



ORSAM WATER BULLETIN

Weekly Bulletin by ORSAM Water Research Programme

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



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15 October – 21 October 2012

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❖ **In TRNC Water Supply Project, construction of the pipeline to carry water under sea and the land structures is launched on 13th October 2012**

Since early 1960s, Cyprus island has been going through a water shortage in general terms. The causes of the aforesaid problem might be listed as follows; uncontrolled use of water resources, population growth, pollution of resources, overevaporation, and salination of coastal aquifers due to overpumping.

The annual average precipitation in the island, where East Mediterranean climate prevails, is 513 mm. And it is approximately 400 mm in Turkish Republic of Northern Cyprus (TRNC) which is located on the northern of the island. The annual water potential of TRNC is 117,5 million cubic meters. 79 per cent of the water is used for agricultural purposes, while 13 per cent for domestic use and 8 per cent is used for industrial purposes. In TRNC, water is generally drafted from coastal aquifers and Güzelyurt aquifer, which is the largest aquifer of the island, is fed by Trodos mountains. As the dams located in Trodos mountains in southern Cyprus keep water, the surface waters and groundwater in TRNC cannot be fed enough. According to the studies conducted in the past years, the total water requirement of TRNC is 190-197 million cubic meters. Considering the fact that the amount of annual usable water is 117,5 million cubic meters, the required amount of water is provided by the overuse of aquifers. This situation shows that the groundwater resources, which are the most important water reserves of TRNC, might be under the risk of becoming unusable in a near future.

Water is inadequate not only in terms of quantity but also in terms of the quality of water supplied. The quality of drinking water in TRNC is below the world standards. In TRNC, the quantity of water per capita is 285 cubic meters. This figure shows that water shortage prevails in the country. A variety of solutions have been sought in order to solve the water problem in TRNC so far. Some of them can be listed as follows; implementation of modern irrigation techniques, sea water treatment, carrying water by tanker, and the construction of water storage structures. The idea of transferring water from Turkey, which is another solution to eliminate the current water shortage, was brought forward in 1990s. Accordingly in 1998, water was transferred by large water balloons of 10.000-40.000 cubic meters. In order to supply drinking water, approximately 4,1 million cubic meters of

water was carried from the Soğuksu water source in Aydıncık district of Anamur in Turkey to Kumköy reservoir in TRNC for five years. This project was stopped in 2002 due to technical disruptions.

The idea of transferring water from Turkey to TRNC via pipeline in order to solve the water problem of TRNC comes out as the exact solution. As it is the first to be implemented in the world, this project, which is known as the project of the Century and which aims at transferring water via the pipeline to be constructed at 80 km length 250 meters under the sea, includes 2 dams, a pipeline of 107 km and 2 elevation centers. 1600 mm of HDPE will be used under the sea. It is stated that the suspending pipe will be connected to the sea bottom by using cables at intervals of approximately 400-500 m between two coasts. The project which foresees annually transferring 75 million cubic meters of water, has been brought up to the agenda again. On 7th March 2011, the foundations of Alaköprü Dam to be built on Dragon Stream, an important pillar of the “TRNC Drinking Water Supply Project”, were laid. On 31st March 2012, the foundations of Geçitköy Dam to store water that will be transferred from Turkey, were laid.

The construction of the land structures and pipeline, which is to transfer water under sea that is an important pillar of the project, will be launched on 13th October 2012.

In the project which is expected to be completed in 2014, it is foreseen that the total investment will cost 782 million 504 thousand liras including 45,6 million liras for land structures to be constructed on Turkey extension of the pipeline, 630 million liras for the water pipeline, 26,9 million liras for land structures to be constructed on TRNC extension of the pipeline, along with the dams to be found at both sides and whose constructions were already launched.

“In TRNC Water Supply Project, construction of the pipeline to carry water under sea and the land structures is launched on 13th October 2012”, ORSAM, Tuğba Evrim Maden, 12/10/2012, online at:

<http://www.orsam.org.tr/en/WaterResources/showAnalysisAgenda.aspx?ID=1942>

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❖ Basra preparing for the collapse of Mosul Dam

Shafaq News / Water Resources ministry in Basra province announced on Sunday, forming a committee to follow up and implement the necessary precautionary measures in case Mosul Dam collapsed, indicating that it has received information from Basra Operations Command that these measures should be taken.

The director of water resources in Basra province, Alaa al-Din Najam al-Taher said in an interview for "Shafaq News" that "the local government in Basra province has taken all preparations to face the possible collapse of Mosul Dam."

"Many of the measures have been taken, notably creating large reservoirs that are able to collect water, as Basra has bodies of water."

Taher added that "there also marshes in southern provinces such as al-Hamar and al-Howaiza that can contain any amount of water, for its absorptive capacity is over 7700 km² of water, and thus are able to contain three times the water capacity of Mosul Dam."

Geologists have warned earlier from the "imminent collapse" of Mosul Dam, revealing that the flowing water from the dam will reach Baghdad within three days.

But the Ministry of Water Resources said on 15 of last July, that Mosul Dam current condition is "very stable" in light of the continued maintenance work, expressing fears of collapse due to earthquakes.

It is noteworthy that Mosul Dam was established in 1983 by a joint German -Italian company, 30 kilometers north-west of Mosul city, a height of 113 meters, while the company estimated it had been built 80 years ago, it is located on Tigris River and is considered as the largest dam in Iraq and the fourth largest dam in the Middle

"Basra preparing for the collapse of Mosul Dam", 14/10/2012, online at: <http://www.shafaq.com/en/news/3791-basra-preparing-for-the-collapse-of-mosul-dam.html>

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❖ **Iran launches water of Alwand River after cutting for 90 days**

Municipal Council in Khanaqin in Diyala province, Saturday, announced the launch of the Iranian authorities of Alwand River water after cut it for about 90 days in full, arguing that the reduced need for water for agricultural purposes behind the launch of the river water.

The head of the Council (Samir Mohammed Noor) in an interview for "Alsumaria News" said that "Department of Water Resources in Khanaqin informed the municipal council officially that the Iranian authorities launched the Alwand river water in quarter meters per second," noting that "it is a very small amount after that cut water river fully 90 days ago. "

"Iran launches water of Alwand River after cutting for 90 days", 13/10/2012, online at:

<http://www.kurdiu.org/en/hawal/?pageid=111792>

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❖ War Over the Nile River

War may soon be coming to Ethiopia.

In March of 2011, at the height of the political revolution in Egypt, Ethiopia strategically announced that it would soon start construction on a massive hydroelectric dam on the headwaters of the Nile River. This is an explosive declaration. Not only will this dam undoubtedly reduce the amount of water flowing into Sudan and Egypt for several years and perhaps permanently, it is an existential threat to Egypt.

For Egypt, allowing Ethiopia to construct this dam is somewhat like Israel allowing Iran to build a nuclear arsenal.

Egypt is nothing without the Nile. Almost 100 percent of Egypt's 83 million inhabitants live along the Nile River. It is literally the lifeblood of the country. It does more than just support agriculture and industry; it provides the water necessary to push the turbines at Egypt's giant Aswan Dam. This dam, one of the biggest hydroelectric engineering feats of all time, helped transform modern Egypt into a Middle Eastern superpower. The massive lake created by the dam allowed Egypt to expand its agricultural production like never before. It turned whole swaths of desert into lush, irrigated farmland. Electricity production allowed businesses and manufacturers to expand. Egyptian standards of living rose—and the population skyrocketed.

The power to shut down the Nile—even temporarily—is the power to destroy Egypt.

To say Egypt and Ethiopia do not have the best of relationships is putting it mildly. During the 1960s, Egypt was ground zero for the formation of the Eritrean Liberation movement and the Eritrean People's Liberation Front, the primary force behind Eritrea's long war for independence from Ethiopia. During the '70s and '80s, Egypt actively supported several other terrorist groups that also worked to overthrow the government in Ethiopia. When Eritrea finally gained independence in 1994, it had Egypt to thank.

But Egypt's strength, and its ability to project force and policy on its neighbors, is a function of not just its military, but its economy—and the economic treaties in force. This is one of the roots of contention between Egypt and Ethiopia.

Due to colonial-era treaties between Egypt, Sudan and the United Kingdom, Egypt holds sole authority over the Nile River's water—forever. Until recently, this meant that if any upstream nation (also former British protectorates/colonies at the time) wanted to use water from any tributary flowing into the Nile, they had to seek Egyptian approval.

Over the years, nations such as Kenya, Sudan, Uganda, Kenya, Tanzania and Ethiopia have largely abided by these pre-independence treaties—often to the detriment of their own people.

But now that may be about to change.

Ethiopia's Blue Nile River generates approximately 85 percent of the total water flowing into the Nile. Ethiopia contends that it was not a signatory to the 1959 treaty, and thus it should not have to abide by a treaty that takes virtually 100 percent of its water that flows into the Nile. Thus Ethiopia is leading the charge to rewrite the treaties.

More than leading the charge—it is now the first nation to actively challenge Egypt's monopoly on the Nile.

Ethiopia claims that the Grand Ethiopian Renaissance Dam is needed for its own domestic electricity requirements. This dam, which is currently under construction, will become one of the top 10 biggest dams in the world. It will be able to generate threetimes the power the Hoover Dam does. It will also greatly increase Ethiopia's regional importance by providing desperately needed electricity to its neighbors.

In 2010, Ethiopia, Kenya, Uganda, Rwanda and Tanzania signed an agreement rejecting Egypt's claim to the Nile and formed a new partnership to redistribute the river's water more equitably.

Ethiopia's Grand Renaissance Dam is the first test of this agreement—and Egypt's resolve. It is scheduled for completion in three years, at which time large amounts of water will be withheld from the Nile. But perhaps even more importantly from Egypt's perspective, if not stopped it could herald a gold rush of other hydro-electric projects that will inevitably lead to increased agricultural projects within the region. If Ethiopia succeeds, it will be the end of Egypt's control of the Nile. In water-limited Africa, that would be an unmitigated disaster for the land of the pharaohs.

What will Egypt do?

In the April 2011 issue of the Trumpet, Mr. Flurry prophesied specifically that Libya and Ethiopia would become the victims of radical Islam. At the time, there was very little physical evidence to suggest Ethiopia could ever be threatened. But he made that prediction based upon the prophecy in Daniel 11:40-43, which foretells an end-time clash between a German-led Holy Roman Empire and an Iranian-led Islamic coalition called the king of the south. In verse 43, Daniel lists the "Libyans and the Ethiopians" as part of the king of the south alliance. "This verse states that Libya and Ethiopia are also going to be closely allied with Iran!" stated Mr. Flurry.

When this article was published, people said the idea that largely Christian Ethiopia could ever fall into the radical Islamist camp was outrageous. Muslims and Christians had been peacefully coexisting for years, they said.

Based on the physical evidence at that time, these critics seemed right. But look at Ethiopia now.

In November 2011, the Ethiopian government discovered plans by a group of Wahhabi Muslims to turn Ethiopia into an Islamic country governed by sharia law. In a press conference, the Ethiopian government expressed concern over the increasing incidence of violence against moderate Muslims and Christians by radical Wahhabi Muslims. Since then, as Trumpet columnist Brad Macdonald wrote, there has been a huge uptick in Islamic inspired protests and riots. Even Western newspapers like the Christian Science Monitor and the Washington Times are warning about an Islamic backlash and the radicalization of Ethiopian Muslims. "Is this the start of radical Islam's takeover of Ethiopia?" he asked.

Then on August 20, Ethiopia's longtime prime minister, Meles Zenawi, suddenly died. His successor is untested and comes from a small protestant group as opposed to one of the major religious affiliations. There is talk of a power struggle.

On August 22, just two days after Zenawi died, Gerald Flurry said on a Key of David program that Daniel 11:43 shows that Egypt is about to have a "major impact on other nations in the Middle East, and in Libya and Ethiopia, in particular." He went on to say that Egypt would play a critical role in turning Ethiopia into an Egypt-Iran allied state.

Events are now bearing out that prophecy.

According to Stratfor, Egypt has three choices. First, Egypt can bring political and economic pressure on Ethiopia to prevent the construction of the dam. This has already had a limited effect, but it probably won't be enough to stop Ethiopia. Although Egypt and Sudan have successfully discouraged international investors from financing the \$5 billion project, Ethiopia appears to be internally funding construction.

Second, Egypt could resort to direct military intervention. Although Stratfor says this is a last option, it also warns that "Cairo will use any tool at its disposal to stop the project, including military force if necessary. This jives with the Stratfor files that were stolen by WikiLeaks and published on August 31. According to these WikiLeaks documents, Egypt has procured the use of Sudanese military bases to launch military attacks on Ethiopia's dam project.

Third, Stratfor says Egypt could reactivate and support proxy militant groups. There are at least a dozen such armed groups scattered across ethnically divided Ethiopia that are working to overthrow the government or carve out independent regions.

Egypt could also use its allies in Eritrea to destabilize Ethiopia. This is exactly what appears to be happening.

Yesterday Ethiopia announced that it had seized 500 weapons and thousands of rounds of ammunition being smuggled into the country from Sudan. The seizure comes just a month after six exiled Ethiopian opposition groups announced the formation of armed movements against the government. According to Africa Review, 12 armed opposition groups have recently taken up arms against the Ethiopian government.

Ethiopia may quickly be headed for civil war—instigated by Egypt! According to one report, most of these groups are proxies of Egypt’s Eritrean and Sudanese allies.

Will Egypt soon topple the Ethiopian government? Egypt has tens of billions of dollars’ worth of U.S. military hardware. It has well positioned and locally supported militant groups based in Ethiopia and on its borders. And it is facing the prospect of losing control of its most important and strategic asset—a river that is the lifeblood of its existence.

The Bible says Egypt will soon be instrumental in bringing a radical political reorientation to Ethiopia. Watch while it happens. ▪

“War Over the Nile River”, 16/10/2012, online aty: <http://www.thetrumpet.com/article/9962.18.0.0/world/war/war-over-the-nile-river>

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❖ Egypt pushes Ethiopia to scrap Nile dam

CAIRO, Oct. 19 (UPI) -- Egypt increasingly views Ethiopia's plan to build a massive 6,000-megawatt hydroelectric dam on the Nile River as a threat to its national security because it will seriously cut the Arab state's water supplies.

Egypt depends on the Nile for virtually all of its water and is mounting a major diplomatic and economic campaign to scupper the plan. "Even direct military action by Egypt cannot be ruled out," observed the U.S. global security consultancy Stratfor.

Both countries have undergone major political upheavals recently, which have added to the tension in a long-running battle for control of the world's longest river which rises in the Ethiopian highlands.

Egypt's Muslim Brotherhood now controls the presidency and Parliament following the February 2001 downfall of longtime dictator [Hosni Mubarak](#) and is locked in a struggle for supremacy with the military.

Longtime Ethiopian ruler, Prime Minister [Meles Zenawi](#), as harsh a dictator as Mubarak and whose ethnic Tigray group has long dominated the military, died Aug. 20, leaving a leadership vacuum and internal rivalries.

Meles, who came to power in 1991, had long opposed the domination of the Nile's water flow by Egypt, and to a lesser extent Sudan, under colonial agreements that left the upstream African states -- Ethiopia, Kenya, Uganda, Burundi, the Democratic republic of Congo, Rwanda and Tanzania -- with almost no control of the river's resources.

He found Cairo's hard-line position on the Nile particularly galling because 85 percent of the river's water flows from the Ethiopian highlands.

There were years of fruitless negotiations between Cairo and the upstream states in the Nile Basin initiative, a forum set up in 1999 by all the Nile states.

But in 2010, Egypt found its domination of the river heavily challenged.

Ethiopia and four African states -- later joined by two more -- threw out a 1959 agreement imposed by British colonial rulers that gave Cairo control of 90 percent of the Nile's water and veto power over dam construction upstream that would limit its water supplies.

They contend they need more water because of burgeoning populations, industrialization and agricultural projects.

The fall of Mubarak, who had fiercely opposed surrendering any of Egypt's control of the Nile, left Cairo adrift.

Meles, who had already built seven small dams on the Nile, took advantage of Egypt's disarray to announce his plan for the \$5 billion Grand Ethiopian Renaissance Dam on the Blue Nile and start work on it.

"Cairo fears that once the dam is completed in 2017, it will take two to three years, depending on rainfall, to fill up the 67 billion cubic meter reservoir, which could reduce the amount of water that flows into Egypt by 25 percent," Stratfor observed.

"After the reservoir fills up, there is no guarantee that Egypt will maintain its present share of the water, and Ethiopia is already planning multiple agricultural projects on Nile tributary rivers flowing from the Ethiopian highlands.

