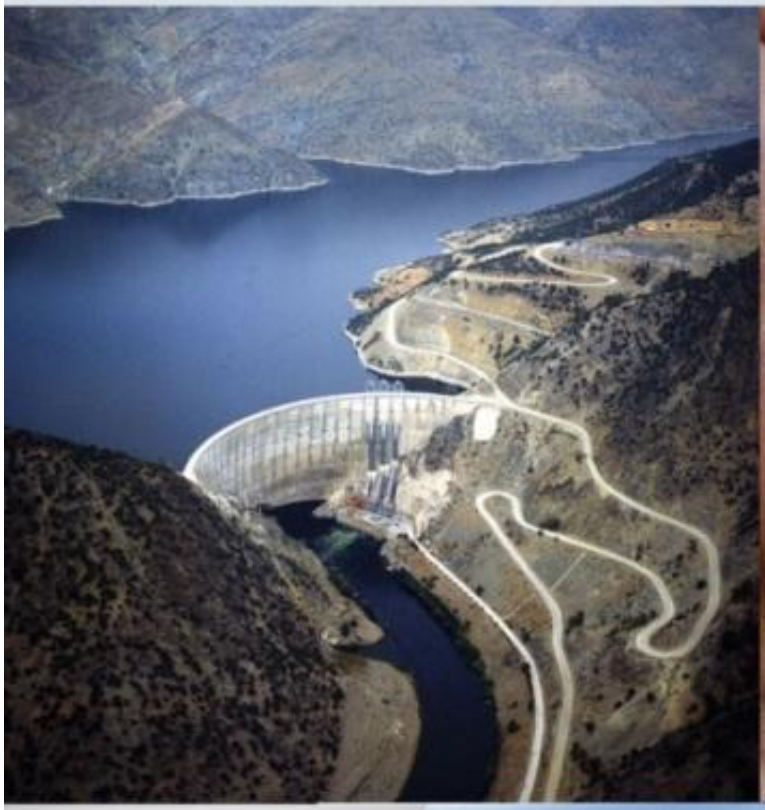


ORSAM WATER BULLETIN

Weekly Bulletin by ORSAM Water Research Programme

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





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ORSAM WATER BULLETIN

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❖ Turkey-N. Cyprus water pipeline project starts off

Turkey-TRNC water pipeline project will meet 50 years of the water need of the island.

Water pipeline project construction to link Turkey and Turkish Republic of Northern Cyprus (TRNC) has begun.

The project envisaging the transfer of water from a dam which will be built on Turkish side, is estimated to cost 782.5 million TL.

The pipelines will transfer water through a special method which will be applied for the first time in the world, as the pressure level in the deep-sea prevents the transfer of water through the pipes.

The 80,151 meter-long pipeline will not transfer the water through channels in the deep-sea, but through the hangers only in 250-meter under the sea.

The 75 million cubic meters of water will meet TRNC's 50 years of water need.

While 50.3 percent of the water will be used for drinking, the rest will be used for irrigation.

TRNC lacks water due to the nonexistence of adequate underground and surface water resour

"Turkey-N. Cyprus water pipeline project starts off", 18/05/2013, online at:
http://www.worldbulletin.net/?aType=haber&ArticleID=109271

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❖ Without Water, Revolution

TEL ABYAD, Syria — I just spent a day in this northeast Syrian town. It was terrifying — much more so than I anticipated — but not because we were threatened in any way by the Free Syrian Army soldiers who took us around or by the Islamist Jabhet al-Nusra fighters who stayed hidden in the shadows. It was the local school that shook me up.

As we were driving back to the Turkish border, I noticed a school and asked the driver to turn around so I could explore it. It was empty — of students. But war refugees had occupied the classrooms and little kids' shirts and pants were drying on a line strung across the playground. The basketball backboard was rusted, and a local parent volunteered to give me a tour of the bathrooms, which he described as disgusting. Classes had not been held in two years. And that is what terrified me. Men with guns I'm used to. But kids without books, teachers or classes for a long time — that's trouble. Big trouble.

They grow up to be teenagers with too many guns and too much free time, and I saw a lot of them in Tel Abyad. They are the law of the land here now, but no two of them wear the same uniform, and many are just in jeans. These boys bravely joined the adults of their town to liberate it from the murderous tyranny of Bashar al-Assad, but now the war has ground to a stalemate, so here, as in so many towns across Syria, life is frozen in a no-man's land between order and chaos. There is just enough patched-up order for people to live — some families have even rigged up bootleg stills that refine crude oil into gasoline to keep cars running — but not enough order to really rebuild, to send kids to school or to start businesses.

So Syria as a whole is slowly bleeding to death of self-inflicted gunshot wounds. You can't help but ask whether it will ever be a unified country again and what kind of human disaster will play out here if a whole generation grows up without school.

"Syria is becoming Somalia," said Zakaria Zakaria, a 28-year-old Syrian who graduated from college with a major in English and who acted as our guide. "Students have now lost two years of school, and there is no light at the end of the tunnel, and if this goes on for two more years it will be like Somalia,

a failed country. But Somalia is off somewhere in the Indian Ocean. Syria is the heart of the Middle East. I don't want this to happen to my country. But the more it goes on, the worse it will be."

This is the agony of Syria today. You can't imagine the war here continuing for another year, let alone five. But when you feel the depth of the rage against the Assad government and contemplate the sporadic but barbaric sect-on-sect violence, you can't imagine any peace deal happening or holding — not without international peacekeepers on the ground to enforce it. Eventually, we will all have to have that conversation, because this is no ordinary war.

THIS Syrian disaster is like a superstorm. It's what happens when an extreme weather event, the worst drought in Syria's modern history, combines with a fast-growing population and a repressive and corrupt regime and unleashes extreme sectarian and religious passions, fueled by money from rival outside powers — Iran and Hezbollah on one side, Saudi Arabia, Turkey and Qatar on the other, each of which have an extreme interest in its Syrian allies' defeating the other's allies — all at a time when America, in its post-Iraq/Afghanistan phase, is extremely wary of getting involved.

I came here to write my column and work on a film for the Showtime series, "Years of Living Dangerously," about the "Jafaf," or drought, one of the key drivers of the Syrian war. In an age of climate change, we're likely to see many more such conflicts.

"The drought did not cause Syria's civil war," said the Syrian economist Samir Aita, but, he added, the failure of the government to respond to the drought played a huge role in fueling the uprising. What happened, Aita explained, was that after Assad took over in 2000 he opened up the regulated agricultural sector in Syria for big farmers, many of them government cronies, to buy up land and drill as much water as they wanted, eventually severely diminishing the water table. This began driving small farmers off the land into towns, where they had to scrounge for work.

Because of the population explosion that started here in the 1980s and 1990s thanks to better health care, those leaving the countryside came with huge families and settled in towns around cities like Aleppo. Some of those small towns swelled from 2,000 people to 400,000 in a decade or so. The government failed to provide proper schools, jobs or services for this youth bulge, which hit its teens and 20s right when the revolution erupted.

Then, between 2006 and 2011, some 60 percent of Syria's land mass was ravaged by the drought and, with the water table already too low and river irrigation shrunken, it wiped out the livelihoods of 800,000 Syrian farmers and herders, the United Nations reported. "Half the population in Syria between the Tigris and Euphrates Rivers left the land" for urban areas during the last decade, said Aita. And with Assad doing nothing to help the drought refugees, a lot of very simple farmers and their kids got politicized. "State and government was invented in this part of the world, in ancient Mesopotamia, precisely to manage irrigation and crop growing," said Aita, "and Assad failed in that basic task."

Young people and farmers starved for jobs — and land starved for water — were a prescription for revolution. Just ask those who were here, starting with Faten, whom I met in her simple flat in Sanliurfa, a Turkish city near the Syrian border. Faten, 38, a Sunni, fled there with her son Mohammed, 19, a member of the Free Syrian Army, who was badly wounded in a firefight a few months ago. Raised in the northeastern Syrian farming village of Mohasen, Faten, who asked me not to use her last name, told me her story.

She and her husband "used to own farmland," said Faten. "We tended annual crops. We had wheat, barley and everyday food — vegetables, cucumbers, anything we could plant instead of buying in the market. Thank God there were rains, and the harvests were very good before. And then suddenly, the drought happened."

What did it look like? "To see the land made us very sad," she said. "The land became like a desert, like salt." Everything turned yellow.

Did Assad's government help? "They didn't do anything," she said. "We asked for help, but they didn't care. They didn't care about this subject. Never, never. We had to solve our problems ourselves."

So what did you do? "When the drought happened, we could handle it for two years, and then we said, 'It's enough.' So we decided to move to the city. I got a government job as a nurse, and my husband opened a shop. It was hard. The majority of people left the village and went to the city to find jobs, anything to make a living to eat." The drought was particularly hard on young men who

wanted to study or marry but could no longer afford either, she added. Families married off daughters at earlier ages because they couldn't support them.

Faten, her head conservatively covered in a black scarf, said the drought and the government's total lack of response radicalized her. So when the first spark of revolutionary protest was ignited in the small southern Syrian town of Dara'a, in March 2011, Faten and other drought refugees couldn't wait to sign on. "Since the first cry of 'Allahu akbar,' we all joined the revolution. Right away." Was this about the drought? "Of course," she said, "the drought and unemployment were important in pushing people toward revolution."

ZAKARIA ZAKARIA was a teenager in nearby Hasakah Province when the drought hit and he recalled the way it turned proud farmers, masters of their own little plots of land, into humiliated day laborers, working for meager wages in the towns "just to get some money to eat." What was most galling to many, said Zakaria, was that if you wanted a steady government job you had to bribe a bureaucrat or know someone in the state intelligence agency.

The best jobs in Hasakah Province, Syria's oil-producing region, were with the oil companies. But drought refugees, virtually all of whom were Sunni Muslims, could only dream of getting hired there. "Most of those jobs went to Alawites from Tartous and Latakia," said Zakaria, referring to the minority sect to which President Assad belongs and which is concentrated in these coastal cities. "It made people even more angry. The best jobs on our lands in our province were not for us, but for people who come from outside."

Only in the spring of 2011, after the uprisings in Tunisia and Egypt, did the Assad government start to worry about the drought refugees, said Zakaria, because on March 11 — a few days before the Syrian uprising would start in Dara'a — Assad visited Hasakah, a very rare event. "So I posted on my Facebook page, 'Let him see how people are living,' " recalled Zakaria. "My friends said I should delete it right away, because it was dangerous. I wouldn't. They didn't care how people lived."

Abu Khalil, 48, is one of those who didn't just protest. A former cotton farmer who had to become a smuggler to make ends meet for his 16 children after the drought wiped out their farm, he is now the Free Syrian Army commander in the Tel Abyad area. We met at a crushed Syrian Army checkpoint. After being introduced by our Syrian go-between, Abu Khalil, who was built like a tough little boxer,

introduced me to his fighting unit. He did not introduce them by rank but by blood, pointing to each of the armed men around him and saying: "My nephew, my cousin, my brother, my cousin, my nephew, my son, my cousin ..."

Free Syrian Army units are often family affairs. In a country where the government for decades wanted no one to trust anyone else, it's no surprise.

"We could accept the drought because it was from Allah," said Abu Khalil, "but we could not accept that the government would do nothing." Before we parted, he pulled me aside to say that all that his men needed were anti-tank and antiaircraft weapons and they could finish Assad off. "Couldn't Obama just let the Mafia send them to us?" he asked. "Don't worry, we won't use them against Israel."

As part of our film we've been following a Syrian woman who is a political activist, Farah Nasif, a 27-year-old Damascus University graduate from Deir-az-Zour, whose family's farm was also wiped out in the drought. Nasif typifies the secular, connected, newly urbanized young people who spearheaded the democracy uprisings here and in Egypt, Yemen and Tunisia. They all have two things in common: they no longer fear their governments or their parents, and they want to live like citizens, with equal rights — not as sects with equal fears. If this new generation had a motto, noted Aita, the Syrian economist, it would actually be the same one Syrians used in their 1925 war of independence from France: "Religion is for God, and the country is for everyone."

But Nasif is torn right now. She wants Assad gone and all political prisoners released, but she knows that more war "will only destroy the rest of the country." And her gut tells her that even once Assad is gone, there is no agreement on who or what should come next. So every option worries her — more war, a cease-fire, the present and the future. This is the agony of Syria today — and why the closer you get to it, the less certain you are how to fix it.

"Without Water, Revolution", 18/05/2013, online at: **http://www.nytimes.com/2013/05/19/opinion/sunday/friedman-without-water-revolution.html?pagewanted=all&_r=2&**

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❖ Jordan, Syrian refugees and water problem

According to official figures from the UNHCR, 1.244 million Syrians have taken shelter in neighboring countries such as Turkey, Jordan and Iraq since April 2011, following the Arab Spring's arrival in Syria on March 2011. Some 230,000 people are still waiting in line for registration.

It is feared that Syrians taking shelter in Jordan in particular might face a major problem regarding water, especially in the forthcoming summer months. In terms of the amount of water there is per capita in the Middle East and in the world, Jordan and Palestine are two of the poorest countries. Along with the dry spell prevailing in the area for the last decade, water shortages have become worse in Jordan and agricultural activities have also been negatively affected in the country.

Each day, some 3,000 Syrians flee into Jordan. According to the aid organizations in Jordan, there are approximately 400,000 Syrians who have taken shelter in the country. It is feared that this figure might reach 1 million by the end of the year. The population in Mafraq has doubled since the beginning of the unrest in Syria. While international aid organizations provide food, accommodation and fuel, the water supply provided from outside is not sufficient. Some of those organizations also have the responsibility to supply water to refugee camps and for sanitation. The organizations and the camps they are responsible for are listed as follows: ACTED Jordan (Agency for Technical Cooperation and Development) -- King Abdullah Refugee Camp, Cyber City Refugee Camp and Zaatari Refugee Camp; IRD Jordan (International Relief and Development) -- Zaatari Refugee Camp; JEN Jordan (Japan Emergency NGOs) -- Zaatari Refugee Camp; Mercy Cops Jordan -- Zaatari Refugee Camp; Oxfam -- Zaatari Refugee Camp; THW (Federal Agency for Technical Relief) Jordan -- Zaatari Refugee Camp; UNESCO Jordan -- Cyber City Refugee Camp and Zaatari Refugee Camp. In addition, the local Red Crescent Society also provides water to the camps.

The majority of refugees in Jordan have settled in the camps that were set up in Zarqa and Mafraq provinces. The water shortage in terms of both quantity and also access to water resources in the camps has been on the agendas of international organizations and the media for the last two months. According to information received from news reports, while there is a major problem regarding a lack of water in Mafraq province, there is no water at all in certain areas. There are some 170,000 people in the Zaatari camp, which is located in Mafraq province and is the biggest refugee camp in Jordan. The water shortage is expected to get worse as a result of increasing temperature and new

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groups of refugees arriving from Syria. It is estimated that water consumption per capita, other than drinking water, is 53 liters per day. It is assumed that refugees who do not stay in refugee camps consume 20 to 50 liters of water per day, including drinking water.

The existing water problem has become even more evident upon the arrival refugees in the country. Jordan has been meeting its water needs from ground waters for many years due to the lack of surface waters. According to the British aid organization Oxfam, the population has increased as a result of the immigration from Syria. This situation has led to some wells drying up. According to another report published by Oxfam, 65 percent of water transported to Mafraq province is lost through the pipelines and as a result of people illegally tapping into the pipelines. Furthermore, it is mentioned in the reports that there are also problems in terms of the quality of water. The quality problem leads to water-related diseases and an additional cost for its filtration. Those who live in refugee camps cannot afford the cost of water filtration. As a general solution, chlorine is added to waters in tankers, which the World Health Organization (WHO) permits, but the fact is that that water can create other hygiene problems if it is kept in old tankers and not consumed within a short time of period.

