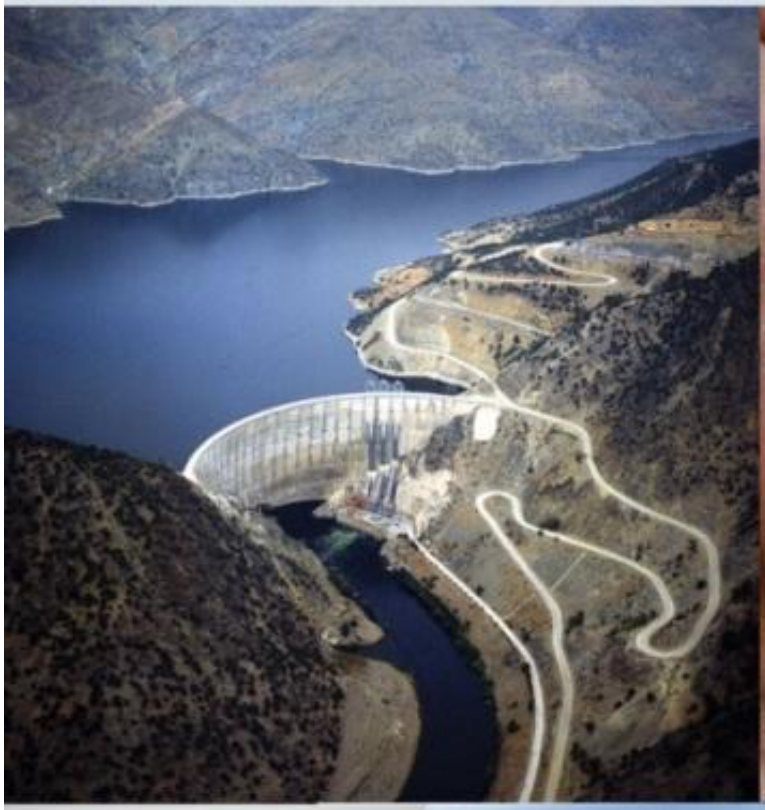


ORSAM WATER BULLETIN

Weekly Bulletin by ORSAM Water Research Programme

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





Issue 101

ORSAM WATER BULLETIN

05 November – 11 November 2012

- **Pell Frischmann advises on Iraq water projects**
- **Iran, Armenia start building joint hydro-electric power plant**
- **Iran to Build Dam on Kabul River**
- **Iranian, Iraqi universities sign cooperation MoU**
- **Contaminated Aquifers; Radioactive Water Threatens Middle East**
- **Bridge over dirty water**
- **Church of the Holy Sepulchre bank account blocked**
- **Turks "strong interest" in financing Gaza desalination**
- **Lebanon must address climate change: Khoury**
- **National policy being drawn up to mitigate climate change impact**
- **Provide Clean Drinking Water and Prevent Disease**
- **'Disi project progressing as per schedule'**
- **Israel providing support for water issues in Ica**
- **Master plan to help clean up Jordan River Basin**
- **Smallholder farmers need improved stake in Nile's development**
- **The politics of food**
- **Dahshur lake under threat: Residents complain of state's disinterest**
- **Egypt: Govt to Raise Price of Drinking Water**
- **Without Better Water Management, Nile Basin's Poorest Will Be Left Behind**
- **Egypt Attends Nile Basin Countries Ministerial Meeting**
- **Kenya: Nile Water Not Helping Farmers, Report Says**
- **Flower power threatens Kenya's Lake Victoria**
- **Climate Conversations - Can regional organisations prevent future water conflicts?**
- **Saudi Minister Signs $196 Million of Water, Sewer, Leak Projects**
- **The Groundwater Model Bill: Rethinking Regulation for thePrimary Source of Water**

Mithat Paşa Caddesi 46/4 Kızılay-Ankara TURKEY
Tel: +90(312)4302609 Fax: +90(312)4303948 orsam@orsam.org.tr

- **India, Bangla near historic agreement on Teesta water**
- **Delta farmers seek water till February-end for 'thaladi' crop**
- **Kalabagh dam: a bargain chip**
- **Scarcity of Water and Land Shifts Geography of Food Production and Irrigation Networks to China's Northeast**
- **China's Water Supply Could Limit Economic Development**
- **China Buys Japan Water Rights on Two-Decade Land Price Slump**
- **Laos approves Xayaburi 'mega' dam on Mekong**
- **Worst flooding in a decade in Mekong Delta**
- **Laos holds ground-breaking ceremony for Mekong dam project**
- **Vietnam drops objections to Laos dam on Mekong**
- **Laos Breaks Ground for Controversial Mekong Dam**
- **Laos pushes ahead with Mekong dam and risks destroying the region's lifeblood**
- **US criticizes Laos decision to build Mekong dam**
- **Laos: pressing ahead with the Mekong dam despite concerns**
- **Climate Change Features in State Governors' Races**
- **Who Were the Greenest Presidents**
- **On international day, Ban underscores bond between peace and the environment**

Mithat Paşa Caddesi 46/4 Kızılay-Ankara TURKEY
Tel: +90(312)4302609 Fax: +90(312)4303948 orsam@orsam.org.tr

❖ Pell Frischmann advises on Iraq water projects

Pell Frischmann is providing consultancy services for a US$700m (£438m) project to improve water supply conditions in three areas of Iraq.
The first rehabilitation contracts will be tendered in about six months.

The contract was awarded by the Ministry of Municipalities & Public Works following an international competition. It involves the detailed design, preparation of tender documents and construction supervision for the rehabilitation and new construction of water intake facilities, water treatment plants, transmission facilities and distribution pipelines in three areas of Iraq.

Re-construction of the water supply in the Mid-Western region has became an urgent priority now that the economic and social situation has improved.

The Ministry of Municipalities & Public Works for Iraq has arranged financing from the Japan International Cooperation Agency (JICA) toward the cost of the water supply sector loan project. The total cost of the project is US$700m.

The rehabilitation contracts will be tendered in about six months time and the main contracts in 30-36 months time. Procurement will be split into a significant number of individual tenders covering new build, rehabilitation, transmission and distribution works.

"Pell Frischmann advises on Iraq water projects", 10/11/2012, online at:
http://www.theconstructionindex.co.uk/news/view/pell-frischmann-advises-on-iraq-water-projects

BACK TO TOP

❖ Iran, Armenia start building joint hydro-electric power plant

Iran and Armenia have started the construction of a joint hydro-electric power plant (HPP) on the Aras River, which borders the two countries.

The construction of the plant started on Wednesday in a ceremony attended by Armenian President Serzh Sarksyan and Iran's Energy Minister Majid Namjou.

With the completion of the project, some 1,700 megawatts of electricity will be generated annually for domestic production in Iran, said managing director of East Azarbaijan Regional Water Company, Arsalan Hashemi.

According to Hashemi, the HPP has the capacity to produce 260 megawatts and includes two 130-megawatt plants, one in Iran and the other one in Armenia.

The project is financed with USD 560 and 500 million in credits respectively from Armenia and Iran.

Iran and Armenia agreed to build the joint plant during Namjou's one-day trip to Armenia in June.

The plant is being constructed simultaneously in Armenia's Meghri and Iran's Qarachilar regions.

"Iran, Armenia start building joint hydro-electric power plant", 08/11/2012, online at: http://www.presstv.com/detail/2012/11/08/271085/iran-armenia-start-building-joint-plant/

BACK TO TOP

Mithat Paşa Caddesi 46/4 Kızılay-Ankara TURKEY
Tel: +90(312)4302609 Fax: +90(312)4303948 orsam@orsam.org.tr

❖ Iran to Build Dam on Kabul River

TEHRAN (FNA)- Iran and Afghanistan signed a deal for the construction of a dam on Kabul River by an Iranian company.

A representative of the Iranian company and Afghanistan's Water and Energy Minister Mohammad Esmail Khan signed the agreement for building 'Shahtoot' dam which will provide water for 4,000 hectares of agricultural lands in Kabul.

"Drinking water will be supplied to 2,000,000 citizens in Kabul once the project is accomplished," said Mohammad Esmail Khan on Monday.

He added that the dam will reinvigorate the hydropower network of Mahipar district in the capital, Kabul.

The dam which will costs 1.5 mln dollars is 113 meters long and has the capacity to reserve 250 mln cubic meters of water.

The technical and economic studies of the dam located 18 kilometers Southwest of Kabul were completed by Iran's Pouyab Co in 2008.

"Iran to Build Dam on Kabul River", 06/11/2012, online at: http://english.farsnews.com/newstext.php?nn=9107117418

BACK TO TOP

Mithat Paşa Caddesi 46/4 Kızılay-Ankara TURKEY
Tel: +90(312)4302609 Fax: +90(312)4303948 orsam@orsam.org.tr

❖ Iranian, Iraqi universities sign cooperation MoU

Chancellor of Khorramshahr Marine Sciences and Technology University Masoud Sadrinasab said the university has signed a cooperation MoU with the Iraqi Basra University, IRNA reported.

On the sidelines of meeting between academic delegations of the two universities, Sadrinasab told reporters that the two sides discussed joint scientific, research and educational cooperation.

He added that the two sides also discussed Arvand River and it was decided that a joint 5-year plan concerning scientific studies and research on the river be implemented.

The chancellor said that in this direction each of the two universities accepted to pay 2.1 million dollars for the plan.

It was also decided that students be accepted in Khorramshahr University from Basra University for postgraduate studies.

It was also agreed that a joint bureau be set up in both universities to coordinate joint work, visits and meetings between academic delegations.

"Iranian, Iraqi universities sign cooperation MoU", 11/11/2012, online at: http://en.trend.az/regions/iran/2086453.html

BACK TO TOP

❖ Contaminated Aquifers; Radioactive Water Threatens Middle East

The Middle East and North Africa suffer from water shortages and pump millions of liters a day from ancient aquifers. But the water contains high levels of naturally-occurring radioactive contamination. Experts fear this will increase the cancer risk for millions of people.

True masters of water management once lived in the desert of what is now Jordan. It took the Nabataeans only a few decades to carve the city of Petra out of sandstone cliffs. In addition to crafting now world-famous decorative tomb facades, they built a sophisticated system of water pipes and cisterns, which made it possible for the city to exist in the dry wilderness in the first place -- more than 2,000 years ago.

Today trucks rumble through Jordan to supply the population with drinking water. The water sloshing back and forth in their tanks is often thousands of years old, pumped from fossil groundwater reservoirs that filled up when the region wasn't as dry. Millions of cubic meters of water are now being pumped from such aquifers every day in the Middle East and North Africa. The next hydraulic engineering project is currently underway in Jordan, at a cost of $1.1 billion (€850 million). Starting in the spring of 2013, about 100 million cubic meters a year will be pumped out of the Disi aquifer in the country's south, in addition to the 60 million cubic meters a year already being taken from the aquifer today. The water will then be pumped through pipelines to the capital Amman, some 325 kilometers (203 miles) away.

But radiation experts warn of an invisible danger. Tests have revealed that the water contains high levels of naturally occurring radioactivity, with samples exhibiting radiation levels well above World Health Organization (WHO) radiation guidelines. The health risk doesn't just affect Jordan, but virtually all of the countries in the Middle East and North Africa.

Radioactivity Up to 30 Times Higher than Safety Standards

An explosive study on the problem was published in February 2009, but it has only attracted attention in the professional world until now. A team working with geochemist Avner Vengosh of Duke University in Durham, North Carolina, had tested radioactivity levels in 37 samples from the Disi

aquifer. According to the findings, published in the journal *Environmental Science & Technology*, the water from the aquifer, which is about 30,000 years old, is up to 30 times as radioactive as the WHO considers safe.

The radioactivity is caused by natural uranium and thorium that can occur in sedimentary rock. Their decay products include radium, which can cause bone cancer if it enters the human body. Two isotopes, radium-226 and radium-228, with half-lives of 1,600 years and less than six years, respectively, are especially dangerous.