"Speeding up the diversion of water would put added pressure on Cairo," Stratfor noted.

So far Cairo has focused primarily on diplomatic efforts with Ethiopia and its African allies, concentrating on these countries' parliaments whose agreement on a new water-sharing arrangement will be necessary if it is to be legally binding to supersede the 1959 agreement.

According to documents released by WikiLeaks in September, the Egyptian and Sudanese governments had planned to attack the Grand Renaissance Dam.

WikiLeaks claimed the documents originated with Stratfor. The Texas-based consultancy's computer system was penetrated before the leaks and that may have been how the alleged documents were uncovered.

One 2010 email quoted a "high-level Egyptian source" as saying "we are discussing military cooperation with Sudan" against Ethiopia, establishing a base there from which to fly Egyptian Special Forces to destroy the Ethiopian project.

Egypt denied it had such a plan. But Stratfor noted that if diplomacy fails, "Egypt's next most likely approach is to support proxy militant groups against Ethiopia" as it did in the 1970s and 1980s.

Stratfor said direct military action "was the least likely approach and one Cairo would undertake only if the dam was completed and significantly interrupted the water flow.

"Such a course will also largely depend on Egypt's new leadership ... but whatever its political inclination, a large-scale reduction in water from the Nile would be intolerable to any Egyptian government."

"Egypt pushes Ethiopia to scrap Nile dam", 19/10/2012, online at: http://www.upi.com/Business_News/Energy-Resources/2012/10/19/Egypt-pushes-Ethiopia-to-scrap-Nile-dam/UPI-74581350658245/?spt=hs&or=er

❖ What's missing in Aljazeera's documentary By Kiflu Hussain

Despite repetitive adverts of a documentary and even its screening on Aljazeera titled “Struggle over Nile,” it's a couple of days ago that I managed to watch it. My first attraction to the documentary stemmed from the fact that I am a denizen of Ethiopia from where flows, according to the documentary itself, 85 percent of the water that sustains the land of the Pharaoh's. Indeed, the Blue Nile River is Egypt's lifeline. It joins hand with White Nile at Khartoum that originates from the Ugandan side of Lake Victoria to its final destination, Mediterranean Sea. Blue Nile, popularly known as Abbay in Ethiopia, would have been unparalleled had it not been for the other wonders of nature, Amazon River in South America. While I don't recall hearing about Amazon River being the cause of mistrust and bickering between the Latinos on whose valleys Amazon traverses, Nile on the contrary has always been the source of discord in Sub-Saharan Africa. This is particularly so between Ethiopia and Egypt. Perhaps it's because none of the countries in South America depends desperately on Amazon like Egyptians do on Nile. According to a cyber source “on average, only an inch of rain falls in Egypt per year.”(Sic but not so sic).Hence, no wonder if Egyptians feel touchy on any design upstream countries entertain on the flow of Nile.

At present, Egypt is pissed off with almost all the riparian states for disregarding the colonial era treaty that gives it monopoly on the use of Nile through a partnership these countries formed and christened as Nile Basin Initiative (NBI). Yet, as Aljazeera's documentary depicted, Egypt is naturally more nervous by the current fad the Ethiopian regime trumpets on Blue Nile. Those who constitute the NBI partnership, by the way, are Sudan, Kenya, Uganda, Rwanda, Burundi, Tanzania, DR Congo, Ethiopia, Egypt itself and Eritrea as an observer. Notwithstanding the fact that the initiative began with “a dialogue” to “achieve sustainable socioeconomic development through the equitable utilization of, and benefit from the common Nile Basin water resources,” Egypt balked when it felt the partnership's ambition upsets its monopoly on Nile. However, Wikipedia informs us further that the upstream countries namely, Ethiopia, Kenya, Uganda, Rwanda and Burundi signed an agreement to “seek more water from the River Nile.”To the vehement opposition Egypt alongside its historical lackey, Sudan showed, the representatives of the signatory states responded as to how “tired” they are to always appease Egypt “before using River Nile for any development project like irrigation.”Even though, Aljazeera's documentary highlighted all aspects of Nile in terms of ecology and geopolitics among all riparian states, it ultimately and rightly focused between the two main rival countries, Egypt and Ethiopia. On top of picking scholar's and expert's brains from both sides, the documentary also reflected the sentiments of ordinary people on River Nile or Abbay.Thus; an Egyptian historian intimated that King Menelik of Ethiopia threatened to “divert Nile to the Red Sea.”

Considering Egypt's blatant aggression against Ethiopia in the wake of Egypt's emergence following the decline of the Ottoman Empire, diligent students of history would agree that Emperor Menelik

was within his right to make such a bluff. No record on this end, however, shows that Menelik was given to making such idle threats.

The crude fact is Egyptians have always felt insecure that Nile is their only source of water and much of it comes from Ethiopian highlands. Consequently, it's understandable if some of its elites get carried away by figments of their own imagination. To their credit, Egyptian elites, while still prone to paranoia over Nile, have "matured" from making any frontal attack against Ethiopia like they did at the battle of Gundet and Gura in 1875 and 1876. Instead, as Shumet Sishagne showed in his scholarly researched book "UNIONISTS & SEPARATISTS; THE VAGARIES OF ETHIO-ERITREAN RELATION" they had resorted to sponsoring subversive groups such as the Eritrean secessionists who in turn nurtured another ethno-fascist and divisive element in Ethiopia. Notable among these is the group that ousted the military regime of Mengistu Hailemariam on a ticket to secede another Ethiopian province adjacent to Eritrea.

The master-mind of this ethno-fascist element romanticized the Eritrean secessionists in a publication he titled "The Eritrean struggle; from where to where." Ironically, the man whose heart and mind belongs to the Eritrean secessionists by blood and deed; and who was indirectly sponsored by the Egyptians became the ruler of Ethiopia, postponing his agenda of seceding the other province he meant to "liberate." This Trojan horse named Meles Zenawi who died on July 14 but pronounced dead effective August 20 by his cronies traded off many of Ethiopian vital interests to the cause he championed. Zenawi, the "Ethiopian" representative pushed aside an offer to successfully negotiate the retention of Assab as its rightful gateway to the sea at the London peace talk in May 1991. Mr. Herman Cohen, Assistant Secretary of the United States for African Affairs mediated the talk. Assuming power in Addis, Zenawi went on to disparage and belittle anything Ethiopian. He disbanded the professional Ethiopian military and jailed upright officers known for their valor and uncompromising patriotism under the pretext of prosecuting war crime. He allowed his Eritrean secessionist cousins to distort history and foment hate, while gagging Ethiopians including unionist Eritreans by denying them the right to air their views on the electronic media that his régime monopolized. Having made sure that the field is so skewed to the Eritrean secessionists, he wrote a letter to Mr. Boutros Boutros- Ghali, then secretary general of the United Nations so that the latter sponsors a referendum on Eritrea's fate. Feeling more Egyptian than behaving as an impartial arbiter of the UN, Mr. Ghali failed to consider at least two glaring hindrances to conduct a referendum in a free and fair environment.

The first one was that Zenawi, as mere president of a transitional government, had no mandate to write such a letter to the UN on behalf of Ethiopia. Secondly, the choices the Eritreans were confronted with in the referendum were so monstrously reduced as a question of "freedom or slavery." When asked as to what would be the fate of thousands of Eritreans enjoying life more than any other Ethiopians, Zenawi bragged that "Ethiopia and Eritrea will not go the Pakistani-Indian way." Alas! A few years later after this asinine remark, Zenawi dragged Ethiopia in the most

senseless bloody war never recorded in its history against Eritrea. Without mentioning the carnage at the battlefield, Zenawi himself instigated mass deportation of Eritreans and those suspected of having Eritrean ties. Ironically once again, the man who championed the Eritrean cause and promoted anything Eritrean at the expense of Ethiopia justified the mass deportation, waving a flag of “sovereignty” all of a sudden, as a statesman’s prerogative to order the expulsion of anyone if he doesn’t like the “color of that person’s eye.”

From “sovereignty” to the “Renaissance” dam

While acknowledging that it’s a daunting task to incorporate every aspect of a geopolitical history in a half hour documentary, I am of the opinion that Aljazeera missed the convoluted history of collaboration between “Ethiopian” secessionist elements and Egyptians. While the documentary echoed the fear that “asserting patriotism and politics over the River Nile” exacerbates the existing tension thus reminding me of Captain Fikreselassie Wogderes’s—prime minister during the Mengistu era—prediction on “the future war over water” which has also been reiterated by current analysts that “access to freshwater can become more incendiary than access to fossil fuels,” again I am of the opinion that Egyptians feel no immediate pressure to blow the “Renaissance” dam to smithereens .

Although, Egyptians might have entertained the idea to bomb Zenawi’s pet project on River Nile as disclosed by Wikileaks, I don’t think that it amounts to anything more than a psychological warfare. Egyptian elites know very well that the deceased embarked on fancy “development” projects such as the “Renaissance” dam for diversionary purposes sugarcoating it with patriotic fervor. They know too that he was not crazy enough to risk confrontation with their highly trained and better equipped military after disbanding the elite Ethiopian military, particularly the Air force to replace them with his own morons that frequently crashed jet aircrafts and helicopters on markets in towns and on farms. They also remember as to how he duped Ethiopians after sacrificing the Ethiopian youth on empty talk of “sovereignty” over a barren land; and how he traded off the victory gained at the battlefield to a defeat in diplomacy waving the right of appeal and by agreeing to be adjudicated via a colonial treaty that was inimical to Ethiopian interest but beneficial to Eritrea.

In light of this and innumerable other betrayals of his own country, Egyptians are smart enough to see that the deceased was in the habit of coming up with diversionary tactics under the guise of big projects to escape from his own deception that threatened to choke him. It was also obvious to them that without his Western financiers that he could never bring such a project to completion except using the scheme to extort money from his own gullible subjects by feeding on their fear or by pandering to their patriotic feelings. More comforting to the Egyptians is the man who replaced the deceased. In addition to being spineless with no mind of his own, the people who manipulate him are still busy with unfinished power struggle. Notwithstanding the rhetoric, therefore, carrying on the much vaunted “vision” of the deceased is not in their priority list. Despite this respite, however, Egyptians must recognize the right of the people of upstream countries including Ethiopia to use

River Nile. Like Aljazeera’s documentary pointed out, so long as we maintain “calm heads” and employ “cooler words,” I don’t think there will be any difficulty to enjoy Abbay equitably. After all, Nile’s blessing or in the words of one ordinary Egyptian in the documentary, “God’s blessing is all around us.” Concerning the latest fad in Ethiopia on Blue Nile reminds me of my own doggerel which I scribbled twelve years ago. I am happy to share it once again as published by the Ethiopian weekly newspaper of August 2, 2000.

“What’s missing in Aljazeera’s documentary By Kiflu Hussain”, 19/10/2012, online at:

<http://www.abugidainfo.com/index.php/20858/>

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❖ No Wars for Water

Why Climate Change Has Not Led to Conflict

The world economic downturn and upheaval in the Arab world might grab headlines, but another big problem looms: environmental change. Along with extreme weather patterns, rising sea levels, and other natural hazards, global warming disrupts freshwater resource availability -- with immense social and political implications. Earlier this year, the Office of the Director of National Intelligence published a report, [Global Water Security](#), assessing hydropolitics around the world. In it, the authors show that international water disputes will affect not only the security interests of riparian states, but also of the United States.

In many parts of the world, freshwater is already a scarce resource. It constitutes only 2.5 percent of all available water on the planet. And only about .4 percent of that is easily accessible for human consumption. Of that tiny amount, a decreasing share is potable because of pollution and agricultural and industrial water use. All that would be bad enough, but many freshwater bodies are shared among two or more riparian states, complicating their management.

Of course, the policy community has long prophesied impending "water wars." In 2007, UN Secretary General Ban Ki Moon warned that "water scarcity ... is a potent fuel for wars and conflict." Yet history has not witnessed many. In fact, the only official war over water took place about 4,500 years ago. It was a conflict between the city-states of Lagash and Umma in modern day Iraq over the Tigris river. More recently, there have been some close calls, especially in the arid Middle East. About two years before the 1967 War, Israel and Syria exchanged fire over the Jordan River Basin, which both said the other was overusing. The limited armed clashes petered out, but the political dispute over the countries' shared water sources continues. In 2002, Lebanon constructed water pumps on one of the river's tributaries, which caused concern for downstream Israel. The project never provoked any formal military action, but with peace in the region already precarious, verbal exchanges between the two countries prompted the United States to step in. Both parties eventually accepted a compromise that would allow Lebanon to withdraw a predetermined amount of water for its domestic needs.

In short, predictions of a Water World War are overwrought. However, tensions over water usage can still exacerbate other existing regional conflicts. Climate change is expected to intensify droughts, floods, and other extreme weather conditions that jeopardize freshwater quantity and quality and therefore act as a threat-multiplier, making shaky regions shakier.

So what river basins constitute the biggest risks today? In a [World Bank report](#) we published in 2010 (as well as a subsequent article in a special issue of [the Journal of Peace Research](#)) we analyzed the physical effects of climate change on international rivers. We modeled the variability in river annual runoff in the past and for future climate scenarios. We also considered the existence and nature of the institutional capacity around river basins, in the form of international water treaties, to potentially deal with the effects of climate change.

According to our research, 24 of the world's 276 international river basins are already experiencing increased water variability. These 24 basins, which collectively serve about 332 million people, are at high risk of water related political tensions. The majority of the basins are located in northern and sub-Saharan Africa. A few others are located in the Middle East, south-central Asia, and South America. They include the Tafna (Algeria and Morocco), the Dasht (Iran and Pakistan), the Congo (Central Africa), Lake Chad (Central Africa), the Niger (Western Africa), the Nile (Northeastern Africa), and the Chira (Ecuador and Peru). There are no strong treaties governing the use of these water reserves in tense territories. Should conflicts break out, there are no good mechanisms in place for dealing with them.

By 2050, an additional 37 river basins, serving 83 million people, will be at high risk for feeding into political tensions. As is the case currently, a large portion of these are in Africa. But, unlike today, river basins within Central Asia, Eastern Europe, Central Europe, and Central America will also be at high risk within 40 years. Some of these include the Kura-Araks (Iran, Turkey, and the Caucasus), the Neman (Eastern Europe) Asi-Orontes (Lebanon, Syria, Turkey), and the Catatumbo Basins (Colombia and Venezuela).

CROSSING THE NILE

Among the larger African basins, the Nile has the greatest implications for regional and global security. Tensions over access to the river already pit Ethiopia and Egypt, two important Western allies, against one another. Egypt has been a major player in the Middle East Peace Process and Ethiopia is an important regional force in the Horn of Africa, currently aiding other African forces to battle Al-Shabbab in Somalia.

Over the years, a number of international water treaties have made rules for the basin, but they are largely limited to small stretches of it. In particular, only Egypt and Sudan are party to the 1959 Nile River Agreement, the principal treaty regarding the river. Egypt, which is the furthest downstream yet is one of the most powerful countries in the region, has been able to heavily influence the water-sharing regime. Upstream countries, such as Ethiopia and Burundi, have been left out, hard-pressed to harness the Nile for their own needs.

In 1999, with increasingly vitriolic rhetoric between Egypt and Ethiopia sidetracking regional development, the World Bank stepped up its involvement in the basin. It helped create a network of professional water managers as well as a set of investments in a number of sub-basins. Still, the drafting of a new agreement stalled: upstream countries would not compromise on their right to develop water infrastructure while downstream countries would not compromise on protecting their shares. In 2010, Ethiopia signed an agreement with a number of the other upstream countries hoping to balance against Egypt and Sudan. More recently, the country has also announced plans to construct a number of large upstream dams, which could affect the stability of the region.

By 2050, the environmental state of the Nile Basin will be even worse. That is why it is important to create a robust and equitable water treaty now. Such a treaty would focus on ways to harness the river's hydropower potential to satiate the energy needs of all the riparian states while maintaining ecosystem health. The construction of dams and reservoirs further upstream could likewise help even out water flows and facilitate agricultural growth. Projects such as these, mitigating damage to ecosystem health and local populations, would benefit all parties concerned and thus facilitate further basin-wide cooperation.

UP IN THE ARAL

Another water basin of concern is the Aral Sea, which is shared by Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan. The basin consists of two major rivers, the Syr Darya and Amu Darya. During the Soviet era, these two rivers were managed relatively effectively. The break-up of the Soviet Union, however, ended that. The major dispute now is between upstream Kyrgyzstan and downstream Uzbekistan over the Syr Darya. During the winter, Kyrgyzstan needs flowing water to produce hydroelectricity whereas Uzbekistan needs to store water to later irrigate cotton fields.