In a survey with Syrians who are not staying in refugee camps which was conducted by an NGO called CARE, it was recorded that 77 percent of the refugees do not have access to drinking water and that they have to buy treated and packaged water.

The authorities suggesting that water will be a problem in the upcoming process assert that a solution has to be found, and also it is feared that pointing to Syrians as responsible for the water shortage caused by the increase in water consumption could give rise to tension in society. Furthermore, the insufficient amount of water along with the cost of filtration was announced by Oxfam as a problem. As a solution, positive results can be obtained in the short run through projects that provide small-scale water conservation in the first place, but long-term projects are required for Jordan Ministry of Water and Irrigation to provide durable solutions.

"Jordan, Syrian refugees and water problem", 19/05/2013, Tuğba Evrim Maden, online at: http://www.todayszaman.com/news-315834-jordan-syrian-refugees-and-water-problem.html

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❖ Floods Cause Severe Damage In Southern Iraq

The heavy rains that have unexpectedly hit the southern cities of Iraq since May 3 have resulted in significant human and material losses, while torrential flooding from elevated regions of Iran have destroyed agricultural lands in the border city of Wasit.

After the heavy rain that hit Baghdad and other provinces last February revealed the inability of Iraqi infrastructure to contain any emergency, more heavy rain in southern Iraqi cities over the last six days has resulted in large human and material losses.

The provinces of Dhi Qar, Maysan and Wasit, besides some areas of the capital, witnessed heavy rain during the past few days that flooded streets and destroyed crops, while some houses collapsed.

The downpour put an end to years of drought that led to desertfication of extensive arable lands.

The Iraqi Ministry of Agriculture said that the council of ministers has set up a damage-indemnity committee to compensate farmers affected by rain.

The ministry's administrative adviser, Ghazi al-Abboudi, confirmed that "the council of ministers has set up a committee headed by Minister of Agriculture Mohammad Shayaa al-Soudani to take an inventory of the lands affected by the rain and the crops destroyed in order to compensate the farmers."

He added, "The ministry asked the agricultural officials in the provinces to list the [affected] regions and the amounts of damaged crops."

He continued, "The council of ministers has already issued law No. 71 of 2012, which regulates everything related to natural disasters and indemnities," pointing out that "indemnities will be provided to all the provinces that were affected by rain in the past few days."

However, the damage does not stop there. Townships of the city of Kut, the capital of Wasit province, have struggled with floods streaming down from the adjacent Iranian highlands that were affected by the rain as well.

Four people were killed — including two children — as their houses collapsed, reported the Iraqi Red Crescent, which also confirmed that 50 houses collapsed and 248 families were hurt in Wasit and Maysan.

In a bid to meet the challenges of this natural disaster, the council of ministers allowed military helicopters to assist the evacuation process from the distressed towns.

According to local sources, the floodwaters coming from Iran blocked highways and killed dozens of cattle in the township of Sheikh Saad in the city of Kut.

While the Iraqi Ministry of Water Resources affirmed that dams are set to contain the unexpected downpour, officials in the township of Sheikh Saad announced that a joint dam with the province of Maysan collapsed due to the floods, amid warnings that dozens of towns might become submerged.

Mahmoud Abdel Rida, head of the provincial council of Wasit, accused the federal ministries of delinquency, reiterating that the farmers suffered great losses due to heavy rain and floods. Abdel Rida declared that the measures espoused by the federal government were late, even though relief airplanes have started arriving in the distressed areas of the province.

Ali Hashem, an official in the Iraqi Ministry of Water Resources, affirms that the dams are prepared to contain the unexpected amount of rain.

Hashem said that "the rainfall amounts do not threaten the dams," stressing that "the dam that collapsed in Wasit due to rain is a small dam."

"Floods Cause Severe Damage In Southern Iraq", 14/05/2013, online at: http://www.al-monitor.com/pulse/originals/2013/05/floods-iraq-rain-damages-deaths.html

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❖ Iraq in ruins: Post-war life overshadowed by crumbling infrastructure, corruption, poverty

Despite Iraq being rich in natural resources and the US pouring money into its economy for over a decade, Iraqi infrastructure is constantly failing and the people are forced to beg, as RT's Lucy Kafanov reported from the war-torn country.

In spite of billions of dollars spent on reconstruction following the decade-long conflict, many neighborhoods lack sewerage systems and trash collection services. In some settlements, there are barely any streets. Water is also a big problem, locals pointed out.

"Nobody drinks the city water because we know it's not clean. Since the war, I've had to rely on bottled water. What comes out of the tap is contaminated and makes us sick. How can we drink it?" local resident Umm Muhammad indicated.

Central power is another issue, with the system sometimes on for as little as two hours a day.

Electrician from Baghdad Abu Meria is sure the new government is to blame for the chaos that reigning in his homeland.

"It's the citizens who suffer in the end, not the government. The services are so bad and the power system has really deteriorated. There were billions spent on fixing the grid but there's little to show for it."

Abu Meria now earns four times more than before the war due to the frequent failures and blackouts all over the city.

As RT's Lucy Kafanov also discovered, the crumbling infrastructure is closely entangled with rampant corruption.

Transparency International group has ranked Iraq as the eighth most-corrupt state in the world. In the latest scandal, the country's Electricity Ministry was involved in a $1.7 billion fraud case.

On the backdrop of this, most Iraqis remain impoverished, struggling to make their ends meet. In the Al Tajiat landfill, on the outskirts of Baghdad, people are actually forced to live – without any proper living conditions.

"There are no schools for the kids here, no electricity, no real houses. To get a drink of water we have to travel 4km. It's very difficult to live here." Watch RT's Lucy Kafanov's full report.

"Iraq in ruins: Post-war life overshadowed by crumbling infrastructure, corruption, poverty", 17/05/2013, online at: **http://rt.com/news/iraq-poverty-war-crisis-414/**

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❖ Khasa dam project to be finished by late 2013

A planning official of the Khasa Dam Project says although many obstacles are facing them, the project is ongoing.

Engineer Ahmed Ghafour Mustafa said, "More than 50% of the project has been implemented. Working on the project is ongoing day and night, which will be finished by late 2013." The project is implemented via the Turkish Orso company, costing an estimated 71 million USD.

The dam can store 47 million cubic meters of water. The experts believe the project will lead to the improvement in the sectors of agriculture and tourism in the area. While the area had been neglected for many years, the project offered a major job opportunity for the people.

"Khasa dam project to be finished by late 2013", 19705/2013, online at:
http://kirkuknow.com/english/index.php/2012/02/khasa-dam-project-to-be-finished-by-late-2013/

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❖ Ahmadinejad to speak at water summit

Iranian President Mahmoud Ahmadinejad will address the international forum on water security in Chiang Mai on Monday, an embassy official in Bangkok has confirmed.

His scheduled appearance comes as Iran gears up for elections and as world powers press the Islamic republic over its suspected nuclear programme and support for the Syrian regime.

Mr Ahmadinejad, who is constitutionally barred from seeking a third straight term in next month's polls, will join regional leaders at the Asia-Pacific Water Summit, which focuses on water security and climate change.

"He will arrive on Sunday in Chiang Mai," an Iranian embassy official in Bangkok said.

Mr Ahmadinejad has challenged the West since taking office in 2005 with his defiance of nuclear inspectors, fierce criticism of the US and Israel, and tough response to opposition protests.

The Water Summit began on Tuesday, with around 1,300 participants attending forums and seminars on water management.

Most heads of state are expected to arrive on Sunday and will give statements during the Leaders' Forum on Monday, when Prime Minister Yingluck Shinawatra will preside over the opening ceremony.

"Ahmadinejad to speak at water summit", 18/05/2013, online at:
http://www.bangkokpost.com/breakingnews/350706/ahmadinejad-to-speak-at-chiang-mai-water-summit

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❖ Iran will soon face a water shortage crisis

NCRI, 15 May 2013 - Iran under mullahs' rule will soon face a water shortage crisis, an official of Iranian regime has warned.

On Tuesday April 14, Alireza Daemi, Iranian regime's deputy energy citing official figures said "Every year the situation in Iran will become more difficult.'

According to Daemi, in 1960 six thousand cubic meters of water were available per person but in 1990 it was reduced to two thousand cubic meters per person.

Accordingly, the availability of water will reach one thousand cubic meters per person in 2025.

He predicted that in the next 20 years water availability will be reduced to one quarter.

In late February in province of Isfahan, over 400 protesters were injured as the State Security Forces attacked a peaceful gathering of farmers protesting water shortages in the area.

The former head of Iranian regime's Revolutionary Guard warned in his website in March that the farmers' protests over water shortages could trigger a massive social uprising that could threaten the stability of the regime.

"Iran will soon face a water shortage crisis", 15/05/2013, online at:
http://www.mojahedin.org/pagesen/detailsNews.aspx?newsid=26101

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❖ Ahmadinejad Inaugurates Development Projects in Southern Iran

TEHRAN (FNA)- Iranian President Mahmoud Ahmadinejad inaugurated several development projects in the Southern Iranian city of Bandar Abbas on Thursday.

President Ahmadinejad opened the construction project of a desalination plant in Bandar Abbas in Southern Iranian Hormuzgan Province today.

After being operational, the plant will change the Persian Gulf's water into fresh waters for drinking, industrial and agricultural purposes to be used by local residents.

It will also provide fresh water for residents of two other provinces, including the neighboring Southeastern province of Kerman and the Yazd Province in Central Iran.

The desalination plant is located some 30 km to the West of Bandar Abbas

"Ahmadinejad Inaugurates Development Projects in Southern Iran", 16/05/2013, online at: http://english.farsnews.com/newstext.php?nn=9202241412

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❖ Political Currents of Water Management: Challenges in Israel, Palestine, and Jordan

Posted by Kate Voss, UCCHM Water Policy Fellow. This is the fourth in a series of posts on our Water Diplomacy trip to Israel, Jordan, and Palestine inspired by our paper on 'Groundwater Depletion in the Middle East.' Other posts in the series: 1) Middle East Lost a Dead Sea Amount of Water in 7 Years, by Jay Famiglietti, 2) Parallel Worlds: Water Management in Israel and California, by UCCHM Policy Fellow Kate Voss, and 3)Desalinating Holy Waters with the Red Sea-Dead Sea Conveyance by UCCHM Graduate Fellow Sasha Richey.

The geopolitics of water management in the Middle East are primarily governed by the basic distribution of freshwater resources: there are vast differences between the naturally available water resources in the region. Layer to this the additional complexity of political stability, financial assets, and other socioeconomic factors, and the potential for improved transboundary water management in the Middle East becomes vastly complicated.

Simply, some nations have few water resources and a lack of capabilities to effectively manage their limited resources – their water security is at risk. Other nations, those with more technological and economic capacity to maximize their limited resources, have less at stake. Our recent trip to the Middle East in February underscored the well-known perspective that while Israel is making great advances in water management in the region, Palestine and Jordan are simply further behind.

The actions, decisions, and processes that led to this imbalance are complex. While Israel is currently a regional (and global) leader in water management strategies, the nation has faced many challenges with competing user-groups, made trade-offs between short-term economic investment versus long-term sustainability, and leveraged its economic and political clout to ensure that the financial assets were in hand to prioritize water management solutions.

Israel's path to achieve water management success was not simple or easy. At the same time, while Jordan and Palestine have historically encountered many struggles to manage their incredibly scarce water resources, which for Palestine includes the challenge of being land-locked (save its Dead Sea access), making autonomous desalination impossible. Water managers in Palestine and Jordan are

actively striving to improve the technological capacity and policy portfolio to optimize water use in the future.

Israel's Geopolitical Advantages

As described in our previous post in Water Currents, Israel is a regional and global leader in water management strategies. Israel has a diverse portfolio of water sources that includes an extensive supply of desalinated water and recycled wastewater and, consequently, puts less pressure on its limited, natural freshwater sources from surface water and groundwater. Israeli water managers have detailed knowledge and data about how much water they have, the precise source of that water, how much water is being used at any given moment, and specifically who is using that water and for what purpose. Every last drop of water is accounted for. There is a direct line of communication between the Water Authority and Mekorot, the national water utility company, which allows for the supply and demand as well as the pricing of water in Israel to be meticulously monitored and regulated. Israel's water management system is a well-oiled, robust machine.

Israel's detailed understanding of its water resources has allowed the nation to strategically invest in new technology and solutions that allow for more stable and sustainable water planning. Furthermore, the economic and political clout that Israel can leverage to finance such solutions is significant. Without investment, political commitment, and long-term planning, Israel's water success would not exist. In addition, Israel's geographic assets – mainly it's shoreline on the Mediterranean Sea – are essential to its success. The Mediterranean provides Israel an unlimited supply of water as long as the investment for infrastructure and energy costs for desalination are met. With new natural gas reserves discovered off the coast, once prohibitive energy expenses will now be obsolete. Armed with detailed knowledge about its water resources, new energy sources, and a strong sociopolitical backing, Israel's water future looks bright.

Tapping the Root of Jordan and Palestine's Struggle

Yet while Israel is leading the world in innovative water strategies, its neighbors, Palestine and Jordan, are clearly struggling. The core differences in the naturally available water resources as well as the social, economic, and political capability to address water resource management challenges was staggering. Before meeting with water management officials in Jordan, we had the opportunity to drive beyond the sprawl of Amman and into the surrounding desert.

The land outside the city boundaries is vast, dry, and desolate – there are no water resources to speak of. Communities that dot the highway are dependent on either dwindling groundwater reserves or weekly water tankers. The situation is dire. Without proactive efforts to find and transport new sources of water, many of these communities will probably cease to exist, leaving only the shadow of a civilization, akin to the ancient ruins of Petra.

Jordan's water managers are trying their best to develop innovative, long-term solutions to its water crisis. The pioneering solutions from Israel, such as desalination or wastewater recycling, may have a place in Jordan's water strategy, but even those options are difficult to acquire. Wastewater recycling necessitates steep financial investment, as does desalination, and these solutions often force Jordan to place its water security in the hands of another nation. Neither option is perfect. Consequently, long-distance conveyance alternatives from friendly neighbors, such as pumping groundwater from Saudi Arabia or tanking water from Turkey, do not seem obscure when forced to cope with a physical water scarcity emergency.

Jordan's dire water situation is not for lack of effort or vision, but mainly a lack of resources. Few natural water assets combined with a weak socioeconomic foundation makes investment in long-term water strategies incredibly difficult. In Palestine, the situation is similar. According to a World Bank report from 2009, "economic disparities between West Bank Gaza (WBG) and Israel are large – in 2005, Israel's Gross National Income (GNI) per capita was almost eighteen times the Palestinian GNI per capita. Water resources availability in the two neighbors is likewise far apart, with fresh water per capita in Israel is about four times that of WBG. Whereas Israel is known for efficient water infrastructure and management, Palestinians are struggling to attain the most basic level of infrastructure and services of a low income country." Add to the weak economy the fact that water rights in Palestine are directly linked to the broader conflict between Palestine and Israel, particularly in the West Bank, and water management in Palestine becomes more convoluted and challenging. Palestine's situation is analogous to Jordan's crisis, but with the added complexity of unclear sovereign rights to access and improve water resources.

