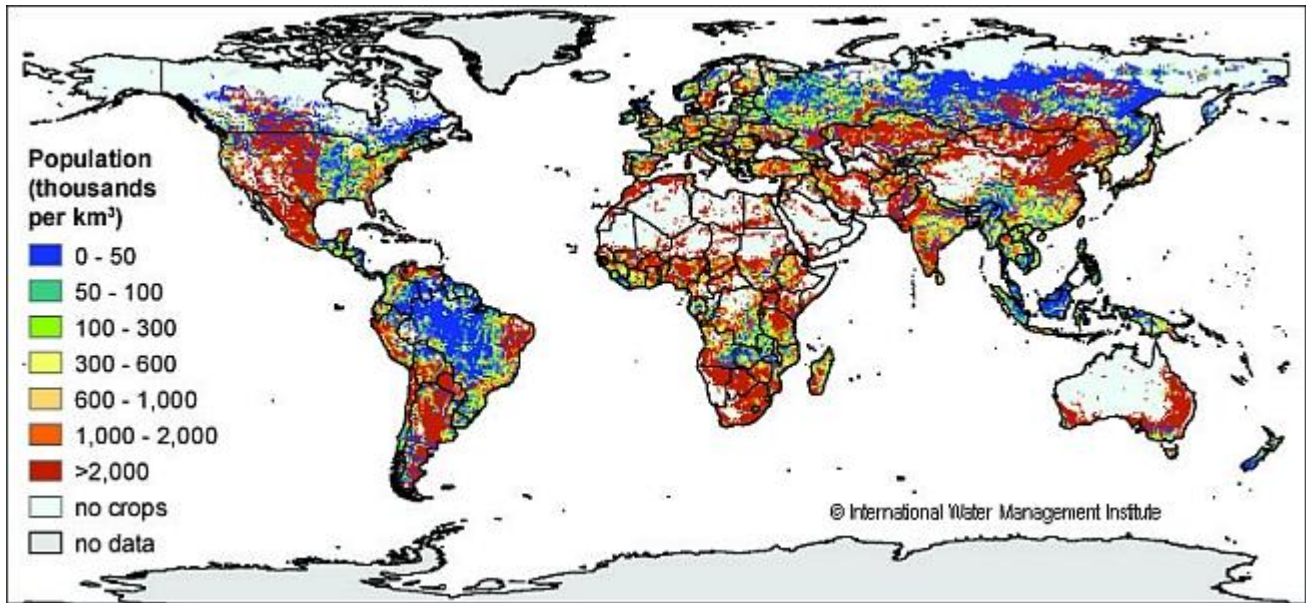
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❖ A Familiar Fight Gets Tougher

New report highlights major challenges for water management posed by climate change.

(Punta del Este, 31 October 2012) A major overhaul of water management strategies in developing countries will be needed to enable the world's poorest to cope with climate change. That is the conclusion of a new report from the [CGIAR research program on Climate Change Agriculture and Food Security \(CCAFS\)](#). Released to coincide with the second [Global Conference on Agricultural Research for Development \(GCARD\)](#), starting today in Uruguay, the report outlines the challenges poor farmers will face as climate change takes hold.

One of the most daunting of these will be managing water in regions where rainfall patterns are likely to become far less predictable. However research by IWMI and its CGIAR partners has demonstrated the great potential to develop resilience strategies for subsistence farmers that could help insulate them against the maelstrom.



Map – Water Crowding

“Water scarcity has always challenged food security in the developing world and it will become even more critical with climate change,” says IWMI’s Vladimir Smakhtin, one of the contributors to the report. “For example, 90 percent of all irrigated wheat is grown in less developed countries, while developed countries mostly grow rain-fed wheat. As the planet heats up, crops that rely on water resources will come under increasing pressure. Unless farmers adapt by 2050, climate change could cause wheat yields in irrigated systems in developing countries to fall by around 13 percent. Similarly, climate change could cause irrigated rice yields in these countries to fall by 15 percent.”

A fair share for farmers?

Of all the fresh water used around the world, agriculture accounts for 70 percent. As more water is needed to quench the thirst of the world's rapidly growing population, competition for this resource will force farmers to grow more with less water. Projected changes in water availability vary greatly by region and are lacking in specificity and certainty. Some regions have addressed rainfall shortages by tapping surface water and groundwater. But these sources are easily depleted if water is taken out faster than it can be naturally replenished.