Using Vengosh's data, the German Federal Office for Radiation Protection (BfS) has now calculated the magnitude of the health risk. According to its estimates, a person who drinks two liters of water a day from the Disi aquifer is exposed to radiation levels of between 0.99 and 1.53 millisieverts a year, or 10 to 15 times as much as WHO considers safe. According to the BfS, if we assume that the population receives an average annual dose of one millisievert and has an average life expectancy of 70 years, the radioactive drinking water will increase the normal number of deaths by four people per 1,000. When this estimate is extrapolated to the roughly two million residents of Amman, who are to be supplied with drinking water from the Disi aquifer in the future, it comes to about 8,000 additional deaths. The calculation only applies to the absorption of radium that occurs when people drink the water, without taking into account other ways in which radiation can enter the body, such as when the water is used to irrigate fields and radiation becomes concentrated in vegetables.

Similar Geological Conditions Across the Region

Jordan is only a small part of the problem. The same geological conditions that make the water from the Disi aquifer radioactive prevail in large parts of the Middle East and North Africa. "The problem probably applies to all sandstone aquifers in the region," says Vengosh, which means that it affects hundreds of millions of people.

Only 10 percent of the Disi aquifer passes through Jordanian territory. The rest is in Saudi Arabia, where it's called the Saq aquifer. BRGM, the French national geological service, took samples from 64 locations in the aquifer. According to its 144-page report published in 2008, radioactivity levels were generally well above the WHO guidelines. "The problem of radioactive contamination of the

groundwater is complex and probably widespread," the French geologists conclude. "It must be studied as quickly as possible, because of its potentially critical consequences." In its research, the BRGM encountered a strange phenomenon: Contamination with radionuclides appears to be especially high in places where the water level in the aquifers is declining the most precipitously. While the reasons are unclear, say the French scientists, the water threatens to become "unfit for both human consumption and agricultural use."

Underground Aquifers Vital for the Region

This is a worrisome conclusion, since fossil groundwater is now essential for the survival of agriculture in the region. According to the BRGM, the amount of water being pumped from the Saq aquifer increased more than fourfold from 1985 to 2005, from about two billion to more than 8.7 billion cubic meters per year. Saudi Arabia already derives about half of its water from aquifers.

Israel also pumps water from fossil reservoirs to irrigate its fields in the Negev Desert, and Egypt has pumped fossil groundwater in oases since the 1980s. But Libya operates the world's largest pumping operation, the "Great Man-Made River." Every day, about 1.6 million cubic meters of water are pumped from the Nubian Sandstone Aquifer System, at a rate of more than 18,500 liters per second. When it is finished, the massive system of wells, pipelines and reservoirs is expected to conduct 6.5 million cubic meters of water a day from the desert to Libya's coastal cities. It's water they urgently need. Their own aquifers are now so heavily depleted that they are becoming brackish as a result of seawater infiltration, a problem that also plagues other coastal cities in the region.

Saudi Arabia, at least, is treating fossil groundwater and removing radioactive particles, says Christoph Schüth of the Technical University of Darmstadt in western Germany. But elsewhere, especially in rural parts of North Africa, the situation is "problematic." The quality of the groundwater from the Nubian Sandstone system, says Schüth, has presumably been "studied only very incompletely," and Libya lacks water-treatment technologies. "In principle," say Schüth and his colleagues, "this affects many sandstone aquifers." They published the results of their research in 2011 in the *International Journal of Water Resources and Arid Environments*.

Experts See Jordan 's Plan as Wishful Thinking

The Jordanian Ministry of Water and Irrigation (MWI) doesn't see the radiation as a problem, claiming that its tests produced much lower results than those of the US experts. The MWI engineers also plan to dilute the water with water from sources with no radioactivity, which they say will reduce the annual radiation exposure to 0.4 millisieverts.

But even that dose, which would still be four times as high as the WHO standard, will be very difficult to achieve. According to an internal document produced by Germany's Federal Institute for Geosciences and Natural Resources (BGR), the Jordanians measured radioactivity levels in a part of the Disi aquifer where radium activity is especially low. Most of the water, however, is to be obtained from a part of the aquifer where radiation levels are much higher. According to the BGR, it would take the addition of at least one billion cubic meters of non-contaminated water a year to bring exposure to levels below the WHO standard. It is unclear where this much water would come from, and the MWI did not respond when asked about the issue. The ministry is also unwilling to say whether Jordan plans to treat the water the way Saudi Arabia does. Officials say that they cannot provide any specific information at the moment, because they must first conduct more analysis and collect more data.

First Signs of Genetic Damage

This is surprising, given the Jordanians' contractual obligations. One of the largest financial backers of the Disi project is the European Investment Bank (EIB), which approved loans totaling $225 million in May 2009. In its contracts with the EIB, Amman pledged to begin testing the water from every well during the construction phase, and to submit regular reports. If Jordan failed to fulfill this obligation, "the EIB could revoke the loan in an extreme situation," warns a bank spokeswoman.

In early November, the EIB was still waiting for the complete report, which the Jordanians were supposed to submit at the end of September. They have already provided the bank with readings for about half the wells, which, according to the EIB, show that the average annual dose of radioactivity "is still above the allowed limit."

There are already initial signs of the possible health consequences. In 2010, King Saud University examined 10 men who change filters in underground wells. Their blood was found to contain 11 times as much chromosomal damage than that of controls, it said in an article in the journal *Radiation Protection Dosimetry*. These changes in genetic material can lead to cancer and illnesses in offspring.

Still, the use of fossil water could end up being the lesser of two evils. Although some of the water contains high radiation levels, it is otherwise considered very clean and free of bacteria. "What would happen if people consumed water of lesser biological quality instead?" asks Clemens Walther of the Institute for Radioecology and Radiation Protection at the University of Hanover in northern Germany. According to Walther, this would lead to more deaths than those resulting from radiation, partly from elevated numbers of dangerous diarrheal disease in children.

"Contaminated Aquifers; Radioactive Water Threatens Middle East", 05/11/2012, online at: http://www.spiegel.de/international/world/contaminated-aquifers-radioactive-water-threatens-middle-east-a-865290.html

BACK TO TOP

❖ Bridge over dirty water

The Kidron River was once Israel's link between city and the desert. Today, it is a putrid, waste-infused channel that suffocates both Israel and the West Bank with its stench. Can this waterway be saved?

The Mar Saba monastery perches on a cliff above the Kidron River in the heart of a sprawling desert, about 10 kilometers east of Jerusalem. A monk in a black robe leans on the fence of a broad terrace and stares out at the lovely view. Several meters beneath us, the streambed's running water gurgles.

But while the eyes feast, the noise crinkles. The beauty of the scene comes with a beast of a stench, and it is only politeness in the presence of the monk that keeps me from holding my nose.

The water, which churns swiftly eastward, is covered in a white foam. It's wastewater, it's untreated, and it's the sewage-filled result of one-third of Jerusalem's population and the communities east of it. It flows through the channel, in the open air, passing below the monastery and announcing itself by its stink.

Some of the streambed passes through the Jerusalem, some through the Palestinian Authority and some through the territories in the West Bank under the control of the Civil Administration. The complex, curving route of the Kidron channel, the political mess surrounding it and the unshakable controversies that flow along with it have earned it the dubious hallmark of "most polluted stream in Israel." But this does the Kidron River a terrible injustice.

Archaeologist Avner Goren has accompanied me to Mar Saba, and he is agitated.

"People don't know a thing about it," he says of the river, which he insists is rife with historical, religious and cultural significance. For thousands of years, he tells me, the corridor – which connects Jerusalem's Old City with the Dead Sea – served as a travel route from the city to the desert. It is the bridge between water and sand, between the past and the present, between high mountains the lowest place on earth.

"This is an important corridor and it's been forgotten for decades," he tells me. "We've turned it into a sewage canal, and it has to stop. We need to give it the honor it deserves."

The Kidron River, he says, needs to be restored.

Professor Richard Laster of the Hebrew University would agree. In 2009 Laster, a jurist who specializes in environmental issues, established a steering committee to coordinate with local authorities and government ministries to clean up the stream.

His team includes some of the best planners, architects and landscapers in Israel, as well as Palestinians living both in East Jerusalem and across the separation fence.

A committee directed by Laster's group led the creation of a master plan for the Kidron basin, and the trick is now implementing it.

The Kidron River, Laster tells me, crosses borders, and thus needs to be treated as an international issue. The waterway is an integrated whole with complex parts.
Look closely at the Kidron basin, Laster says, and you will see the whole Middle East: an area with gigantic problems, linked to both human dignity and respect for the environment. When it comes to the river, he says, that respect and dignity has vanished. The effluent chugging through the channel not only poses a health risk to the tens of thousands of area residents, but also stymies the development of the region's tourism and economy.

The rehabilitation and development plan of Laster and his team seems simple. They want to rehabilitate the stream, and in doing so restore honor to the people living beside it and the organizations connected to it. They are being funded by the Dead Sea Drainage Authority, the Jerusalem municipality and several other organizations.

“It’s an off-the-wall, impossible project – and that’s why it’s interesting,” says Laster.

Think outside the idiotic box

A side benefit, Laster hopes, will be the breaking down of political barriers.

"There are different groups involved with the basin – residents, local authorities, organizations, Jews, Christians and Muslims. We're giving them a way to climb out of the idiotic boxes they've built for themselves," he says. "For decades, everybody dug their heels into their own positions and wouldn't budge. But now there's no choice. They have to look at the issue in a new way that's broader and more open, a way that enables dialogue and problem-solving."

Later, he strikes a less professorial tone. "Everybody's fighting over the crap, and nobody's doing anything about it. What do they care who cleans up the crap?"

Bring a perfumed hanky

On November 8 and 9, at the 10th anniversary conference of the Israel Association of Landscape Architects, a plan to rehabilitate the Kidron will be presented. The conference will include a hike along the Jerusalem segment of the Kidron River, and those who choose to trek have been advised to bring along scented handkerchiefs to help them handle the stench.

A river runs through it

Hours before we arrived at the reeking terrace of the Mar Saba monastery, we stood on another overlook, this one at the new Golden Promenade in southeastern Jerusalem across from the neighborhood of Armon HaNatziv. You could see the sources of the river: from Mount Scopus, through the Garden of Gethsemane to the foot of the Mount of Olives, and then through the East Jerusalem village of Silwan, the Jabel Mukaber neighborhood, and further out, in the direction of Arab al-Zawahra.

The separation fence stands out against the skyline, and my guides show how the river leads straight to it. Beyond the barrier are Palestinian communities under the responsibility of the Israel Defense Forces' Civil Administration and communities such as Ubeidiya, where 13,000 people live in Palestinian Authority territory. East of Ubeidiya, the desert stretches its sandy hand.

Vardit Tsurnamal, who is guiding me along with Goren, the architect, says that the river must be considered as a whole entity. The sewage issue, she says, cannot be solved without considering tourism on a larger scale.

"The issue of solving the local problem transcends the conflict," she says.

Even an occupation has obligations

Naim Awisat, a Palestinian living in Jebal Mukaber, has homes beneath the overlook near Armon HaNatziv. He has been working with the planning committee for a long time, and calls the Kidron basin by its Arabic name, Wadi Nar.

The youth of Jebal Mukaber, he says, think differently these days.

“We have less faith in politics. Today, we want quality of life, not politics and talk," he says. "I’m very well aware that people are living under occupation, but even an occupation has obligations. We pay taxes and want what we’re entitled to from the authorities: treatment for the sewage of Kidron, regional development, development of tourism, the option of planned, legal construction, road repair, trash removal. We are entitled to these things just like everybody else in Jerusalem.”

From where he sits, Awisat tells me, it looks as though no one has lifted a finger to save the stream and harness its enormous potential. His dream is for a private sports club along the river, where area residents and the 65,000 students of East Jerusalem can go.

Standing on the overlook, he points to a swath of 20 dunams where he imagines his club. "I don't want to talk about politics," he tells me. "I want to talk about getting it done. I just want my children to have the same thing that yours do."

'The occupation is responsible'

We trundle into the car and drive for half an hour, making a big detour south that brings us back to the Kidron Channel. We've arrived in the West Bank town of Ubeidiya, and the mayor, Suleiman Abdullah al-Asa, ushers us into his office with a grin.