The countries have made several attempts to resolve the dispute. In particular, downstream Uzbekistan, which is rich in fuel and gas, has provided energy to Kyrgyzstan to compensate for keeping water in its large reservoirs until the cotton-growing season. Such barter agreements, however, have had limited success because they are easily manipulated. Downstream states might deliver less fuel during a rainy year, claiming they need less water from upstream reservoirs, and upstream states might deliver less water in retaliation. Kyrgyzstan, frustrated and desperate for energy in winter months, plans to build mega hydro-electric plants in its territory. And another upstream state, Tajikistan, is likewise considering hydro-electricity to satiate its own energy needs. Meanwhile, Uzbekistan is building large reservoirs.

Although these plans might make sense in the very near term, they are inefficient in the medium and long term because they don't solve the real needs of downstream states for large storage capacity to protect against water variability across time. In fact, both Kyrgyzstan and Uzbekistan, along with Kazakhstan, will see substantial increases in water variability between now and 2050. And so, the need to share the benefits of existing large-capacity upstream reservoirs and coordinate water uses through strong and more efficient inter-state agreements is unavoidable.

A stabilized Aral Sea basin would also benefit the United States. With its withdrawal from Afghanistan, Washington has been courting Uzbekistan as a potential alternative ally and provider of stability in the region. The Uzbek government seems willing to host U.S. military bases and work as a counter-weight to Russia. Kyrgyzstan is also an important regional player. The Manas Air Base, the U.S. military installation near Bishkek, is an important transit point. The country is also working with

the United States to battle drug trafficking and infiltration of criminal and insurgent groups. Regional instability could disrupt any of these strategic relationships.

If the past is any indication, the world probably does not need to worry about impending water wars. But they must recognize how tensions over water can easily fuel larger conflicts and distract states from other important geopolitical and domestic priorities. Since formal inter-state institutions are key to alleviating tensions over shared resources, it would be wise, then, for the involved governments as well as the international community to negotiate sufficiently robust agreements to deal with impending environmental change. Otherwise, freshwater will only further frustrate stability efforts in the world's volatile regions.

“No Wars for Water”, 18/10/2012, online at: <http://www.foreignaffairs.com/articles/138208/shlomi-dinar-lucia-de-stefano-james-duncan-kerstin-stahl-kenneth/no-wars-for-water>

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❖ Israel's innovative water technologies

On Kol Nidrei night, I was once again asked by my congregation to make the annual State of Israel Bond appeal. For 14 years, I have related the value of that investment opportunity in Israel, in terms of supported infrastructure projects. This year, my focus was water.

In September 2011, documents were released by Israel's Ministry of Industry, Trade and Labor's Foreign Trade Administration, Investment Promotion Centre. The Israel's Water Sector presentation, along with the brochure Israel's Water Industry: A History of Turning Desert into Oasis, summarize statistics that explain what drives Israel's leadership in the water sector.

An Israeli consumes 250 litres of water a day. By comparison, Canada's water consumption rate is about 325 litres of water a day, according to a 2010 McKinsey and Company summarization of a Water Resources Group report.

In Israel, 49 per cent of available water is used for agriculture, 35 per cent for domestic use, six per cent by industry and the remaining 10 per cent is used to supply neighbouring areas or other natural uses. Through improved efficiency and technological innovation, Israel's total water consumption has remained nearly the same since 1964, in spite of a growing population and agriculture. In Canada, where fresh water is in abundant supply, finding a comparative breakdown is difficult. We know that water is used to generate electricity, raise crops, develop the Oil Sands, produce forest products and manufacture consumer goods. Water-intensive manufacturing sectors including food and beverage face direct challenges with respect to sourcing water of sufficient quality and quantity.

Israel's water consumption in 2010 was 2,030 million cubic metres (MCM) per year, of which only 1,170 MCM is refilled by natural means. To help with Israeli rainfall, we add, "Mashiv ha'ruach u'morid hageshem," to our daily Shmoneh Esrei prayers between Shmini Atzeret and Passover. Prayer will only get us so far.

This scarcity of water in Israel has led to innovation. Israeli scientists have managed to turn the country into a world leader in innovative water technologies.

According to Israel Bonds, the country has some 166 water-technology enterprises, including 91 companies offering water-efficiency solutions, 50 firms specializing in waste-water reuse and desalination, and another 25 offering water control and command systems.

Israel's capabilities in water technologies include: water recycling and management, leakage and water-loss detection and prevention through the use of advanced metering, analyzers and control systems, advanced irrigation and desalination.

Water desalination converts saltwater so that it may be suitable for irrigation. Israel is pioneering cost-effective ways of providing fresh water for regions where its availability is limited.

Infrastructure build-out is supported by Israel Bonds. The world's largest seawater reverse-osmosis desalination plant opened in Hadera in May 2010. With two more plants planned for the near future, Israel predicts that two-thirds of the nation's water will be provided by five plants when all of them are in operation.

Over the next few articles we will look at ways Israeli water technology could bring value to Canada.

"Israel's innovative water technologies", 18/10/2012, online at: <http://www.cjnews.com/index.php?q=node/95737>

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❖ NIS 160m. allocated for waste separation

Environmental Protection Ministry awards money to local authorities joining its waste separation “recycling revolution.”

The Environmental Protection Ministry will award NIS 160 million to local authorities joining the office’s waste separation “recycling revolution,” it announced on Monday.

In addition to funding infrastructure for waste separation at the source, the money will also enable the acquisition of collection trucks for the separated garbage and for informational activities, according to the ministry.

This latest amount of financing joins the already NIS 350m.

allocated to 31 local authorities, which has given 94,000 families the opportunity to participate in “wet” (leftover food) and “dry” (paper, plastic, etc.) waste separation. For the latest block of funds, the ministry said it is granting preference to areas deemed national priority regions or places in the periphery.

“The recycling revolution is already a daily fact that exists in about half-a-million Israeli homes,” Environmental Protection Minister Gilad Erdan said. “Authorities realize the economic potential of recycling and the improvement in quality of life of their residents, and therefore, it is not surprising that more and more cities want to take part in the revolution that we are leading.”

The maximum individual grant per city will be NIS 40m., and granting criteria will be based on a number of factors, such as how many households will be participating in the venture and the execution time. The selected authorities will receive grants to finance educational projects for the residents, operational support, waste separation infrastructure, collection trucks and much more, the ministry said.

Among the 31 cities already participating in the waste separation program are Dimona, Beersheba, Ashdod and Afula, where wet debris is already being transferred to produce green electricity and

fertilizer, according to the ministry. By the end of 2014, approximately half-a-million residents of Israel will be participating in the waste separation effort, the ministry said.

“NIS 160m. allocated for waste separation”, Jerusalem Post, 18/10/2012, online at:
<http://mideastenvironment.apps01.yorku.ca/?p=6100>

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❖ Japan Funds Compost Production Plant in Jericho

RAMALLAH, October 18, 2012 (WAFA) – With the fund of \$220,000 from Japan, the Agricultural Engineers Home Society (AEHS) built a local compost production plant to produce about 1,050 tons of compost of a very good quality and affordable price on an annual basis, said a press release by Representative Office of Japan.

Japan’s Ambassador for the Palestinian Affairs and the Representative of Japan to the PA, Matsuura Junya, attended the opening ceremony of the project titled “Establishing a Compost Production Plant in Jericho Agricultural District.”

The release stated the importance of the project is because at least 1,800 agricultural households in Jericho governorate will use the produced compost. “Thus, improving the agricultural sector in that area though assisting farmers to increase the agricultural productivity, and improving food security among Palestinian people.”

AEHS built this plant on a five dunums of land owned by the Arab Development Society, procured the needed agricultural machineries and equipments and installed them inside the barracks.

Junya emphasized Japan’s firm commitment of supporting the Palestinian people from human security perspective and the importance of implementing social and economic development projects needed for Palestinian communities.

The project was funded by the Government of Japan in 2011, through its Grant Assistance for Grassroots Human Security Projects (GGP) and implemented by AEHS in cooperation with the Arab Development Society (ADS).

“Japan Funds Compost Production Plant in Jericho”, WAFA, 18/10/2012, online at:
<http://mideastenvironment.apps01.yorku.ca/?p=6110>

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❖ Shapira deems water prices illogical

Rates have risen 30% since January 2010 reform, says state comptroller, but lack research and reasoning.

Domestic water tariffs are unjustifiably high and require much more comprehensive investigations before fixing them at the current rate, State Comptroller Yosef Shapira argued in his latest report.

The state comptroller reviewed the Water Authority method of setting rates for water and sewage – rates that since a reform in January 2010 have risen by 30 percent, without proper research and reasoning, according to the report. Based on the reform, local authorities also have had to build their own water companies.

The domestic consumer water tariff is determined in a two-pronged fashion – a lower rate for a basic amount of water use and a higher rate for water consumed beyond that amount. However, the process for determining what the basic amount should be is flawed and has not undergone thorough examinations of factors that affect national per capita consumption, according to Shapira. Consequently, there was no solid basis for determining the basic amount was 2.5 cubic meters of water for a year and a half beginning in January 2010, or the determination of 3.5 cubic meters per capita per month in July 2011, he explained.

By completion of the audit in November 2011, the Finance Ministry had not yet determined an arrangement on the matter of increasing discounts for vulnerable populations, such as the poor, the disabled and the elderly. In March 2012, the Finance Ministry approved about NIS 42 million, and the Water Authority said it was preparing to implement the decision in July 2012.

As far as the water companies are concerned, by November 2011, 137 authorities combined efforts to form 52 local water companies, and 48 authorities still needed to do so. A goal of the Water Authority is having local authorities consolidate such companies – create 13 for the remaining 48, for example, which could save the country NIS 500m. and potentially reduce prices by 7%, according to a report generated by an external adviser to the Water Authority. However, a year has passed since

the expert submitted the report and the Water Authority's council has not brought up the matter for discussion, Shapira said.

In response to the report, a Water Authority statement welcomed what the office deemed a "thorough, insightful work," but explained that the authority has already begun to identify many of the deficiencies cited in the report and is working to repair the vast majority.

Regarding the special needs population, the Water Authority adopted the Finance Committee's decision and will be doubling the amount of people eligible for the discounts to 250,000, according to the statement.

As far as the domestic water prices are concerned, the layout of determining rates in 2010 changed from being a result of agreements at a discussion table to relying on a professional economic model, the Water Authority explained. Aiming to minimize rates as much as possible, the authority conducts regular tests and also accounts for the costs associated with service providers, according the statement.

"The authority is actively working to prevent the rise of water prices and aspires even to lower it, with great effort and by coping with increases in electricity and energy costs, which influences the price of water," the Water Authority said.

"Shapira deems water prices illogical", Jerusalem Post, 18/10/2012, online at:
<http://mideastenvironment.apps01.yorku.ca/?p=6114>

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❖ Israeli scientist awarded 2012 World Food Prize for micro-irrigation

Israeli scientist Daniel Hillel was awarded the 2012 World Food Prize Thursday evening for conceiving and implementing a radically new mode of bringing water to crops in arid and dry land regions, known as micro-irrigation.

Hillel's pioneering scientific work in Israel revolutionized food production, first in the Middle East, and then in other regions around the world over the past five decades. His work laid the foundation for maximizing efficient water usage in agriculture, increasing crop yields, and minimizing environmental degradation.

Hillel proved that plants grown in continuously moist soil, achieved through micro-irrigation, produced higher yields than plants grown under the old flooding or sprinkler irrigation methods.

Using less water in agriculture per unit of land not only conserves a scarce resource in arid and semi-arid regions, but also results in significantly "more crop per drop," with the successful cultivation of field crops and fruit trees - even in coarse sands and gravel.

By integrating complex scientific principles, designing practical applications, and achieving wide outreach to farmers, communities, researchers, and agricultural policymakers in more than 30 countries, Hillel has impacted the lives of millions.

Receiving the award, Hillel said his joy was "tempered by the realization that work is far from completed" and that enhancing agricultural productivity and protecting the environment is still a challenge.

The scientist who is also awarded for bridging the cultural and religious divide in the advancement of science and technology, vowed to keep on breaking sectarian barriers to promote international cooperation and inter-disciplinary exchanges.

In his speech at the laureate award ceremony held here at the Iowa State capitol, UN Secretary-General Ban Ki-moon hailed Hillel as a "remarkable scientist" in fighting drought.

The UN chief referred to the right to food as the "fundamental human right", noting "Ending hunger is a wise thing, smart thing and necessary thing to do, something we must do."

The World Food Prize was founded in 1986 by Dr. Norman E. Borlaug, recipient of the 1970 Nobel Peace Prize, whose pioneering work in producing higher yielding strains of wheat ushered in the Green Revolution, which transformed modern agriculture and prevented global famine.

Since then, the World Food Prize has honored outstanding individuals who have made vital contributions to improving the quality, quantity or availability of food throughout the world. Laureates have been recognized from Bangladesh, Brazil, China, Denmark, Ethiopia, Ghana, India, Mexico, Sierra Leone, Switzerland, Britain, the United Nations and the United States.

"Israeli scientist awarded 2012 World Food Prize for micro-irrigation", 19/10/2012, online at:
<http://www.globaltimes.cn/content/739400.shtml>

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❖ **Jordan: Fund launched to protect biodiversity in Mediterranean Basin**

BirdLife International has launched a fund to finance projects that preserve the environment in the Mediterranean Basin, one of the world's largest biodiversity hotspots, Global Arab Network reports according to Jordan Times.

The fund is a five-year conservation investment in the Mediterranean Basin that seeks to preserve biodiversity and the environment by engaging and building the capacity of civil society organisations, said Ibrahim Khader, regional director of BirdLife International's Middle East Division.

"The Mediterranean Basin is the second largest global biodiversity hotspot, covering more than two million square kilometres across 34 countries and territories. It stretches from Portugal to Jordan and from northern Italy to Cape Verde," Khader said.

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 noted.

"The primary threat in the hotspot is habitat loss due to increasing pressure on water resources, agricultural intensification, land abandonment, and infrastructure and residential development," Khader told reporters at a meeting on Wednesday.

BirdLife International will announce a call for proposals twice a year for small grants worth up to \$20,000 and large grants of up to \$1 million, according to the regional director.

"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,

according to BirdLife International.

CEPF Programme Leader at BirdLife International's Middle East Division Mohammed Yousef said that the grants awarded to civil society organisations will work towards safeguarding globally threatened species and critical sites in the Mediterranean Basin.

"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," Yousef said. (Jordan Times)

"Jordan: Fund launched to protect biodiversity in Mediterranean Basin", 21/10/2012, online at:

<http://www.english.globalarabnetwork.com/2012102112704/Economics/jordan-fund-launched-to-protect-biodiversity-in-mediterranean-basin.html>

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❖ Reverse Osmosis to rescue water scarcity in the dead sea

Amman (Jordan), Oct. 14, – Engineers and scientists are expected to use Reverse Osmosis (RO) technology to merge the Dead and the Red seas under the “Two Seas Canal Project” worth 10 billion dollars.

RO, occurs when water is moved across a membrane against a concentration gradient from lower to higher concentration, under pressure to force ions, molecules and bacteria to be filtered, which is used purposely for the commercial desalination of seawater.

The project, to run in three-phases would be financed through international and multi-national institutions with counterpart funding from beneficiary countries, namely, Palestine, Jordan and Israel, would haul in 700,000 cubic metres of water into the Dead Sea from the Red Sea, a distance of 180 kilometres.

Results of feasibility studies and Environmental Impact Assessment (EIA) supported by the World Bank and other donors are yet to be released for concrete works to commence.

The region is witnessing water scarcity with its main freshwater source, the River Jordan, which has kept shrinking in size and posing declines in its annual flow from more than 1.3 billion cubic meters per year to less than 30 million cubic meters annually.

With Israel, Jordan and Syria, each grabbing as much clean water as they could, it is ironically the sewage that is keeping the river alive today.

In fact, water scarcity is a disincentive to many in the agriculture and industrial sectors as well as for domestic consumption, largely due to urbanization, pollution and global warming.

Mr Batir Wardam, environment expert and researcher, said the project, though ambitious, is expected to revive the biodiversity and water scarcity in the region.

He called for use of science to distinguish between myths and reality while urging the media to lead the crusade by setting the right agenda.

General Secretary of the Ministry of Water, Mr Bassem Talfah, said the situation is scary, which demands prompt action hence the invitation to the private sector to strike partnership with to government to diversify funding and implementation of the project.

He said the sector needs higher investment portfolios resulting from higher financial outlays in production cost stating that this manifests in a financial gap of One Billion Jordanian Dinar.