In the Near East, North Africa, and Central Asia, for instance, irrigation systems use approximately 58 percent of existing water resources. In South Asia, the rate is 52 percent. Doubts persist as to whether or not this level of use outpaces nature's ability to recharge groundwater and surface water sources. In sub-Saharan Africa, that rate of water usage is less than three percent. More can be used, but how much more?

Crowded out?

Complicating matters further, annual average river runoff and water availability will change with the climate. Already, the amount of water that parts of the world rely on for agricultural production is stretched very thin—a concept known as *water crowding* (see map).

“Understanding the impacts of climate change on water resources in different parts of the world and devising viable water management strategies that conserve this resource has become a critical focus of climate change adaptation,” says Smakhtin. “Already, increasing water efficiency—producing “more crop per drop”—is a priority. Alternative sources of water for agriculture may need to be explored, such as energy efficient systems that remove salt from ocean water.”

“A Familiar Fight Gets Tougher”, 31/10/2012, online at:

http://www.stumbleupon.com/su/70ctJT/www.iwmi.cgiar.org/News_Room/Archives/A_Familiar_Fight_Gets_Tougher/index.aspx

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❖ 2012 Election Guide: Obama and Romney Say Little About Water, But Important Policy Decisions Await Certain Voters

Next week, on the first Tuesday in November, American voters will not only choose their representatives. In many states and cities, those casting ballots will also make decisions about water supply.

Next week, voters in San Francisco will decide whether the city should draw up plans to end a century-old dispute over the environmental cost of Hetch Hetchy Reservoir, which supplies 61 percent of the city's drinking water. The cost of removing O'Shaughnessy Dam and replacing both its storage capacity and the energy it generates would cost between \$US 3 billion and \$US 10 billion, according to estimates by the state of California.

But supporters say the benefits outweigh the costs to bring back a beloved natural wonder, a lost valley in Yosemite National Park that Sierra Club founder John Muir called, "one of nature's rarest and most precious mountain temples."

The fate of Hetch Hetchy is by far the biggest water-related item on any U.S. ballot, but it is not the only one.

More than half the states and many municipalities allow citizens to vote directly on matters of public policy. Ballot measures, initiatives, and referenda in this election cycle that touch on different water matters — disposal of wastewater from hydraulic fracturing, financing new infrastructure, desalination, and public control of water systems, to name a few — will be put before voters in Maine and Oklahoma, as well as those in big cities and small towns in California, Illinois, North Carolina, and Ohio.

The billions of dollars of potential investment that are on the table next week are representative of the slow devolution of infrastructure spending from the federal level to states, counties, and municipal governments.

Ever since a surge of spending in the 1970s following the Clean Water Act — which turned 40 last week — federal assistance has been chopped down and replaced with ratepayer dollars. Recently, Congress balked at establishing a national infrastructure bank and has cut the amount of money flowing into the federal funds for drinking water and wastewater projects.

Yet, most Americans support water investments:

- A 2010 survey from ITT, a manufacturing company based in White Plains, New York, found that 85 percent of voters agreed that federal, state, or local governments should invest in water

system improvements, and 63 percent were willing to pay 11 percent more on their water bills to do so.

- Just last week, polling commissioned by global technology giant General Electric (GE) revealed that 84 percent of people surveyed thought that water resources should be a national priority.

As this election shows, even though Congress may have lost its appetite for investment and the presidential candidates are politely looking away, a hunger for reliable water still exists among the electorate.

Obama & Romney: The Voices At The Top

Though water is clearly a primary concern in the daily lives of Americans, incumbent U.S. President Barack Obama and Republican nominee Mitt Romney have largely ignored the topic during the presidential campaign, as have the moderators at the three televised debates.

The two candidates, however, did respond to questions about their water policies — as well as to questions about food, energy, climate change, and 10 other science-based categories — posed by the nonprofit organization ScienceDebate.org.

In the failed jobs bill that Obama proposed to Congress in September 2011, the president included funds for a national infrastructure bank that would provide low-interest financing for water, energy, and transportation projects. Yet, in his responses to ScienceDebate.org, the president touted the investments that his administration has been able to make in water conservation and infrastructure, as well as improved access to drinking water for rural areas and poor communities along the U.S.-Mexico border.