Knowledge for a Sustainable Water Future

While visiting with water management officials in Israel, Palestine, and Jordan, we discussed the shared need for better monitoring — a need that the U.S. has in common with the Middle East — in order to have essential, baseline data for characterizing regional water availability. Based on this

information, water managers can develop short- and long-term strategies that are rooted in the reality of actual water availability and use. Without this information, any decisions or solutions are based on speculation, at best, and politics at worst.

As previously mentioned, Israel has a stronger foundation in data and monitoring than either of Palestine and Jordan. That said, water managers in Palestine and Jordan are actively making substantial efforts to lay the framework for an improved water monitoring system and are beginning to collect core data on their native resources. With clear evidence about their changing water availability, water managers will hold more power to leverage for the political and economic support they need to create actual change. In the future, our hope is that we atUCCHM will be able to support these efforts by providing training workshops based on our research, to provide the capacity for water managers in Israel, Palestine, and Jordan to utilize new advances in satellite data to monitor and manage their water.

With these fundamental data and information in hand, water managers in Palestine and Jordan can begin to close the gap on their investment needs and to implement their own innovative solutions to tackle their water challenges. For Israel, there are clear economic and political benefits for improved water management in Palestine and Jordan. With any luck, water management will come forward as an issue of mutual interest for regional cooperation. This will, of course, necessitate strong political, economic, and social backing from national, regional, and international leaders.

Throughout the Middle East we heard that "water cannot be removed from politics" in this region. Consequently, the broader political and socioeconomic intricacies must be incorporated into water management and vice versa. With this complexity in mind we can only hope that the political currents of the region lead to improved water management and that, collectively, Israel, Palestine, and Jordan can see the benefit of sustainable solutions for their shared water future.

"Political Currents of Water Management: Challenges in Israel, Palestine, and Jordan", 13/05/2013, online at: http://newswatch.nationalgeographic.com/2013/05/13/political-currents-of-water-management-challenges-in-israel-palestine-and-jordan/

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❖ AWK to Lower Water Wastage

Water utility **American Water Works Company Inc.** (AWK) received a $1.8 million contract from the Israel-U.S. Binational Industrial Research and Development (BIRD) Foundation to reduce the wastage of water. The company will work jointly with Steam Control Ltd. in a two-year project to lower the wastage of water.

The BIRD Foundation supports cooperation between Israeli and American companies for the exchange of technological expertise. The foundation to nurture projects like these also provides 50% of the estimated project cost. The foundation does not demand a refund of the investment if the project fails to reach the sales stage.

The program will aim to install modification in the existing pipeline. This will automatically ease the water pressure when there is a decline in demand from customers. The need to control water pressure in a system is essential as an international study showed consistent strong pressure increases the probability of leakage and failure of the pipeline systems.

The modification introduced by American Water Works Company will vary water pressure as per demand. This will help to conserve water and lower the possibility of water leakage. The innovation is also expected to lower maintenance costs at it will reduce the occurrence of main breaks.

We believe the company's consistent R&D efforts in improving water quality and providing water solution have helped it to clinch the BIRD contract. The company invested $2.8 million on research and development in 2012. The research supports effective usage of water thereby ensuring reliable service at reasonable rates.

American Water Works Company missed our earnings estimate in the first quarter of 2013. The company projects 2013 earnings in the range of $2.15 to $2.25 per share. We project long-term earnings growth of 8% and our earnings expectation for 2013 is presently $2.22 per share, which is near the higher end of the guidance.

American Water Works Company currently has a Zacks Rank # 3 (Hold). Other water utilities, which are doing well include **American States Water Company** (AWR), **Aqua America, Inc.** (WTR) and **Middlesex Water Co.** (MSEX). All of them presently carry a Zacks Rank #2 (Buy).

Voorhees, N.J.-based American Water Works Company was founded in 1886. The company serves around 14 million people with water and water related services. With 6,700 employees, the company's market capitalization is $7.53 billion.

"AWK to Lower Water Wastage - Analyst Blog", 15/05/2013, online at: http://www.nasdaq.com/article/awk-to-lower-water-wastage-analyst-blog-cm246324

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❖ Knesset panel: Reduce water prices in new budget

MK Amnon Cohen demands drop in water prices be included in state's future budget due to its "significance to the cost of living."

Stressing that water is a basic human need, Knesset State Control Committee chairman MK Amnon Cohen (Shas) demanded on Monday that a drop in water prices be included in the state's future budget.

"The upcoming budget must include the reduction of the price of water, and it is important that the conclusions of this discussion be embedded in the budget due to its significance to the cost of living," Cohen said at a committee meeting that day.

Demanding that the Water Authority reduce water prices by at least 10 percent, Cohen also blamed the inefficient operation of local water corporations for raising consumer prices.

In Monday's discussion, the State Control Committee was reviewing a section of the October State Comptroller's Report (63-aleph) that had deemed water tariffs unjustifiably high and had called for the consolidation of the country's local water companies.

The report determined that the overall method for calculating water rates is flawed, as there has not been a thorough process to figure out what the national per capita consumption of water should be.

Meanwhile, although the Water Authority has plans to consolidate the number of local water corporations, these plans have been slow to progress, the report said.

"It is important that the water sector be managed as a closed market, but a portion of the costs are not justified," said Zvi Vertikovsky, deputy director- general of the State Comptroller's Office. "If consumers are not bound to things that are not the real price of water, we can significantly reduce the price for the consumer."

Attacking the very existence of water corporations, Kiryat Ono Mayor Yossi Nishri said that "four people in the municipality could handle the water sector, and there is no need for this monster called a corporation."

Water belongs to the Israeli people, and revenues should go directly to municipalities to pay for necessities like wastewater treatment, Nishri argued.

Echoing these sentiments, MK Miki Rosenthal (Labor) said that all water corporations must be abolished and that control of water should return to the municipalities, coinciding with an immediate slash in water prices.

A representative from the Finance Ministry, Adi Hachmon, on the other hand, attributed rising water prices to the increase in desalination plants and the energy required for their operation. The ministry therefore opposes the reduction of the water corporations, she said.

Whatever their cause, "high water prices are generators of social protests," noted MK Uri Maklev (United Torah Judaism).

"The civilian subsidizes about half a million shekels for agriculture," he added. "I am not against subsidizing farmers, but the state should be subsidizing them – not the citizens."

In response to the discussion, Water Authority commissioner Alexander Kushnir stressed that his office had already enacted a new discounted water pricing mechanism specifically for the disabled, and that most of those eligible for this discount were taking advantage of it.

"Our goal is excellent service at a minimal price," Kushnir said. "Our intention to reduce the number of corporations from 55 to 13 will enable a drop in the price of water by about 5 percent, but in the meantime our work on this subject is meeting with strong resistance."

Meanwhile, Hezi Lipshitz, deputy director-general of the Energy and Water Ministry, noted that Energy and Water Minister Silvan Shalom is holding a large number of meetings for the purpose of merging water corporations and reducing consumer prices.

"Knesset panel: Reduce water prices in new budget", Jerusalem Post, 13/05/2013, online at: http://mideastenvironment.apps01.yorku.ca/?p=7212

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❖ Water Authority: 'Severe drought' from 2015-2035

Despite dire predictions, country not expected to suffer water shortage.

Israel must prepare for the possibility of a severe drought period that is expected to begin within a few years, the Water Authority warned on Monday.

Models from the authority's Hydrological Services have predicted that Israel will face a long and difficult drought from 2015 through 2035, which will be even more exceptional than the country's previous two drought periods – 2004 through 2010 and 1999 through 2002.

The weather at the end of the decade will become arid in a "dramatic, severe and even exceptional manner," according to Hydrological Services.

The statement comes as, for the first time this season, the water levels of the Lake Kinneret basin dropped on Monday morning, bringing the reservoir down to 209.875 meters below sea level, the Water Authority reported.

This figure represents a half-centimeter plunge from the previous morning, and leaves the Kinneret 1.075 meters from full capacity.

"All of Israel's water needs will be fulfilled," a statement from the Water Authority assured, however.

That being said, drought periods can have a significant impact on consumers, farmers as well as nature, the authority noted.

The models for the expected drought were assembled by a team of senior researchers from Hydrological Services and Tel Aviv University.

Incorporating climate simulations for the coming decades and analyzing the cyclical nature of drought periods and their intensities, the model indicates an increase in drought frequency, strength and duration, the Water Authority said.

Hints of the incoming drought can already be found in the weather patterns of the winter of 2013.

For the first three months of winter – from November to January – a series of heavy rainstorms gave Israelis confidence after having experienced a sequence of many drought years, the Water Authority said. However, the months of February and March that followed proved to be driest since 1957.

Yet despite these dire predictions, the Water Authority is assuring consumers that Israel will not in fact suffer a water shortage during this lengthy drought, and that the Israeli water market is prepared to adjust to extreme climate change.

The combined forces of increased desalination plant capacity, as well as reclamation of treated wastewater for irrigation, have already allowed the Israeli water economy to avert crisis and develop a stable and reliable water supply, the authority stressed.

"The water market of the State of Israel will be required to cope with much longer and more severe periods of drought than those that we have recently gone through," said Water Authority Commissioner Alexander Kushnir.

"We will stand by our duty to supply all of the water required for the needs of the State of Israel and its residents."

Kushnir emphasized the "tremendous effort" that the state has made in recent years to establish efficient desalination facilities as well as to become the world leader in implementing purified wastewater for irrigation needs.

These steps, he explained, have "provided us with the tools necessary for coping with extreme climate changes and for guaranteeing a reliable and stable water supply for domestic, industrial and agricultural consumers."

"Beyond the generation of alternative water sources, enormous work is being performed to upgrade and develop the national water system, which is necessary for the absorption of desalinated water from the new facilities," Kushnir added.

"Water Authority: 'Severe drought' from 2015-2035", Jerusalem Post, 13/05/2013, online at: http://mideastenvironment.apps01.yorku.ca/?p=7217

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❖ Weapons plant still polluting Tel Aviv soil 30 years after closure

The site in question is located at the end of the Arvei Nahal Street in Tel Aviv and was home to an IMI factory from 1948 until 1980.
By Zafrir Rinat | May.07, 2013

Recent groundwater and soil tests carried out in the Tel Aviv area by Israel's Water Authority prove that more than 30 years after the closure of an Israel Military Industries factory, the pollution that it caused still threatens the region's groundwater supply and endangers public health. Following the findings, the Water Authority will need to formulate a clean-up plan to prevent the spread of the pollutants.

The site in question is located at the end of the Arvei Nahal Street in Tel Aviv and was home to an IMI factory from 1948 until 1980. The factory produced various types of ammunition, mainly for light weapons, and handled the cleaning and polishing of bullet cartridges and casings. The factory used sulfuric acid and chlorine-based solvents in the industrial process and the wastewater from the plant went to collection pits, from where it flowed through a drainage system and into the sewers. However, some of this factory effluent actually seeped into the ground, reaching groundwater sources.

During the tests, almost no pollutants were found in the upper soil layer. But further below, high concentrations were found of pollutants such as Trichloroethylene and Tetrachloroethylene, which are suspected carcinogens that impair different body systems. At 15 meters depth, the test team found concentrations of toxic substances considerably greater than the permissible limit for drinking water. The tests were led by Sara Elhanany and Guy Reshef of the water quality division at Israel Water Authority.

It should be pointed out that some of the pollutants found in the soil could be released into the environment as toxic gas vapors through underground cavities. This is a particularly sensitive issue for the Arvei Nahal site because it is located next to the planned route for Tel Aviv's yet-to-be-built subway.

In recent years, the Water Authority has been regularly measuring the pollution levels at five sites in the country's central Gush Dan region where IMI munitions factories were once located. The most polluted site that has yet to be found is that of the former Magen plant on the border between Tel Aviv and the city of Givatayim.

At most of the former factory sites the polluted top-soil has already been removed but a significant portion of the pollution has already permeated deeply into the soil. More than ten wells for drinking in the area have already been determined to be unsuitable for human use due to pollutants that originated at IMI plants. The Water Authority believes that additional areas are likely to be harmed by the spread of pollutants from different sites unless quick action is taken to clean up the soil or purify the underlying groundwater.

"Weapons plant still polluting Tel Aviv soil 30 years after closure", Haaretz, 13/05/2013, online at: http://mideastenvironment.apps01.yorku.ca/?p=7203

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❖ The Real Jordan River Will Flow from the Sea of Galilee Once Again

The Lower Jordan River, the baptismal river of Jesus, has been dead at its source for some time. For the first time in ages, Israel is releasing native waters via a pump back to the historic waterway.

Christian pilgrims to Israel may be thrilled to have a chance to bathe in the historic Jordan River, believed to be the original baptismal river of Jesus. It's clean, safe and totally free.
Pilgrims arrive to the southern tip of the Sea of Galilee (where mysterious objects are still being found) at Yardanit, get off the bus and within a few hundred yards are themselves in the river in white robes.
I can understand the appeal but was put off by the whole idea that these pilgrims aren't really baptizing in a river, but a standing pool created for tourism. The real river actually starts as a sewage pump outlet further downstream.

A series of dams on the Sea of Galilee block water from flowing to the River Jordan. The story is really sad. What ends up in the real "river" is effluent and all types of waste, and those brave souls who disregard the warning and dip into the water on the Jordan side far downstream are taking their lives into their hands.
By the time this wastewater flows down to its final destination it is merely a trickle of sewage, if it reaches the end at all.

This is what I learned a few years ago while on a Jordan River tour with the eco group Friends of the Earth Middle East. (That's me above checking out the sewage pipe at the Jordan River's source).

Local newspapers are now reporting that the Israeli Government along with various interest groups have decided to turn on a pump from the Sea of Galilee to restore the Jordan River's native habitat. Some 1000 cubic meters of water will be pumped into the river every hour.
Recharging the Jordan River is a great idea our friends at Friends of the Earth maintain, but much more water will be necessary to bring it up to healthy levels, they assess.

They say that some 30 million cubic meters a year will not be enough to renew the Lower Jordan River. Something magnitudes bigger, 400 and 600 cubic meters would be needed for restoration, and

Israel should allot 220 million cubic meters to do its part. It should be noted that the Jordan River is shared between three major stakeholders: Israel, the Palestinian Authority and Jordan. Peace making over a river important to all people is a very easy way to start real peace efforts on the ground.

"The Real Jordan River Will Flow from the Sea of Galilee Once Again", 19705/2013, online at: http://www.greenprophet.com/2013/05/jordan-river-restored/

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❖ Kinneret water to be released into Jordan River

Next month the Water Authority will allow the discharge of 1,000 cubic meters of water per hour from the Kinneret basin into the the Jordan River, with the ultimate goal of letting in 30 million cubic meters of water flow past the Deganiya Dam annually, the Jordan Rehabilitation Administration announced on Thursday.

Water has no been released on a large scale in years from the Kinneret basin into the Jordan, whose flow has dropped to a standstill as the level of the river dwindled and it has boasted only high levels of pollution.

Replenishing the flow of the river will only be the first stage in its rehabilitation, stressed Water Authority Commissioner Alexander Kushnir, to representatives of the Israeli and Jordanian governments gathered at a seminar in Tel Aviv on Thursday – organized by the Southern Jordan River Drainage Authority.

A collaboration of many bodies including the Drainage Authority, the Environmental Protection Ministry, the Water Authority, the Emek Hamayanot Regional Council, the Israel Nature and Parks Authority and Keren Kayemeth LeIsrael-Jewish National Fund, the Jordan Rehabilitation Administration was established in 2009 with the purpose of removing the river's contaminants and restoring its natural value.