On the wall are three large photographs: Yasser Arafat, Palestinian Authority Chairman Mahmoud Abbas and the Temple Mount. Two young men serve us coffee and tea while our host urges us to drink. Asa says the so-called open sewer of the Kidron has to be dealt with once and for all.

"Those who have damaged the environment have an obligation to repair it," Asa says, referring to the Israeli government and the Jerusalem municipality. Not mincing words, he adds, "The occupation is responsible."

Later, as we sip our steaming beverages, he softens his tone. “We’re willing to cooperate with everyone, particularly with the non-profit organizations and groups that volunteer to help," he says. In Ubeidiya, the mayor adds, the municipality and local residents are desperate for a solution and willing to look anywhere to find it.

As we head back to our car, my companions point out the distinction between "cooperation" and "collaboration." Cooperation is a good thing, they say. In these parts, however, collaboration has an ominous ring.

The one thing on which Israelis and Palestinians can agree

On both sides of the barrier, there's an agreement that the Kidron River must be saved by building a sophisticated, expensive sewage-treatment plant. Money is not the problem here. Like so many issues in this complicated corner of the world, it comes down to geography.

International organizations have said they will be happy to handle the funding, but where will the plant be located? Jerusalem? The West Bank? Civil Administration areas?

Officials in Ubeidiya insist the plant must be built there and that the treated water remain in the Palestinian Authority. The Kidron planning committee examined several options and would prefer a location farther to the east, in a tiny channel that descends to the Kidron northeast of Ubeidiya, in territory controlled by the Civil Administration.

The Ubeidiya municipality shun this plan, because it means that treated water will flow not only to Palestinian fields and residents of Jericho but also to areas that they, and many others, call settlements.

Today, the waters of the Kidron River flow a long way to the east, passing by the Mar Saba monastery and continuing near the Jordan Valley, where they undergo minimal treatment in pools

and are used to water the date palms in the Jordan Valley. If the treated water could also trickle this far, it could change the face of the entire region. But judging by the quiet but non-conciliatory statements made by Rateb Abayat, Ubeidiya's municipal engineer, an agreement is still well a ways off.

A river like the Seine or the Thames

A day later in Tel Aviv, as the reek of the Kidron River lingers like a vague memory, Arie Rahamimoff and Liora Meron, architects heading the planning committee, explain the importance of persistence.

"The current situation can't continue," says Rahamimoff. "We're missing out on a colossal opportunity here. For hundreds of years, the Kidron River was the Old City's corridor to the desert. Over the past few decades, the city has been developing, mostly westward, while the east has been completely neglected. It's inconceivable that in 2012, Israel's capital sends one-third of its sewage to the Kidron."

He tells me later that it won't be as simple as just treating the sewage. "The Kidron River should be for Jerusalem what the Seine is to Paris or the Thames is to London. We can't hope to host 5 million tourists in Israel every year without developing the Kidron. Even now, the overcrowding in the Old City is intolerable. The Kidron will give breathing room to the whole city."

All the project's participants talk enthusiastically about the next stage, once the sewage is gone. That will be the Kidron Trail, a hiking path along which people will be able to trek the Kidron channel from Jerusalem to the Dead Sea – a journey of a day or two.

In 1983, Rahamimoff says, he and two friends spent 12 hours hiking that route. "It was a wonderful experience, but today it sounds like a dream. We need to stay optimistic, and then you'll see it's completely logical."

"Bridge over dirty water", 05/11/2012, online at: http://www.haaretz.com/news/features/bridge-over-dirty-water.premium-1.475225

BACK TO TOP

❖ Church of the Holy Sepulchre bank account blocked

A clergyman from the church, built on the site in Jerusalem where Jesus Christ is said to have been crucified, said that its bank account has been frozen as the result of a long-standing dispute with an Israeli water company.

Greek Orthodox priest Isidoros Fakitsas said that the move has impaired the Church of the Holy Sepulchre to pay bills and salaries.

As a result, the church is considering closing for a day in protest, shutting the doors to one of Christianity's most popular pilgrimage sites.

The account was blocked two weeks ago and lawyers were hired to address the matter in court, Fakitsas said. He insisted the church will be able to function despite the blocked bank account and that if matters become too difficult, it will try and find an alternative, such as opening a new bank account.

The church for decades was exempt by the different leaderships which ruled over Jerusalem's Old City from paying water bills until the Israeli water company began pressing it to pay up a few years ago.

Fakitsas, the superior of the Greek Orthodox church, said an agreement was reached after months of negotiations. Under the deal, various denominations in the church would pay their monthly bill. A debt of about $2.3 million was to be forgotten, he said.

But to the surprise of the church elders, its account was blocked two weeks ago, making it impossible to pay stipends of some 500 priests and monks, 2,000 teachers and the running costs of over 30 Christian schools that the church runs in the Palestinian territories and Jordan, church spokesman Issa Musleh said.

The water company, which could not immediately be reached for comment, demands the church pay for its water — charges from which it has been exempt for decades.

Mithat Paşa Caddesi 46/4 Kızılay-Ankara TURKEY
Tel: +90(312)4302609 Fax: +90(312)4303948 orsam@orsam.org.tr

The Israeli Tourism Ministry said the issue is between the Church and the Jerusalem municipality. But because of the great importance of the site, the ministry is now trying to mediate between the two sides and hopes the issue will be resolved quickly.

"Church of the Holy Sepulchre bank account blocked", 03/11/2012, online at: http://www.stumbleupon.com/su/324JCx/www.cbc.ca/news/world/story/2012/11/03/church-sepulchre-water.html

BACK TO TOP

❖ Turks "strong interest" in financing Gaza desalination

The Union for the Mediterranean (UfM), which is promoting the Gaza Desalination Facility in Palestine, says that the Turkish government has expressed its strong interest in supporting the project, and a financial commitment will be discussed with the prime minister in the coming weeks.

The UfM Secretariat, the Palestinian Water Authority and the Government of Turkey recently held talks on the technical and financial aspects of the Gaza project, which will require an investment of € 310 million.

The Arab states and France have already committed financially, and the European Investment Bank is financing the technical assistance towards the implementation of the project.

"Turks "strong interest" in financing Gaza desalination", 02/11/2012, online at: http://www.stumbleupon.com/su/1Rf6aM/www.desalination.biz/news/news_story.asp?id=6801&title=Turks+%27strong+interest%27+in+financing+Gaza+desalination

BACK TO TOP

Mithat Paşa Caddesi 46/4 Kızılay-Ankara TURKEY
Tel: +90(312)4302609 Fax: +90(312)4303948 orsam@orsam.org.tr

❖ Lebanon must address climate change: Khoury

BEIRUT: Climate change is a matter of serious concern to Lebanon, and the country must implement policies to deal with its fallout and mitigate its future impact, Environment Minister Nazem Khoury said Thursday.

"Climate change has serious consequences for the Arab world and for Lebanon, in spite of its relatively low emissions compared to the rest of the world," Khoury said during a panel discussion at the ministry ahead of the United Nations convention on climate change in Doha later this month.

"Harsh and severe climate phenomenon occur in Lebanon, for example we can witness either a heavy rain season, or a long period of drought, which means we must put high and urgent importance on the issue of managing water in Lebanon," he added.

Khoury said that while Lebanon accepted responsibilities to reduce emissions and to combat climate change in line with the United Nations conventions, it must nonetheless "make sure at the same time that efforts are made to combat climate change that will not put Lebanese economic growth at risk."

The ministry, Khoury said, is currently in the process of enacting new projects aimed at combating climate change, including a body to improve cooperation between the concerned ministries, and project funded by the European Union and the Australian government to establish ways to reduce carbon emissions.

"In addition to reducing emissions, there is another need which will emerge soon to adapt to the effects of climate change," Khoury said.

The ministry has studied a number of technologies to help several sectors, including water, energy and transportation, to adapt to climate change, Khoury said.

"Lebanon must address climate change: Khoury", Daily Star, 08/11/2012, online at: http://mideastenvironment.apps01.yorku.ca/?p=6282

BACK TO TOP

❖ National policy being drawn up to mitigate climate change impact

AMMAN — Climate change experts and renewable energy consultants on Thursday started formulating a national policy for the mitigation of and adaptation to climate change impact in Jordan.

Under the national climate change policy, experts will propose strategies to reduce greenhouse gas emissions in several sectors, as well as measures and projects to minimise the impact of the global phenomenon on the Kingdom.

The national policy will be formulated by the environment ministry in cooperation with UNDP and the Global Environment Fund.

Hussein Badarin, who heads the environment ministry's monitoring and assessment directorate, said the policy will be developed based on the country's climate change vulnerabilities, adaptation needs and mitigation potentials, in accordance with international agreements.

"The national policy will focus on vital sectors and areas, such as health, management of water resources, agriculture and food safety, energy, transportation, infrastructure, land use and gender," Badarin said during a workshop to launch the policy's consultancy study.

He told The Jordan Times that the Kingdom will be the first country in the region to formulate a climate change policy.

"The policy will also raise public awareness and preparedness for future climate change action," Badarin highlighted.

He said the consultancy study will be completed within two weeks, adding that policy makers and experts from various fields will start convening to finalise the national policy.

Official figures indicate that climate change has caused a 30 per cent reduction in the country's surface water resources, as well as a decrease in the volume of rainfall and agricultural production, both of which Jordan and the Arab world rely on heavily.

Analyses of climate change scenarios during the 21st century indicate that the Kingdom will experience more frequent droughts as a consequence of year-round increases in temperature, according to the Fourth World Water Development Report.

The same climate change simulations show little or no change in precipitation to offset these big increases in temperature, the report said.

"National policy being drawn up to mitigate climate change impact", Jordan Times, 08/11/2012, online at: http://mideastenvironment.apps01.yorku.ca/?p=6279

BACK TO TOP

Mithat Paşa Caddesi 46/4 Kızılay-Ankara TURKEY
Tel: +90(312)4302609 Fax: +90(312)4303948 orsam@orsam.org.tr

❖ Provide Clean Drinking Water and Prevent Disease

BEKAA VALLEY, Lebanon (November 7, 2012) — The large chalkboard is a reminder that the crowded shelter housing Zaineb, her family and more than a hundred other Syrian refugees is actually a school.

"It is so hard. We do everything in this classroom—we sleep, eat, cook. There are no showers, so I wash my children here in a bucket, but there is enough water only to wash them once a week," says Zaineb.

Any Shelter Possible

It is estimated that more than 100,000 Syrian refugees are now in Lebanon. Fleeing across the border, these families stay wherever they can—with friends, with family, with generous strangers, in public buildings, in abandoned homes. Some families have pitched tents on vacant land. Some pay for shelter with scarce resources.

Accessing basic necessities is difficult, particularly water and sanitation facilities.

Zaineb is six months pregnant. She, her husband and their three young children Ali, Safa and Marwan fled their home in Hama, Syrian Arab Republic, after it was destroyed during a bombing.

The family crossed into Lebanon a month ago. Without a place to stay, they took shelter in a small, private school in Arsal, a village close to the eastern Syrian border in Lebanon's Bekaa Valley. It was the best they could afford.

Nearly 150 other people are staying at the school. Zaineb's family pay $100 a month, one of the lowest going rates in the area.

There are only four functioning toilets, and no showers or drinking water.

Meeting Water Needs to Prevent Disease

A recent UNICEF-supported assessment of Syrian refugee families and host communities showed an increasing number of cases of diarrhea caused by shortages of drinking water, contamination of water and a lack of toilets.

The assessment also found that children living in these areas are at high risk of disease.

In partnership with Action Contre la Faim, UNICEF is running a water voucher program to meet the emergency drinking water needs of families across the Bekaa Valley.

"Continuous access to safe drinking water is our first priority in a crisis situation like this," says UNICEF Representative Annamaria Laurini. "As the conflict continues in Syria, more families arrive in Lebanon, and the demand for drinking water is becoming vital. We are mobilizing all efforts to raise funds to meet the urgently growing needs."

The families sheltering at the school receive water vouchers based on the size of the family. Each voucher provides enough water for a month, and a local water trucking company is in charge of delivery.