“A combination of incentives, market-based programs, and cooperative conservation measures will improve the water quality of our lakes, rivers, streams, and coastal environments.”

–Mitt Romney

Republican presidential nominee

“Through partnerships with communities around the country,” Obama wrote, “we are working to improve water quality, restore rivers and critical watersheds, and we are making headway in ensuring that our nation’s waters best serve its people.”

Romney, in accord with his general position on regulations, claimed in his response that federal water laws are “significantly out of date,” meaning that businesses and communities are shouldering the burden of “excessively costly and inflexible approaches.” Romney’s solution is to “modernize” federal water law, as he put it.

“A combination of incentives, market-based programs, and cooperative conservation measures will improve the water quality of our lakes, rivers, streams, and coastal environments,” he wrote, echoing positions in the Republican platform, adopted at the party’s national convention in August.

Voting About Voting in California Cities

While the national candidates speak broadly — or not at all — about water-related programs and positions, the initiative process forces voters at the state and local levels to consider specific policies or projects and to decide whether or not they are willing to pay for them.

In San Francisco, a rancorous debate about the city’s water supply and man’s relationship to the natural world is taking place. Nearly a century ago, engineers built O’Shaughnessy Dam on the Tuolumne River creating a reservoir in Yosemite National Park’s Hetch Hetchy Valley. Currently, Hetch Hetchy is one of six drinking water reservoirs that serve 2.6 million people in the Bay Area. Next week, voters will decide if the city should think about draining the reservoir to restore the valley.

Voting yes on Proposition F does not mean that the dam will be removed, but rather it asks San Francisco voters if the city should spend \$US 8 million to develop a plan to shut it down. If Proposition F passes, the plan would examine ways to replace lost storage capacity and power generation, and then be put to city voters in 2016, at the earliest.

Many of the political heavyweights in the city and state, including San Francisco’s mayor and California Senator Dianne Feinstein, oppose the measure, because of the costs and the reliability of the current system. A *San Francisco Chronicle* editorial called it a “fanciful vision” that would “squander taxpayer money.”

On the other hand, the *Sacramento Bee*, the capitol city’s daily paper, claimed the push for a study to be “farsighted” and endorsed the measure. Restore Hetch Hetchy, the group leading the charge for removal and restoration, argues that a broader constituency is at play.

“This belongs to the American people. And what we can do — what San Francisco can be leaders in — is draining this and bringing this incredible place back to life,” Mike Marshall, director of Restore Hetch Hetchy, told San Francisco radio station *KQED*.

Meanwhile, just down the California coast, residents of Santa Cruz will also have a hand in shaping decisions about the future of their water supply. This election cycle, Santa Cruz has a ballot measure that would amend the city charter to let voters approve or reject any future plans for a desalination plant.

Santa Cruz is following in the steps of in Marin County, where, in 2010, voters approved a measure requiring approval public vote before the local water district can construct any desalination plant.

Local Affairs

Voters in **Wichita, Kansas**, will decide whether the city should add fluoride to its water supply. Wichita is one of several large U.S. cities to take up the fluoridation debate this year. The others, though, have resolved the matter via their city councils.

In **Aspen, Colorado**, the question is whether or not the city should continue to pursue a controversial hydroelectric project.

In **Wauconda, Illinois**, voters will decide on a \$US 41 million bond measure to extend and improve the pipeline system to bring in water from Lake Michigan.

Residents of **Mansfield, Ohio**, will consider whether to block the development of wells that store wastewater from hydraulic fracturing. A Texas company is planning two such injection wells within city limits, according to the *Cleveland Plain Dealer*.

And in **Ashville, North Carolina**, the November election will mark a milestone in a year-long battle between the state and the city over the city's water utility. Asheville residents will vote on a referendum asking whether the city should sell or lease its water treatment and distribution system. The question is being put to voters, because a study committee, convened by the state's General Assembly, recommended in April that control of the Asheville water system be transferred to a regional sewage district. The referendum is non-binding, and the state can override a vote against the transfer. In fact, the study committee recommended that the General Assembly merge the two systems during the 2013 session.