Although the Water Authority will begin next month by pumping 1,000 cubic meters per hour, in the future the government will be able to consider boosting the stream with additional water flow, Kushnir explained.

Meanwhile, within two years, a sewage treatment facility will begin to operate in the region, capable of conserving the water level and maintaining quality, he said. The facility will ensure that chlorine levels in the treated water drop from 3,000 milligrams per liter to 1,000 milligrams per liter, and will solve the issue of waste-water penetrating the riverbed, Kushnir said.

All of these improvements in water quality will translate into an ecological restoration process that will increase biodiversity and protect endangered species in the region, he added.

In addition, the Jordan Rehabilitation Administration will clear land mines this summer that extend along 30 kilometers of the river's perimeter, so that the river can become more accessible to visitors, said Inbal Abraham, project manager on behalf of the Drainage Authority.

The ultimately purpose of the project is to restore historically valuable ecological habitats and agricultural spaces while leveraging peace and cooperation along the way, said Ramon Ben- Ari, CEO of the Drainage Authority.

Saad Abu Hammour, head of the Jordan Valley Authority on the Jordanian side, welcomed the project and said that a Jordanian team was working in conjunction with the Israeli group.

Although in favor of recharging the Jordan River with a clean and stable water supply, regional environmental organization Friends of the Earth Middle East has repeatedly said that the 30 million cubic meters promised by Israel will not be sufficient. Between 400 and 600 million cubic meters of water is needed to replenish the Lower Jordan, and Israel should be allocating at least 220 million cubic meters, Friends of the Earth said.

"Kinneret water to be released into Jordan River", 17/05/2013, online at: **http://www.jpost.com/Enviro-Tech/Kinneret-water-to-be-released-into-Jordan-River-313441**

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❖ For first time, Israel's Water Authority to pump Kinneret water into Jordan River

The plan is intended to ecologically rehabilitate the neglected river.
By Zafrir Rinat | May.17, 2013

The Israel Water Authority will shortly begin, for the first time, to pump water regularly from Lake Kinneret into the southern Jordan River in an effort to ecologically rehabilitate the river, the authority announced Thursday.

During the first stage, 1,000 cubic meters an hour will be pumped from the lake into the river. At a later stage, the plan is to pump 30 million cubic meters a year into the river.

The plan to shore up the southern Jordan was presented Thursday at a conference organized by the Southern Jordan Streams and Drainage Authority, and it is a comprehensive plan that includes enhancing the water quality and developing projects to encourage tourism in the area.

In recent decades the water level of the southern Jordan River has dropped dramatically, because the flow of water into in from the Kinneret and the Yarmuk River has been almost totally blocked by dams. The quality of the water has seriously deteriorated, because the sewage of all the communities along the river has been flowing into it. Water from the Kinneret now only reaches the southern Jordan River if the lake's level rises above the upper red line, at which point, to prevent flooding, the dams are opened to let water flow into the river.
One of the major components of this rehabilitation plan is stopping the flow of sewage into the river and pumping clean Kinneret water into the river instead. Water Authority head Alex Kushnir told the conference that by the end of this month thousands of cubic meters of water would be flowing from the Kinneret every day.

"Within two years we will increase the quantity and it will reach 30 million cubic meters a year," said Kushnir. "I know that's not enough, but that's what we can manage now. We won't be able to restore the river to its historic flow levels of the past."

The improvement will be primarily in the quality of the water. According to Kushnir, by the end of this year a waste treatment plant will be treating the sewage that now flows into the river. Next year, the plant will be upgraded and the treated wastewater will be suitable for agricultural use.

In addition, small desalination installations will be built to desalinate the saline water from the Kinneret springs that now flow into the Jordan, and some of the water will be allowed to continue into the river after treatment. Thus, the salinity level of the lower Jordan's water will also be reduced.

All these activities are being conducted with the agreement in coordination with the Kingdom of Jordan. Sa'ad Abu Hamour, the Jordanian representative to the joint Israeli-Jordanian Water Committee, attended Thursday's conference. He said that his country also wants the river's water quality to improve, but that at this stage this was a solely Israeli-funded project.

The Palestinians are currently not involved. Gideon Bromberg, the Israeli director of the Friends of the Earth-Middle East environmental group criticized the officials promoting this plan for not soliciting Palestinian cooperation.
"We can't deal with the political issues right now," responded Kushnir. "If we do, it will delay the efforts we are already making." Abu Hamour noted, however, that because the Palestinians aren't being included, the river will be cleaner in the area closer to the Kinneret but will remain polluted in its southernmost section, near the Dead Sea.

According to the Southern Jordan Streams and Drainage Authority, during the coming summer the National Mine-Clearance Authority will start removing mines and the fence along a 30-kilometer stretch of the river. This will eventually allow public access to parts of the river that are currently closed off.

http://www.haaretz.com/news/national/for-first-time-israel-s-water-authority-to-pump-kinneret-water-into-jordan-river.premium-1.524410#

JERUSALEM POST

Kinneret water to be released into Jordan River
By SHARON UDASIN

1,000 cubic meters of water per hour will be discharged next month from the Sea of Galilee to replenish river

Next month the Water Authority will allow the discharge of 1,000 cubic meters of water per hour from the Kinneret basin into the the Jordan River, with the ultimate goal of letting in 30 million cubic meters of water flow past the Deganiya Dam annually, the Jordan Rehabilitation Administration announced on Thursday.

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Related:

*
Kinneret rises 2 cm. after Shavuot storms

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"For first time, Israel's Water Authority to pump Kinneret water into Jordan River", Haaretz / Jerusalem Post, 17/05/2013, online at: http://mideastenvironment.apps01.yorku.ca/?p=7243

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❖ 'Climate change may reduce water availability, damage agriculture in Jordan'

AMMAN — Climate change scenarios indicate that Jordan and the Middle East could suffer from reduced agricultural productivity and water availability among other negative impacts, according to an official report issued on Tuesday.

Prepared by the Ministry of Environment in cooperation with the National Energy Research Centre and the UN Development Programme, the 2013-2020 Jordan Climate Change Policy predicted that climate change will have serious implications on the country's efforts to eradicate poverty and realise sustainable development for current and future generations.

"Jordan faces serious potential impacts on its natural ecosystems, on its river basins, watersheds and its biodiversity; then cascading to impacts on food productivity, water resources, human health, public infrastructure, and human settlements," the national policy predicted.

The report indicated that climate change projections suggest a 1-4°C increase in temperatures and a 15-60 per cent decrease in precipitation.

"Studies in Jordan indicate that extreme [weather] events, such as flash floods, intense rain, snow storms and droughts, are predicted to be more frequent," according to the report.

The climate change policy evaluated the current conditions of several sectors that will be affected by climate change and suggested practices and adaptation measures to reduce greenhouse gas emissions.

The sectors included energy, transportation, solid waste and wastewater, land use and forestry, agriculture, water, biodiversity, health, coastal areas and tourism.

"Jordan is the first country in the Arab region to prepare a national policy that addresses climate change and its impact on vital sectors and development," the Ministry of Environment's secretary general, Ahmad Qatarneh, said at a ceremony to launch the policy.

Although Jordan contributes a marginal emission rate of 0.01 per cent of the global greenhouse gas emissions, it is committed to its responsibility in addressing climate change challenges while adhering to its national priorities and development objectives, the government official highlighted.

"'Climate change may reduce water availability, damage agriculture in Jordan'", Jordan Times, 14/05/2013, online at: http://mideastenvironment.apps01.yorku.ca/?p=7241

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❖ Grohe launches water project in Jordan

Germany-based Grohe has launched the first of its 'Water for Life' projects in Jordan, by partnering with Friends of the Earth Middle East (FoEME) to provide water to local Bedouin families living near the Sharhabil Bin Hassneh Ecopark.

Following the formation of the EcoPark, the Bedouin families were no longer allowed access to the park to collect water from the dam, for both for their animals and their own use, a statement from the company said. The completion of the project has allowed these families to be connected to fresh water supplies, whilst allowing the EcoPark to thrive.

The project, which began in November 2012, has seen Grohe install pumps, piping, water meters and fixtures to provide easy access to water for drinking and irrigation purposes.

Previously, the families needed to walk or drive to fill water containers daily for drinking purposes, and would need to buy larger water tanks for washing and other domestic uses, the statement said.

The initiative is part of Grohe's global water conservation initiative Watercare and is one of many regional implementations throughout the Middle East. The Green Mosque project has already been activated in the UAE, Saudi Arabia, Syria and Jordan, providing water-saving faucets to ablution rooms - successfully managing to reduce excess water consumption in these areas.

Simon G Shaya, general manager and president at Grohe East Mediterranean, Middle East and Africa, said: "We are delighted to have partnered with Friends of the Earth Middle East to provide the Bedouin families with irrigation and portable water solutions. By supporting this community, we are helping to preserve the Jordanian heritage and alleviate their water concerns."

"We hope that the success of this pilot 'Water for Life' project will be able to transcend to other countries within the Middle East as part of our ongoing commitment to Grohe Watercare."

Abdel Rahman M H Sultan, director's assistant of technical issues and parks manager, FoEME, said:

"We would like to thank Grohe for choosing the Sharhabil Bin Hassneh Ecopark as their first location for this fantastic initiative. The installations have not only helped these families immensely, but have improved their day-to-day quality of life, and for that we are all extremely grateful. We look forward to continuing our relationship with Grohe, and working on future projects together."

"Grohe launches water project in Jordan", 14/05/2013, online at: http://www.tradearabia.com/news/HEAL_235940.html

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❖ China: High and dry

Water shortages put a brake on economic growth

Wang Fuguo, a 63-year-old cotton farmer, does not know when his ancestors began tilling the land in the dusty village of Weijie.
But he is fairly sure he will be the last of his family to do so. "They've all fled," he says, looking out from his gate at the abandoned houses that line the village's only street.

The reason is simple. "There's just no water here," he says. "If you don't have water you can't survive." His household gets running water for one hour every five days, barely enough to feed a tiny patch of aubergines and supply his family and their dozen sheep.

In the face of China's rapid economic expansion and growing presence on the global stage, it is often forgotten that the country is running out of water. In per capita terms, China's water resources are just a quarter of the world average. Eight of China's 28 provinces are as parched as countries in the Middle East such as Jordan and Syria, according to China Water Risk, a consultancy based in Hong Kong.

In the area where Mr Wang lives, Minqin county, a former oasis in Gansu sandwiched between the vast deserts of Inner Mongolia, the problem is particularly severe. Mr Wang's neighbours are not the only ones who have moved away. More than 10,000 people have left the area and have become *shengtai yimin*, "ecological migrants".

Chinese officials identify water scarcity as one of the nation's most pressing difficulties. The problems are social, political and economic. This year Beijing for the first time issued water quotas to every province, setting targets for annual consumption by 2015.

The water shortage is made even more urgent by China's rapid urbanisation, as expanding cities have greater water needs. More than 300m people are expected to move into cities between now and 2030. This transformation comes as the Chinese are becoming far more critical and vocal about the way they are governed. Weibo, a Twitter-like social network, is routinely filled with users sharing information about pollution violations. Some users even dare officials to take a dip in the rivers they

are supposed to be in charge of keeping clean. At times the government's inability to control its waterways has made it the object of public ridicule, such as when more than 16,000 dead pig carcases floated down Shanghai's main waterway this year.

The economic problems are formidable, with the water shortage threatening to slam a brake on growth. According to a World Bank report in 2007, water problems cost China economic losses of 2.3 per cent of gross domestic product. Executives say that water shortages are already starting to reshape their industries.

"Serious water scarcity is one of the big problems that has slowed down social and economic development in the north," says Jiang Liping, water specialist at the World Bank in Beijing. China's lack of water is itself partly a result of economic growth. As people grow wealthier and move to cities, they eat more water-intensive foods, buy more water-intensive products and use more water at home. Changing climate also plays a role, as rainfall patterns and river flows shift. All this is exacerbated by a strained agricultural sector – which accounts for 60 per cent of China's water use. Farmers are digging ever deeper to access water supplies and irrigate more of their land.

The water scarcity is also worsened by the heavy pollution that accompanies China's economic growth. "Controlling pollution is the most difficult aspect of China's water policies," says Xia Jun, director of the centre for water resources research at the Chinese Academy of Social Sciences. "Even in places that have water, it is so polluted that you might not be able to use it." Already, 39 per cent of the water in China's major rivers is too toxic to be fit for any contact with humans.

In a sign of the gravity of the problem, Beijing is planning to pour Rmb1.8tn ($291bn) into water-related infrastructure projects such as irrigation and dams under the current five year plan – a sum that is greater than the annual gross domestic product of economies such as Egypt and Chile.
Loss of livelihood for farmers such as Mr Wang in Minqin is just one example of the huge pressure that water scarcity is putting on China's whole commercial landscape. The country's growth and political stability are increasingly threatened by the widespread degradation of its air and soil.

China's energy sector is particularly threatened by water shortages. Promising new technologies will be constrained in some areas. Projects to develop shale gas, for example, require large amounts of water for hydraulic fracking. Even as Beijing builds new nuclear power plants at a record rate, the government has also announced a moratorium on inland nuclear plants because of concerns over water supply and safety.

"All uses of energy are connected with water," says Lin Boqiang, an energy economist at the University of Xiamen. "In the past, when there was not a shortage of water resources, people would only think about how much water they needed on the site where they wanted to build a project. Now it's the other way around. The volume of water available determines how much energy can be developed in a certain place."

The state's deep concern about water has resulted in some of the toughest laws on water use and water pollution anywhere in the world, although corruption and weak rule of law mean implementation is patchy. "You have to build the most sophisticated water treatment plants in the world to fulfil the law," says an executive in the chemicals industry. "The water laws are sometimes causing investors to rethink, given the amount of investment needed."

However, many question whether these tough laws and the billions spent on water infrastructure will really ease the water crisis. Some Chinese scientists have lambasted the expensive projects at the core of Beijing's water strategy, including the giant diversion system that will carry water thousands of kilometres from southern to northern China to alleviate shortages there.

That project, known as the South-North Water Transfer, will cost at least $41bn and has forced more than 300,000 people to relocate, with engineers cutting new canals and reservoirs. Other efforts to ease the water shortages in northern China, such as the desalination plants springing up on the coast near Tianjin, are also expensive and consume large amounts of energy.

Minqin county, where Mr Wang lives, is a good example of how China's obsession with water infrastructure has backfired. Mega-projects have been a hallmark of communist rule. When Mao Zedong was in power, a giant dam was built across Minqin's only water source, the Shiyang river, in

1958, by students eager to show their devotion to their leader. But soon after the reservoir was filled, Qingtu lake, the body of water downstream that had been at the heart of the Minqin oasis, dried up. With no more water in the lake and diminished flows in the Shiyang river, farmers in Minqin started pumping water from the ground to feed their crops. As a result the water table fell. Trees and shrubs that had kept the desert at bay for centuries died during the 1980s and 1990s. With the vegetation gone, the desert started to encroach on the once-lush area. In some places, sand dunes engulfed entire houses.

Minqin's plight eventually started to attract national attention. In 2007, Premier Wen Jiabao visited, declaring: "We should win the fight for Minqin, and not let it vanish from the map." The government allocated Rmb4.7bn to make sure that did not happen. This was a colossal amount for one of China's poorest provinces but the move mirrored China's huge outlays on water projects across the country. However, China's approach to water management has changed little since Mao. Instead of improving the situation, the multibillion yuan programme has infuriated many in Minqin over what they consider to be useless vanity projects.