People receive three gallons a day per person—the international standard during an emergency. It is enough to survive.

The new voucher program reaches 5,000 people, but the needs are much greater. UNICEF's objective is to reach more than 50,000 people in the near future, subject to availability of funds.

Sanitation Facilities and Hygiene Supplies Urgently Needed

Along with clean drinking water, families need better sanitation facilities and hygiene supplies.

UNICEF will distribute jerry cans, ceramic water filters, buckets and water purification tablets. New toilets, showers and handwashing stations urgently need to be built.

Zaineb says she feels some comfort surrounded by other families living through the same situation as her. The other women at the school are supportive. They have become friends.

"I don't know what will happen tomorrow. I am worried about raising a new baby in these conditions," she says.

Every day, more Syrian families are arriving in Lebanon's small border towns. These communities are doing as best they can. But support to meet their basic needs—drinking water, showers and toilets—is urgently needed now.

"Provide Clean Drinking Water and Prevent Disease", 07/11/2012, online at: http://www.unicefusa.org/news/news-from-the-field/in-lebanon-unicef-partners-clean-drinking-water.html?mkt_tok=3RkMMJWWfF9wsRohv6vNZKXonjHpfsX66OQsX6Gg38431UFwdcjKPmjr1YcDTct0dvycMRAVFZl5nQhdDOWN

BACK TO TOP

Mithat Paşa Caddesi 46/4 Kızılay-Ankara TURKEY
Tel: +90(312)4302609 Fax: +90(312)4303948 orsam@orsam.org.tr

❖ 'Disi project progressing as per schedule'

AMMAN — Eighty-seven per cent of the Disi Water Conveyance Project has been completed and the mega-venture is progressing according to schedule, a source involved in the implementation of the project said on Monday.

Fifty-five per cent of the project's production wells have been drilled and 97 per cent of the pipes have been laid, added the source, who requested anonymity.

"Blueprints and procurement of materials have been completed, as well as 88 per cent of construction work, and overall progress on the project reached 87 per cent," the source noted.

The Disi project, work on which started in 2007 and is scheduled to finish next year, entails drilling 64 wells, 55 of which will be used for the generation of water, while nine will serve as piezometer wells to measure the elevation of water.

The piezometer wells and 30 production wells are ready, according to the source.

"A total of 330-kilometres of pipes have been laid of the 340-kilometre pipeline, which will convey water from the southern region to the capital," the source highlighted.

The pipeline starts at the ancient Disi aquifer in southern Jordan and ends in Amman, passing through several water stations in Maan, Tafileh, Karak and Madaba. Being carried out on a build-operate-transfer basis and implemented by Turkish company GAMA, the Disi project seeks to provide the capital with 110 million cubic metres of water annually.

Experimental pumping from the aquifer is scheduled to start later this year, according to officials at the Ministry of Water and Irrigation, who expect 20-30 million cubic metres of Disi water to be pumped to Amman by February next year.

The project, which is viewed as the Kingdom's first step towards achieving water security, will be ready in July 2013. When it is operational, water supply in Amman and Zarqa is expected to improve because subscribers will start receiving water continuously instead of once a week, according to the ministry.

Under the current distribution programme, households in Jordan receive water once during a set period, usually a week to 10 days, on a rotating basis.

Scarce water resources in the country compelled the Kingdom to initiate the programme in the early 1980s to conserve limited resources and ensure a sustainable water supply for subscribers.

'Disi project progressing as per schedule', Jordan Times, 06/11/2012, online at: http://mideastenvironment.apps01.yorku.ca/?p=6259

BACK TO TOP

Mithat Paşa Caddesi 46/4 Kızılay-Ankara TURKEY
Tel: +90(312)4302609 Fax: +90(312)4303948 orsam@orsam.org.tr

❖ Israel providing support for water issues in Ica

Israeli water experts have arrived in Peru's southern Ica region to provide local authorities with technical consultancy over local water-related issues, according to a statement from the Israeli embassy in Lima.

The initiative will focus on surface and underground water management and irrigation efficiency in the areas of Pampas de Villacurí, Lanchas and Valle de Ica.

Ica suffers from water shortages and its underground water resources tend to be constantly overexploited, to the extent that they risk being completely emptied in a decade, according to a study by national water authority ANA.

ANA and Israeli cooperation agency Mashav signed a cooperation agreement on water-related issues earlier this year in order to leverage Israel's experience in dealing with water shortages and to support knowledge transfer between the two countries.

"Israel providing support for water issues in Ica", 06/11/2012, online at:
http://www.waterworld.com/news/2012/11/06/israel-providing-support-for-water-issues-in-ica.html

BACK TO TOP

❖ Master plan to help clean up Jordan River Basin

Dutch project management, consultancy and engineering services provider Royal HaskoningDHV has been contracted to produce a master plan for the Lower Jordan, the historical river between the Sea of Galilee and the Dead Sea.

The purpose of the cross-border master plan is to integrate separate Israeli, Palestinian and Jordanian plans and thus produce a healthy ecosystem, distribute water fairly and provide open public access to the river. The master plan will be available in Arabic, English and Hebrew at the start of 2014.

Friends of the Earth Middle East awarded this contract to Royal HaskoningDHV together with the Stockholm International Water Institute and the Global Nature Fund.

The downstream part of the river (Lower Jordan River) springs in the Sea of Galilee and winds 200 kilometres through the Jordan Valley to the Dead Sea. At present most of the water is drained off for agriculture and for the supply of drinking water. The river is seriously polluted due to the discharge of **effluent** and other contaminants.

Dutch and Israeli experts from Royal HaskoningDHV will work as consortium members on the spatial planning, water management, ecological and economic aspects of the project. Other consortium partners are local engineering firms in Jordan and Palestine.

Jeroen Kool, project manager for **Royal HaskoningDHV**, said: "The master plan will be used to encourage the Israelis, Palestinians and Jordanians jointly to rehabilitate the river and to restore the river's ecology and its hydrological functions. Important matters are the creation of free access, good security conditions and a healthy economic basis."

"Master plan to help clean up Jordan River Basin", 07/11/2012, online at:
http://www.waterworld.com/articles/2012/11/master-plan-to-help-clean-up-jordan-river-basin.html

BACK TO TOP

Mithat Paşa Caddesi 46/4 Kızılay-Ankara TURKEY
Tel: +90(312)4302609 Fax: +90(312)4303948 orsam@orsam.org.tr

❖ Smallholder farmers need improved stake in Nile's development

A new book finds that the Nile river, together with its associated tributaries and rainfall, could provide 11 countries—including a new country, South Sudan, and the drought-plagued countries of the Horn of Africa—with enough water to support a vibrant agriculture sector, but that the poor in the region who rely on the river for their food and incomes risk missing out on these benefits without effective and inclusive water management policies.

The Nile River Basin: Water, Agriculture, Governance and Livelihoods, published by the CGIAR Challenge Program on Water and Food (CPWF), incorporates new research and analysis to provide the most comprehensive analysis yet of the water, agriculture, governance and poverty challenges facing policymakers in the countries that rely on the water flowing through one of Africa's most important basins. The book also argues that better cooperation among the riparian countries is required to share this precious resource. "This book will change the way people think about the world's longest river," said Dr. Vladimir Smakhtin, water availability and access theme leader at the International Water Management Institute (IWMI) and one of the book's co-authors. "For the first time, hydrologists, economists, agriculturalists and social scientists have pooled their research to focus on agriculture and food security along the Nile to give a comprehensive and timely overview of the development challenges facing the river. With significant new dams and development works being planned, and South Sudan joining the river basin countries, the need for solid, science-based evidence to inform policy decisions has never been greater." Agriculture, the economic bedrock of all 11 Nile countries, and the most important source of income for the majority of the region's people, is under increased pressure to feed the basin's burgeoning population—already 180 million people, half of which live below the poverty line. According to the book, investing in a set of water management approaches known as Agricultural Water Management (AWM), which include irrigation and rainwater collection, could help this water-scarce region grow enough food despite these dry growing conditions. "Improved AWM, which the book shows is so key to the region's economic growth, food security and poverty reduction, must be better integrated into the region's agricultural policies, where it currently receives scant attention," said Dr. Seleshi Bekele, senior water resources and climate specialist at the United Nations Economic Commission for Africa (UNECA) and one of the book's co-authors. "It is tempting for these governments to focus on large-scale irrigation schemes, such as existing schemes in Sudan and Egypt, but more attention must also be paid to smaller, on-farm water management approaches that make use of rainwater and stored water resources such as aquifers." Ads by Google Prefabricated House - Search Largest China Supplier Base. Verified Global Exporters-Join Free - www.alibaba.com/Prefabricated-House Lack of access to water is another area that could negatively impact the poor, according to the book. In the Nile basin, poor people live further away from water sources than the wealthy, which forces them to travel longer distances to collect water. Women that are responsible for collecting water for their households and smallholder farmers who rely on rainwater to irrigate their crops would therefore benefit from policies that give them greater

access to water in the Nile basin. "We need to look beyond simply using water for crop production if we are to comprehensively address the issues of poverty in the region," said Dr. David Molden, IMWI's former director general and one of the book's co-authors. "Water is a vital resource for many other activities, including small-scale enterprises like livestock and fisheries. This should not be forgotten in the rush to develop large-scale infrastructure." Improving governance, especially coordination among Nile basin country governments, is another crucial aspect of ensuring that the poor benefit from the basin's water resources. The book argues that the establishment of a permanent, international body—the Nile Basin Commission—to manage the river would play a key role in strengthening the region's agriculture, socio-economic development and regional integration. "The Nile basin is as long as it is complex—its poverty, productivity, vulnerability, water access and socio-economic conditions vary considerably," said Molden. "Continued in-depth research and local analysis is essential to further understanding the issues and systems, and to design appropriate measures that all countries can sign on to." According to the book, reports of conflict among these countries over these complex management issues are exaggerated. "Past experience has shown that countries tend to cooperate when it comes to sharing water," said Alain Vidal, CPWF's director. "On the Nile, recent agreements between Egypt and Ethiopia show that even the most outspoken basin country politicians are very aware that they have much more to gain through cooperation than confrontation."

"Smallholder farmers need improved stake in Nile's development", 05/11/2012, online at: http://phys.org/news/2012-11-smallholder-farmers-stake-nile.html?utm_source=feedburner&utm_medium=twitter&utm_campaign=Feed%3A+CPWF_updates+%28CPWF+Updates%29

BACK TO TOP

Mithat Paşa Caddesi 46/4 Kızılay-Ankara TURKEY
Tel: +90(312)4302609 Fax: +90(312)4303948 orsam@orsam.org.tr

❖ The politics of food

Egypt's food production suffers from schizophrenia: it ranges from a tomato grown in sewage water and sprayed by killer pesticides to a perfect orange, grown following strict international quality and safety standards. The fruit and vegetable stalls in souqs all over the country are flooded with produce belonging to the former category, while most of the high-end, locally grown produce is exported to Europe and other markets.

"The highest quality products that Egypt produces are inaccessible to the normal consumer," explains Asuncion Molinos, a Spanish visual artist who inaugurated her latest art installation "El Matam El Mish-Masry" in the informal neighborhood of Ard al-Lewa in northwest Giza.

Through the creation of a restaurant with aesthetics that correspond to any street food venue in Egypt's popular neighborhoods, Molinos aspires to open a conversation on food in the public sphere. "This conversation should be happening in politics, but unfortunately it is not on their agenda," she deplores. "Healthy food is the best medicine, we could alleviate so many diseases if people had access to clean, nutritious and vitamin filled food," she says.

But, this food is out of reach for 99 percent of the Egyptian population.

The temporary restaurant that Molinos has opened will run for the entire month, with each week focusing on one dimension of the food problems Egypt is currently facing. This week, all the dishes that are served (which range in price from LE1 to LE5) use Egypt's higher quality produce, which is either exported directly to Europe or purchased by the local elite.