Mr Khaled Irani, President of Royal Society for the Conservation of Nature, said the problem of water scarcity is not only a humanitarian issue but economic as well.

“Sixty-six percent of water is imported into Jordan of which 15 percent goes into agricultural activities. We cannot wait for the commencement of this project as its prospects are overwhelming.”

He entreated stakeholders to avoid knee-jerk reactions even as the recommendations are released and positive that the project would provide an alternative means for water in the country and beyond.

Contrarily, Dr Samir Mahmoud, media expert, said double-political commitment was needed to actualize the Two-Seas canal project as it is “haunted by political inactivity.”

“With the pace of development and disregard for timelines, the canal project will not see the light of day now, not within the next two decades,” he suggested.

He said merging the two seas would have an environmental catastrophe for Jordan, especially for occupying the lowest bit of the project.

Dr Mahmoud explained that Jordan’s location with increased salinity could be a bouquet for destabilization of the ecology in relation to marine life and culture of the Dead Sea.

“Reverse Osmosis to rescue water scarcity in the dead sea”, 14/10/2012, online at:

<http://www.ghananewsagency.org/details/Science/Reverse-Osmosis-to-rescue-water-scarcity-in-the-dead-sea/?ci=8&ai=50610#.UIP5wWcb6sg>

❖ UNICEF to use Israeli produced water purification tablets in Syria

Following a growing shortage of drinking water in Syria, UNICEF plans on using the "AquaTabs" system

The United Nations Children Fund (UNICEF) plans on using Israeli-made water purification tablets in their efforts to aid the people of war-torn Syria. UNICEF expressed interest in the company's "AquaTabs" water purification product following the growing shortage of drinking water in war-torn Syria.

"AquaTabs" is a tablet which is added to drinking water to kill most harmful micro-organisms in water to prevent cholera, typhoid, dysentery and other water borne diseases. The tablet dissolves clear within minutes and disinfects the water within 30 minutes. This product is recommended for disinfecting raw or pre-treated (settled, coagulated and/or filtered) water supplies intended for use as drinking water for humans. The source of water to be treated may be a river, lake, well, cistern or similar system at temperatures as low as 4°C.

Israel's Israel Chemicals (ICL) received a special authorization from the Israeli government to knowingly sell the tables for use in the neighboring country. The company needed government approval for the deal since it involved the delivery of Israeli products to an enemy state. The deal will be carried out by ICL's Ireland-based subsidiary, Medentech. Israel's Finance Minister Yuval Steinitz who approved the deal was called on to authorize the deal, due to the innate political sensitivities. He did so citing humanitarian grounds; as well as the fact that the product will not be sold directly to Syria, but rather to the UN agency.

“UNICEF to use Israeli produced water purification tablets in Syria”, 21/10/2012, online at:

<http://www.port2port.com/Index.asp?CategoryID=46&ArticleID=3333>

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❖ **Israel has room for in-home water recycling'**

While boasting high wastewater treatment, a thriving desalination industry, Israel lacks in decentralized systems.

While Israel's authorities allow almost no decentralized water systems, experts stressed that there would be a place for such structures – particularly greywater recycling mechanisms – in the country's future, at a conference in the Negev last week.

The third Sde Boker Conference on Advanced Water Management Technologies was held at Ben-Gurion University Sde Boker campus.

Other highly developed countries, such as the United States, Australia and Germany, allow at least to some extent the reuse of household greywater, but the Health Ministry still takes issue with such practices due to fears of health risk, according to Prof. Amit Gross, of the Environmental Hydrology and Microbiology Department at BGU's Zuckerberg Institute for Water Research.

While Israel reuses a higher proportion of treated wastewater than any country by far – more than 80 percent – and its desalinated water industry also thrives, all of these mechanisms are performed in a centralized, large-scale form. Decentralized greywater reuse, on the other hand, would mean individual homes reusing sink and shower basin water to flush their toilets and water their gardens, experts explained.

“In Israel we neglect almost completely the discipline of decentralized water treatment,” Gross said.

To put it simply, blackwater is defined as feces with flushing water and urine, yellowwater is urine with or without flushing water, brownwater is feces with flushing water without urine, and greywater is other domestic sewage – such as used shower or sink water, Prof. Jörg Londong of the Bauhaus-Universität Weimar said.

Londong spoke of projects in Germany and Switzerland where waste products are being separated into streams right from the home – deriving nutrients such as nitrogen, phosphorus and potassium from urine, organic content for biogas and fertilizer from feces, and reusable water from greywater. The ideal situation, he said, would be “using everything, not just water but the nutrients.”

About 70% of urban water demand in developed countries is for domestic consumption, and of that 70%, about 60% to 70% becomes greywater, said Prof. Eran Fridler, of the Environmental, Water and Agricultural Engineering Department at the Technion-Israel Institute of Technology.

Of that greywater, about two-thirds is deemed light greywater – bath, shower and wash-basin water – and about one-third is dark greywater – water from the kitchen sink, the dishwasher and the washing machine, Fridler explained.

By using greywater to flush toilets, countries can reduce the demand for potable water by 30%, and by using it to both flush toilets and water gardens, countries can reduce the demand by 40%, Fridler said.

“When planning our systems we have to think about how to save and use more efficiently our water,” said Eli Cohen, CEO and an engineer at the Tzipori-based Ayala Water and Ecology, which develops natural biological systems for wastewater treatment.

While a centralized approach might be easier to control, it requires more infrastructure, longer-range transport, more piping, pumping, maintenance, water loss, energy and contamination, Cohen explained. Decentralized approaches lack those disadvantages but still are often seen as a nuisance to the surrounding community and also require complex technological skill to install, he said.

“It’s starting to get its place in the world, but it’s too slow,” he said.

Gross and a team have been experimenting with greywater flow for three years, using installed constructed wetlands for further purification to irrigate landscapes and gardens. While there have been failures – only 45% of the systems experienced no failure during the entire period – fecal coliform levels met stringent Israeli standards, and soil treated with the greywater was similar in quality to soil treated with freshwater, he said.

Gross stressed his hope that Israeli authorities would warm up to the idea of using decentralized greywater systems.

“One major issue is that there is a lack of long-term quantitative information, and if we introduce that I think we can convince the authorities that it is possible,” he said.

On a national scale, using greywater could reduce urban water consumption by an annual 140 million cubic meters by 2050 (around 10%), as well as reduce electricity usage by 560 gigawatt-hours (about 0.5%) by that time, according to Gross. Meanwhile, the country would be able to eliminate the need of one large desalination plant, reduce carbon dioxide emissions by about an annual 6 to 8 tons and save about \$3 billion-\$4b. in direct costs by that same year, he added.

“Even in a single-house operation, water reuse can be economical and it can increase water savings by 40%,” Gross said. “It is recommended that the Israeli authorities will firmly advance and adopt current initiations for greywater reuse.”

“Israel has room for in-home water recycling”, 21/10/2012, online at: <http://www.jpost.com/Sci-Tech/Article.aspx?id=288683>

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❖ Serious Water Concerns for Israel

For anyone living in Eretz Yisrael it is clear that concerns over water are serious and genuine, no less than the military threats that occupy the IDF's top generals. International experts predict that the 'big war' in the region between Israel and her neighbors will not be over territory, but over water, the most precious and limited resource.

The primary water source for the Kinneret is the Jordan River, which is fed from the Banias, the Dan and the Hasbani River. The Dan and Banias are in Israel, so controlling those sources is not problematic for Israel. However, a considerable portion of the Hasbani is north of the border, and therefore it can be directly targeted by Lebanon or via Syria.

The main water source for the Hasbani is about three kilometers (1.8 miles) north of Israel's border in the Shebaa Farm area of Lebanon. Israel first complained about a decade ago after detecting ongoing work which officials feared was intended to redirect the flow of at least a portion of the water. Following Israeli objections, the work was halted and Israeli fears were abated.

Now however, Israel is growing increasingly concerned as a resort village is being constructed on 40 dunam (10 acres) on the west bank of the Hasbani, a resort which will include dozens of vacation tzimmerim, pools and other buildings. Israeli experts have two primary fears, that the water may be redirected in part and that the sewage from the resort will be dumped into the water source and thereby contaminate that source of water which is essential to Israel.

Lebanese officials responding to Israeli concerns are quick to assure Israel the resort village will be environmentally friendly and even the construction will not compromise the water source in any way. According to the resort's manager, Halil Abdullah, quoted in the daily Yediot Achronot, Israeli concerns are baseless and tourism officials are simply afraid the presence of the resort village which symbolizes peace and tranquility "since Israel is uninterested in peace".

The report concludes that the Lebanese Army, which fears "escalated tensions in the region", has ordered a halt to the construction but Israel believes this is only a temporary move and the situation remains under the watchful eye of those responsible.

The IDF Spokesman reports the construction in that area is unauthorized and as such, the matter is under investigation.

“Serious Water Concerns for Israel”, 14/10/2012, online at:

<http://www.theyeshivaworld.com/news/General+News/141303/Serious-Water-Concerns-for-Israel.html>

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❖ Sea of Galilee water levels are encouraging

Israeli officials this week expressed satisfaction and were even encouraged by the water level of the Sea of Galilee, Israel's main fresh water reservoir, as the summer months come to an end.

Over the past eight years, the Sea of Galilee, known locally as the Kinneret, has been hard hit by drought, a situation that raised serious questions about Israel's future water security.

But this year the Kinneret sits a full meter higher than it did at this time in 2011. The current level of 212.345 meters (696.67 feet) below sea level is also the highest the Kinneret has been at the end of summer since 2006.

The head of Israel's Water Authority told *The Jerusalem Post* that the increased water supply was due to decent rainfall last winter, less pumping from the Kinneret during the summer, greater conservation among Israelis, and a growing desalination program along Israel's Mediterranean coast.

Officials noted that if the coming winter has above average rainfall, the Kinneret could recover a significant amount of its lost water. Israelis and their friends abroad are sincerely praying for just that.

“Sea of Galilee water levels are encouraging”, 14/10/2012,online at:
<http://www.israeltoday.co.il/NewsItem/tabid/178/nid/23428/Default.aspx>

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❖ Drip, Drip, Drip

Daniel Hillel talks about how he helped revolutionize the way farmers water their crops

Daniel Hillel helped change the way farmers in the Middle East water their crops. Now the rest of the world is catching on.

Decades ago, the Israeli-American scientist helped develop and spread an idea called micro-irrigation agriculture. Rather than flooding the land at infrequent intervals, crops are exposed to small amounts of water in frequent or continuous doses. The result: much more efficient use of a tight water supply in arid climates.

The breakthrough—for which Dr. Hillel was awarded the 2012 World Food Prize—took root throughout the Mideast and parts of Africa. But it's seeing higher usage these days as more countries, from the U.S. to India to Mexico, face devastating droughts, many scientists say, because of climate change and vast population growth.

Not only are growing numbers of places adopting these methods, but they're doing new and inventive things with them, such as using new types of tubing that can more easily get water into the soil.

The Wall Street Journal spoke with Dr. Hillel about his contributions to micro-irrigation, the method's spread around the world and his concerns for global food security. Here are edited excerpts of the conversation.

A Dream of Open Spaces

WSJ: *What inspired you to choose a career in agriculture?*

DR. HILLEL: I was born in Los Angeles in 1930 at the start of the Great Depression. At an early age, I moved with my family to Palestine—a part of which would eventually become the state of Israel. At age 9, I was sent to live on a kibbutz, and I learned the reality and challenges of farming in arid conditions. I fell in love with the land, the soil, the ever-changing weather and open spaces. The miracle of irrigation was a revelation for me. I have kept this love all my life, and it became my vocation and avocation.

WSJ: *At what point did your focus shift to drip-irrigation methods?*

DR. HILLEL: After I completed my studies at Hebrew University [in the late 1950s], I began to develop, together with colleagues, ideas to improve the efficiency of soil and water management in arid conditions. Traditional methods of irrigation focused on flooding the land so as to saturate the soil, but this meant crops were alternately subjected to an excess of water and then to gradual desiccation.

But we realized through drip irrigation, by applying water to the rooting zone of crops very gradually, drop by drop, the soil is never saturated nor ever allowed to desiccate. Consequently, the system becomes more sustainable, water is used more efficiently and farmers could get much more crop per drop.

WSJ: *How did you take the idea of drip irrigation as a concept and apply it to the real world? What challenges did you face in its application?*

DR. HILLEL: We were lucky enough to be developing our ideas during the 1960s plastics boom just as low-cost weathering-resistant plastics became available. While earlier the soil could only be irrigated by flooding or via expensive portable metallic pipes, the invention of low-cost plastic made it possible to apply small doses of water to the soil continuously, so we could dictate how much water exactly the plants would be provided, at a rate commensurate with their changing needs.

WSJ: *How did this new technological process then become widespread around the world?*

DR. HILLEL: The system of drip irrigation was patented by enterprising engineer Simcha Blass. Drip-irrigation systems manufacture was instituted in Israel during the 1960s, from where it spread throughout the world. Basically, in collaboration with the United Nations and the World Bank, I have served in more than 30 countries to apply and disseminate improved methods of irrigation, including Jordan, the United Arab Emirates and Palestine, as well as in parts of Asia and Africa.

WSJ: *Where do we see drip-irrigation methods spreading to today and why?*

DR. HILLEL: We see drip-irrigation methods spreading to various parts of the world, such as parts of the U.S.A., different parts of India as well as various parts of Africa, such as Zimbabwe. All these countries face the same issue: the great need of intensifying crop production in a context of heavy population growth and climate-change issues, such as drought. The technology must be constantly innovated and tailored to the crop types in question. For example, we've seen irrigation technology that is solar powered and also developments to the tubing material used; instead of using plastic tubing there have been switches to ceramic as the material is more porous.

WSJ: *Can you name one country in particular that has recently adopted drip irrigation with great results?*

DR. HILLEL: For me, I see Egypt as a great success story—a population that has witnessed soaring population growth and has managed to intensify its crop production as a result of drip-irrigation technology.

What's to Come

WSJ: *What other advances would you like to see in irrigation methods?*

DR. HILLEL: Rather than just trying to control the soil or the greenhouse, control over the entire environment of the plant should be the next focus, and recognition of this has very recently started. The intensity of light, wind force, even the genetic makeup of the plant, are conditions that can all be controlled in irrigation.

We must confine agricultural production to limited areas where we have control because then one can dictate the conditions of the environment, while protecting the larger environment and its natural biodiversity.

WSJ: *Do you think that international governments need to do more to place agricultural issues and food security higher on the political agenda?*

DR. HILLEL: I firmly believe that international governments, as well as agencies, must do more in this regard.

Obviously, there is also the risk that temporary pressing issues, such as the global economic crisis, could divert attention from what is ultimately fateful: the welfare of humanity and biodiversity in a world of dwindling resources and an unstable clima

“Drip, Drip, Drip”, 15/10/2012,online at:

http://online.wsj.com/article/SB10000872396390443855804577602930583558076.html?mod=googlenews_wsj

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❖ The Battle for Water - India's food insecurity compounded by water scarcity

Since India's independence, the mammoth task of feeding its hundreds of millions, most of whom are extremely poor, has been a major challenge to policymakers. In the coming decades, the issue of food insecurity is likely to affect almost all Indians. However, for the poorest amongst us, it could be catastrophic. India ranks 65 of 79 countries in the [Global Hunger Index](#). This is extremely alarming.

In the past few years, uneven weather patterns combined with over exploited and depleting water resources in various parts of India have wreaked havoc on food security, particularly for small and marginal farmers, as well as the rural poor.

The recently launched Global Food Security Index (GFSI) estimates that in 2012, there are 224 million Indians, around 19% of the total population, who are [undernourished](#). The same report also estimates that while the Indian government has various institutions designed to deal with the impact of inflation on food prices, it only spends 1% of agricultural GDP on research to build food security for the [poorest](#). Overall, India ranked 66th on the [GFSI](#). It is estimated that one in four of the world's [malnourished children](#) is in India, more even than in sub-Saharan Africa.

Water insecurity, further exacerbated by climate change, is arguably the most impactful factor on India's food security. India's total water availability per capita is expected to decline to 1,240 cubic metres per person per year by 2030, perilously close to the 1,000 cubic metre benchmark set by the World Bank as ['water scarce'](#).

Factors such as increasing usage, poor infrastructure, and pollution have led to a decline of water quantity and quality in India. Climate change, meanwhile, is expected to cause a two-fold impact.

One, increasing temperatures have hastened the rate of melt of the Himalayan glaciers, upon which major Indian rivers like the Ganges, Indus and Brahmaputra depend.

Second, the effect of climate change on monsoons in India will cause them to become more erratic, arriving earlier or later and lasting for shorter, more intense periods of time. India's farming communities depend overwhelmingly on the monsoon, as their cropping patterns are built around it.