At the top of their list is Qingtu lake. It dried up several decades ago but the government has "restored" it by building a new canal network. When water started flowing through the canals towards the lake, farmers gathered to watch it go by, shocked that so much of the precious resource could be expended to build an artificial lake when their parched fields lay nearby. The lake today resembles a small wetland among the dunes, supported by dykes, pipes and underground sealants to help keep the water in place.

"It is totally unsustainable," says Kuoray Mao, a researcher with the University of Kansas who lived in Minqin for 18 months, referring to the new lake. "All this money is really just going to feed the bureaucracy, not to improve farmers' lives."

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While Minqin has its artificial lake, other parts of China are similarly grappling with the impact of water projects gone wrong. The Three Gorges Dam, completed in 2006 at a cost of Rmb254bn, has been plagued by silting, landslides, pollution and ecological degradation. Last year, the State Council, China's cabinet, warned that the dam had "urgent problems". Across northern and central

China, the rapid expansion of irrigation infrastructure thanks to government funding has hastened the depletion of underground aquifers.

Few places have more cause for public anger than Minqin, however. "The people here are very unhappy with the government," says one former farmer who asked not to be named. "They spent all this money to build a lake but our lives have only gotten harder."

As part of the multimillion-dollar restoration programme, farmers' private wells were closed and water prices were raised, making it difficult to get by. The government provides enough water to each farmer to cultivate 2.5 *mu* of land per person (slightly less than half an acre), but no more than that.

It is hard to see how areas such as Minqin can realise the vision outlined by China's leaders, who are promising a "China dream" with higher incomes and better standards of living.

Although thousands of farmers have moved out of Minqin, suicide and depression are common among those who remain. Mr Wang, the cotton farmer, says he and his wife have thought about moving but decided against it. "No one wants us," he says.
Additional reporting by Li Wan in Beijing

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Three Gorges Dam: A vanity project with dire consequences

When the main structure of the Three Gorges Dam, the world's largest hydropower project, was completed in 2006 it was hailed in China as a triumph of man over nature and a shining example of the Communist party's ability to mobilise advanced technology to build grand projects, **writes Jamil Anderlini**.

But by May 2011, China's state council was referring to the dam's "urgent problems" of environmental degradation, resettlement of about 1.3m people and serious erosion throughout the dam's reservoir area.

A project that was supposed to reduce reliance on fossil fuels and end centuries of devastating floods has become mired in controversy and been blamed for the extinction of species, contributing to climate change, exacerbating droughts downstream and seismic instability.

The dam was envisioned by the early revolutionary Sun Yat-sen but it was Chairman Mao Zedong who was its main champion and who had engineers thrown in prison in the late 1950s when they criticised the proposed project.

Mao did not live to see his vision poured in concrete but the plan was revived in the 1980s and approved in 1992 despite opposition from nascent environmentalists and even many officials who saw it as a ludicrously expensive and environmentally devastating vanity project.

About 1.3m people were moved from their ancestral homes, many of them unwillingly and some of them in the face of violent threats as the 660km-long reservoir was gradually filled. Official corruption was rife throughout the compensation and resettlement process.

But it was only when the dam was completed that the scale of the environmental problems became clear.

"The environmental impacts of the project are profound and are likely to get worse as time goes on," according to International Rivers, a US-based environmental group. "The submergence of hundreds of factories, mines and waste dumps and the presence of massive industrial centres upstream are creating a festering bog of effluent, silt, industrial pollutants and rubbish in the reservoir."

This article has been amended since original publication to reflect the fact that Minqin county is in Gansu province

"China: High and dry", 14/05/2013, online at: http://www.ft.com/cms/s/2/7d6f69ea-bc73-11e2-b344-00144feab7de.html#axzz2TclweV3E

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❖ World's tallest dam approved by Chinese environmental officials

Authorities push forward plans for 314 metre-high dam on Dadu river which would affect rare plants and fis

Chinese environmental authorities have approved construction plans for what could become the world's tallest dam, while acknowledging that the project would affect endangered plants and rare fish species.

The 314 metre-high dam (1,030ft) will serve the Shuangjiangkou hydropower project along the Dadu river in south-western Sichuan province, according to China's state news agency, Xinhua. A subsidiary of Guodian Group, one of China's five major state-owned power companies, will complete the project over a decade at an estimated cost of £2.9bn.

The dam will be far taller than the 185 metre-high Three Gorges dam along the Yangtze river – the world's most powerful hydroelectric project – and slightly edge out the current record holder, the 300 metre-high Nurek dam in Tajikistan. The world's second-tallest dam, the 292 metre-high Xiaowan dam on the Lancang (Mekong) river, is also in China.

China's environment ministry acknowledged that the dam would have an impact on the area's highly biodiverse flora and fauna.

"The project will affect the spawning and movement of rare fish species, as well as the growth of endangered plants, including the Chinese yew, which is under first-class state protection," the ministry said, according to Xinhua.

The ministry proposed counter-measures to mitigate the environmental impact, such as "protecting fish habitats in tributaries, building fish ladders and increasing fish breeding and releasing", Xinhua reported. The project is still awaiting a final go-ahead from China's state council.

The Dadu river is a tributary of the 450 mile-long Min river, which cuts through the centre of Sichuan province before joining the Yangtze further south.

Upon completion, the plant will have a total installed capacity of 2GW and produce nearly 8bn KW-hours of energy a year, about twice as much as the Hoover dam in the US.

China's hydropower development has surged in recent years as the country moves to increase non-fossil energy sources to 15% of its total energy use by 2020. Central authorities approved a

controversial cascade of 13 dams on the pristine upper reaches of the Nu (Salween) river in January. The plans had stalled nearly a decade ago under pressure from environmental groups.

Scientists and environmental activists have raised concerns that a profusion of dams in south-west China could increase the area'srisk of natural disasters, such as earthquakes and landslides.

Another hydroelectric project on the Dadu river prompted social unrest in 2004, as tens of thousands of farmers along its banks rioted against plans to relocate them. Authorities responded by halting the Pubugou dam's construction for a year.

"World's tallest dam approved by Chinese environmental officials", 17/05/2013, online at: http://m.guardian.co.uk/world/2013/may/17/chinese-approve-plans-worlds-tallest-dam

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❖ Dam obstruction: Nu river construction must cease

The final days of one of China's last two major free-flowing rivers are dwindling. The Nu River, flowing from the Tibetan Himalayas through the jungles of Burma and Thailand, is one of China's few rivers untouched from human construction. The Chinese government surprised many in March when it announced its plans to revive 2004 plans of building hydropower dams on the upper courses of the Nu.

China has been the top consumer of energy in the world for some time now, depending primarily on fossil fuels. However, having had record smog levels in Beijing due to an overreliance on coal, the Chinese government has been developing new energy sources. According to its latest energy plan, China plans to construct about three dozen hydroelectric power sources across the country, with the dams along the Nu River being one of the most prominent. Although China's attempts at using cleaner energy are laudable, it should not go through with the construction of hydropower dams along the Nu River.

A majority of opposition to the construction of Nu River dams comes from environmentalists who believe that this construction will have severe ecological consequences. The upper reaches of the Nu, where the majority of dams are planned to be built, ranks among one of the world's most ecologically diverse and fragile places. This project will disturb the animal life in ecosystems all along the river, destroying the spawning grounds of several endangered fish. China's southwest Yunnan Province is also a very seismically active region, and geologists state that constructing dams could threaten people living downstream from the region.

Not only are animals and the ecology at risk, but numerous groups of people are as well. This project will force tens of thousands of ethnic minorities in the highlands of Yunnan to relocate. However, as was the case during the construction of the Three Gorges Dam, the government may not keep its word on all the benefits it promises to displaced peoples. The building of dams will cause the most trouble for the millions of farmers and fishermen who, living outside of China in the countries of Burma and Thailand, depend on the Nu for sustenance. Being an international river that runs through

several countries, the Nu will cause great harm to many beyond Chinese borders if blocked at its source by dams. As Katy Yan, the China Program Coordinator at International Rivers, an advocacy group, states, "We're talking about a cascade of dams that will fundamentally alter the ecosystems and resources for downstream communities that depend on the river." For instance, most downstream farming communities depend on the Nu to deposit silt on their overworked soil, which traditionally provided them with replenishing seasonal nutrients. With the completion of this new project, however, the dams will hold back large amounts of silt, causing devastating effects to these agricultural areas. Therefore, instead of risking the well-being of river-dependent peoples, China should look for other sources of energy.

In fact, there are other slightly more expensive energy options available for China. Wind turbines and solar panels, for instance, are renewable resources that do not harm the environment. Also, wind and solar power are very suitable for China because it controls the Tibetan Plateau, an area that would maximize the usefulness of these alternatives. The Tibetan Plateau is one of the least densely populated areas in China and, not many people, if any at all, would be forced to move should wind turbines and solar panels be built there. Also, the Tibetan Plateau is one of the windiest places in the world; building turbines would be very effective in this area as the tremendous amount of wind would be able to generate great amounts of power. The Tibetan Plateau is also particularly useful for harvesting solar energy because of its geographical structure. Located at a high altitude, the region receives a copious amount of sunlight.

The only downside to wind and solar power is that it is more costly than the construction of dams. However, if money is the issue, China can always negotiate a deal with its neighbors, Burma and Thailand, to finance these projects. China can ask for installments in exchange for preserving the Nu River just the way it is. As a result, Burma and Thailand would not experience detrimental effects to their ecology along the Nu River, and China would have the financial aid to support these more expensive but effective projects.

The Chinese government deserves some approbation for taking the initiative to counter domestic pollution. Yet when it threatens the well-being of river Chinese and foreign river communities,

applause must be capped for the long-term well being of the Chinese economy and people. The waters of the Nu River must run forever as they do now: unimpeded by the artificial obstruction of human progress.

"Dam obstruction: Nu river construction must cease", 18/05/2013, online at: http://thenews.choate.edu/index.php?option=com_content&view=article&id=1904:dam-obstruction-nu-river-construction-must-cease&catid=4:nationworld&Itemid=3

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❖ China gives environmental approval to construct hydro dam

China's environment ministry has given the go-ahead for the construction of tallest hydroelectric dam but the project still requires the formal go-ahead from the State Council, China's cabinet.

China's environment ministry has given the go-ahead for the construction of what will become the country's tallest hydroelectric dam despite acknowledging it will have an impact on plants and rare fish.

The dam, with a height of 314 metres (1,030 feet), will serve the Shuangjiangkou hydropower project on the Dadu River in southwestern Sichuan province.

To be built over 10 years by a subsidiary of state power firm Guodian Group, it is expected to cost 24.68 billion yuan in investment.

The ministry, in a statement issued late on Tuesday, said an environmental impact assessment had acknowledged that the project would have a negative impact on rare fish and flora and affect protected local nature reserves.

Developers, it said, had pledged to take "counter-measures" to mitigate the effects. The project still requires the formal go-ahead from the State Council, China's cabinet.

China aims to raise the share of non-fossil fuels in its energy mix to 15 percent by 2020, up from 9.4 percent in 2011. Hydropower is expected to make the biggest contribution.

It has vowed to speed up construction of dams in the 2011-2015 period after slowing it down following the completion of the controversial Three Gorges project in 2006.

The Three Gorges Dam, which serves the world's biggest hydropower station on the Yangtze river, measures 185 metres.

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The 300-m Nurek dam in Tajikistan in Central Asia is the world's highest, though other taller dams are now under construction. China's tallest dam now, at 292 metres, is the Xiaowan Dam on the Lancang River, also known as the Mekong.

On completion, the Sichuan project will have a total installed capacity of 20 gigawatts (GW), with annual power generation to exceed 7 billion kilowatt-hours (kWh).

The government said this year that hydropower capacity was expected to reach 290 GW by 2015, up from 220 GW at the end of 2010. It also said it would begin building a controversial project on the undeveloped Nu River in Yunnan province.

Guodian was one of a number of state-owned firms criticised by China's national audit office last week for starting work on projects not yet been approved by the central government. The office said by the end of 2011, the company had invested nearly 30 billion yuan in 21 unapproved projects.

The Huaneng Group, China's biggest power company, was also criticised for launching construction of the Huangdeng hydropower plant before receiving the government's go-ahead.

"China gives environmental approval to construct hydro dam", 18/05/2013, online at: http://www.moneycontrol.com/news/world-news/china-gives-environmental-approval-to-construct-hydro-dam_873453.html

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❖ Stop construction of mega dams'

NE organizations appeal to India, China and Bangladesh

DIMAPUR, MAY 18 (MExN): A group of 26 organizations from North East India under the banner of the North East Dialogue Forum have jointly written to leaders of India, China and Bangladesh expressing their concern over the issue of water, the adverse impacts of constructing mega dams and mining in the region.

The joint appeal known as the "Dimapur Declaration" was the outcome of a 2-day North East People's Convention on water and dams held at Bethesda Youth Welfare Centre, Dimapur from May 17-18. The declaration was addressed to the Premier of China, Li Keqiang; Prime Minister of India, Dr Manmohan Singh and the Prime Minister of Bangladesh, Sheikh Hasina. The participants unanimously adopted the "Dimapur Declaration" to protect their inherent rights over their water, land, forest and other resources based on customary and international laws as guaranteed by the Universal Declaration of Human Rights and UN Declaration on the Rights of the Indigenous People 2007 etc.
The organizations expressed serious concern with the aggressive development interventions on water bodies in NE region, such as the construction of a series of mega dams over the Brahmaputra River by the Governments of India and China, with minimal consideration of the rights of indigenous peoples and without their participation and free, prior and informed consent. They pointed out that the increasing number of mega dams and other unsustainable mega projects such as the Loktak Project in Manipur, Doyang Project in Nagaland, Dumbur Dam Project in Tripura, Pagladia Project in Assam and Ranganadi Project in Arunachal have destroyed peoples' lives, livelihood sources, ecosystems and violated indigenous peoples human rights and fueled conflicts.

Asserting their strong stand to protect the water bodies and other natural resources in the region and to ensure that perennial rivers have fresh water flow throughout the year, the 26 organizations called upon the Governments of India and China to recognize indigenous peoples' rights over their waters, land and resources and their self-determined development of their water bodies in the region.

The organizations also declared that any decision making for intervention on water bodies, especially trans-boundary rivers passing through India's NE such as Brahmaputra and Barak River System

should be with due and rightful participation of indigenous peoples in the region. They appealed for implementing the recommendations of the World Commission on Dams, 2000 in all decision making processes on dam constructions over Brahmaputra (Tsangpo) River.

The NGOs specifically urged the Indian government to implement the recommendations of the Committee on Elimination of all forms of Racial Discrimination in 2007, to stop construction of mega dams in the territories of the indigenous people like Tipaimukh Hydroelectric Project, Mapithel Dam, Chakpi Dam and several other projects in the region. They strongly urged India to declare all the rivers and tributaries in each of the North East states as 'No Go Zones,' where no dams/ barrages/ hydropower projects are allowed.

Further, the organizations pushed for India to decommission all dams which caused loss of livelihood to the indigenous people and could not meet the envisaged promise made by the authority, such as the Ithai Barrage of the Loktak Multipurpose Project in Manipur, Dumbur Dam in Tripura etc. India was also urged to stop pollution and contamination of water bodies in the NE by mining, oil exploration and drilling etc.

The organizations urged China to recognize that indigenous peoples of India's North East depend on the Brahmaputra (Tsangpo River) and its tributaries for their survival. They also appealed for China to consider the downstream and other environmental, socio economic impacts of mega dams in Tsangpo River and to implement the recommendations of the World Commission on Dams, 2000 in all proposed mega dams construction in the River.