Every day, the restaurant will propose a unique menu composed of one soup of the day, two or three salads, one to two main courses and a dessert. "I just want people to rediscover what normal food is, and should be," she says, explaining that her definition of normal food is food that has been grown by farmers over the entire human history until the Green Revolution of the 1960s, which started applying industrial practices to agriculture.

"I don't like to use the term organic because not only has it been overused and acts as a brand, but also because the term is often misused, and some produce are dubbed "organic" when they really are not." According to Molinos, "ordinary food" instead of being the exception, should be the norm again, just like it was for all of human history.

Egypt's agricultural policies rely on cash crops, which were presented by economists as the solution for buying food that can not be grown locally. However, these cash crops require vast acres of land, suck up Egypt's scarce water resources and win over viable agricultural land that should be used to grow what Egypt consumes the most: wheat and corn.

Egypt imports more than half of its wheat supplies, mostly from the US but also from Russia, Argentina and France. Whenever a natural disaster strikes in these countries, like the great drought in the US this summer or the latest superstorm Sandy, Egypt faces difficulties in importing enough to feed its population, especially considering that bread makes up a third of the Egyptian diet.

Molinos believes that only a grassroots movement composed of farmers, researchers and university professors can create a coalition to defend the people's rights to decent food, and farmers' rights to a better lifestyle.

Reem Saad, a professor of social anthropology at the American University, is a specialist in rural issues. She told Egypt Independent that she is trying, along with her colleague Habib Ayeb, a geographer and professor in Cairo's Social Research Center, to include the concept of food sovereignty in the new draft of the constitution in the making.

"I believe that food sovereignty should be the cornerstone of Egypt's post-revolution food policies," she stresses. Food sovereignty is a concept coined by members of the international coalition "Via Campesina," which groups over 148 organizations that advocate a family farm-based sustainable agriculture. Food sovereignty refers to a policy framework that recognizes the right of people to define their own food and agricultural systems according to their needs and not according to the needs of the global market.

"This concept is very different from the idea of 'food security'" asserts Saad, because food security's only concern is to provide enough food and is strongly entangled with the fear of hunger. "Food sovereignty is about the quality of the produce, not just the quantity, and the welfare of the ones who produce our food, the peasants."

She also explains that agricultural and trade policies of the last decades have shown a constant lack of vision on food, and that it all comes down to a political choice: what type of agricultural policies do we want and where do we put public investment? "It is absurd that only the biggest agribusinesses receive help from the government!" she says.

Neither Molinos nor Saad are against Egypt exporting part of its agricultural produce, but what they advocate for is a vision and the prioritization of local consumers. "The idea is not to go back to the Middle Ages, it is just to have a shift of priorities," Molinos explains. "Egypt should grow healthy, nutritious food for its population, and sell the excess produce on the international market," she adds.

Khaled Zayed works for the food supplier company El-Nour in sales. The company he works for supplies many five-star hotel and gourmet restaurants in Egypt with the highest quality fruits and vegetables grown in the country.

"All the farms we work with have a Good Agricultural Practices (GAP) certification," he says. The GAP is a collection of criteria that ensures the food is safe and healthy, while taking into account social, economical and environmental sustainability. "We sign agreements with these farms, then we have a quality control team which checks the product and in the final stage we take care of the packaging," explains Zayed.

To clarify the process of quality standards, he takes the example of a tomato. "We check the tomato's coloration, its diameter, and the chemicals that have been used, because some of them are allowed under the GAP certification, while others are completely banned."

The Hilton, GW Mariott and Four Seasons are the major clients of El-Nour company, and recently Offah.com, an online premium fruits and vegetable supplier, joined the list of the company's clients.

Since great food grows in Egypt, the actual challenge is to how to democratize access to cheap, healthy food. "It all comes down to dignity," Ahmed el-Droubi from Greenpeace Egypt said in a previous interview with Egypt Independent. "Food in quantity is not sufficient: quality and dignity need to prevail."

"The politics of food", Egypt Independent, 08/11/2012, online at: http://mideastenvironment.apps01.yorku.ca/?p=6271

BACK TO TOP

Mithat Paşa Caddesi 46/4 Kızılay-Ankara TURKEY
Tel: +90(312)4302609 Fax: +90(312)4303948 orsam@orsam.org.tr

❖ Dahshur lake under threat: Residents complain of state's disinterest

Many Dahshur residents complain the nearby Royal Lake is being dried out to make room for a tourist village and that many antiquities thefts are taking place on its land, despite the US$3.1 million allocated in 2009 from a joint United Nations-government program to develop the area.

Residents have sent their complaints to the Tourism Ministry, and created many Facebook pages asking for the public's solidarity in saving the ancient place.

Royal Lake is considered one of the most important historical treasures, dating back to the pharaonic era. It was dug as a water reservoir to avoid drought while the black mud-brick pyramid of Amenemhat was being constructed.

It is considered one of the last vestiges of Egypt's agricultural ingenuity, and has been a spawning ground for migratory birds for centuries. But in spite of these historical and natural riches, the area is one of the least officially explored sites in the country.

UNESCO defined Dahshur as a World Heritage site in 1979. In 2009, the UN adopted a project to develop the area under the name "Mobilization of the Dahshur World Heritage Site for Community Development." The project started as a joint program between five UN agencies in cooperation with five governmental institutions. The participants included the UN development program, UN World Tourism Organization, UNESCO, the Supreme Council of Antiquities and the Egyptian Environmental Affairs Agency, among others.

The project aimed mainly at preserving the cultural heritage of Dahshur, enhancing local economic development and creative industries, protecting the area's natural resources and promoting the development of sustainable tourism in the area.

Mohamed Arafa, the program's manager, explains what the project could achieve.

"For the first time, we could engage governmental authorities and the local community with the UN on an environmental and cultural program." he says. "The program also targets Dahshur Lake as a part of the development project, and we made a lot of studies about it and submitted a request for the Environment Ministry to define it as a protected area."

Moreover, Arafa asserted that the project could help 400 Dahshur residents find a new source of living by teaching them different kinds of handicrafts. The project organized exhibitions for their work and connected them with different distributors across Egypt. They also provided training workshops for the residents of Dahshur about how to protect antiquities and how to deal with tourists in the region.

However, some Dahshur residents are all but enthusiastic about the project, and are extremely wary of its potential consequences in this pristine location. Youssef Abagui, a photographer, painter and a longtime resident of Dahshur, says the money allocated for the project was distributed to some local contractors supported by the local authorities.

No serious study of the ground was conducted prior to the project's implementation, he says, and he suspects that the contractors have decided to pay more attention to making personal profits.

"The unstudied project's criteria set by the former Tourism Ministry led to the establishment of many flawed tourist facilities and buildings characterized with ugly architecture, which damaged some irreplaceable sites," says Abagui. "Instead of keeping our heritage and developing it, we erase it under the pompous titles of 'progress,' 'environmental protection' and 'modernization.'"

Abagui explains that the plan was to gradually dry the lake out, then fill it garbage and dirt to flatten the area before building upon it. Extremely upset by the undergoing destruction of the area, he sent a complaint to the tourism minister. He says his complaint remains unanswered.

"We, the inhabitants of the area, see the urgency of an action to stop all works immediately, and to send an independent investigative team that can see for itself the transgressions," Abagui says.

Sherif Baha el Din, one of Egypt's leading conservationists, founder of the Nature Conservation Egypt NGO and an expert on the Dashsur area, disagrees with Abagui on the responsibility of the project in the lake destruction.

"In my opinion, the project has nothing to do with these destructive acts that aim at drying the lake or building on it," Baha el Din says. He instead thinks that a group of foreign businessmen are trying to turn the lake into a dumpsite for personal gain.

Kristen Nelson, an art chancellor and another longtime resident of Dashsur, sheds light on another problem that faces the place.

"A lot of acres are being torn down for making two roads for those who work in the local sand and stone quarries close to Dahshur. This will allow a vast amount of trucks to pass and damage the environment in such an area and pollute its air, as well as cause a lot of noise," Nelson notes.

Nelson says that when the project started, they promised to meet with the local residents to involve them in the decision-making process. However, no one contacted them or asked their opinions about what has been achieved. Also, bringing electricity to all Dahshur residents was supposed to be a part of the project, but this aim has not yet been met.

"In my opinion, it's better to encourage the investment in alternative forms of energy such as solar instead of paying a lot of money for connecting electricity cables to every resident," she suggests.

The absence of security forces in the area has led to other drastic changes. Monument thefts from the plateau east of the Pyramids, perpetrated by local gangs in broad daylight, have repeatedly taken place.

"Because the antiquities in the area aren't fully discovered yet, a lot of thefts are taking place. We complained to the police many times, and they promised to build a wall around the archaeological area, but nothing was done," says Sherif Barakat, one of the oldest residents of the area.

Noor Noor, executive coordinator of Nature Conservation Egypt, explains that places of natural and ecological importance suffer because they aren't given enough attention by authorities and government.

"Dahsur is one of the most beautiful cultural and natural treasures of Egypt. The place used to be an important tourist attraction in the past, and it's our duty to bring it back on the map," he says. "It needs new cleaning and maintenance plans. Also, cooperation between the tourism ministry and the local authorities must be found soon and some regulations must be imposed to protect the place."

Abagui, meanwhile, says some NGO projects lead to destruction in the name of development.

"The best example is what happened to the Valley of the Kings in Thebes: not only did it cost an exorbitant amount of money for nothing, but also aids tomb diggers to see their way in the absence and often cooperation of police forces," Abagui says. "Unfortunately, Dahshur's project is also one such projects."

Olfa Gamal Eddin, the UNESCO project's communication and advocacy officer, refuted all these accusations. The main issue she sees is the miscommunication between the project's organizers and some of the Dahshur residents, as well as the lack of transparency and healthy circulation of information in the country.

"Those people are accusing UNESCO because they don't have enough information about the project," she says. "UNESCO is just one of the many organizations behind the project."

Gamal Eddin asserts that the project's main goal is to protect the lake and prevent encroachment on the area land.

"The roads that are being built will encourage tourism in Dahshur and provide a great service to the local residents," she says.

She adds that no tourist facilities were built on the lake, because they must follow certain ecological guidelines and instructions.

"Our project has nothing to do with cutting the water from the lake, because it's the Irrigation Ministry's responsibility," she says, adding that the UN office is always ready to listen to people's complaints and discuss their suggestions.

Though he does not hold the project managers responsible for the current destruction of the area, Baha el Din refuses to blame Dahshur residents for complaining about the ineffectiveness of the project. "So far, this project has not achieved many of its ecological goals, especially when it comes to helping Dahshur become a protected area."

He had helped study the area to make it a protected area. "I don't want that study to be put on the shelves," he says.

"Dahshur lake under threat: Residents complain of state's disinterest",Egypt Independent, 08/11/2012, online at: http://mideastenvironment.apps01.yorku.ca/?p=6268

BACK TO TOP

❖ Egypt: Govt to Raise Price of Drinking Water

An official from the Ministry of Utilities says that the government is considering raising the prices of drinking water for homes and industrial and commercial establishments to reach the cost of production at least.

The government plans to dispense the support it provides for water prices. It had reached 5 billion pounds annually, reported a local newspaper.

"The increase will be gradual over the upcoming five years" says the chairman of the Consumer Protection Agency.

The government seeks monopolizing the purification and distribution services through piped drinking water in Egypt. In order to reduce the budget deficit, which exceeded 170 billion Egyptian pounds in the last fiscal year.

The Holding Company for Drinking Water which is owned by the governement sells a cubic meter of water for half a pound while it actually costs two pounds.

"homes consume less than ten cubic meters of water monthly, the increase would be gradual for homes and top consumer facilities", the governmental official concluded.

"Egypt: Govt to Raise Price of Drinking Water", 06/11/2012, online at: http://allafrica.com/stories/201211070559.html

BACK TO TOP

❖ Without Better Water Management, Nile Basin's Poorest Will Be Left Behind

Ethiopia, ADDIS ABBA— The Nile River Basin has the potential to supply enough freshwater to "provide a vibrant agricultural sector" in all 11 basin states, if "effective and inclusive water management practices" are put into place, according to a new publication launched in Addis Ababa on November 5 by the CGIAR (Consultative Group on International Agricultural Research) Challenge Program on Water and Food (CPWF).