Water Financing

Voters in **Oklahoma** are being asked to approve the creation of a Water Infrastructure Credit Enhancement Reserve Fund, which would authorize up to \$US 300 million in general obligation bonds for drinking water and wastewater infrastructure, expanding a program initiated by the state legislature in the 1980s. The fund allows communities to piggyback on the program's AAA credit rating. The bonds would be sold only if a community defaults on a loan, according to the *Tulsa World*. The fund — one of eight priority recommendations in the state's water plan — has broad support, including from the Oklahoma Farm Bureau, the State Chamber of Oklahoma, and the Oklahoma Rural Water Association.

A smaller bond program is on the table in **Maine**. The state wants to issue \$US 7.9 million in bonds for drinking water and wastewater, which would make it eligible for nearly \$US 40 million in federal grants.

Not This Year

Some measures did not have enough support to make it on this year's ballot.

Voters in **California** will not see an \$US 11 billion bond to finance water infrastructure. The state legislature postponed the bond until 2014 because of other measures, which, in sum, would have presented a potentially repellant price tag.

“We are faced with a tax levy in November,” said one state representative, talking with the *Los Angeles Times* about California Governor Jerry Brown's \$US 8 billion proposal. “It would be disastrous to have [the water bond] on the ballot.”

And in **Colorado**, supporters of two initiatives that would have rewritten state water law could not gather enough signatures to meet a filing deadline.

2012 Election Guide: Obama and Romney Say Little About Water, But Important Policy Decisions Await Certain Voters, 31/10/2012, online at: <http://www.stumbleupon.com/su/2rTbIR/www.circleofblue.org/waternews/2012/world/water-on-the-ballot-a-guide-to-the-2012-election/>

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❖ Seed Money Available to Protect Mediterranean Basin Birds

Sick of reading about Cyprus songbirds killed and pickled for snacks? Weary of wild killing sprees like Egypt's sanctioned bird hunt ? Or maybe the downed flamingos in Kuwait ruffled your feathers? BirdLife International has created a fund to underwrite environmental preservation projects in one of the world's top biodiversity hotspots: the Mediterranean Basin. Check out their new website to learn more about the group and their work. Especially nice is a link where you can enter your country and see which species are at risk and find resources to get involved locally. A search on Jordan, as example, leads to The Royal Society for the Conservation of Nature, BirdLife's partner in Jordan, which in turn will advise on in-kingdom conservation.

This five-year conservation investment aims to preserve regional biodiversity by engaging with and developing existing civil society organizations, said Ibrahim Khader, Regional Director of BirdLife International's Middle East Division.

“The Mediterranean Basin is the world's second largest global biodiversity hotspot, covering more than two million square kilometers spanning 34 countries and territories. It stretches from Portugal to Jordan and from northern Italy to Cape Verde,” Khader told The Jordan Times. A biodiversity hotspot is any place that boasts a large number of diverse species under threat of human interference. “The Mediterranean Basin is one of the biological wonders of the world and is the third richest biological hotspot in the world, with more than 13,000 endemic species found nowhere else on Earth,” he added. “The primary threat is habitat loss due to increasing pressure on water resources, agricultural intensification, land abandonment, and infrastructure and residential development.”

Twice a year, BirdLife International will invite proposals for small grants worth up to \$20,000 and large grants of up to \$1 million, according to the Regional Director. The money will support conservation at a local level, especially vital given economies struggling in the wake of the Arab Spring.

Their website describes the organizations as “a partnership of 117 national conservation organization and the world leader in bird conservation.”

“NGOs, community groups, universities, private enterprises and individuals may apply for funding from all countries eligible for the Critical Ecosystem Partnership Fund (CEPF) support,” Khader added.

CEPF is a joint conservation initiative that seeks to engage civil society in biodiversity conservation. CEPF Program Leader at BirdLife International’s Middle East Division Mohammed Yousef said that the grants will work towards safeguarding globally threatened species and critical sites in Middle East and European nations surrounding the Mediterranean Basin.

Yousef said, “The investments will promote innovative partnerships... to enhance conservation and connectivity in five landscape corridors in the basin and conserve globally threatened species through systematic planning and action.”