The combined effect of climate change and over exploitation is violating the water cycle, degrading aquifers and eroding ground water resources.

Over 50% of agricultural land in India depends entirely on [groundwater](#). In North and Northeast India, where perennial rivers (rivers that have water year round, i.e. glacier fed rivers in India, such as the Ganges) sustain the agricultural land, have to deal with issues such as flooding caused by climate change impacts such as speedier glacier melt and erratic monsoons.

Meanwhile, farmers in states in West and South India, where rivers are seasonal, have to depend heavily on rapidly depleting groundwater resources.

The worst affected by this type of water-fuelled food insecurity are the small farmers of India. Estimates suggest that between 1995 and 2010, over [2,50,000 farmers](#) in India, mostly from states like Andhra Pradesh and Maharashtra, killed themselves. Most of these farmers were drowning in vicious cycles of debt caused by failed monsoons and increasing droughts.

Responses to this crisis, including the National Action Plan on Climate Change, lay out various solutions and intended interventions, but most focus on the long term. To secure the future of India's water resources *vis-à-vis* its agriculture in the future, it is important that certain steps be taken immediately. First and foremost, authorities will have to remove the mindset that water is an endless resource and the solution to water woes is simply a further development of India's fast depleting groundwater.

Indeed, Dr. Mihir Shah, co-Founder, [Samaj Pragati Sahayog](#) (SPS) and member of the Planning Commission of India has stated that the 'era of further water development may be over' and emphasized that we have to urgently introduce more [efficient water management](#). In this regard, promotion of irrigation efficiency will be crucial in the future.

Systems such as drip irrigation and [System of Rice Intensification](#) (SRI) to farmers across India will be essential. It will also be necessary to promote water conservation methods such as rain water harvesting, which has been successful in urban India, in villages as well.

At the same time, reducing inefficiencies and water wastage through conveyance losses will require governmental and NGO support in actions such as replacing faulty pipes and pumps. Hence, India needs to invest on improving its water productivity, and any capacity to produce more food like [rice](#) with less water will be an important contribution to sustainable water and food security.

In short, India is facing a bleak future of becoming water scarce and painfully food insecure. How exactly are the country's hundreds of millions, who depend entirely on agriculture for their livelihoods, as well as those that depend on agriculture for their food needs, to make ends meet?

Delaying this issue is simply not an option for India as this could lead to increased instability, poor human development and enhance intergenerational poverty. India needs to ensure food security through sustainable development and create resilience amongst the most vulnerable in the country: the poor.

“The Battle for Water - India's food insecurity compounded by water scarcity”, 16/10/2012, online at:
<http://www.trust.org/alertnet/blogs/the-battle-for-water/indias-food-insecurity-compounded-by-water-scarcity>

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❖ **Diamer-Bhasha dam: Pakistan must get NOC from India, insist multilaterals**

Pakistani officialdom has failed to grasp the fact that multilaterals such as the Asian Development Bank (ADB) and World Bank will not support the construction of the 4,500-megawatt Diamer-Bhasha dam in what is considered a disputed territory unless both countries party to the dispute approved the project, sources told this correspondent on Saturday.

It is for this reason that both multilaterals are insisting that Pakistan gets a No Objection Certificate (NOC) from India before financing of the \$13.5 billion project would be considered. Sources said that the ADB delegation, comprising members of the bank's Board of Directors, held meetings with President Asif Ali Zardari, Prime Minister Raja Pervez Ashraf, Finance Minister Dr Abdul Hafeez Shaikh and Minister for Water and Power Ahmad Mukhtar, unambiguously communicating that the project had not been presented before the Board for consideration yet.

"The President, Prime Minister, Finance Minister and Water and Power Ministry all urged the delegation to consider (Pakistan's) funding request for Diamer Bhasha dam and play the lead role of financier," said an official on condition of anonymity. The Board members promised to convey the feelings of Pakistani government to the management of the Bank. According to some top level bureaucrats, ADB will accord approval to the release of \$7.5 million technical assistance for the Diamer-Bhasha dam in its next meeting. However ADB's web site does not indicate any proposal regarding Diamer-Bhasha dam.

The source also indicated that USAID would also release \$7.5 million technical assistance for this project. In December last year, the ADB and USAID had agreed to equally share in providing \$15 million grant technical assistance for conducting "due diligence studies" relating to the dam.

The sources said that ADB's Director-General for Central and West Asia called on the Minister for Water and Power on June 28 this year wherein the main issue discussed was the lead financing role that the ADB had committed to play for the project. During the meeting, ADB staff indicated that the Bank was no longer ready to support the construction. "In view of the DG, ADB, there were too many issues with the project and unless these were resolved, the Bank was in no mood to make a commitment," the sources said.

According to sources, Pakistan shared the dam's financing plan with the ADB delegation which includes securitisation of Wapda assets, Islamic Development Bank (IDB), USAID, Middle East donors and suppliers' credit. "If donors and ADB do not support immediate initiation of the Diamer-Bhasha dam project by announcing a time-bound financing plan and construction schedule, GoP may adopt an alternate plan to

construct the dam. Bulk of the financing for the civil works and the E&M equipment would be sought from export credit banks and supplier's credit from foreign companies that win the contracts. The response is likely to be encouraging as preliminary discussions have already taken place," the sources said.

The sources said that the cost of land acquisition was Rs 50 billion and Rs 66 billion were needed for resettlement of affectees which needed to be financed by the GoP and IDB/ Middle East donors, respectively. A small electricity surcharge on the pattern of Neelum Jhelum Hydropower Project (NJHP) surcharge may be levied for raising funds for Diamer-Bhasha dam. The sequence of development would consist of inviting International Competitive Bidding (ICB) under PPRA rules for Lot 1 for the civil works of dam construction, diversion tunnels and underground power houses costing \$4 billion. Financing support from export credit or commercial banks would be required. Chinese companies have in principle offered to provide Exim Bank loans for these works though a formal process would need to be worked out.

For electromechanical equipment such as turbines, generators, transformers switchyards and transmission lines European, Chinese and other suppliers in the past have offered financing through export credit and suppliers' credit financing. According to Wapda, ADB is responsible for cost escalation in project cost of \$2 billion over the last four years because of causing a delay in dam construction.

"Diamer-Bhasha dam: Pakistan must get NOC from India, insist multilaterals", 21/10/2012, online at:
<http://www.brecorder.com/agriculture-a-allied/183/1249731/>

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❖ **Diamer-Bhasha Dam project: ADB urged to act as lead financier**

Pakistan has requested the Asian Development Bank (ADB) to act as lead financier for \$4.792 billion loan for the construction of Diamer-Bhasha Dam project designed to generate 4500 MW electricity and live water storage capacity of 6.4 million acre feet (MAF), it was learnt.

Sources told Business Recorder that the ADB was requested to act as lead financier of Diamer-Basha Dam project here on Thursday by the economic team led by Finance Minister Dr Abdul Hafeez Sheikh and later during talks on energy sector by the Minister for Water and Power, Ahmed Mukhtar, and other senior officials of Ministry of Finance Water and Power and WAPDA.

The Pakistani side led by Secretary Water and Power Nargis Sethi also gave a presentation to the visiting members of the ADB Board of Directors on the indicative financing plan of \$13.683 billion Diamer-Bhasha Dam project. According to the financing plan, Pakistan would seek \$4.792 billion for Diamer-Bhasha Dam from the ADB, local banks, Exim Banks and supplier credit.

The loan would be used to pay \$1.190 billion as interest payment during construction, \$868 million for cost escalation, \$1.156 billion for the purchase of electrical high voltage equipment and power plant electrical equipment for left and right bank and \$1.119 billion for power plant generation equipment left and right banks. An amount of \$459 million would be used for hydro-mechanical equipment and hydraulic steel structure.

The government would arrange \$1.954 billion for the dam through issuance of Sukuk Bonds/power surcharge while according to indicative financing plan presented to the ADB team, an amount of US \$4.794 billion is estimated for the dam from Islamic Development Bank (IDB), the Middle East donors, USAID, and Public Private Partnership (PPP) supplier credit. The government has also estimated \$2.143 billion for the cost of dam on account of deferred payments from power revenue. An official quoted the senior representatives of ministries as saying that the construction of Bhasha Dam would contribute towards affordable energy by shifting hydel mix from existing 33.61%, to 53.9% after the completion of the dam.

Earlier, ADB Board of Directors led by its executive director Maurin Sitorus also met Finance Minister Dr Abdul Hafeez Sheikh. The Finance Minister requested the ADB to send a review mission on Diamer-Bhasha project as this would encourage other donors interested in this project.

Sitorus of the ADB stated that energy sector and infrastructure reforms were their focal points. Sheikh gave a detailed briefing on the status of overall national economy and stated that despite many challenges such as increasing oil prices, security situation and natural disasters such as floods and rains, economic growth was encouraging. Sources said that some members of the ADB expressed serious concerns over a decline in investment in the country and stated the data showed about 3 per cent decline in investment during the last three years. The ADB board of directors reportedly stated that investment had gone down from 15.4 percent of the GDP in 2010 to 12.5 percent in 2012, which was not a good sign for growth.

The boards of directors of multilaterals are not part of the management and are not engaged in designing, negotiations and drafting of the project agreements. However, the management of the multilaterals have to get approval for the project from their respective boards of directors for the loan amount to be disbursed.

At present, documents available with Business Recorder reveal that the management of ADB has indicated that it would only proceed with financial support for Diamer-Bhasha Dam if the government can procure a "No Objection Certificate" from India. Projects in disputed territory require approval from the two protagonists (both being member countries) of the dispute before multilaterals can approve a project.

“Diamer-Bhasha Dam project: ADB urged to act as lead financier”, 19/10/2012,online at:
<http://www.brecorder.com/money-a-banking/198/1249087/>

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❖ **Madakas, the less known and fast disappearing traditional rainwater harvesting structures from Kerala and Karnataka**

Guest post: Aarti Kelkar - Khambete

Madakas are one of the fast disappearing traditional rainwater harvesting structures found in the laterite belts of Karnataka and Kerala and are basically naturally occurring depressions with high terrain on the three sides where water from the surrounding laterite slopes, mainly runoff from the rains gets accumulated. These have been traditionally used to harvest rainwater by constructing bunds on the open fourth side of the depression to check this runoff from the slopes. However, there is no documentation and information available on the madakas, informs Shree Padreji who points at the urgent need to make efforts at restoring and reviving these traditional structures, which can provide sustainable solutions to the water scarcity problems that the farmers have been facing in recent years

A glimpse of the beautiful village of Padre located in Kasargod district makes it very difficult to believe that this is the place where the endosulphan tragedy continues to leave its imprints on the people in the area. We have come to visit [Shree Padreji](#), better known as the rain water man for his pioneering work on farm journalism and documentation of traditional water harvesting methods for water conservation, who continues to live in the village and works on sensitising the communities on the issues very close to the heart of the farmers such as water conservation through revival of traditional water harvesting methods, documenting and sharing old and new methods and success stories by farmers on water harvesting and developing and propagating agricultural products for markets such as jackfruit. Besides this, he continues to direct attention and sensitise communities from Kerala and Karnataka on the endosulphan issue

The madakas from Karnataka and Kerala

We go to visit the village Bedramballa to look at the traditional rainwater harvesting structures known as the *madakas*, which have traditionally been used for supplementary irrigation for rice fields since a long time. *Madakas* are the most common traditional rainwater harvesting structures used mainly in the laterite belt districts of Dakshina Kannada and Kasargod in Karnataka and Kerala respectively and are basically naturally occurring depressions with high terrain on the three sides where water from the surrounding laterite slopes, mainly runoff from the rains gets accumulated. Traditionally, bunds are constructed on the open fourth side of this depression to check this runoff from the slopes and harvest rainwater.

The laterite soil in agricultural areas is ideal for *madakas* as laterite belts have faster absorption and depletion of water and *madakas* aid in slow percolation of water through the cracks and are thus often

compared to percolation ponds. This helps in recharge of groundwater and water oozes through springs and other outlets into manmade tanks or wells, which are located near the point of water collection in the *madaka*.

The main function of a *madaka* is thus to catch most of the run-off that flows from their catchment in the higher elevations. Besides storage of water for six to seven months, the *madakas* can dry up in summer months, but can help immensely by raising the water table of the aquifers below. Building the *madaka* higher up ensures water in the lower areas until the end of summer. The excess of flow that flows over the bunds can be utilised to irrigate the fields and the *madakas* are most commonly used for irrigation, but its other function of absorbing water for recharge continues to be a relatively less known feature till recent times.

Care has to be taken to see that the first rains do not flow into the *madaka* as they bring along with them leaves and silt from the slopes that can clog the cracks in the *madaka* bed, reducing percolation and also the storage capacity of the *madaka*. Afforestation is also important to prevent silt deposits from accumulating in the *madakas*. Besides their use as water storage structures for irrigation and percolation for groundwater recharge, *madakas* also help by creating a new ecosystem that shelters animals and birds as well as helps in reviving aquatic life.

Our visit to Bedramballa village

We come up across a *madaka*, which looks like a pond or lake like structure or water accumulation, surrounded by natural slopes on three sides and constructed bunds on one side made up of rocks, cutting a serene and peaceful picture with the surrounding green vegetation and the view of the occasional cattle that venture into the water to quench their thirst. We also meet a few villagers sitting under the shades of the trees and rocks around the *Madakas*. We talk to two villagers, Mr Govind and Mr Jagannath who inform us that this is a very old *madaka* and that *madakas* have been useful for irrigation for rice and inform that now very less rice is grown, but still this water is useful for public use and can serve as drinking water for animals and cattle.

There is no documentation and information available on the *madakas*, informs Shree Padreji. *Madakas* continue to be abandoned and replaced by borewells, a temporary, highly exploitative and unsustainable means of procuring water. This calls for an urgent need to make efforts at restoring and reviving and creating awareness regarding this traditional wisdom and knowledge that people have, lest it fast disappears, taking along with it the age old wisdom of our ancestors to live in harmony with nature, not by plundering it, but by treating it with respect and reverence, he argues. The villagers inform us that *Madakas* are fast disappearing and are known only to the elderly in the village!

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Acknowledgements:

The author is extremely thankful to Sree Padreji for providing an overview of the water and agriculture related issues in Kasargod district, for informing and educating her on the importance of madakas as traditional water harvesting structures, taking her to the villages to view the madakas and to meet the villagers in the area

“Madakas, the less known and fast disappearing traditional rainwater harvesting structures from Kerala and Karnataka”, 16/10/2012, online at: <http://www.indiawaterportal.org/post/31954>

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❖ Save water to save Pakistan

ISLAMABAD: Water is essential for human beings to survive and develop. At the same time, water is a scarce commodity and shortage sometimes results in crisis. Both facts lead to the simple conclusion that lack of water hinders development and a dignified life.

Protecting the quality and availability of clean drinking water resources is becoming the most critical of many environmental challenges for Pakistan. Pakistan has, in essence, exhausted its available water resources and is on the verge of becoming a water-deficit country.

According to the [State of Environment Report 2005](#), in Pakistan, availability of water was 5,000 cubic metres per capita per annum in 1951, which dropped to 1,100 cubic metres in 2007. This estimate reveals that the country will slip below the limit of 1,000 cubic metres from 2012 onwards.

The situation could get worse in areas situated outside the Indus Basin where annual average is already below 1,000 cubic metres per capita, according to the report. It is projected that water availability will be less than 700 cubic metres by 2025, says Pak Strategic Country Environment Assessment 2006.

Reduced and sudden release/blockage of water from India, under unilateral interpretations of Indus Waters Treaty, also worsens the situation. This directly adds to water insecurity, food insecurity, energy insecurity and acuteness of vulnerability of the already vulnerable population.

In Pakistan the attempt to raise living standards of citizens has meant that economic development has largely taken precedence over environmental issues. Unchecked use of hazardous chemicals, vehicle emissions and industrial activity have contributed to a number of environmental and health hazards, chief among them being water pollution. Much of the country suffers from a lack of potable water due to industrial waste and agricultural runoff that contaminates drinking water supplies.

With increasing population and depleting water resources, the country is fast heading towards water shortage and threat of famine. The minimum water requirement to avoid being a “water short country” is 1,000 cubic metres per capita per year.

Fresh storages, therefore, have to be created by building dams to replenish the lost capacity and save the agricultural economy from total disaster, and produce food grains for rapidly increasing population.

About 80% of Punjab has fresh groundwater, with some saline water in the south and in desert areas. In Sindh, less than 30% of groundwater is fresh. Much of the province is underlain by highly brackish water. In Khyber-Pakhtunkhwa, increasing abstraction has led to wells reaching saline layers, and much of Balochistan also has saline groundwater ([Pak-SCEA 2006](#)).