The book, *The Nile River Basin: Water, Agriculture, Governance and Livelihoods*, found that the region's poorest people, who rely on the river for food and income, are likely to be left behind without implementation of the agricultural water management policies, a set of approaches that include rainwater harvesting and irrigation.

"Improved agricultural water management, which … is so key to the region's economic growth, food security and poverty reduction, must be better integrated into the region's agricultural policies, where it currently receives scant attention," said Dr. Seleshi Bekele, senior water resources and climate specialist at the UN Economic Commission for Africa (UNECA) and one of the book's co-authors.

Poor people in the Nile Basin lack access to water mostly because they often live further away from water sources, making collection more difficult. Management policies that take these needs into account can provide greater access in the region, the book says.

"We need to look beyond simply using water for crop production if we are to comprehensively address the issues of poverty in the region," said co-author and former International Water Management Institute Director General Dr. David Molden.

"Water is a vital resource for many other activities, including small-scale enterprises like livestock and fisheries. This should not be forgotten in the rush to develop large-scale infrastructure."

Another important factor to ensure ample freshwater supplies for the entire basin is good governance by the 11 Nile Basin countries. The book emphasizes the need to implement the Nile Basin Commission as a permanent international regulatory body.

Creation of the commission has stalled due to disagreements over some portions of the new Nile Basin cooperative framework. Downstream Egypt and Sudan are at odds with upstream riparian countries over one particular article governing water security and future projects on the river.

"Past experience has shown that countries tend to cooperate when it comes to sharing water," said Alain Vidal, CPWF's director. "On the Nile, recent agreements between Egypt and Ethiopia show that even the most outspoken basin country politicians are very aware that they have much more to gain through cooperation than confrontation."

Egypt and Ethiopia have locked horns over Ethiopia's plans to construct the Nile's largest hydropower dam, the $4.5 billion USD Grand Ethiopian Renaissance Dam, which is expected to be completed in 2017.

Emails released in late August by international whistleblower site Wikileaks claimed Egypt had military contingency plans to destroy any Ethiopian projects that would affect Egypt's share of Nile River water.

Egypt has denied any such plans, and as recently as October 27 Egyptian Minister of Irrigation and Water Resources Mohamed Bahaaeddin said the nation wanted to avoid any further disputes with its neighbors.

"Without Better Water Management, Nile Basin's Poorest Will Be Left Behind", 06/11/2012, online at: http://africapotashblog.wordpress.com/2012/11/06/without-better-water-management-nile-basins-poorest-will-be-left-behind/

BACK TO TOP

Mithat Paşa Caddesi 46/4 Kızılay-Ankara TURKEY
Tel: +90(312)4302609 Fax: +90(312)4303948 orsam@orsam.org.tr

❖ Egypt Attends Nile Basin Countries Ministerial Meeting

Minister of Water Resources and Irrigation, Mohamed Bahaa Eddin arrived in Addis Ababa on Monday to participate in a meeting for Eastern Nile Basin countries which includes Egypt, Sudan and Ethiopia.

Bahaa Eldin said in a statement upon his arrival that his visit to Ethiopia aims at creating a mechanism for cooperation between the Eastern countries of the Nile Basin, reported The Middle East News Agency.

"The meeting of technical experts will begin later today. It will be followed by the meeting of ministers of Water and Irrigation of the three counties on Tuesday", He explained.

The meeting comes in the framework of celebrating 10 years of establishment of the technical bureau of the East Nile projects. The countries will discuss an initiative that includes new mechanisms for the implementation of joint projects benefiting all Nile Basin countries.

Ethiopia declared in February 2011 that it plans to build "Grand Renaissance Dam" on the Blue Nile in order to generate hydropower.The Blue Nile is the main stream for the Nile River.

This decision sparked extensive arguments considering how that would affect Egypt's share of the Nile water.

"Egypt Attends Nile Basin Countries Ministerial Meeting", 05/11/2012, online at: http://allafrica.com/stories/201211060408.html

BACK TO TOP

❖ Kenya: Nile Water Not Helping Farmers, Report Says

The Nile Basin has enough water for agriculture but water management policies in its 11 countries risk locking out small-scale farmers, a new research has found out.

The research, which has been published in a new book, The Nile River Basin: Water, Agriculture, Governance and Livelihoods, calls on governments to invest in agricultural water management initiatives like irrigation and rain water harvesting to help small-scale farmers grow food throughout the year.

"Agriculture, the economic bedrock of all eleven Nile countries and the most important source of income for the majority of the region's people, is under increased pressure to feed the basin's burgeoning population--already 180 million people, half of which live below the poverty line," the book says.

The research says that even though the Nile and its tributaries are abundant lack of access to water is another area that could negatively affects the poor.

"In the Nile Basin, poor people especially women living further away from water sources travel longer distances to collect water. But by rainwater management livestock and fisheries would therefore benefit from policies that give them greater access to wate," the book says.

Dr Seleshi Bekele, scientist and a co-author from the United Nations Economic Commission for Africa (UNECA) says currently governments in the basin are giving scant attention to improvement of water management in their policies to small scale farmers which is key to the region's economic growth, food security and poverty reduction.

"It is tempting for these governments to focus on large-scale irrigation schemes, such as existing schemes in Sudan and Egypt, but more attention must be paid to smaller, on-farm water management approaches that make use of rainwater and stored water resources such as aquifers," Bekele says.

For small scale farmers and poor to benefit from basin the book also calls on improving governance in coordination among Nile Basin country governments through the establishment of a permanent, international body--the Nile Basin Commission--to manage the river would play a key role in strengthening the region's agriculture and socio-economics development and regional integration in the Nile Basin.

Through the commission conflict among countries will be reduced as much is to be gained through cooperation than confrontation as seen through a recent Egypt and Ethiopian agreement over the building of renaissance Dam, Africa's biggest hydroelectricity plant.

"Past experience has shown that countries tend to cooperate when it comes to sharing water," said Alain Vidal, a co-author and director of the CGIAR Challenge Program on Water and Food.

The book which has been researched by hydrologists, economists, agriculturalists and social scientists says apart from huge projects, water is a vital resource for many other activities, including small scale enterprises like livestock and fisheries. This should not be forgotten in the rush to develop large scale infrastructure.

Apart from Kenya other countries in the Nile Basin include Rwanda, Burundi, Uganda, Tanzania, Sudan, South Sudan, DR Congo, Eritrea, Ethiopian and Egypt.

The book has been published by The International Water Management Institute (IWMI) and Consultative Group on International Agricultural Research.

"Kenya: Nile Water Not Helping Farmers, Report Says", 08/11/2012, online at:
http://allafrica.com/stories/201211090214.html

BACK TO TOP

Mithat Paşa Caddesi 46/4 Kızılay-Ankara TURKEY
Tel: +90(312)4302609 Fax: +90(312)4303948 orsam@orsam.org.tr

❖ Flower power threatens Kenya's Lake Victoria

(CNN) -- Lake Victoria, Africa's largest lake, has been plagued by water hyacinth plants for over two decades. While its flowers can be beautiful its foliage can grow to cover large swaths of the waters in a dense green mat of leaves that choke the shoreline of fish.

Fishermen often struggle each day for a meager catch, but an entrepreneurial weaver has found that the invasive plant can be a free source of material for the area's women who make handicrafts.

"When we make products from this hyacinth, we are empowering women economically. They become self-reliant. That means we are alleviating poverty," said Caroline Agwanda, who heads Hyacinth Ornaments Production Enterprises in Kisumu, Kenya.

The organization, which sells products ranging from handbags to furniture, aims to give employment to disadvantaged women, youths and those with disabilities.

For years, the area's weavers have used banana and sisal fibers to make their wares. They are now turning to hyacinth because of its abundance.

But if the weavers' craft is flourishing, many in the local fishing community are suffering.

Water hyacinth grows into a thick bed of waxy leaves and violet flowers that cover the surface of the lake. It is native to South America but was introduced in Africa in the late 1800s. The plant species can double its mass every five days, according to scientists.

Because of its dense growth, it blocks sunlight from reaching the lake's native aquatic plants, which affects fish and other marine life-- and those who make their livelihoods catching them.

"It has really affected us because the quantity of fish that we used to get from this lake has diminished," said fisherman Jonathan Opiyo, a fisherman.

The difficulties faced by the fishing community are evident at the local markets, where instead of fish traders and buyers loudly haggling over prices, there are only a few quiet voices.

The weavers are not even putting a dent into the sheer growth of the plant, which at the moment is particularly severe.

"It goes all the way -- the furthest you can actually see," said Philip Ochieng, a research scientist who is working with the government to mitigate the environmental problems caused by hyacinth. "This is the biggest acreage of water hyacinth since it was first reported in Lake Victoria in 1992."

Methods that have been tried in the past include the release of South American weevils that eat the plant, as well as machinery that shreds from the water surface. These efforts worked for a while but were not seen as a permanent solution.

Ochieng does not advocate the weavers' use of hyacinth, because transporting it from the lake to their homes could help the plant spread.

However Agwanda says she thinks the weavers could make a real contribution to the removal of the harmful plant from the lake. She would like to see support for the project and to have the resources for machinery that would help make thousands of meters of hyacinth rope each day.

"If we have like a factory somewhere, we'll be consuming a lot of hyacinth," Agwanda said.

The wares that Agwanda's group creates are sold mainly in large towns across Kenya. The finished items are not cheap, and some she says some locals do not appreciate the innovation of utilizing a menacing weed.

"They say, 'You normally get this hyacinth free of charge from the lake. You should sell it for 20 shilling.' They're not looking at the time and skill of coming up with new products and a competitive product," she said.

"Flower power threatens Kenya's Lake Victoria", 05/12/2012, online at:
http://www.stumbleupon.com/su/8VU90I/www.cnn.com/2012/11/04/world/africa/lake-victoria-hyacinth-weavers/

BACK TO TOP

Mithat Paşa Caddesi 46/4 Kızılay-Ankara TURKEY
Tel: +90(312)4302609 Fax: +90(312)4303948 orsam@orsam.org.tr

❖ Climate Conversations - Can regional organisations prevent future water conflicts?

The Nile, the Indus, the Mekong, the Danube are just some of the famous rivers that provide food and energy to millions of people. Their basins are shared by countries of varying sizes, needs and stages of development.

According to the United Nations, 263 transboundary lake and river basins cover nearly half of the earth's land surface and account for an estimated 60 percent of global freshwater flows. Yet more than half of those - 158 - lack a cooperative framework between neighbouring countries on how to use and manage the water.

As the world's population grows and urbanises, demands for water for domestic and industrial use will rise and put these rivers and governments under growing pressure, scientists say – even without the added threat of climate change.

A conference last week in Chiang Rai in northern Thailand said 'hydro-diplomacy' is required to avert future water-related conflicts, with river basin organisations (RBOs) an important tool to help tip the balance from potential conflict to cooperation.

Teferra Beyene, chief executive officer for Nile Basin Initiative, an RBO which brings together government ministers from the states along the Nile, said such organisations can enhance efficiency in water use, contributes to the reduction of risks from climate change and offer a platform for dialogue and building consensus.

They are also essential to analyse the needs, synergies and trade-offs between countries sharing the same river basins, said Torkil Jønch Clausen, senior advisor to the Global Water Partnership and chair of the scientific programme of World Water Week in Stockholm.

"River basin entities can be advisory. They can be light, they can be heavy. Like in the Mekong there are several hundred people for five countries. In the Danube, there are less than 20 (people) for 10 countries," he told AlertNet.

They could also be bilateral, like the International Boundary Commission between Canada and the U.S., or broader, like the International Commission for the Protection of the Danube River, which has 14 members.

KEYS TO SUCCESS

Clausen has a note of caution, however.

"Unless what they do is mainstreamed and owned by the countries, it won't work," he said – a point echoed by others at the conference.

"(RBOs) are a long and complex journey. There's no single path to success and there are very few shortcuts," said Gordon Johnson, environment and energy team leader for the U.N. Development Programme in the Asia Pacific region.