“Seed Money Available to Protect Mediterranean Basin Birds”, 29/10/2012, online at:
<http://www.greenprophet.com/2012/10/bird-protection-seed-money/>

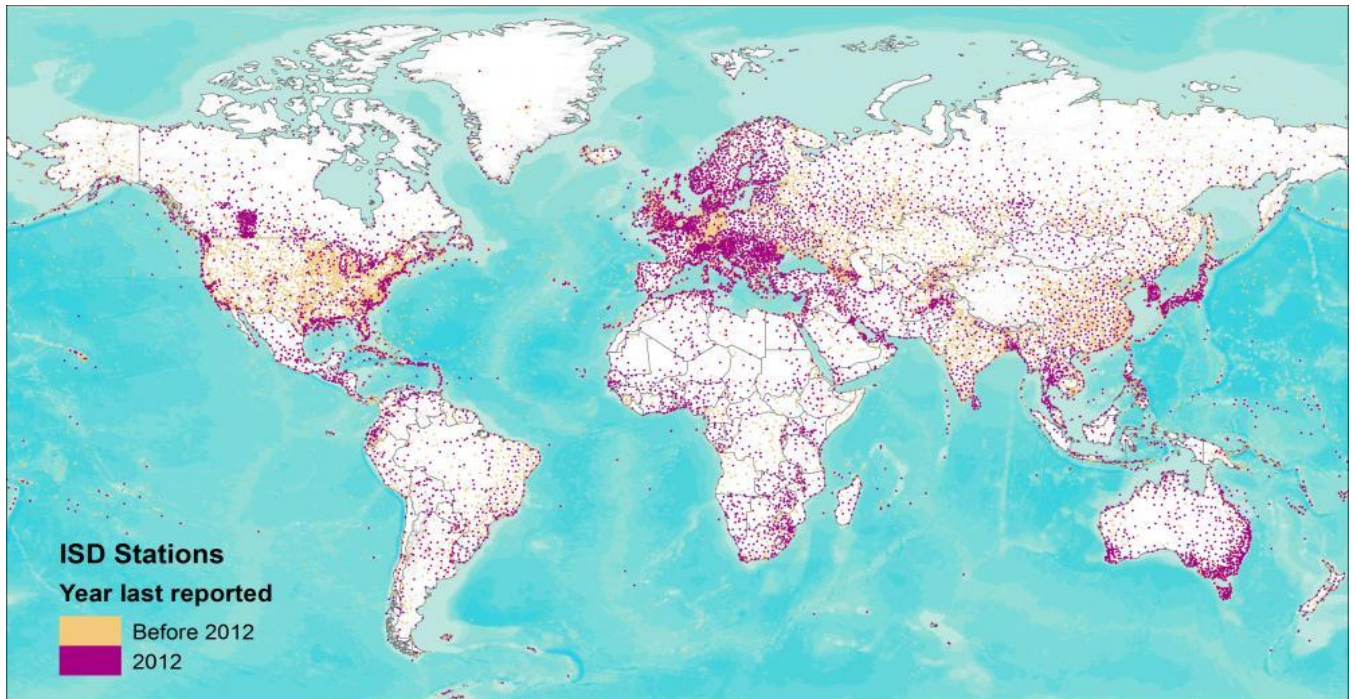
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❖ What We Don't Know About Water Can Hurt Us

This story is part of the “[Aqueduct Sneak Peek](#)” series. [Aqueduct Sneak Peek](#) provides an early look at the [Aqueduct team's updated global water risk maps](#), which will be released in January 2013.

The days leading up to [Hurricane Sandy's landfall](#) were a testament to the power of global data systems in helping to understand and manage risks that natural phenomena can create. A vast, worldwide network of weather monitoring stations and sophisticated remote sensing allowed meteorologists to track and predict Sandy's progress—and give ample warning to those of us in the hurricane's path.