The quality of water in federal capital Islamabad and adjacent city Rawalpindi is no better than the rest of the country. A survey carried out by the National Institute of Health (NIH) revealed that 75% of water in Islamabad and 87% in Rawalpindi is unsafe for human consumption.

The statistics show that there is a close link between poor quality of water and health risk. In Pakistan, diarrheal diseases are estimated to kill 200,000 children under the age of five years (548 per day) due to contaminated water. The cost to the economy due to diarrhea is estimated at Rs55-80 billion per year.

Total health costs of water-related mortality and morbidity are estimated at Rs114 billion or approximately 1.81% of GDP (Pak-SCEA 2006).

According to Water Sector Investment Planning Study, Pakistan will face a deficit of 12 million tons in total grain production in 2012-13 which is 31% of projected target. Such large scale deficit cannot be bridged simply by improving farming practices and technology. The irrigation supplies scenario, by the year 2012-13, would be critical, and it will become increasingly disastrous year-by-year thereafter. Hence, there is an urgent need to save water and of more storage dams.

There are no clear guidelines, rules or regulations for groundwater/fresh water abstraction, which results in depletion of ground water resources in the country. In addition to this, provision of safe water to inhabitants seems to be a low priority for successive governments.

Even in presence of policies like National Water Policy (draft), National Drinking Water Policy (draft), National Environment Policy, etc, there is no clear strategy to implement them. Experts

believe that rising water conflicts is more of a governance issue. If we want to save Pakistan, then we must save our water resources by resolving our governance issues.

“Save water to save Pakistan”, 15/10/2012, online at: <http://tribune.com.pk/story/451620/save-water-to-save-pakistan/>

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❖ Emerging Asia Hits a Wall of Water

It's often said that people are a nation's greatest resource. That can be true, especially with their knowledge and creativity, which can supplement physical resources. But one basic must is hard to think your way around: water.

So it is that the great emerging nations of Asia–China, India, Indonesia–face a wall in their development. All are confronted with either a scarcity of moisture in key regions, or an inability to contain the water that sometimes pours and deliver it in potable form to millions for daily life. The results can be barren fields, destructive floods or sickened populations from exposure to contamination.

Usually the water problem is a natural one of scant rainfall or the absence of topographical means of collection and retention, such as mountains for snowpack or lakes and flowing rivers. Thus you can have monsoons and still be dried out. (Some challenge the notion that this is any longer “natural” by contending that man-made climate change is involved.)

However, even tropical states can be water-constrained when the public infrastructure is so poor that inundation causes bacteria to run off from sewage and other sources and spoil the vital supply. This is the case in booming Indonesia, according to a currently featured article in the country's fine [Strategic Review quarterly](#).

India has both natural and man-made problems. [A recent feature](#) in the licensed edition Forbes India said the country has only 4% of the “total world resource” of water but 18% of the population. It noted: “Deficient monsoons often lead to shortage of drinking and irrigation water. Groundwater is polluted due to poor land practices, atmospheric deposition of pollutants and direct discharge of sewage into water bodies.” Quite a bill of particulars. And then there is [controversy when dams](#) have ultimately been attempted.

Forbes India cited a similar predicament in China, with 7% of “resource share” and 19% of global population. The Chinese government, of course, is more proactive on this front, at least in terms of damming and other diversions intended to route precious fluid from the mountainous south to the populous north. What this is doing or will do to areas like [the Tibetan Plateau](#) is debated, and it is

now difficult for many foreigners to enter that sensitive zone to investigate. China has stumbled on an [attempt to dam northern Burma](#).

(Dams are also a growing issue in the [strategic battleground of Central Asia](#), where the major powers are plying for mineral wealth, whose extraction also takes water.)

So, mere expenditure for mass public works—even if done honestly and efficiently, and not riddled by graft—is not necessarily an easy response to water scarcity. (Few would object to basic water containment and purification projects.) There is also, for most nations, the option of the vast sea, if desalination can be afforded. Countries in North Africa and the Middle East have chosen this course as a palliative. It takes a well-stocked Treasury.

A supremely logical approach is to curb waste and misallocation by pricing water. Yet, failure to do so is common, nowhere more egregiously than in India. But this is understandable: where democracy is most rampant, the interests favored by currently free or cheap common water, if numerous, will be most able to keep their booty. Moreover, [some who grasp the environmental aspects](#) of water misuse nonetheless have a mental block on invoking the market as a remedy.

So we have a fundamental problem amid rising affluence, one that software code largely cannot solve, especially if politics blocks better allocation. Indonesia should be able to marshal its abundance, given honest government. But unless science somehow can muster rain clouds, much of Asia cannot affordably get “more” of something it needs to grow—and live. At some point, if the policy riddle of unpopular allocation is not solved, this becomes a Malthusian knot. That could trump the wisdom of the “people resource” and sidetrack a very promising growth story.

“Emerging Asia Hits a Wall of Water”, 18/10/2012, online at:

http://www.forbes.com/sites/timferguson/2012/10/18/emerging-asia-hits-a-wall-of-water/?utm_source=Circle+of+Blue+WaterNews+%26+Alerts&utm_campaign=10f440379b-RSS_EMAIL_CAMPAIGN&utm_medium=email

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❖ Karnataka has given 55tmcft water to Tamil Nadu

NEW DELHI: The Karnataka government has said the state ensured a flow of 55tmcft of Cauvery water to [Tamil Nadu](#) despite the depletion of its own resources, and expressed the hope that a bountiful retreating monsoon will end the crisis.

"Karnataka has ensured flow of 55tmcft by October 16 to Tamil Nadu by depleting the already inadequate storage from its reservoirs," an official statement here on Wednesday said. Karnataka and Tamil Nadu are engaged in a court battle to settle their claims.

Suggesting that Tamil Nadu just needs to bide time for a couple of weeks, the Karnataka government said the "northeast monsoon will set in in the next couple of days and the forecast from the National Centre for Environmental Prediction indicates very good rain over Tamil Nadu".

Karnataka had earlier refused to accept the mediation of Prime Minister [Manmohan Singh](#) at a meeting held in New Delhi with chief minister Jagadish Shettar rejecting the prescription offered at the meeting.

The state argues that its hands were tied, given the shortfall of rain in all three parts of the Cauvery system. "The Cauvery river system comprises three stems -- KRS, Kabini and intermittent catchment areas. During the current year, rainfall was significantly deficit in all three catchment areas," the release said.

"The flow received in the KRS stem was 67% of the average flow whereas the flow received in the Kabini stem was 40% of the average. Hence, the failure of monsoon in the Wayanad region of Kerala by 51% caused drastic reduction in the inflow to the Kabini stem," the statement said.

The state makes the point that it is much more at risk of drought than Tamil Nadu. "In Karnataka, 64% of the basin area is drought-prone as compared to 29% of the geographical area in Tamil Nadu," the statement added.

"Karnataka has given 55tmcft water to Tamil Nadu", 18/10/2012, online at:
http://articles.timesofindia.indiatimes.com/2012-10-18/bangalore/34554385_1_karnataka-government-cauvery-55tmcft

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❖ City getting chlorinated water, insists KWSB chief

Expressing reservations on the reports by Naegleria Fowleri Monitoring Cell regarding the absence of chlorine in water being supplied to the city, Managing Director Karachi Water and Sewerage Board (KWSB) Misbhauddin Farid said that the water utility has been providing water of international standard and quality by adding required quantity of chlorine in it.

“KWSB is fully aware of its responsibilities and we are fulfilling our responsibility to provide the citizens safe and clean water. We crosscheck our chlorination process and then further ensure it by taking samples from different points,” he told a news conference at COD filter plant here on Wednesday.

The Naegleria Fowleri Monitoring Cell, constituted on the directives of Sindh Health Minister Dr. Sagheer Ahmed, has been issuing reports for the last couple of days, claiming that the analysis of water samples obtained from various city towns indicate that non-chlorinated water was being supplied to the citizens.

Rejecting the reports of the monitoring cell, the KWSB chief said that the water utility has established its own monitoring cell on emergency basis to ensure that the water supply to the people of Karachi meet the international and WHO standards.

“The basic purpose of the cell is to ensure that the people of Karachi are safe from the Naegleria Fowleri parasite. These actions are taken on the directives of Governor Sindh Dr. Ishratul Ebad, Minister Local Bodies Agha Siraj Durrani, Health Minister Dr. Sagheer Ahmed and Secretary Local Bodies, who are also monitoring the whole process,” he claimed.

He said that the KWSB has placed an exceptional monitoring process to monitor the water quality round the clock, adding, “We are testing the water supply on WHO standards ensuring that the water does not contain any contamination or bacteria”.

He reiterated his claim that ample quantity of chlorine as per the standard formula was added to the water being supplied to Karachi.

“The chlorination process is carried out on a specific formula because excess amount of chlorine could be dangerous to health,” he said, adding, “The KWSB is ensuring that 2.5-PPM chlorine is added at all its six filter plants.”

Answering a question regarding awareness campaign, he said that the KWSB has distributed more than one million pamphlets among the citizens as well as taking all necessary actions in full collaboration with Minister Health Dr. Sagheer Ahmed and elected MPAs.

According to him, 25 chemists are working on six filter plants and they use to test more than 150 samples daily. “The KWSB is doing all in its power to supply clean water but the chlorine evaporates from water after a certain period, however, this chlorine cleans the water before evaporation,” he claimed.

Talking about difference in reports, he said that the KWSB has advised the Health Department, Secretary and EDO Health, and concerned town health officers to ensure better sampling process for which a collaborative strategy should be devised and instead of collecting independent samples, all samples should be collected collaboratively.

The MD KWSB also briefed the media about the filtration and the testing process of water vis-à-vis the presence of chlorine.

He also took the journalists to a visit of the chlorinators and laboratory where he answered their queries.

On the occasion, the Water Board chief requested the citizens, associations and mosque committees to ensure cleansing of their underground and overhead tanks.

He also requested the owners and associations of hospitals, schools, colleges, shopping malls and offices to ensure cleansing of their water tanks.

According to him, mud settled in the bed of these tanks affects the efficiency of chlorine since the mud in such tanks dissolves the chlorine within half an hour.

He asked the media people to understand that only the KWSB test report was authentic and invited them to visit its installations whenever they want.

“City getting chlorinated water, insists KWSB chief”, 18/10/2012, online at: http://www.thenews.com.pk/Todays-News-4-138019-City-getting-chlorinated-water-insists-KWSB-chief?utm_source=Circle+of+Blue+WaterNews+%26+Alerts&utm_campaign=10f440379b-RSS_EMAIL_CAMPAIGN&utm_medium=email

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❖ Are We Destined to Fight over Scarce Water Resources?

Are current international agreements strong enough to prevent future conflicts over water? Scott Moore argues that if conflict is defined as interstate warfare, then international agreements have effectively contained disputes in the past and will continue to do so in the immediate future.

By Scott Moore for the ISN

Conflicts over and involving water resources are not new; ancient empires [continually fought](#) over the rivers of the arid Middle East, and some analysts believe that the 1967 Six-Day War was sparked by attempts to [divert the waters of the Jordan River](#). Yet in the past decade the notion that water scarcity is likely to stoke inter-state warfare has gained ever-greater credence. In a [1993 article](#), Peter Gleick wrote that “water and water-supply systems are increasingly likely to be both objectives of military action and instruments of war as human populations grow, as improving standards of living increase the demand for fresh water, and as global climatic changes make water supply and demand more problematic and uncertain.”

Gleick’s statement reveals two key elements of the “water wars” hypothesis: that water scarcity will serve as a driver, and that organized inter-state violent conflict will result. Understood this way, the question of whether the world is likely to experience future water wars can be based on past experience. And the evidence generally indicates that the proposed outcome - violent inter-state conflict over water - is extremely rare. For example, a [landmark 2003 study](#) of some 1800 inter-state “water-related events” between 1946 and 1999 found that although rhetorical hostility was pervasive, only 37 involved violence, and none resulted in inter-state warfare.

Other empirical analyses cast doubt on water scarcity as a causal mechanism for inter-state conflict. Studies find that water scarcity [increases the likelihood](#) that countries will seek to conclude treaties with their neighbors regarding shared river basins, as well as the [likelihood that these agreements will be strengthened](#) over time. Accordingly, the proposed direct linkage between water scarcity and inter-state conflict doesn’t appear to be borne out by available evidence. But this doesn’t necessarily mean

that international agreements are responsible, or that they will continue to be sufficient to prevent inter-state conflict.

How Effective Are Water Agreements?

International water agreements take a number of forms, but generally address water quantity and quality issues in shared lakes or river basins. The unique value of water resources for economic activity is [generally thought](#) to provide an impetus for inter-state negotiation, as are some issues like navigation and water quantity allocation, which [demand inter-state cooperation](#) in trans-boundary waterways. Moreover, because these issues are most salient in shared flowing watercourses, river basins tend to be the locus of international water agreements. Although [most agreements are either bilateral or regional](#), a few are global in scope, most notably the [1992 Helsinki Convention](#), which promotes joint mechanisms to reduce trans-boundary pollution impacts and to promote sustainable and equitable use. While the Helsinki Convention principles are frequently cited in other agreements, most scholars stress the importance of [country- or region- specific factors](#) in informing most international water agreements. These include the geographic position of states *vis-a-vis* one another, economic and cultural ties, and the degree of water scarcity, all of which determine the success of international water agreements.

Conventional international relations theory also suggests that the [presence of a markedly more powerful state](#) may be able to prevent effective international regime-building, since this state may be able to gain more through intimidation than cooperation. Some research does indicate that inter-state rivalry [increases the probability of conflict](#) instead of cooperation regarding shared territory or water resources, but the bulk of empirical evidence indicates that inter-state cooperation regarding shared water resources is [possible and even probable](#) on the basis of shared economic and diplomatic relations. Immutable geographic factors, as well as the existence of previous military disputes between states, have been found [not to impede prospects](#) for international water agreements, suggesting that there are [fewer barriers](#) to inter-state cooperation regarding shared water resources than is often assumed. Nonetheless, further research suggests that some characteristics of international water agreements are particularly important in promoting and sustaining cooperation and preventing conflict.

Analyses of successful international water agreements often stress the importance of communication and interaction between water managers across countries. The presence of international “epistemic communities” of scientists, environmentalists, and other stakeholders with similar interests is generally thought to favor cooperation and facilitate “institutional learning” whereby agreements can be strengthened and optimized over time. In Europe, for example, scientific exchanges and inter-state civil society groups have been [credited with sustaining cooperation](#) on waterways like the Elbe and Rhine. [Other studies](#) suggest that the ability to tie water-specific issues to broader national economic and political priorities, often called “issue linkage” encourages persistent cooperation. Indeed, research on international water agreements also indicates that the most important function of international water agreements is to [constrain unilateral actions](#) such as water diversion or dam-building.

Although there are few systematic assessments of the effectiveness of international water agreements in directly preventing conflict, those which do exist generally concur that this is the case. An [account of the Indo-Pakistani conflict](#), for instance, notes that “the trans-boundary river management regime was the most functional bilateral relationship between the two South Asian powers.” Studies of regions like the [La Plata in South America](#) extend this overall picture of efficaciousness to regional as well as bilateral water agreements. Moreover, in contrast to popular perceptions that international agreements are generally toothless, at least one [large-scale analysis](#) finds that concluding river basin treaties improves inter-state cooperation on broader water-related issues as well. Overall, then, the available evidence suggests that current international agreements have effectively contained organized inter-state violence over water resources. Yet it remains to be seen whether extant agreements can be replicated in emerging regions where conflict seems likely, and whether current agreements can withstand increased water scarcity as a result of climate change and other stressors.

Future Prospects

The possibility of inter-state conflict over water resources has always been predicated on the idea of growing water scarcity, and indeed current projections of global climate change, population and economic growth suggest that greater demands will be placed on diminished quantities of water in many regions, particularly in middle-latitude areas. Some assessments conclude that the risk of scarcity-driven conflict has been [consistently offset](#) by deepening institutional agreements, whereas

others suggest that a [U-shaped relationship](#) exists between water scarcity and the probability of cooperation, and that in turn accelerating climate change may reduce prospects for continued international water agreements. Because current projections of global temperature increases and other climatic changes suggest non-linear change, there is a serious possibility that current models of international water cooperation may be insufficient to prevent acute scarcity from driving violent conflict beyond 2030. In the meantime, however, climate change and other global trends are unlikely to overload international agreements where they can be put into place and maintained.