"First and foremost, political will is key," he said.

An integrated approach to water use - instead of simply focusing on a specific bit of infrastructure or a specific problem – combined with information-sharing between countries to build trust and and efforts to ensure the sustainability of the organisation through national budgets instead of relying on donors can make such organizations successful, Johnson said.

According to the U.N., water availability varies greatly across the Asia Pacific region. Southeast Asia has more than 150,000 cubic metres of available water per square kilometre, whereas the Pacific sub-region, including Australia and New Zealand, has less than 30,000.

Still, "If there's a water security problem in Asia, it's likely due to governments rather than a lack of water," said Ian W. Makin, principal water resources specialist for the Asian Development Bank, who said there's a strong relationship between national water security and status of governance in a country.

IS ADVICE ENOUGH?

But what should the mandate of an RBO be? Should it be simply a facilitator? Or something more?

Hans Guttman, chief executive officer of the Mekong River Commission (MRC) Secretariat, said his organisation's role as an inter-governmental facilitating agency is to provide technical, scientific information that can underpin political decision.

"When there are competing demands and different opinions about impacts, both positive and negative, technical support will be able to move that discussion forward," he told journalists on the sidelines of the conference.

Yet there are times when technical support is not enough.

On Wednesday, Laos held a groundbreaking ceremony for the controversial $3.5-billion, 1,260-megawatt Xayaburi Dam despite opposition by environmentalists, neighbouring countries and MRC's own recommendation for a 10-year moratorium.

Xayaburi is the first of a dozen dams planned by landlocked, impoverished Laos, which has ambitions to become the "battery of Southeast Asia" by exporting most of the power generated by its hydro projects.

In December, under pressure from neighbouring countries who are concerned about damage to fish migration routes, farm land, food security and local livelihoods, Laos had agreed to put the project on hold.

"Climate Conversations - Can regional organisations prevent future water conflicts?", 08/11/2012, online at: http://www.trust.org/alertnet/blogs/climate-conversations/can-regional-organisations-prevent-future-water-conflicts/

BACK TO TOP

Mithat Paşa Caddesi 46/4 Kızılay-Ankara TURKEY
Tel: +90(312)4302609 Fax: +90(312)4303948 orsam@orsam.org.tr

❖ Saudi Minister Signs $196 Million of Water, Sewer, Leak Projects

Saudi Arabia's water and electricity minister signed 735 million riyals ($196 million) of contracts for water, leak detection and sewage projects across the kingdom, the Saudi Press Agency said.

Contracts signed by Abdullah bin Abdulrahman Al-Husain include projects in Quriyyat and villages in the Jouf region, expansion of a water purification plant and sanitary project in Quaiyyah province, development of water reservoirs in Khobar and Dammam in the Eastern region, water networks in the Border region and pumping stations in the Asir region as well as water leak detection works in Ahsa and Bgaig, it said.

"Saudi Minister Signs $196 Million of Water, Sewer, Leak Projects", 06/11/2012, online at: http://www.stumbleupon.com/su/2RvEyl/www.bloomberg.com/news/2012-11-06/saudi-minister-signs-196-million-of-water-sewer-leak-projects.html

BACK TO TOP

Mithat Paşa Caddesi 46/4 Kızılay-Ankara TURKEY
Tel: +90(312)4302609 Fax: +90(312)4303948 orsam@orsam.org.tr

❖ The Groundwater Model Bill: Rethinking Regulation for thePrimary Source of Water

Groundwater is now the main source of water for all major water uses in India and needs to be given greater policy attention. The fact that it is a politically sensitive topic because any reform will affect some powerful constituencies cannot be an excuse anymore for lack of action. Inaction only increases existing inequalities in access to groundwater by progressively reinforcing the power of bigger landowners at the expense of other water users. This article examines the basic principles governing access to and use of groundwater inherited from the past to the Model Bill for the Conservation, Protection and Regulation of Groundwater, 2011, which provides a basis for rethinking groundwater regulation.

Philippe Cullet (pcullet@gmail.com) is a senior visiting fellow, Centre for Policy Research, Delhi and professor of International and Environmental Law, SOAS, University of London. He was also the convener of the Planning Commission's Sub-Group on Legal Issues Related to Groundwater that drafted the Model Bill for the Conservation, Protection and Regulation of Groundwater, 2011.

Groundwater use in India has dramatically increased over the last few decades. It is now the backbone of India's food and drinking water security. Since 1970, an overwhelming majority (80%) of the total addition to the net irrigated area has come from groundwater ensuring that it accounts by now for around 60% of irrigation water use (Shankar et al 2011). Groundwater is also the source of about 80% of drinking water needs.1

The rapid increase in groundwater use has had negative impacts on aquifers in various parts of the country. Thus, by 2004, 28% of the country's blocks were showing alarmingly high levels of groundwater use.2 In addition, many parts of India report severe water quality problems, causing drinking water vulnerability. Overall, nearly 60% of all districts in India have problems related either to quantitative availability or to quality of groundwater or both (Planning Commission 2011).

The tremendous increase in groundwater use has led to a situation where it is now the most crucial source of water for the realisation of the fundamental right to water. This simple fact implies that the use and protection of groundwater needs to be given much more attention in law and policy terms. This requires a major effort since until a few decades ago water laws were primarily conceived as surface water laws.

For a variety of reasons, there has been relatively little attention to groundwater regulation until recently. This lack of focus on the basic framework governing groundwater use and protection is particularly problematic because the existing groundwater legal framework is structured around an outdated, inequitable and environmentally unsustainable principle that essentially links control over groundwater to landownership.

The limitations of this scheme have been recognised for several decades but little change has been introduced either through case law or legislation. This is in part due to the fact that the rapidly increasing reliance on groundwater in many parts of the country has led to a situation where state governments realised that they could avoid tackling an increasingly bleak reality by fostering groundwater mining. Yet, this purposeful policy inaction has now shown its social, environmental and economic limits. The existing status quo is untenable in the long term because it leads to further deterioration of the resource on a yearly basis.

Groundwater regulation of the future needs to be based on the recognition that it must be available primarily for meeting needs related to the fundamental right to water, as well as ecosystem and livelihood needs. The existing legal framework that essentially hands control over groundwater to landowners is unacceptable because it does not recognise the claims to groundwater of all other individuals in the country, and because it precludes any aquifer-wide regulation of groundwater.

This article starts by examining the basic principles governing access to and use of groundwater inherited from the past and the partial reform framework proposed since 1970s. The second section brings out some of the key shortcomings of the existing legal framework. Finally, the third section examines the latest model available for reforming groundwater regulation, the Planning Commission's Model Bill for the Conservation, Protection and Regulation of Groundwater, 2011.

1 Groundwater Regulation

The existing legal framework governing groundwater is based largely on principles developed during the second part of the 19th century and applied more or less consistently until today. Groundwater regulation is characterised by the fact that courts have played a leading role in shaping the rules that apply today.

1.1Rules Giving Landowners Full Control over Groundwater: Basic rules governing access to and use of groundwater in India were laid down in English decisions in the second half of the 19th century. Since judges developed this area of the law, this should have given it ample scope for changing over time in line with changing circumstances and understanding of the science underlying the rules in place. Yet, with a few exceptions, the case law to date has not moved beyond the basic principles laid down in another country, for different climatic conditions, and at a point in time when the connections between surface and groundwater were not well-understood. The legislative framework, while underdeveloped in this area, has further contributed to stagnation. Indeed, the only direct reference to groundwater rights in the legislative framework is found in the Indian Easements Act, 1882 that simply confirmed the principles developed in English case law.3

The first basic principle applying to groundwater is that it should be treated differently from surface water. This was asserted in Chasemore vs Richards where the court determined that groundwater that percolates through underground strata, which has no certain course, no defined limits, but which oozes through the soil in every direction in which the rain penetrates is not subject to the same rules as flowing water in streams or rivers.4

Once the distinction between the different bodies of water was made, it became possible for courts to define a different set of rights applicable to groundwater. These were not derived from the existing rules for surface water that imposed significant restrictions on the powers of landowners to appropriate water flowing past their land. The case law subsequently gave landowners virtually limitless control over groundwater. In Acton vs Blundell, the court found that the person who owns the surface may dig therein and apply all that is found there to his own purposes at his free will and pleasure; and that if, in the exercise of such right, he intercepts or drains off the water collected from underground springs in his neighbour's well, this inconvenience to his neighbour falls within the description of damnum absque injuria (damage without injury), which cannot become the ground of an action.5

This was confirmed in Chasemore vs Richards, which found that the right of the owner of a mill using spring water had no action against other landowners abstracting groundwater to the extent of affecting his own use of the water. This was because the judges determined that such a right would "interfere with, if not prevent, the draining of land by the owner".6 One of the few limitations to have been placed on the rights of landowners concerns the case where groundwater cannot be accessed without touching surface water in a defined surface channel. In this case, the landowner is then barred from accessing it.7

The general rules mentioned above did not apply in all situations. Indeed, the case law of the 19th century made a distinction between percolating groundwater and groundwater flowing in defined channels - where groundwater was found to flow in defined channels, the rules applicable to surface water would also apply. This meant that the right of the landowner was then limited to use and consumption for household and drinking purposes, for watering their cattle and for irrigating their land, or for purposes of manufacture, provided that the use was reasonable, that it was required for their purposes as owners of the land, and that it did not destroy or render useless or materially diminish or affect the application of the water by riparian owners below the stream in the exercise either of their natural right or right of easement, if any (Katiyar 2010).

The application of the concept of defined channel to groundwater proved to be difficult because until the past few decades it was not easy to ascertain the existence of underground defined channels. In the early part of the 20th century, case law was no more specific than requiring "a fairly defined course", but this did not even need to be confined within banks or have a continuous flow,8 thus making it difficult to apply to groundwater. Yet, in some cases, the concept of defined channel has

been applied to groundwater: First, in the context of a river running a few inches below its natural bed in the dry season, judges determined already in 1930 that "it was safe to say" that the water flowing down the riverbed had a defined course.9 Second, in a case where a landowner had built an underground trench taking off from a point 14 feet away from the outlet of a spring, it was held that while this was not the actual water of the spring, "there can be little doubt that there must be a direct channel between the top of the drain and the outlet" and there was thus no need for the channel to be "known" through excavation to apply the rules concerning defined channels.10

The application of the concept of defined channel to groundwater leads to several conclusions: First, it confirms that judges were from the start ambivalent about the legal status of groundwater. Second, the cases applying the concept of defined channel can be seen as confirming that when a flow of groundwater could be identified, judges were not averse to restricting the rights of landowners over groundwater. Third, the concept of defined channel has not proved to be an appropriate basis for triggering a reform of groundwater rights.

On the whole, the rules highlighted here are at the very least outdated. Yet, the surprising element is the very limited evolution that has taken place over the past one and a half century. Indeed, while it was probably reasonable to expect that by the beginning of the 20th century a commentary on easements would be based on the cases cited here (Peacock 1904), it is much more surprising to find that a leading commentary on easements published in 2010 still cites the same cases as being the most authoritative statements of the law today (Katiyar 2010).

1.2Limited Reforms since 1970: The need for reforms of groundwater law has been felt for decades and, at the very least, since the widespread introduction of mechanised pumping devices led to rapidly increasing groundwater use and lowering water tables. This led the Government of India to acknowledge the need for a statutory framework governing groundwater. As a result, starting in 1970, it put forward a Model Bill to Regulate and Control the Development and Management of Ground Water (Model Bill, 1970/2005) for adoption by the states. This model bill has been revised several times (1992, 1996 and 2005) but the basic scheme adopted in 1970 has been retained.