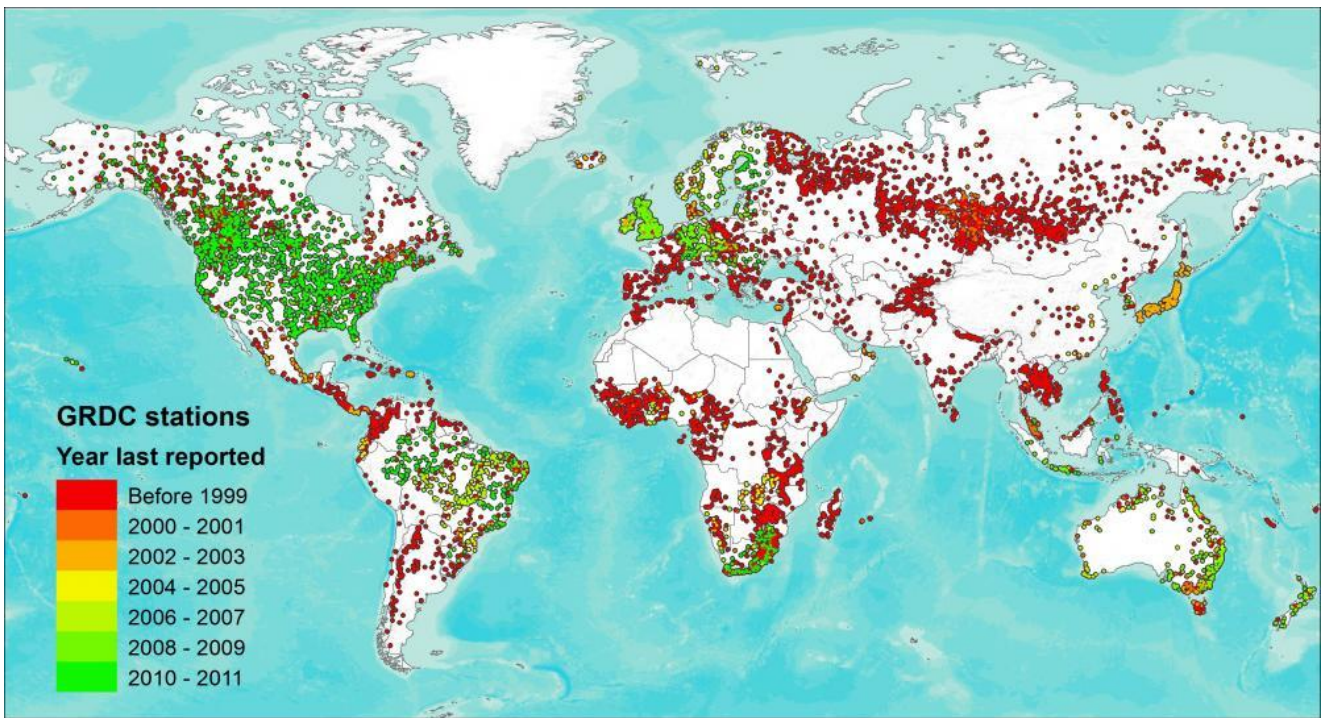
The map below is one way to visualize the global data network that makes such analysis possible. It shows [Integrated Surface Database \(ISD\)](#) stations, a widely distributed network of weather stations that all report regularly to a centralized hub.



Sources: WRI Aqueduct; NOAA; USGS, ESRI, TANA, AND

Like [extreme weather events](#), water scarcity creates impacts that range widely and rarely adhere to political boundaries. Despite these concerns, we lack a water equivalent to the ISD – a standardized, global dataset that would allow decisionmakers to see the whole picture of [water scarcity](#).

The closest thing we have is the Global Runoff Data Center (GRDC), visualized in the map below. The white areas show places where data on water availability is not reported at all, either due to the cost and difficulty of collecting data or a desire to keep that data confidential. As the preponderance of yellow and red points on the map indicate, many of the monitoring stations that are in place do not report with the regularity needed to be truly helpful (compare that to the ISD map, where all the purple dots represent data reported within the last year). The absence of robust global datasets on water availability makes it difficult to understand where and how scarcity and other water risks are emerging around the world.



Sources: WRI Aqueduct; GRDC; USGS, ESRI, TANA, AND

However, with advanced hydrological modeling techniques and observations from space, it is possible to generate meaningful information in spite of existing data gaps. The World Resources Institute's Aqueduct project's newest global maps, launching in January of 2013, do just that: employing the best available techniques and data to provide high-resolution, global perspective on the complexity of water risk. By employing these new and sophisticated techniques, Aqueduct's new maps are able to extract the most information possible from what limited data is available on global water availability and use.

Nonetheless, nothing beats on-the-ground observations about where water is and where it is being used. As water issues become more pressing across the globe, they act as a signal that governments must do a better job of collecting—and sharing—water data.

“What We Don’t Know About Water Can Hurt Us”, 01/11/2012, online at:
http://insights.wri.org/aqueduct/2012/11/what-we-dont-know-about-water-can-hurt-us?utm_campaign=socialmedia

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