Indeed, several areas of the world combine serious water scarcity with a paucity of mechanisms for international cooperation over water resources, and thus constitute “hot spots” with the potential for future violent conflict. River and groundwater basins in northern and sub-Saharan Africa are of particular concern because of the intensity of projected climate impacts on water availability, as well as the [absence of international water agreements](#). Similarly, the collapse of Soviet-era agreements created an [institutional vacuum](#) in Central Asia’s Amu Darya basin which has yet to be filled. Finally, the Brahmaputra River is the locus for [increasing concern](#) that China may unilaterally divert water from one of the Asian subcontinent’s most important riverine water sources—fears that so far are not specifically addressed by agreements between China and its neighbors. The absence of bilateral and regional agreements and institutions in these basins makes them areas of great concern for the possibility of water-related, inter-state violent conflict in the future.

Room for Improvement

There can be no doubt that international water agreements have generally been effective in preventing inter-state conflict. However, issue linkage is an important means of facilitating cooperation, and effective cooperation is best sustained through mechanisms such as scientific exchanges and regular policy dialogue. Properly designed, international water agreements are likely to prevent future conflicts over water issues in the medium-term. However, international policymakers must focus their efforts on ensuring that properly-designed institutions are implemented in hotspot regions. Moreover, the possibility of water-related inter-state conflict should be given additional attention if projected climate, demographic, and economic growth trends prove to be accurate. This, in turn, suggests that the best means of reducing the probability of water-scarcity-

driven inter-state conflict is to re-double efforts to mitigate and adapt to global climate change, improve population health and wellbeing, and promote balanced economic development.

“Are We Destined to Fight over Scarce Water Resources?”, 16/10/2012,

Online at: <http://www.isn.ethz.ch/isn/Digital-Library/Special->

[Feature/Detail?lng=en&id=153751&contextid774=153751&contextid775=153744&tabid=1453348872](http://www.isn.ethz.ch/isn/Digital-Library/Special-Feature/Detail?lng=en&id=153751&contextid774=153751&contextid775=153744&tabid=1453348872)

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❖ Sharjah aims at 100% recycling of waste

Green Middle East Exhibition highlights UAE's plan to launch nine-year initiative to develop green economy

Sharjah: As a part of their multiple green initiatives, Bee'ah, the region's integrated environment and waste management company is working on several projects which aim to reach 100 per cent landfill diversion for the Emirate of Sharjah by the end of 2015.

"We reached 40 per cent landfill diversion [the process of diverting waste from landfills] this year and we are planning to reach 60 per cent by next year," said Khalid Al Huraimel, CEO of Bee'ah at the second Green Middle East environmental management and technology exhibition which set off on its first day at the Sharjah Expo Centre.

Another project highlighted at the exhibition by Bee'ah is currently in process in Sharjah's residential and commercial areas.

The project includes providing recycling bins and booths in several residential areas in Sharjah while raising awareness of the advantages of recycling. It further includes door-to-door visits by Bee'ah personnel who have provided people with educational brochures and additional information on waste management.

With their showcased clean technology and innovative products and services covering different areas across the environment spectrum like solid waste, waste water, air pollution, scrap recycling, alternative energy and green buildings, Bee'ah is also looking to expand its projects to Sharjah's industrial areas in its next phase, added Al Huraimel.

The three-day Green Middle East exhibition and conference hosted by Bee'ah showcased multiple innovative green initiatives as well as products and technologies which are contributing to the UAE's aim to boost the Green economy drive. The event is also bringing focus to the UAE's plan to launch a nine-year initiative to develop a green economy.

The show was held under the patronage of His Highness Dr Shaikh Sultan Bin Mohammad Al Qasimi, Supreme Council Member and Ruler of Sharjah, and was opened by Dr Mariam Al Shenasi, Assistant Undersecretary, UAE Ministry of Environment and Water, and accompanied by Salim Al Owais, Chairman of Bee'ah.

With waste water being considered as one of the biggest environmental issues in the region, the Middle East currently uses 225 per cent more energy than Europe and is a high-volume producer of waste, “the investments and innovations in alternative or renewable energy, recycling, and environmental technology is stressed by the precarious situation we are in,” said Lilian Segundo, Director of Sales at Sharjah Expo Centre.

On its second day, the show will also include the announcement and presentation of the first Green Middle East Awards for Environmental Excellence, which will recognise Middle East’s establishments for successfully developing and introducing technology and innovation.

Open from 10am to 6pm until 17 October, the show will also fea

“Sharjah aims at 100% recycling of waste”, 15/10/2012, online at:

<http://gulfnews.com/news/gulf/uae/environment/sharjah-aims-at-100-recycling-of-waste-1.1089737>

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❖ A Blueprint for Managing Water Conflicts

The number of international water conflicts is increasing, raising questions about how governments can effectively manage them. In today's podcast, Salman MA Salman shares his insights on this issue from more than 30 years of working as a water lawyer.

Prepared by: ISN staff

Editor's note: Due to the bad quality of the phone line, we have published a transcript of the interview.

Managing the use of trans-boundary waters is probably one of the oldest issues on which states have had to cooperate. In most cases cooperation has prevailed. But, if we are to believe certain analysts, conflicts over water resources will increase in the future. On the one hand, the demand for fresh water will rise. On the other, the supply will decrease, at least in certain areas. In this situation it is crucial that international conflicts over the use of water are managed peacefully.

How can international institutions help us do this? Today we discuss this question with Salman MA Salman, a consultant and researcher who was previously the World Bank's advisor on water law.

ISN: You have been working on water issues for more than thirty years. Have you observed an increase in international water conflicts over that time?

Salman MA Salman: We need to start by defining the word conflict. What do we mean by conflict? Because the word conflict for some people has a higher connotation. For some it means armed conflict, for others it could just mean a difference between two states. So I think we need to agree on what we mean by conflict.

If we look at some of the treaties that deal with such issues, we find different words being used to describe situations where there are issues between states over international waters. Some of the treaties talk about "questions" between states. This is probably the lowest stage of issues between states. Then there are treaties that talk about "differences" between states over international waters. Then the word "dispute" comes in at another stage. Dispute is also used as a broader term for questions, differences and issues. And sometimes, as you have used it, the word "conflict" appears.

So, if I understand your question correctly, when you refer to conflict you mean any of those issues: differences, questions, disputes. Is that correct, is that the right point to start from?

Exactly, that's correct.

So we agree that we are using the word conflict in a wider context to refer to any issues, questions, differences, or disputes between the parties. Starting from that point, the answer to your question – of whether there is an increasing number of water conflicts – is yes. You mentioned in your introduction that there is a finite amount of water in the world. And we have a population increase in the last century. When the century started, we were at about 1.5 billion people and when the century ended it was about 6 billion people. That is a four-fold increase. That means competition over the same amount of water. In many countries, water resources are already exhausted if waters from international rivers and lakes are not taken into account, and so issues of sovereignty arise – the issues of my share, your share, how much do I need, how much do you need, etc. And so these issues arise and conflicts (in the wider sense of the word) pop up spontaneously and generate even larger issues.

And it's not only at the international level. Within the countries themselves you usually also find conflicts, you find 'differences,' between the users at the lower end, whether they are upstream or downstream of a canal. You find these differences between districts in the same province. You have differences within the same country in federal states such as the US or Australia or India, where the difference between the provinces or states involved are often more significant and acute than some of the international disputes. So yes, there has been a significant increase in international water conflict in the last decade and this trend will continue.

I would like to focus on international conflicts between states rather than within states. If we take a broad definition of what a water conflict is, you said that there has been an increase. In the conflicts and disputes in which water plays a role, have the conflicts actually emerged due to water, or has water played a secondary role to ethnic, ideological or historical factors? How important is water as the trigger of these conflicts?

I think the answer is that we have instances of both situations. We have situations where water by itself is the main issue of the conflict between the states. If you look at the Nile states, you have eleven states now, you have limited amounts of water, you have other differences but the main difference is how to share the Nile water. But then you look at other parts of the world. You look at the Jordan River and you find larger political disputes between Israel and its neighbors where water becomes a complicating factor, especially with the scarcity there -- because there is already a political dispute between those states, between Israel and Jordan and Syria and the Palestinians.

The same situation exists in India and Pakistan. Water is scarce, there are problems, and the issue of water becomes more complicated because of historical factors – i.e., the situation in which India and Pakistan were born – and the religious factors. So here water becomes more of a catalyst for deepening or exacerbating the conflict. So, in short, I think we have instances of both situations – situations where water becomes an issue by itself as well situations where water is a catalyst for exacerbating existing conflicts.

That raises the question of whether we can learn lessons from the past in order to solve water conflicts in the future. Are there case studies that can provide us with a blueprint for managing future water conflicts?

From the perspective of the situations that I worked on while with the World Bank and even after leaving the World Bank in the last three years, one could see that where the political will existed there were solutions to problems. And those solutions are usually translated into inclusive agreements that include all the riparian countries and which are then translated into the establishment of a river basin management organization that includes all the states. When you have these situations, you have a lower chance of a conflict and better chances of cooperation.

If you look, for example, at the Danube River in Europe or the Amazon River in South America or the Niger River in West Africa, all the riparian countries are members of a river basin organization. More recently we have the example of the Guaraní Aquifer, a huge ground water system in South America, which is shared by Brazil, Argentina, Paraguay and Uruguay, where the countries all sat together and worked [towards an agreement]. We have the example of Lake Victoria, where Tanzania, Kenya, Uganda and to a lesser extend Burundi and Rwanda all sat together.

So I think the lesson we could draw is that when countries have the political will, and when they translate that political will into inclusive agreements and inclusive river basin management organizations, then the chances of managing conflict, the chances of cooperation, the chances of sharing benefits are far higher than when you have a river that is dominated by one or two or three countries – or when you have an agreement that is not inclusive.

For an example of a situation where a river is dominated by a few countries and where the agreements are not inclusive, look at the Nile. You have an agreement between Sudan and Egypt to which the other Nile states are not parties. Or look at the Mekong River, where China and Burma are not included in the commission, and the other riparians – Vietnam, Cambodia and Thailand – are included in the commission. If the agreement is not inclusive, that also does not send the right signals to the donor community that the states in the basin are willing to cooperate.

So, in short: when you have an inclusive river basin management organization, then there is a bigger chance of cooperation and a better chance of managing conflict.

Let's talk about the role these institutions play in managing water conflicts. What have we learned about the setup of these international institutions and organizations? How should they be set up to effectively manage water conflicts?

I think the first thing is that these institutions need to be constituted as legal entities with authority, legal power, and legal personality, with the ability to contract, borrow money, accept grants, execute projects, and be more than simply a body for the exchange of ideas, because that limited authority will not be sufficient. The most effective river basin management organizations are those that have executive authority to carry out grants and programs, limited legislative authority to issue rules and regulations, and limited judicial authority to resolve conflicts. Those are the kinds of organizations that really work well. Again, I give you the examples of the Danube River, the Amazon River and the Niger River authorities. All three of these institutions have legal authority, executive power, limited legislative powers and limited judicial powers.

Now, if we predict that we will have to deal with an increasing number of water conflicts in the future, the question arises of whether these institutions are ready to deal with a much larger number of conflicts. Would you say they are ready?

As I said, it really depends on the way they are constructed and on the authority that is given to them. For example, recently some institutions were created, but they were created more as administrative agencies for exchanging views on the situation – without any authority to make decisions. And those types of institutions are not going to help. Those institutions are created without any feet to stand on. Institutions with more power and authority have a better chance to succeed. So it really depends on how much power the states are prepared to concede to those institutions.

“A Blueprint for Managing Water Conflicts”, 19/10/2012, online at: <http://www.isn.ethz.ch/isn/Digital-Library/Special-Feature/Detail?lng=en&id=153955&contextid774=153955&contextid775=153953&tabid=1453350824>

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❖ Water Conflicts in the Middle East

Despite its notable lack of resources, water has rarely formed the basis for conflict throughout the Middle East, or so argues Hannu Juusola. However, climate change and extreme weather conditions point to a future in which water disputes may trigger conflict, most notably between Israel and its immediate neighbors.

By Hannu Juusola for the ISN

The Middle East is one of the most water insecure regions in the world. This already scarce natural resource has the potential to spark local and inter-state conflict throughout this troubled region. Indeed, the importance of the latter is reinforced by the fact that many of the region's central waterways are shared by several riparian states. In this respect, the most likely sources of inter-state water conflict are the Nile drainage basin, the Tigris-Euphrates River and the Jordan River. All of these potential sites of conflict involve several countries.

Yet, despite the scarcity of water throughout the Middle East, there have been surprisingly few military conflicts between disputing parties. The most likely reason for the absence of "water wars" is that in each potential case, there has always been one party that is clearly the most powerful military and economic power. In the case of Nile basin, for example, the hegemonic power has traditionally been Egypt, whereas Turkey and Israel are influential in disputes related to the Tigris-Euphrates and Jordan River.

Another contributing factor has been the relative insignificance of water as a strategic asset. Even though the region has always been 'water scarce', it is only in recent years that the strategic importance of water has grown significantly, often as a consequence of population growth and the mismanagement of existing resources. However, the Arab-Israeli conflict provides the most notable exception to the principle that water resources are not a major source of conflict throughout the Middle East.

One of Many Causes of Conflict

From the very outset, disputes related to water resources have formed part of the Arab-Israeli conflict, most notably between Israel and Syria. In 1949, for example, peace negotiations after the

first Palestinian war broke down in response to Israel's demands to keep tight control over the economically important Lake Tiberias and Jordan River. The water issue resurfaced again in the early 1960s after Israel announced plans to divert water from Lake Tiberias to the Negev. The Arab states strongly denounced the plans, which would have increased Israel's industrial and agricultural capacities and, consequently, encouraged further Jewish immigration to the country. Their response was a counter-plan that aimed to considerably reduce the amount of water reaching Israel from the tributaries of the Jordan River. However, repeated Israeli military strikes in 1965–1966 prevented Syria from implementing the plan.

The conflicting water-diversion projects by Israel and Syria were a significant contributor to the 1967 Six Day War. However, strategic water resources were by no means the only source of tension between Damascus and Tel Aviv. Indeed, there is evidence to suggest that the dispute between the two countries could have been solved if water rights were the sole reason for conflict. For instance, Israel and Jordan settled their water disputes in the 1994 peace agreement. This led to Israel agreeing to transfer additional water supplies to Jordan. By sharp contrast, water remains an important source of tension between Israel and Syria and, by default, between Israel and Lebanon. Here the problem is not only the strategic importance of water but also the fact that this resource forms part of a more extensive range of problems.

Water disputes also contributed to the failure of peace talks between Israel and Syria in the 1990s, as well as those between Tel Aviv and the Palestinian Liberation Organization (PLO). In 2002, there was also a short period of political tension related to water resources between Israel and Lebanon. This was caused by Beirut's attempts to construct a pipe on the Wazzani River, a tributary of the Jordan River, in order to connect a number of communities to running water in the under-developed south of the country. The proposal reflects the fact that southern Lebanon's water resources were under Israeli control from the 1982 war between the two countries until Israel's withdrawal in 2000. The Lebanese construction works were the first significant attempt to challenge the status quo that had prevailed over the Israel-Arab water disputes since the 1960s. Despite several threats, Israel did not use military means to thwart the Lebanese project, a fact that might be explained by international condemnation led by the United States.

Maintaining the Status Quo

In general, Israel's neighbors have accepted Tel Aviv's de facto control of the water resources of the Jordan River basin. Two key factors help to explain the status quo. First - and perhaps most importantly - Israel has been the dominant military power throughout the Arab-Israeli conflict. Indeed, Israel's military might strengthened after the signing of 1979 peace treaty with Egypt as well as continuous American political and military support. Consequently, Syria has been too weak to seriously challenge Israel over the issue of strategic water resources. The same can also be said of the PLO and other organizations that lack the political and material resources to effectively counter Israel.

Another important reason for preserving the status quo is that the disputed water resources have so far not been of prime importance to the strategic calculation of the Arab states. Syria, for example, is by no means dependent upon the disputed waters it shares with Israel. The country also has access to 16 main rivers or tributaries in Syria, including the Euphrates (the largest water source in Syria) and the Tigris, which it shares with Turkey and Iraq. Accordingly, Syria's dispute with Israel over water supplies is just one – and not necessarily the most important – water conflict that Damascus has to negotiate. It was no coincidence, for example, that during the peace negotiations with Israel in the 1990s, Syria's Foreign Minister pointed out that the water dispute could be solved if the United States and Israel helped the country to resolve its water disputes with Turkey.

Future Tense?