To the Government of Bangladesh, the 26 NGOs called for a proactive role and a collective and consensual decision making processes of the stakeholders on all Trans-boundary rivers. They urged Bangladesh to be conscious of the impacts of arbitrary interventions in rivers in upper riparian countries and to desist from compromises for political or economic gains.

Further, the participants called upon international financial institutions and corporate bodies to desist from financing and taking up water related projects in India's NE, such as mega dams which would

undermine indigenous peoples inherent rights over their waters and threaten environment integrity of the region.

"Stop construction of mega dams'", 18/05/2013, online at: http://www.morungexpress.com/frontpage/95463.html

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❖ State opposes Centre's water policy proposals

PATNA: The state government has certain reservations about the Centre's proposed water policy that is being framed by National Water Resource Council (NWRC). It will strongly resist the provisions perceived to undermine and infringe upon the state's rights to the use of its water resources. Water resources comes in the state list.

Addressing a press conference here on Thursday, Bihar water resources department (WRD) minister Vijay Kumar Choudhary said that quite a few other states had also expressed similar reservations at the NWRC meeting held in December last year. They include Punjab and Kerala. "Even Punjab CM Prakash Singh Badal, who presented his state's case on the proposed water policy, expressed a contrarian point of view like Bihar," said Choudhary, who represented Bihar at the last NWRC meeting.

According to him, the Centre has already sent the proceedings of the NWRC meeting that PMManmohan Singh had addressed in his capacity as its chairman. The papers sent had included Bihar's views, with a noting that the reservations expressed would be taken care of in the draft policy. However, Bihar WRD has not yet been informed about the next NWRC meeting.

As Choudhary said, the Centre's proposed policy considers water as natural resource and, accordingly, it has stressed on 'fair and equitable distribution of water' lying in any area within the country. The Centre also proposes to make legal framework for the regulation of water resources belonging to other states. By implication, if Bihar is rich in its water resources, other states would also naturally enjoy the same rights and, therefore, the same could be channelized and distributed to other states for use by people there.

Clearly, it would require far-reaching changes and basically nullification of the existing constitutional provisions regarding the rights of states to their water resources and their rightful use. Since water has been put in the state list - unlike the Union or concurrent list - the new central water policy would amount to rescinding of the existing laws, rules and regulations that govern the state's right to ownership and use of water.

"The proposed new policy is against the federal structure of the Constitution," Choudhary said. Curiously, the Centre first mooted the policy proposal in 2002, and had not yet been able to make the final draft of the new policy.

Earlier, WRD principal secretary Arun Kumar Singh said the department had taken up medium and major irrigation projects for implementation in a focused manner as its primary task in hand, apart from taking steps to prevent or mitigate floods. As to the latter, 420 schemes, including under Flood Management Programme, were under implementation for completion before the onset of monsoon, he added.

"State opposes Centre's water policy proposals", 18/05/2013, online at: http://articles.timesofindia.indiatimes.com/2013-05-18/patna/39354004_1_nwrc-water-policy-bihar-wrd

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❖ HCM City to host world delta conference

VietNamNet Bridge – Two of the earth's great river systems, the Mekong and the Mississippi, will be the focus of global deltaic leaders who will gather in HCM City this week for a conference.
Speaking about "DELTAS2013VIETNAM: World Delta Dialogues II" to be held from May 19 to 23, King Milling, chairman of the US-based America's WETLAND Foundation, said: "We come to the Mekong Delta both in search of answers and to leverage what we have learned in attempting to restore one of the most productive US assets, the Mississippi Delta."
The foundation hosted the first World Delta Dialogues in New Orleans, the US, in October 2010, with 15 deltas represented.
An action agenda to both help draw attention to coastal land loss issues and create solutions was adopted by delegates who represented governments, NGOs, science, engineering and cultural groups.
In the face of hastened sea level rise due to climate variations, along with subsidence and river system development, the conference's second edition will address some of the world's most challenging issues.
"World populations, agriculture, and industry rely on coastal regions at a time when vulnerabilities are increasing in these very places," Dr Le Quang Minh, deputy president of the Viet Nam National University – HCM City, said.
"After the first event in Louisiana, we returned to the Mekong Delta with a better understanding of how much we have in common and offered to host the second world meeting in HCM City."
The theme this time will be centred on preventing "unintended consequences," or actions related to managing river systems that later create negative and costly consequences.
Stephen Gambrell, executive director of the Mississippi River Commission, will discuss this theme at the event.
He will illustrate the unintended consequences of river management decades ago that have left coastal areas in the US losing land at one of the fastest rates on the planet.
"The Dutch have more than 800 years of water management expertise to share, and one of our most important observations might be the need for societies to make room for their rivers and build with nature," Martien Beek, first secretary at the Dutch embassy Ha Noi, said.

"HCM City to host world delta conference", 17/05/2013, online at:
http://english.vietnamnet.vn/fms/environment/74449/hcm-city-to-host-world-delta-conference.html

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❖ Coastal experts land in Vietnam

American coastal experts have traveled to Vietnam to gain help in saving the Mississippi River delta system.

Experts from around the world will spend much of next week in Vietnam addressing coastal land loss, particularly along the Mississippi and Mekong river systems.

Representatives from the America's WETLAND Foundation, Vietnam National University and the Netherlands in Building Communique of Cooperation will gather beginning Sunday in Ho Chi Minh City for DELTAS2013VIETNAM, the second World Delta Dialogues involving global leaders since 2010.

The America's WETLAND Foundation hosted the first World Delta Dialogues conference in New Orleans in October 2010.

According to research by Michael Blum with LSU's department of geology and geophysics, and Harry Roberts with the LSU Coastal Studies Institute, over the past few centuries, 25 percent of the deltaic wetlands associated with the Mississippi Delta have been lost to the ocean. It was estimated 18 to 24 billion tons of sediment would be required to sustain existing delta surface areas.

"That is significantly more than what can be drawn from the Mississippi River in its current state. We conclude that significant drowning is inevitable, even if sediment loads are restored, because sea level is now rising at least three times faster than during delta-plain construction," according to the report.

The dialogues in Vietnam this week will revolve around the theme of "unintended consequences," a term often used in discussing the management of river systems and actions that have later created negative and costly consequences, according to Stephen Gambrell, who serves as executive director of the Mississippi River Commission.

Gambrell will make presentations to illustrate the unintended consequences of river management decades ago that have left coastal areas known as America's wetlands losing land at one of the fastest rates on the planet.

According to Restore and Retreat, a nonprofit coastal advocacy group in Louisiana, the state is losing 25 to 35 square miles of wetlands per year. At the current land loss rates, nearly 640,000 more acres, an area nearly the size of Rhode Island, will be under water by 2050.

Valsin A. Marmillion, president and founder of Marmillion + Co. and managing director of America's WETLAND Foundation, is in Vietnam for the five-day event.

He said Ho Chi Minh City officials and citizens have welcomed the Americans and other world coastal experts as the group works to elevate the issue of wetland loss on a worldwide stage.

"To imagine a foundation from Louisiana could find literally the common ground to come together in Vietnam on an issue of such world importance is a humbling experience after knowing the history of our two countries," Marmillion said.

Vietnam's MeKong Delta shares many of the same issues as the Mississippi Delta as both are experiencing the greatest rate of land loss on the planet due to land subsidence and sea level rise.

"Worse for us in Louisiana is we also have a triple threat when you combine these two factors with tapping of sediments, fresh water and nutrients that starve our delta," MarMillion said. "This is what we call 'unintended consequences' of placing levees on our big river for flood protection and to support navigation."

He said the Louisiana-Mississippi delta, a national resource, is on the verge of collapse and after generations of knowing the problem was eminent, no fix has occurred.

He said the group's goal is twofold. First, they want to alert the world of what is happening in Louisiana's delta to get the attention required to create solutions. Secondly, the group will leave Vietnam with a "Communique of Cooperation" signed by the world's leading coastal experts defining how cooperation among leaders of world deltas can bring about the sustainability necessary to keep the deltas viable and functioning for future generations.

"With access to and availability of fresh water fast becoming the number one issue in the world, the filtering mechanisms for water, our deltas, must be protected. If not, we deplete our water supplies and won't maintain a salt-free water table along the coasts of the world — heavily populated and productive areas that support all national economies," Marmillion said.

However, he said in the U.S., a politically charged climate has made it hard to establish priorities. But he said federal officials must recognize the need for action.

"America's wetlands in coastal Louisiana are dying and we are at a critical point where all could be lost. While this would be devastating to Louisiana, it will also cripple the U.S. economy, as

commodities from 31 states of the Mississippi watershed will lose export routes. Fisheries will be impacted and the land where people live to support America's most prolific energy development will be gone. That may sound very dramatic, but it is within view today," Marmillion said

"Coastal experts land in Vietnam", 17/05/2013, online at:
http://www.thenewsstar.com/article/20130518/NEWS01/305180014?gcheck=1

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❖ Year 2013 - Water Conservation Year

Water is a natural resource, fundamental to life, livelihood, food security and sustainable development. It is also a scarce resource. India has more than 18 percent of the world's population, but has only 4 percent of world's renewable water resources with 2.4 percent of world's land area. There are further limits on utilizable quantities of water owing to uneven distribution over time, as 75 percent of annual rainfall is received in just four months. Also region wise it varies from 10 cm rainfall in Rajasthan to 1000 cm in North Eastern Region. In addition, there are challenges of frequent floods and droughts in one or the other part of the country. With a growing population and rising needs of a fast developing nation as well as the given indicators of the impact of climate change, per capita availability of water is likely to go down from 1545 cubic metre/yr, in 2011 to 1341 cubic metre/yr, in 2025. The increasing demand of water for various purposes will further strain with the possibility of deepening water conflicts among different user groups as drinking water need is going to rise by 44 percent, irrigation need by 10 percent, industry need by 81 percent respectively by 2025.

In view of this, the Ministry of Water Resources prepared the National Water Policy (2012), which was adopted by the National Water Resources Council headed by the Prime Minister on Dec. 28, 2012. This takes cognizance of the existing situation and proposed a framework for creation of a system of laws and institutions and a plan of action with a unified national perspective. The major concern is of the increasing demand which is leading to growing water stress and causing conflicts among citizens / societies as a result of over usage or diversion of water and due to competition amongst different users. Hence, there is a need for greater awareness on water conservation for optimal usage of the existing resources.

Water Conservation is also the key objective of the National Water Mission which is one of the eight National Missions under the National Action Plan for Climate Change. This envisages conservation, minimizing wastage and ensuring more equitable distribution of water resources both across and within States through integrated water resources development and management.

The effective water resources management must be underpinned by knowledge and understanding of the availability of the resource itself, the uses to which water is put and the challenges facing the

users of water at all levels of stake holders. This can be done by creating mass awareness on the measures that can be taken to address the challenges affecting every living being.

Implementation

A number of mass awareness activities will be undertaken during Water Conservation Year – 2013 with emphasis on sensitizing the masses on water related issues, encourage them to conserve and use it judiciously.

The policies and programmes of the Ministry of Water Resources will be propagated to create a sustainable society and economy.

An effective and sustained mass awareness programme will be launched with the involvement of all stakeholders to achieve the objectives identified in the National Water Policy, 2012 and National Water Mission.

The multi-dimensional awareness programme will help in development of self-consciousness of the individuals as well as the masses on the issue of water conservation and its judicious use.

The activities will be undertaken in all parts of the country so as to touch each and every corner of the country.

As an impact of the above the people will become conscious of the importance of the limited natural resources of water, the ways and means to use water judiciously and addressing the local water related problems, thereby contributing to the sustainable use of water resources through collective responsibility. Each and every individual of this country, be it households, farmers, industrialists, children etc. will be the beneficiary.

"Year 2013 - Water Conservation Year", 15/05/2013, online at: http://www.authintmail.com/news/feature/year-2013-water-conservation-year

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❖ Egypt Dismisses Use of Force to Solve the Nile River Conflict

Cairo, May 12 (Prensa Latina) Egypt will not resort to force to resolve the dispute with Ethiopia on the quota of the Nile river water, assured the Defence Minister General Abdel Fattah el Sisi in statements cirdulated here today.

The Nile, one of the fathers rivers of mankind, whose source is in Burundi, also goes through Ethiopia, Uganda and Sudan before flowing into the Mediterranean, which characteristic explains why the south of this country is called Upper Egypt, and north Lower Egypt, contrary to the usual terms for those cardinal points.

The Ethiopians want to live and we too, we have to find a peaceful solution to this case that was abandoned for a long time, told the Defense Minister to the official newspaper Al Ahram.

In the second half of last year Egyptian military sources denied that they were building landing strips in Sudan in preparation for a campaign to resolve any conflict with Addis Ababa by the construction of the Dam Renaissance.

The quotas of water from the Nile were set in the late XIX during the colonial era and are considered void by Uganda and Ethiopia who demand a renegotiation.

A technical report on the impact of that megareservoir suggests that Egypt, where annual rainfall is minimal and lacks other sources, could face a substantial decrease of the water supply and therefore the crisis for agriculture, industry and the supply to the population.

These apprehensions were denied by official sources here, according to which the dam will not cause "water shortage, but meassures must be taken to get the amount that Ethiopia needed to store in the reservoir according to the needs and the Egyptians consent."

"Egypt Dismisses Use of Force to Solve the Nile River Conflict", 12/05/2013, online at: http://www.plenglish.com/index.php?option=com_content&task=view&id=1403851&Itemid=1

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❖ "Egypt not opposed to Renaissance Dam" Irrigation minister

Many Egyptians consider the construction of the Grand Ethiopian Renaissance Dam controversial, believing it will alter water distribution

By: Luiz Sanchez

Somalilandsun - Minister of Water Resources and Irrigation Mohamed Bahaa ElDin said in Cairo that Egypt does not oppose the establishment of development projects or dams along the Nile River as long as it does not affect water distribution between countries.

Bahaa ElDin's statement, made during an interview on a state TV channel, was in relation to the construction of the Grand Ethiopian Renaissance Dam, which many fear will alter the balance of water to downstream countries such as Egypt and Sudan. The minister said Ethiopia has the right to pursue such projects as long as it does not alter Egypt's water shares.

According to the state-run news agency MENA, the Ethiopian prime minister has promised the state will not allow the dam to affect Egypt's share of the water, stressing that the dam serves only to generate electricity.

During his interview Bahaa ElDin also mentioned the international committee tasked with investigating the potential effects of the dam, saying if the committee concluded the dam would have an adverse effect on Egypt then discussions with Ethiopia to find an alternative would be needed.

If no agreement can be reached between Egypt and Ethiopia, MENA reported Bahaa ElDin saying, then Egypt would turn to international rules and laws to settle the matter. However the minister stressed ties between the two nations were strong and Ethiopia would be flexible if needed.

The dam is a contentious issue between Egypt and Ethiopia. In order to deal with the issue surrounding the dam's effects on downstream nations, an international panel of experts (IPoE) was established to investigate the impact of the dam.

The IPoE consists of ten experts from Ethiopia, Sudan, Egypt and members of the international community. It is expected to complete the report this month, and Egypt has said it will base future dialogue surrounding the dam on IPoE findings.

Egypt has previously refused to sign the Entebbe Agreement, which would see a redistribution of Nile water. The redistribution would potentially have a negative effect on Egypt's share of the water; 55.5 billion cubic metres annually from an estimated total 84 billion cubic metre output.