Even though the parties to the Arab-Israeli conflict have been able to effectively manage their water disputes since the 1960s, there are no guarantees that this will always be the case. Climate change in the region is likely to increase the frequency of extreme weather conditions throughout the Middle East, potentially leading to decreased rainfall, droughts and water shortages. As a result, water scarcity across the region would further increase, with the consequences for water and food security likely to be dramatic. This, in turn, suggests that the role of water may increase as a source of tension between Israel and Syria and the Palestinians. Indeed, such a possibility is further underlined by the stall in the Israeli-Palestinian peace process and the uncertain future facing Syria. The heightened regional instability may even put the Israeli-Jordanian consensus on water allocation under growing pressure.

It is, therefore, apparent that the existing and mostly unofficial agreements over water resources in this part of the Middle East will need to be renegotiated in the not-too-distant future. In addition to the impacts of climate change and water mismanagement, the changes in the regional balance of power due to the ongoing upheavals resulting from the “Arab Spring” further emphasize the need for changes. Unfortunately, it is unlikely that these agreements will be reached without the risk of military conflict. If so, then water disputes will once again be just one significant factor in a much larger whole, whereby this resource is linked to disputes over security, territory and economy.

“Water Conflicts in the Middle East”, 19/10/2012, online at: <http://www.isn.ethz.ch/isn/Digital-Library/Special-Feature/Detail?lng=en&id=153761&contextid774=153761&contextid775=153757&tabid=1453348906>

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❖ Green Middle East Environment Excellence Awards announced

The inaugural Green Middle East Environment Excellence Awards was announced on Wednesday, October 17, with the prestigious Environmental Visionary of the Year Award going to H.H. Sheikha Jawaher Bint Mohammed Al Qassimi and the Green Personality of the Year Award to Mrs. Habiba Al Marashi.

The honour has been bestowed on Sheikha Jawaher in recognition of her role in guiding several Sharjah entities, including the Environment and Protected Areas Authority, in conserving precious resources, protecting and enhancing environment, and strengthening the sustainable growth of the Emirate's and the country's economy.

H.H. Sheikha Jawaher, wife of His Highness Dr. Sheikh Sultan Bin Mohammed Al Qassimi, Member of the Supreme Council and Ruler of Sharjah, is the Chairperson of the Supreme Council for Family Affairs and the Sharjah Ladies Club.

"We are proud to honour Emirati women in two of the prestigious award categories. H.H. Sheikha Jawaher is the leading light of several organizations and initiatives in Sharjah... her patronage, leadership and contributions have ensured that campaigns launched by local entities to reduce, reuse and recycle and achieved their targets... while also setting benchmarks in sustainability," said Mr. Mohamed Salim Al Musharreh, Board Member, Sharjah Chamber of Commerce and Industry, while speaking at the awards ceremony.

The Green Personality of the Year Award winner Habiba Al Marashi is the co-founder and Chairperson of Emirates Environmental Group. The award recognizes her role in spearheading the growth of EEG from a small voluntary organisation to a large network both locally and globally as well as her contributions as the President of Arabia CSR Network and the UN Global Compact GCC Network.

"Habiba Al Marashi started EEG before anyone really knew what recycling was about. Today, it is the leading green NGO in the UAE and is well known globally too. We are happy to honour the first Emirati eco warrior with the Green Personality of the Year Award," he added.

In the remaining 12 award categories, the Market Transformation Award / Best Environmental Campaign of the Year Award went to Environment and Protected Areas Authority, while the Natural Resources Conservation Award was won by Emirates Transport, and the Best Regional Sustainability Initiative Award to DP World.

"We have demonstrated time and again that the concern for the environment and resources has constantly guided the Emirate's economic policies. We were one of the first in the region to launch

pioneering green initiatives like Bee'ah, reverse vending machines, and the environment awareness award and now the excellence award. We like to consider these as just a beginning towards more interesting times and exciting trends," said Mr. Musharrekh.

The other winners included Green Media Award — Goumbook; Environmental Awareness & Education Award — Bee'ah and Emirates Environmental Group; Best Waste Water Management Project of the Year Award — Radisson BLU Resort, Sharjah; Best Alternative Energy Project of the Year Award — Hi-Tech Equipment; Best Solid Waste Management Company of the Year Award — Bee'ah; Green Building Design Award — Kimoha Entrepreneurs Ltd.; Government Sustainability Innovation Award — Dubai Municipality; Green Technology Award — Gulf Green Environmental; and Sustainable Legacy Award — Summertown Interiors.

The inaugural Green Middle East Environment Excellence Awards was aimed at recognizing best practices and initiatives in energy efficiency, recycling, waste & water management and other related areas across the region.

“Green Middle East Environment Excellence Awards announced “, 18/10/2012, online at:
<http://www.ameinfo.com/green-middle-east-environment-excellence-awards-315801>

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❖ China's Mekong River dams undermine neighbors' economies, food production

Five Chinese dams on the Mekong River's upper portions have caused rapid changes in water level, and other adverse effects, downstream, especially in Vietnam, Cambodia, Thailand, and Laos, where millions of people rely on the river for water, food, and transportation

At the recent Asia-Pacific Economic Cooperation (APEC) summit in Russia, China announced that its large dam on the Mekong River, has started generating electricity.

The dam joins four other Chinese dams that have been commissioned on the Mekong River's upper portions. The dams have caused rapid changes in water level, and other adverse effects, downstream, especially in Vietnam, Cambodia, Thailand, and Laos, where millions of people rely on the river for water, food, and transportation.

The dam received little media attention around the world."China's Mekong dams are so remote they receive little coverage in the Western media," Milton Osborne, a Southeast Asian expert at the [Lowy Institute](#), [told](#) *Radio Free Asia*. "Yet, like the more readily viewed sites for proposed dams in Laos and Cambodia, what is happening in China will eventually alter the productive capabilities of mainland Southeast Asia's longest and most important river, a river vital to the sustenance of sixty million people of the Lower Mekong Basin."

Beijing claims that the group of dams will not affect the countries that sit downstream as only 13.5 percent of water in the Mekong flows through China. Osborne says this claim has been discredited, and that the water from China is significant in maintaining the dry-season flow for the downstream countries, for a total of 40 percent of the river's volume overall.

"So with each dam China builds there is the prospect of a greater diminishing of the flow, particularly as both Xiaowan (another of the five Chinese dams in operation) and Nuozhadu will act as storage dams rather than having a 'run of the river' character," Osborne told *RFA*. "There is no doubt that the commissioning of the five dams will have other long-term effects downstream," including impacting the amount of nutrient-rich sediment flowing down the river."

Vietnamese president Truong Tan Sang said at the APEC summit that “We cannot deny the fact that tensions over water resources are threatening economic growth in many countries and representing a source of conflict, especially at a time when countries are accelerating their economic development.”

Sang said that the management of water resourced in the Mekong River is quickly turning into a “pressing issue with direct and unfavorable bearing” on Vietnam, especially when it comes to rice production.

Vietnam, world’s second largest rice exporter is located in the lowest part of the Mekong Basin. “Water resources in the country, including river and underground water, “are seriously declining, while floods; sea level rises, high tides, coastal erosion... have been exacerbated,” Sang said.

Cambodia is also affected by the damn as the Tonle Sap; Southeast Asia’s largest freshwater lake could also be shrinking. ”There is also the likelihood that Cambodia’s Great Lake will be reduced in area during the wet season, to the detriment of its current vital role as a source of much of Cambodia’s protein consumption through its vast bounty of fish,” Osborne told *RFA*.

The Cambodian Fishery Coalition, a community-based organization set up by fishery folk in the country, stated in a recent report that the Chinese dams “have impacted the lake’s fish sanctuary.”

“When the hydropower dams were established, the community people living around the Tonle Sap Lake were severely affected, as they have transformed fish resources, and lead to progressive loss.”

China may have control over the dams and is largely ignoring its neighbors as a result of it, but this could backfire in the future, according to Cronin.

“China’s disregard for its neighbors’ interests has generated a growing store of ill will in downstream countries, which will make it difficult for Beijing to achieve its longer-term goals of securing the Mekong and its own influence over it,” Cronin told *RFA*.

“China’s Mekong River dams undermine neighbors’ economies, food production”, 15/10/2012, online at: <http://www.homelandsecuritynewswire.com/dr20121015-china-s-mekong-river-dams-undermine-neighbors-economies-food-production>

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❖ Second Mekong Dam Awaits Nod

Developers of a second dam proposed on the Mekong River in Laos have completed the design and impact assessment for the project and are awaiting the government green light to proceed with construction, according to an energy official.

The Pak Beng dam, to be located north of Luang Prabang in northwestern Laos' Oudomxay province, was designed by Chinese developer Datang Overseas Investment Co., Ltd. through a memorandum of understanding between the Lao and Chinese governments signed in August 2007.

Construction on the project is only awaiting a nod from the government, a source from the Lao Ministry of Energy and Mining told RFA's Lao service, speaking on condition of anonymity.

"It's a Mekong dam. The design and everything else has been completed," the source said.

"We're just waiting for the government's agreement to proceed."

The dam will cost U.S. \$1.88 billion to complete and generate 1,300 megawatts of energy when operable. The dam is estimated to be online by 2018 if the government allows construction to proceed.

If approved, the dam would be the second project of its kind on the Mekong River in Laos after the controversial Xayaburi dam, for which initial construction work had already begun despite opposition from environmentalists and neighboring nations.

Resource-starved Laos hopes to become the "battery" of Southeast Asia by selling hydroelectric power to its neighbors.

In September, Lao energy minister Soulivong Daravong said that the government would not shelve plans to build the U.S. \$3.5 billion Xayaburi dam—the first of 11 proposed dams on the main stream

of the Lower Mekong River.

Two months earlier, Lao Foreign Minister Thongloun Sisoulith announced at a meeting of the Association of Southeast Asian Nations (ASEAN) that the project had been put off pending further studies.

But official media in Laos has said the government would allow developer Ch. Karnchang, a Thai company, to proceed with “scheduled” activities at the construction site, including the resettlement of affected villagers.

The dam has drawn criticism from neighbors Cambodia and Vietnam, which have jointly urged Laos to suspend the project to allow more time for a comprehensive review.

In August, a group of Thai villagers opposed to the dam submitted a lawsuit against five Thai government agencies, saying the government should not have agreed to purchase electricity from the dam without further study.

The project is being financed by a consortium of Thai banks.

The Mekong River Commission (MRC), an intergovernmental body including Cambodia, Laos, Thailand, and Vietnam which manages development along Southeast Asia's main waterway, had also ruled that the dam project should not proceed until further assessment was conducted.

The decision followed an earlier recommendation by an expert study group for a 10-year moratorium on all mainstream Mekong dams due to a need for further research on their potentially catastrophic environmental and socioeconomic impact.

“Second Mekong Dam Awaits Nod”, 18/10/2012, online at: <http://www.rfa.org/english/news/laos/dam-10182012181106.html>

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❖ Nigeria: Flood - FG Approves Construction of Dams On Upper Niger, Benue

President Goodluck Jonathan yesterday announced the decision of the Federal Government to approve the building of more dams on the Upper Niger and Benue to avert re-occurrence of the flood disasters in some states of the federation.

President Goodluck Jonathan , who made this known in Yenagoa yesterday after a tour of flood disaster relief camps and flooded communities, said that the decision was based on studies conducted on flood disasters in the country insisting that the last time the people of the Niger Delta, especially Bayelsa State, experienced this magnitude of flood was in 1969.

President Jonathan said, "with the 1969 flood experience at the back of my mind, I noticed that the outlet of the water resulting into flood was from River Niger but with the construction of Shiroro and Kainji dams then, the outflow of water drastically reduced".

"Also, during my visit to flood victims in Kogi State, the Governor told me that the bulk of the water came in from River Benue and as a way of reducing the flooding, government is planning is to build more dams in Benue section", he added.

"Presently, the Federal Government is building Kashambila Dam and it will be completed in 2014. My commitment is to fast track it and by the time government builds two or three dams in the Benue section, it will reduce the level of water because dams have the primary responsibility of holding water", Jonathan said.

Describing the flooding as a global phenomenon, President Jonathan who said the nation was worst hit, added that having flown over some states, he discovered that some clans are presently under water while farmlands and fish ponds have been washed away with property worth billions of naira destroyed.

"Flood as you know more than me is a global thing. It affects the whole World; Europe, Asia. It is not unique to Nigeria but quite devastating in Nigeria. The middle Niger, that is the northern part of the country to the coastal communities are badly affected.

"What I promise Nigerians is that government is working hard to see that people are rehabilitated. We are working with the respective state governments at ensuring that people are rehabilitated and live in a decent environment immediately water goes down.

"It is an emergency situation and the Federal Government is looking at various options aimed at ameliorating the suffering of the people in the area of plants that will mature in short distance time like 60 days", the president disclosed.

Earlier in his address, the Bayelsa State Governor, Hon. Seriake Dickson commended the efforts of the President and various government agencies at bringing succour to the people of the state, describing the effects of the flooding as devastating.

"Nigeria: Flood - FG Approves Construction of Dams On Upper Niger, Benue", 15/10/2012, online at: <http://allafrica.com/stories/201210150200.html>

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❖ Seeking to connect on water issues

There are seven dams on the Missouri River, one of the main tributaries of the mighty Mississippi. And behind those dams lies Louisiana's coastline.

Tons of silt carried downriver from the Missouri to the Mississippi and then to the Gulf of Mexico have for eons laid the foundation for the Mississippi Delta. The dams, the first of which was built in the 1930s, have cut off that flow, leaving Louisiana with an eroding coastline.

Today, those dams are managed for a long list of purposes: navigation, flood control, water quality, irrigation, hydropower, recreation, and fish and wildlife, but not necessarily for the health of the landforms thousands of miles downstream.

To Gerald Galloway, professor at the University of Maryland, the disconnect between water management matters upstream and needs downstream is a symptom of a larger problem. The United States lacks a national water policy to guide development and use of the nation's major water resources.

Galloway, an engineer who rose to brigadier general in the Army and who served as dean of academics at West Point, was for seven years a member of the Mississippi River Commission and led the White House study of the 1993 Mississippi River flood. He spoke Friday at the Radcliffe Institute for Advanced Study's annual science symposium, this year titled "Cloudy with a Chance of Solutions: The Future of Water."

The event featured talks on a wide variety of water-centric issues, from desalination to pollutants to the dangers of contamination posed by the use of hydraulic fracturing to release natural gas from shale deposits.

Radcliffe Dean Lizabeth Cohen said that water issues reach across disciplines, making them good subjects for examination at the science symposium, which seeks to stimulate both interdisciplinary conversation and collaboration.

To illustrate the sometimes stark choices made to obtain clean water supplies, Cohen raised the specter of four towns — Dana, Enfield, Greenwich, and Prescott — that in 1938 were flooded to form the Quabbin Reservoir and provide water to Greater Boston. Without their disappearance, the growth in population, commerce, and industry in the Greater Boston region may not have been possible, Cohen said.

Joan Ruderman, senior adviser to the Radcliffe science program, said that water is in the headlines regularly today, from stories about chemical pollutants like PCBs being cleaned up to links between water and energy, to the search for water in arid parts of the world.

Galloway, one of the day's last speakers, said that though we don't know how the world of water will change, change seems certain.

"It's a volatile, uncertain, and ambiguous world," Galloway said. "Things are going to change pretty rapidly and we're going to have to deal with that."

Water planning itself has changed over the decades, Galloway said. Engineers used to look ahead, calculate future needs, then design projects to meet them in a somewhat straightforward process. Today, the forecasting process has to take into account a host of possible scenarios and then create flexible plans for multiple outcomes. Today's planning is also more focused on the short term and on keeping costs low, he said. The 500-year flood standard used to guide policies in the early 20th century has given way to a 100-year flood standard, not because government officials believe it the best way to guard against disaster, but by default, because insurance companies use it to determine flood insurance coverage.

Challenges today include drought and degraded water supplies, increasing flood damage, maintenance of ports and waterways, and environmental protection and restoration. Other challenges include interstate conflicts, crumbling infrastructure, and a lack of assessment that keeps us blind to potential problems, Galloway said.

To meet these challenges, the U.S. has 50 water policies, one for each state. With water growing scarcer and rivers crossing state borders, the state-by-state policies are a recipe for conflict, Galloway said. When it comes to the Missouri, for example, the result is a lot of law regulating it, but no unified policy, Galloway said.

Efforts to move toward a national policy have had a rough road in the past, being ignored or fought outright. Several good scientific studies have been conducted, so the hurdle is not knowledge, Galloway said, but political will.

“Seeking to connect on water issues”, 21/10/2012, online at: <http://news.harvard.edu/gazette/story/2012/10/seeking-to-connect-on-water-issues/>

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