Reports last year surrounding a potential military strike on the dam by Egypt were vehemently denied by Egyptian authorities. The allegations were initially made in a Sudanese newspaper citing Wikileaks documents alleging that Sudan had agreed to allow Egypt to construct an airbase from where Egypt would be able to launch an airstrike on the dam if needed.

On Saturday Minister of Defence Abdel Fatah Al-Sisi refused to resort to military force to solve any water disputes Egypt may have with neighbouring countries. His statement was made in a military camp in Dahshour where, according to state-owned Al-Ahram, he told the press that Egypt would look for a peaceful solution to the Ethiopian issue.

"We want to live and [Ethiopians] want to live," Al-Sisi said

“Egypt not opposed to Renaissance Dam” Irrigation minister:, 13/05/2013, online at: http://somalilandsun.com/index.php/regional/2913-egypt-not-opposed-to-renaissance-dam-irrigation-minister

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❖ Kenya: Devolution and Water - Sound Policies Required

Arid and semi-arid lands conjure images of desolation and hopelessness. Yet, they represent a majority of the areas where incremental development in agriculture can occur. For example, some of the best fruits grow in lower Eastern and despite hosting Chalbi Desert, you will notice thriving and robust production of Khat in Marsabit. Counties in Asals present the most important agricultural potential outside the usual food-basket areas; what is required is water.

Unfortunately, water and sanitation discussions have tended to focus on urban water, forgetting that rural water is not only critical for consumption, but also for economic production.

The new constitution mandates that counties provide water and sanitation services. With the governments in place, the stage is set for revolutionary access to water. The Transition Authority had only earmarked storm-water management for immediate devolution in its February gazette notice. Storm water management is no doubt a critical function as shown by the recent rains. However, not devolving water and sanitation services immediately dealt a hard blow to governors, many of whom had come into power on promises of providing basic services like water. Recently, TA presented water and sanitation as one of the functions that would be ready for devolution come July 1.

However, county governments will have to make a request and demonstrate having the capacity and necessary structures to be allowed to take up this function. How are county governments going to demonstrate these? Will the necessary legislation be ready by July 1?

The 1999 and 2002 water reforms created the water services boards and district water offices through which most of the decentralised funds in water sector have been channeled. The reforms also transferred the provision of water and sanitation from municipalities to commercially run water service providers while separating infrastructure development and making it the mandate of the regional water services boards.

With counties expected to take over water and sanitation, the relevance of both WSPs and WSBs has been questioned, with some proposing their disbandment and suggesting the strengthening of water companies for infrastructure development with the support of public works. We note that lots of infrastructure, including shared facilities like Ndakaine and Mzima Springs, were developed through boards with funding from bilateral grants and loans and some mega projects are still ongoing.

Hence, no meaningful discussion on devolution of funds in water can be done without discussing the place of boards, given most funds are channeled through them.

In spite of the sector's past reforms, access, coverage, and infrastructure development have not matched the pace of urbanisation and population growth. According to Water Services Regulatory Board's 2010-11 annual report, water coverage by formal institutions in the country stands at 47 per

cent. The devolved system must provide solutions and mechanisms for dealing with the most critical problems in the sector like poor governance, corruption, lack of infrastructure and limited public participation in decision-making.

The Ministry of Water,TA and the key sector players should provide answers on who is in charge of what and look for new sources of financing for water and sewerage expansion while ensuring effective use of the available resources.

Limited water resources make inter- county sharing of resources inevitable. Governors need to establish inter-county agreements and memorandums with compensation policies that will ensure sustainability and development of the affected counties.

As it is, none of the 47 counties would be able to take up water and sanitation services in July 1 without the passage of water policy and Water Bill 2012, which provide necessary legislative and operational framework to the sector.

TA must play its part and ensure that the public is informed and can engage the FACT team on water. Citizens need to be aware that devolution of funds has to follow functions, and unless they push for actualisation of this in their respective counties, meaningful devolution in water will take a long, long time. Your work is cut-out, the new Cabinet Secretary.

Alois advises on programme issues at Water and Livelihoods Network and Hillary works with ARTICLE 19 Right to Information Programme. This analysis was conducted in collaboration with the International Budget Partnership.

"Kenya: Devolution and Water - Sound Policies Required", 15/05/2013, online at: http://allafrica.com/stories/201305160657.html

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❖ Chilean Company Wants to Sell Glacier Water to Middle East

Chile is a country of environmental extremes. The northern third of this narrow but extremely long nation contains rich copper mines and some of the driest deserts in the world. The sparsely populated southern tip of Chile, which is some 2,500 miles away from the northern deserts, is packed with fjords and glaciers. As global warming prompts glaciers to melt at faster rates this is also becoming one of the world's most water-rich areas.

Such geographical challenges have always made it difficult for Chile to use its water efficiently and to take it where it is most needed. This is why plans to capture melting glacier water and sell it to far away Middle Eastern nations have caused somewhat of a scandal in the South American country.

The information first emerged in a newspaper from Qatar, which talked about a deal in which Chile would put glacier water in large containers, and ship it to the desert kingdom.

Chilean officials immediately denied any involvement in this alleged plan, explaining that the water deal was proposed to Qatar by a "small private company" from Chile.

The company that wants to sell the glacier water is called Waters of Patagonia, the Chilean press reported. And it is also discussing a deal to sell water to Qatar's southern neighbor, the United Arab Emirates.

This idea did not go down well with environmental groups who are concerned that such deals could have a negative impact on one of the world's most important fresh water reserves.

"We should first look at the necessities and problems that our country faces before we start thinking about selling water to the United Arab Emirates," said Juan Pablo Orrego, president of Ecosistemas, a Chilean NGO that focuses on environmental issues, to a local radio station. "I think it's a totally scandalous and unacceptable concept, which underscores the lack of protection of Chile's hydrological resources."
Waters of Patagonia received the rights to collect the melted water of a part of Jorge Montt glacier, one of the country's largest ice fields, in 2005. But so far the company has not been involved in any major water shipments.

The company says that its procedures are eco-friendly, as it is merely capturing fresh water that melts from the glacier before it is lost into the ocean.

Waters of Patagonia also says that most of its business plans involve shipping water to Chile's drought-stricken Northern provinces. They do this by placing glacial water in giant floating containers, which are pulled across the ocean by tugboats.

"Chile is always our priority," said Ian Szydlowski, the owner of Waters of Patagonia. "We don't touch the ice, and we didn't take the area from the Mapuche [indians], from miners or farmers."

Szydlowski added that for several years his company has been working to solve Chile's water problems. He argues that an initiative to provide water to 83 percent of one of Chile's northern provinces is well under way.

Environmentalists in Chile, however, argue that water problems are not just solved by shipping the stuff from one place to another.

According to Pablo Orrego, from Ecosistemas, water problems in the north are not necessarily caused by the lack of rain or lack of rivers. It turns out that mining companies use up a lot of water that could be used for human consumption.

Environmentalists also point out that the future of Chile's glaciers lies in a legal limbo, which could allow for more companies like Waters of Patagonia to exploit the country's pristine glaciers.

Water is considered a public good in Chile. But water laws do not specify how to regulate hydrological sources that are not in liquid form. This means that no one is certain about the specific regulations that govern the collection of melted ice water, an increasingly important resource in Chile and the rest of the world.

"Chilean Company Wants to Sell Glacier Water to Middle East", 16/05/2013, online at:

http://abcnews.go.com/ABC_Univision/News/chilean-company-sell-patagonia-glacier-water-middle-east/story?id=19195706#.UZkUQqKe8zF

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❖ Study: Fewer Trees in the Amazon, Less Hydropower from Dams

A controversial dam under construction on an Amazon River tributary in Brazil may deliver less electricity than promised if trees in the wider rainforest continue to be cut down, according to a study published online Monday in the *Proceedings of the National Academy of Sciences*.

The 11,233-megawatt Belo Monte Dam on the Xingu River will be the world's third largest hydropower facility by generating capacity when it is completed in 2015.

Because plans for a large reservoir were scrapped to mollify indigenous and environmental groups, the facility's power output will fluctuate with seasonal river flows. In an average year Belo Monte, now a "run of the river" dam with a smaller reservoir, will generate just 40 percent of its installed capacity.

But if Brazil does not rein in deforestation in the Amazon basin, Belo Monte's power potential may fall well short of expectations, says Claudia Stickler, the study's lead author and a scientist at the Amazon Environmental Research Institute.

The study is one of the first to assess the effects of regional deforestation on hydropower potential.

Under a "business-as-usual" scenario of 40 percent loss of forest cover in the Amazon by 2050, Belo Monte would generate nearly 40 percent less electricity than its developer anticipates, the study claims. That is on top of the expected reductions in average annual generation due to the dam's redesign. The Amazon has lost about 17 percent of its forest cover already, according to study co-author Michael Coe of the Woods Hole Research Center.

"We recommend that forest policy be considered in connection with energy policy," Stickler told Circle of Blue. "There should be integrated thinking about land use and energy."

The Water-Energy-Land Use Cycle

The study turns conventional thinking – that deforestation increases river flows, and thus increases hydropower potential – on its head.

The problem with the accepted wisdom, Stickler said, is that people are not thinking broadly enough.

Stickler and her colleagues assessed how different deforestation rates in both the Xingu basin and the Amazon basin as a whole affected two variables: evapotranspiration (ET) and rainfall. ET measures how much water is consumed by a plant. Together, these two variables influence river flows.

Forests are typically cleared to grow crops, which have a lower ET. Within an isolated basin, this vegetation change would increase river flows.

Rainfall, the authors found, plays a much bigger role than ET in determining how much water makes its way into the Xingu River. And rainfall can only be understood within a regional context, which is the conventional wisdom's blind spot. The water vapor transpired by trees in the eastern basin and the energy they absorb from the sun help to create rain downwind to the west.

Thus, regional deforestation has a greater effect on rainfall within the Xingu basin than local deforestation itself. The study found no difference in local rainfall between a 20 percent and a 40 percent reduction in Xingu basin forest, so long as the Amazon forest remained intact.

"Once you've deforested much of the Amazon basin, [the loss of rainfall] far outweighs any bump you may see from decreased evapotranspiration," Coe told Circle of Blue. Similar connections between regional forest cover and precipitation have been documented for Southeast Asia and Central Africa, both dam-building hot spots.

The study used current climate models and did not account for changes that might occur because of increasing greenhouse gas emissions.

Forests in Brazil are cleared largely for crops and pastures. The decrease in rainfall because of deforestation could create a tragic circumstance in which farmers become agents of their own demise, according to a separate paper published last week in the journal*Environmental Research Letters*.

The study suggests that "the more agriculture expands, the less productive it becomes" because yields drop in tandem with decreases in precipitation.

The authors then applied their new river discharge figures to the models used by Belo Monte engineers to calculate hydropower potential. Electricity generation at Belo Monte falls as deforestation in the Amazon increases.

Dominick Spracklen, a climate scientist at the University of Leeds, called the study "intriguing." Last year Spracklen published one of the first papers to use observational data to show thattropical forests produce rain that falls hundreds of kilometers away.

"Most people only think about ET as a 'waste' of water rather than as a potential source of additional rain and discharge downwind," Spracklen wrote in an email to Circle of Blue. "The paper demonstrates the need to rethink this and highlights the need to slow deforestation to maintain rainfall patterns, river discharge and ensure sustainable hydroelectric power generation into the future. Hopefully the work will encourage hydroelectric power companies to contribute to efforts to slow deforestation and restore tropical forests on degraded land."

Hydropower accounted for 85 percent of Brazil's electricity generation in 2010, according to the U.S. Energy Information Administration.

Brazil has ambitious development plans for its rivers as it seeks to meet self-imposed goals to reduce greenhouse gas emissions. South America's largest economy wants to source half of new electricity supplies from hydropower, the country's secretary of planning and development told *The Economist*. Of the 48 dams on the drawing board, 30 are located in the Amazon rainforest.

If hydropower becomes less reliable because of decreased precipitation, electricity rationing could occur, as Venezuela was forced to do in the winter and spring of 2010 when a drought dropped water levels behind its primary hydroelectric dam. Or, the country would need to invest in expensive back up capacity powered by fossil fuels.

Thanks to better enforcement by state and federal officials, deforestation rates in Brazil have decreased in the last few years, Coe said.

The study makes clear that in the Amazon the consequences of local land-use decisions can be felt hundreds of kilometers away.

"Even if we reforest the entire Xingu basin, it wouldn't make much of a difference [for river flows] if we didn't reforest the rest of the Amazon," Stickler said.

"Study: Fewer Trees in the Amazon, Less Hydropower from Dams", 16/05/2013, online at:
http://www.circleofblue.org/waternews/2013/world/fewer-trees-in-the-amazon-less-hydropower-from-dams/

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❖ The private sector: new seed-funders for development?

A global water partnership between UNDP and Coca-Cola shows how businesses can help trial new ideas

With more and more companies giving money to development charities or donating a percentage of the sales of certain products, most people are familiar with the idea of companies investing in development work. What doesn't tend to happen a lot, however, is the private sectorproviding seed-funding to kick-start development projects – a role traditionally played by development donors.
Yet the idea does have merit. Could the private sector play a greater role in providing the seed-funds needed to trial new ideas so that donors and governments can replicate, on a larger scale, those that work?

An example that both demonstrates the benefits of this approach and provides important lessons for future attempts by businesses wanting to take this route is the Every Drop Matters project – or EDM. EDM began in 2006 when The Coca-Cola company and the United Nations Development Programme (UNDP) came together to start a regional water partnership to seed-fund and pilot innovative ways of solving water problems identified by local communities.
Since then the initiative has expanded, and now has 62 projects working to test new ways of protecting and replenishing water resources in eastern Europe and the Commonwealth of Independent States, the Arab States and Asia. To date, the project claims to have helped improve over 350,000 people's access to water and sanitation.

Funding pilot projects

EDM policy of funding pilot projects aims to bring more money to bear on a problem – either by winning additional funds to expand a project's scope, or by providing the proof governments and donors need to fund a project's replication on a much larger scale.

A good example is the work started with a small seed grant from EDM toclean up the polluted Aghstev River in Armenia. By showing the feasibility of this work, the project attracted extra funds

from USAid and helped local government get a further $2m loan from the European Bank for Reconstruction and Development to build a wastewater treatment works and rebuild local sewers. Similarly, a rooftop rain-water harvesting system successfully piloted in Turkey has now been replicated in many other countries, as far away as Pakistan, Nepal and Bangladesh. Another example is the innovative 'Black Sea box' – an environmental education kit for schoolchildren. Piloted in Turkey, it is now being adopted by governments of other countries bordering the Black Sea.

Lessons learned

One key lesson for the private sector is don't try to do it alone. For this type of seed-funding initiative to work, business needs a strong and reputable development partner like UNDP. Ideally this development partner should have staff on the ground, managing small grant programmes, and building good connections with communities, NGOs, and local and national government. This will ensure that pilot projects are relevant and can be replicated and scaled up.

Another message for companies is that they should link the initiatives firmly to their business strategy – which helps to gain and maintain internal support for development projects. For example, water is a key business issue for EDM partner Coca-Cola and is critical to its global vision 2020. One of its business goals is to return the same amount of water it uses in its operations to communities and the environment.

Considerable effort is also needed to ensure such initiatives are true partnerships – not just a funder–implementer relationship. EDM has found that a small steering committee ensures an equal workingpartnership. Its committee has just six members (three from each partner). This helps discussions remain frank and open and makes for a very democratic way of deciding which pilot projects to fund.

Finally, both partner organisations need to have a strong local presence, with offices in each country. This will mean that staff work with each other regularly, and call on each other's very different skills.

Benefits

The bringing together of very different points of view, resources and expertise has been a major benefit for EDM. While UNDP brings expertise on water governance and works on the ground and

with national and local governments, Coca-Cola brings a lot of knowledge on outreach, effective communications, and creative, practical and innovative ways of project design – in addition to its financial contribution of $2m per year.

Also, because the partnership is not funded by public money from taxpayers, it can afford to be innovative. It can try bold new ideas to see what works. Those that do work continue to receive funding and those that don't can be quickly dropped. There is a strong focus on delivering results, and a relatively short funding cycle of one year, which encourages projects to deliver concrete outputs.

Challenges

The different cultures in business and development posed a challenge at the start. Business is used to moving quickly and seeing fast results, while development organisations are used to working to a longer time-frame, in order to achieve long-term sustainable results.

From Coca-Cola's side, it took time to appreciate that community-development approaches can take longer than expected. The company has learned to be more flexible and more understanding of the long-term nature of the return on investment. In addition, development teams now have a stronger focus on efficiency.

Both partners say that they've learned to appreciate each other's priorities, and the initiative is set to expand further and work with more private-sector partners interested in water.

Dr Kadri Ozen is the public affairs director for Coca-Cola Eurasia & Africa, and the catalyst behind the Every Drop Matters project. Dr Bogachan Benli, from the UNDP water and ocean governance programme, is the EDM global programme manager

"The private sector: new seed-funders for development?", 13/05/2013, online at: http://www.guardian.co.uk/global-development-professionals-network/2013/may/13/coca-cola-water-seed-funding

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❖ SA, Lesotho reach agreement on new water project

The R12bn second phase of the Lesotho Highlands Water Project (LHWP), which will secure a continued supply of water for South Africa and hydroelectric power for Lesotho, was approved in principle by the two countries this week.

Tenders are likely to be issued late this year or early next year.

The big project will be a boost for South African and Basotho construction and materials supply companies and should create thousands of jobs. It will also provide South Africa with much-needed water security, one of the challenges highlighted in the government's National Development Plan.

Water and Environmental Affairs Minister Edna Molewa confirmed on Thursday that the project would go ahead for completion by August 2020. Officials of her department said South Africa would bear the full R12bn cost of the project, sharply higher than the initial R9bn estimate, and that the Trans-Caledon Tunnel Authority would obtain funds from various financial institutions.

Ms Molewa said the additional water supply from Lesotho was earmarked for two major nodal developments planned for Lephalale near Vryburg, where new mines were being established, and for strategic infrastructure projects planned for Steelpoort.

According to the department, South Africa receives 24.6m³ of water per second from the LHWP.

An additional 45.5m³ per second would flow as a result of the expansion. The project would also generate 1,000MW of electricity for Lesotho.

President of the South African Federation of Civil Engineering Contractors Norman Milne welcomed the decision, saying the industry had been waiting anxiously for announcements on strategic infrastructure projects.

Lesotho Prime Minister Thomas Thabane visited Pretoria on Monday to clinch the agreement with President Jacob Zuma on the project after ministerial engagements at the weekend overcame Lesotho's outstanding concerns, which Ms Molewa said related to energy supply for Lesotho, governance and the configuration of the project itself.

Ms Molewa said the project involved the construction by South Africa of the Polihali Dam and connecting tunnels. Lesotho would build another new dam near Polihali and both dams would feed the existing Katse Dam, which would supply South Africa. The hydropower would be generated for Lesotho from these three dams. The agreement includes the measurement of water for South Africa.

Ms Molewa said an additional phase would involve providing water to Botswana through the same channel as South Africa.

She said South Africa, Lesotho, Botswana and Namibia recently signed an agreement for an investigation into Botswana and Namibia also getting water.

"SA, Lesotho reach agreement on new water project", 17/05/2013, online at: http://www.bdlive.co.za/national/2013/05/17/sa-lesotho-reach-agreement-on-new-water-project?utm_source=Circle+of+Blue+WaterNews+%26+Alerts&utm_campaign=8720e4decc-RSS_EMAIL_CAMPAIGN&utm_medium=email&utm_term=0_c1265b6ed7-8720e4decc-250657169

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❖ U.N. says there is hope for Yemen if funds are forthcoming

GENEVA, May 16 (Reuters) - Yemen, home to what Washington considers al Qaeda's most dangerous wing, has the chance of a bright future, the top U.N. official in the country said on Thursday, but needs help to deal with a major humanitarian crisis that threatens its stability.

Ismail Ould Cheikh Ahmed, the U.N. humanitarian coordinator for Yemen, also told reporters at a briefing in Geneva that poverty, unemployment and scarce water supplies meant its recovery was still precarious.

"This is a situation that is full of hope," Ould Cheikh Ahmed said. "It is often quoted as an example. People say: 'Why don't we use the model of Yemen for the region?'

"The problem is, I'm saying to the world it could collapse today because many of the Yemenis, half of the population, need food assistance, need medical assistance. There is no water access. The youth cannot find jobs."

Yemen's humanitarian problems, including its one million malnourished children, were partly the result of decades of mismanagement, he added.

Yemen was ruled for more than 30 years by Ali Abdullah Saleh before he was forced out after months of protests early last year in one of several Arab Spring revolutions.

A transitional government is now in power, under a process which should bring a new constitution by the end of 2013 and new presidential and parliamentary elections in early 2014.

"Finally we are having a situation in the Middle East where we have a chance of the transition succeeding," Ould Cheikh Ahmed said.

But the transitional government lacks the mandate to take tough steps, including cracking down on qat, a mild stimulant leaf that most Yemeni adults chew regularly, sometimes with adverse effects on productivity.

It is also a serious drain on water supplies in a country where 13 million people out of a population of some 24 million have no access to safe drinking water.

The interim government has managed to improve security by driving militants from al Qaeda in the Arabian Peninsula (AQAP) out of the Abyan region in the south, Ould Cheikh Ahmed said.

"But unfortunately what you see there is that every single house has been destroyed. The mosque has been destroyed. The governor's house has been destroyed, the schools, the hospitals."

AQAP has emerged as one of al Qaeda's most active and ambitious branches, and despite the setbacks it suffered in the U.S.-backed military offensive in Yemen, it continues to launch attacks on the army and security apparatus.

The United Nations estimates it needs $716 million this year for Yemen's humanitarian needs, including 300,000 mainly Somali refugees, but has only received 28 percent of that so far.

If Yemen can remain stable, it has the opportunity to tap large reserves of private investment including from Yemenis in neighbouring oil exporter Saudi Arabia, Ould Cheikh Ahmed said. (Reporting by Tom Miles; editing by Mike Collett-White)

"U.N. says there is hope for Yemen if funds are forthcoming", 16/05/2013, online at: http://www.reuters.com/article/2013/05/16/yemen-un-idUSL6N0DX4GX20130516?utm_source=Circle+of+Blue+WaterNews+%26+Alerts&utm_campaign=8720e4decc-RSS_EMAIL_CAMPAIGN&utm_medium=email&utm_term=0_c1265b6ed7-8720e4decc-250657169

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❖ Economic losses from disasters underestimated, 'out of control' – UN

LONDON (Thomson Reuters Foundation) - Economic losses caused by disasters have been underestimated by at least 50 percent, and are "out of control", U.N. Secretary-General Ban Ki-moon has said.

The head of the world body was speaking on Wednesday at the New York launch of a **U.N. report on the business case for disaster risk reduction**, which reviewed reported losses from disasters in 56 countries.

"Our startling finding is that direct losses from floods, earthquakes and drought have been underestimated by at least 50 percent," said Ban. "So far this century, direct losses from disasters are in the range of $2.5 trillion. This is unacceptable when we have the knowledge to reduce the losses and benefit from the gains."

The study from the United Nations Office for Disaster Risk Reduction (UNISDR) noted that, between 2001 and 2011, global reinsurer Munich Re. reported around $1.68 trillion in losses, and over the same period, EMDAT, the major public global disaster database, reported $1.25 trillion in losses.

But neither provides a complete picture of global disaster losses, as they do not account for uninsured losses from repeated, smaller-scale but extensive disasters, particularly in low and middle-income countries, according to UNISDR.

Ban said that while governments bear responsibility for measures to mitigate disasters, the private sector also has a critical role to play. It accounts for 70 to 85 percent of worldwide investment in new buildings, industry and critical infrastructure, he added.

The UNISDR report argued that the globalisation of the world's economy over the past 40 years has led to rapid increases in disaster risk in all countries, both rich and poor.

"Decades of decentralising and outsourcing production to areas with comparative advantages, such as

low labour costs and access to export markets, has enhanced competitiveness. However, because many of these areas are hazard-prone, business exposure has dramatically increased," it said.

Investors have not paid enough attention to this trend, and national and local authorities have downplayed it in their efforts to attract investment.

Ban said markets have placed greater value on short-term returns than on the sustainability and resilience of businesses. But this is now shifting.

"At long last, we are coming to understand that reducing exposure to disaster risk is not a cost but an opportunity to make that investment more attractive in the long-term," he said.

SMALL BUSINESSES SUFFER MOST

The March 2011 earthquake and tsunami in Japan, and the Chao Phraya river floods in Thailand in the same year have focused attention on the growing impact of disasters on business, the report said.

The global nature of supply chains means that a crisis in one place can have consequences much further afield. For example, damage to a microchip maker in Japan resulted in 150,000 fewer Toyota automobiles being manufactured in the United States.

And even if businesses do not experience direct losses, they often suffer indirectly due to impacts on public infrastructure such as power cuts. During the Thai floods, companies were forced to suspend business with a knock-on effect for their workers, many of whose homes had also been flooded.

While large international corporations may be able to bounce back from disasters, thanks to insurance and diversified assets, this is often not the case for small businesses and informal traders, the report said.

They are more likely to be located in hazardous areas and less likely to have invested in protection. "A single disaster may wipe out all or a large part of these businesses' capital," the report said.

It surveyed 1,300 small and medium-sized businesses in six disaster-prone cities in the Americas, and found that three quarters had suffered business disruptions related to damaged or destroyed power, telecommunications and water utilities. Yet only 14.2 percent of those with fewer than 100 employees had even a basic approach to crisis management in the form of business continuity planning.

The effects of a disaster can also persist for years, the report noted. Before it was hit by an earthquake in 1995, the Japanese port of Kobe was the world's sixth busiest. Yet, despite massive reconstruction, by 2010 it had fallen to 47th place.

CUTTING COSTS, CREATING VALUE

A new global risk model, developed by UNISDR and its partners, projects annual losses from earthquakes and cyclonic winds alone to be in the range of $180 billion per year this century.

The study also reviewed risk management in 14 major corporations: ABB, ARUP, BG Group, Citigroup, General Electric, HCC Group, HIRCO Group, Hitachi Group, InterContinental Hotels Group, Nestlé, NTT East Corporation, Roche, Shapoorhi Pallonji&Co. Ltd. and Walmart.

"It is clear from our discussions that senior executives are increasingly aware of the vulnerability of their businesses to disasters and are beginning to prioritise the strengthening of their risk management," said Joseph Rizzo, a partner with global consulting firm PwC. "For the private sector, the business case for stronger disaster risk management is clear: it reduces uncertainty and builds confidence, cuts costs and creates value."

This goes for small entrepreneurs too, the report showed. In Mexico, for example, after its southeastern coast was battered by a hurricane in 2002, the municipality of San Felipe teamed up with farmers and fishermen to help protect them from future storms, by relocating their animals further inland and storing fishing equipment in a safe place. This strategy saved each fisherman around $35,000 when Hurricane Wilma hit in 2005.

UNISDR chief, Margareta Wahlström, said a major **international conference on disaster risk reduction in Geneva** next week would focus on boosting the contribution of business.

"The beginnings of changing attitudes in the private sector now need to transform into a more systematic approach to disaster risk management in partnership with the public sector to make the world a safer place," she said.

"Economic losses from disasters underestimated, 'out of control' – UN", 16/05/2013, online at: http://www.trust.org/item/20130516151307-54x3f/?source=hptop&utm_source=Circle+of+Blue+WaterNews+%26+Alerts&utm_campaign=8720e4decc-RSS_EMAIL_CAMPAIGN&utm_medium=email&utm_term=0_c1265b6ed7-8720e4decc-250657169

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❖ Water may reshape energy industry

Demand for fresh water could exceed supply by an estimated 40 percent by 2030, pushing up prices for the water-intensive energy industry. Soaring water prices would help wind, solar, and natural gas, but hurt coal and nuclear plants.

There is a broad and growing consensus that freshwater is undervalued. It is a limited, but vital, commodity without a price. In nearly every region the price of water is the cost of water access rights, treatment costs, and transportation costs. There is no price or market for the water itself.

That will begin to change. Prolonged drought and overuse have depleted freshwater reserves at the same time that demand is rising rapidly. The resulting imbalance has some projections of demand for freshwater exceeding supply by as much as 40% by 2030 . Increasingly, water starved regions have begun to look to ways to both reduce overall use and to prioritize different types of use. While there are a number of policy approaches, one that seems to have wide support is the idea of regional exchanges where water could be priced (with adjustments for preferred uses) and sold.
The implications for the energy industry are significant. Fuel extraction is water intensive, especially for mining and fracking extraction - for fracked natural gas, about a gallon of water is required to extract one mmbtu. Electric generation from fossil fuels also requires large amounts of water. The average kWh produced from coal-fired electric generation uses a gallon of water, and while natural gas averages less water use, nuclear uses significantly more.

Initially, reduction in use will focus on eliminating waste and high-use-low-value activities (like watering a lawn), but as the limitations become more acute some uses will simply cease to be provided for, or the cost of use will increase, forcing a rebalancing of the ways water gets used.

Currently, agriculture is the single largest use for freshwater, globally roughly 70% of freshwater use is for agriculture - upward pressure on food costs has already been pointed to as a significant source of political destabilization, so in water limited areas adding to food costs will not have political appeal.

Direct water use by individuals is typically less than 10% of total water use. The remainder is industrial use - the majority of which is energy related - which uses roughly 23% of fresh water

globally (worth noting that reports have energy related water use as high as 40% of total water withdrawals here in the U.S.). Pricing structures could be designed any number of ways, but against the current use mix, it is reasonable to think that energy and industrial uses (along with specialty agriculture) are likely to be the most politically viable place to increase costs in hopes of influencing use.

The impact of water prices on energy activities will, of course depend on how high the cost. Historically, the prices paid for water are so low as to be of little concern to most energy businesses, even if they were to double, but given the high cost of disruption from shortages, real, significant increases in prices are a possibility in the future. Pricing cuts both ways, it will add to the cost of energy, but it would also provide certainty as to availability. There are already markets in which doubts about the absolute availability of water has limited the ability of developers to finance new power generation.

Over the longer term the value of low-water use (or saltwater viable) energy generation will increase relative to high water demand energy sources. Wind, solar and natural gas (especially conventionally sourced gas) will gain some advantage relative to coal and nuclear.

Another area to pay attention to are technologies and processes that can reduce or eliminate water use from the energy process - these types of technologies have been underfunded to date because of limited market value. We are seeing increased interest by investors (especially from early stage investors like Vodia Ventures, which is working from a thesis that the potential disruption is undervalued and that the potential for truly transformative technology or process is just beginning to emerge now) in building positions because with a clear view on the economic value associated with water savings these companies can become extremely valuable.

"Water may reshape energy industry", 19/05/2013, online at: http://www.csmonitor.com/Environment/Energy-Voices/2013/0519/Water-may-reshape-energy-industry

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