The basic scheme of the Model Bill, 1970/2005 is to provide for the establishment of a groundwater authority under the direct control of the government. The authority is given the right to notify areas where it is deemed necessary to regulate and control the development and management of groundwater. However, while the respective state government takes the final decision (Model Bill 2005, s 5), there is no specific provision for public participation in this scheme. In any notified area, every user of groundwater must apply for a permit from the authority unless the user only proposes to use a handpump or a well from which water is drawn manually (ibid: s 6). Wells need to be registered even in non-notified areas (ibid: s 8). Decisions of the authority in granting or denying permits are based on a number of factors, which include technical factors such as the availability of groundwater, the quantity and quality of water to be drawn, and the spacing between groundwater

structures. The authority is also mandated to take into account the purpose for which groundwater is to be drawn, but the model bill does not prioritise domestic use of water over other uses.11 Basic drinking water needs are indirectly considered since, even in notified areas, hand-operated devices do not require a permit (ibid: s 6(1)).

2 Need for a New Framework

A number of reasons call for the adoption of new bases for groundwater regulation. First, the existing set of rules was never appropriate for the country where they were introduced. Second, the underlying legal framework has changed enormously since independence, as well as since 1970, requiring a rethink of groundwater regulation. Third, the importance of groundwater has increased tremendously since the introduction of mechanised pumping to the extent that it is the primary source of water for all main water uses.

The basic groundwater right framework outlined above, as well as the Model Bill 1970/2005, is not an appropriate framework for the regulation of groundwater in India in the 21st century. This is due to several reasons:

First, existing rules are based on a dated scientific understanding of groundwater. This fails, for instance, to take into account patterns of aquifer recharge and the interconnectivity between surface and groundwater (Soman 2008). This translates into separate rules for surface water and groundwater.

Second, the existing legal framework is not adapted to conditions prevailing in large parts of India. This was already noted in 1930 in a groundwater case where justice Wallace determined that "my considered view is that conditions in England are so different to those in the district of Bellary that I deprecate calling in aid English law on this subject and confess that I do not myself find it of any assistance here".12

Third, the present legal framework is socially inequitable. On the one hand, it gives landowners an overbearing power over groundwater; on the other, it excludes all landless groundwater users from the purview of the rules, even where groundwater is their main source of drinking and livelihood water.

Fourth, the existing legal regime limits itself at administering the respective claims of different landowners with no regard for the need to regulate groundwater at an aquifer level. The limitations of existing rules have come up in more specific contexts, like the division of a single plot of land. In a case involving the division of a piece of land where a single well was found in the part remaining with the original owner, the court found that in the absence of a clear stipulation providing for access to the well, the new owners had not acquired such a right.13 The case focused entirely on the issue of

the source of groundwater and landowners' claims to the same, rather than on the resource itself and the uses to which the groundwater might be put.

The Model Bill 1970-2005 and the Acts derived from it warrant the same criticisms since they do not go beyond the existing basic legal framework. The Model Bill 1970-2005 does attempt to set out a framework for addressing groundwater overuse. It does so by extending the state's control over the use of groundwater through the registration of sources of groundwater and the introduction of permits for groundwater extraction in regions where it is overexploited. Yet, this fails to effectively tackle existing overuse of groundwater since, in effect, it provides for the grandfathering of existing uses by only requiring the registration of such uses (Model Bill 2005: s 7). This implies that in situations where there is already an overuse, it does not provide an effective basis for controlling it and will, at most, provide a basis for ensuring that future use is more sustainable.

With regard to the proposed institutional framework, the Model Bill, 1970-2005 also fails to provide a set-up that is capable of addressing the various aspects of groundwater regulation. It neither provides a single institution with a general mandate to look after groundwater in all its dimensions nor provides mechanisms to ensure coordination between the different institutions that have a mandate or the capacity to address groundwater use and conservation, such as pollution control boards and groundwater authorities. Further, the framework is intrinsically top-down in its approach and focuses on the establishment of a state-level institution.

3 The Groundwater Model Bill, 2011

The previous section has highlighted that the existing legal framework is incapable of addressing the challenges of groundwater use and conservation facing most states of the country (GoK 2011: para 21.52). This makes an unassailable case for reform in the context of the ever-increasing importance of groundwater for all main water uses. This has been recognised by the Planning Commission's approach paper for the 12th Five-Year Plan stating that "[t]here is an urgent need to come out with a clear legal framework governing the use of ground water".14

While the theoretical case for reforms seems clear, the reality is that states have been slow to take up the challenge. This can be explained by the fact that groundwater has become so crucial that it is politically difficult to challenge the various vested interests that have been created around the existing pattern of water use. This translates in practice in states subsidising access to groundwater infrastructure or subsidising the energy necessary to pump it into a way to avoid having to regulate existing uses.15

At the same time, in a number of states, the groundwater crisis is becoming serious enough to force states to start taking some action. Three different types of responses can be identified. First, in some cases the nexus between access to electricity and access to groundwater has been used to restrict

groundwater use. This has, for instance, been done in Gujarat where electricity lines for irrigation and domestic consumption have been separated (e g, Shah and Verma 2008). Second, some states that are opposed to adopting comprehensive groundwater legislation have nevertheless started using regulation as a tool for controlling groundwater use. This is the case of Punjab and Haryana that have taken a limited but a real step in this direction with the adoption of a task-specific legislation focusing on prohibiting sowing and transplanting of paddy before specific dates in order to reduce groundwater use.16 Third, some states have adopted legislation based on the limited reform framework of the Model Bill, 1970-2005.

The different answers given by states until now are noteworthy and important. They confirm that states are taking the groundwater challenge increasingly seriously. Yet, none of the three initiatives discussed in the previous paragraph provide a comprehensive solution that addresses groundwater use and protection in all its dimensions. The necessity for a broader approach stems from two issues: first, in a context where groundwater is the key source of water for realising the fundamental right to water of the overwhelming majority of the population, regulation cannot be only concerned with groundwater use for irrigation despite the importance of the latter. Second, existing policy interventions are based on the need to address groundwater scarcity but fail to provide bases for aquifer-based protection measures. There is thus a need for groundwater regulation that brings together the fundamental right to water dimension together with livelihood uses and protection of groundwater. In addition, from a legal perspective, the present groundwater framework does not reflect key judicial and constitutional developments of the past few decades.

In the context of an increasing recognition of the need for a new framework regulating groundwater, the Planning Commission took up the challenge of preparing a new groundwater model bill in the context of the preparation of the 12th Five-Year Plan. The Model Bill for the Conservation, Protection and Regulation of Groundwater, 2011 (here onwards Groundwater Model Bill, 2011) provides a response to the shortcomings of the existing legal framework in the context of the fast increasing reliance on groundwater in most parts of the country.17

The basic premise of the Groundwater Model Bill, 2011 is that it is small farmers and all persons living in rural areas that are most directly affected by the existing framework that gives exclusive control over groundwater to landowners and no effective control to other groundwater users or democratically elected local bodies of governance. The Groundwater Model Bill, 2011 is thus based on the idea that while protection of groundwater is a key to the long-term sustainability of the resource, this must be considered in a framework in which livelihoods and basic drinking water needs are of central importance.

3.1Basic Principles

The Groundwater Model Bill, 2011 finds its roots in existing constitutional and other legal principles, as well as existing laws in the water and related sectors. Thus, it is based on principles that have already been accepted in the legal fabric of the country. At the same time, it builds on developments that have taken place in the legal framework since the Government of India proposed the first Model Bill in 1970.

Public Trust and Subsidiarity: The Groundwater Model Bill, 2011 starts by recognising groundwater as a public trust (Groundwater Model Bill 2011: s 9). This brings the statutory regime in line with repeated Supreme Court directives concerning surface water,18 and the one case mentioning groundwater.19 This also ensures that groundwater and surface water will be in the future treated under similar legal principles, providing the basis for much better coordination between the different sectoral water laws in force.

The recognition that groundwater is a public trust is a significant change. Indeed, it bears the potential to give communities the possibility to regulate groundwater use at the aquifer level. In other words, the recognition that groundwater is a public trust does not diminish but rather enhances local control over the resource.

Some safeguards are, however, necessary to ensure that the change of legal status does not end up dispossessing local communities further. This is why the Groundwater Model Bill, 2011 links the recognition of public trust with decentralisation and the principle of subsidiarity.20 It thus suggests that the trustee should be the lowest possible democratically elected body that can regulate an entire aquifer. In other words, an aquifer situated entirely within a panchayat is under the direct control of the Gram Panchayat Groundwater Committee. It is only in case the aquifer is shared with another panchayat that control is shared and the Block Panchayat Groundwater Committee facilitates the coordination of the planning process between the panchayats sharing the aquifer (ibid: Ss 18 and 20(1)b).

The link between public trust and subsidiarity is absolutely crucial and severing the two would negate the reform potential of the Groundwater Model Bill, 2011. Not linking the two would in effect hand over untrammelled power to the state government as the only trustee. This would amount to doing little more than rebranding the state's power of eminent domain as that of a trustee without creating effective new accountability mechanisms. Indeed, the only real check on the power of an all-powerful trustee would be the courts. This would not provide optimal results since court interventions do not provide quick results.

Fundamental Right to Water: The Groundwater Model Bill, 2011 starts by specifically integrating the fundamental right to water (ibid: S 8). This is a necessity in legal terms given the repeated strictures of the higher judiciary for the past two decades.21 This is also necessary in practical terms given the prominence of groundwater as a source of drinking water.

The Groundwater Model Bill, 2011 ensures that the right to water is specifically integrated within its operational provisions. It starts by giving drinking water the highest priority among groundwater uses (ibid: S 10(2)). While this is uncontroversial, it is an important provision since there is no legislation that specifically confirms this priority implied in the recognition of the right to water by the courts.

The fundamental right to water framework for the Groundwater Model Bill, 2011 has broader consequences. Indeed, in a context where groundwater is the main source of water for 80% of individuals, control over the resource cannot be left entirely in private hands. This is again nothing new insofar as the very reason why actual ownership of surface water has been prohibited for centuries was the link between human survival and access to drinking water. Yet, in the context of groundwater, where the legal regime has condoned a form of an appropriation linked to land rights, this necessitates a process of adaptation.

At this juncture, the idea of delinking groundwater from land rights is gaining increasing support in policy circles. This is positive from the point of view of ensuring that individual property rights over land do not come in the way of the realisation of the right to water for all. At the same time, this process of delinking land rights and groundwater should not be used to set up new tradable groundwater entitlements. This is not a speculative concern, since the introduction of tradable water entitlements has already been given a statutory recognition in some states.22 The implementation of the Groundwater Model Bill, 2011 will, thus, need to be carefully tailored so that the positive impacts for the realisation of the right to water of severing the link between land rights and groundwater are not negated by these new private rights.

3.2Institutional Framework

The institutional framework of the Groundwater Model Bill, 2011 reflects the decentralisation mandate of the 73rd and 74th amendments to the Constitution (Articles 243G and 243W). These amendments have already been used in generic terms in various states, for instance, to give panchayats powers over water resources at the local level. The Groundwater Model Bill, 2011 goes further and applies the decentralisation principles to groundwater regulation. As mentioned above, this is further strengthened by a specific reliance on the principle of subsidiarity.

The Groundwater Model Bill, 2011 organises its institutional framework around existing units of territorial governance. At the same time, in recognition of the fact that aquifers do not necessarily follow administrative boundaries, it provides mechanisms to ensure that the latter do not come in the way of effective protection of groundwater aquifers from the local to the state level.

The institutional framework is divided into rural and urban areas. In each case, the Groundwater Model Bill, 2011 provides for the setting up of groundwater committees starting at the lowest level of

democratic governance. These are gram panchayat groundwater committees in rural areas and ward groundwater committees in urban areas (ibid: Ss 17 and 21). The Groundwater Model Bill, 2011 also provides for block and municipal groundwater committees to address issues that cannot be tackled at a lower level. In the case of rural areas, this includes "[c]oordination of the planning process between panchayats sharing aquifers where the aquifer boundary does not correspond with boundaries of a single panchayat" (ibid: s 20(1)b). Further, it provides for the setting up of district groundwater councils tasked, for instance, with the coordination of measures taken at the block and municipal level and a state groundwater advisory council set up to provide advice and support to all groundwater bodies constituted under the legislation (ibid: sS 26(1)e and 28(1)).

The Groundwater Model Bill, 2011 also recognises that duplication of institutions and mechanisms should be avoided to the greatest possible extent. Thus, it uses to the extent possible existing institutions. For instance, at the panchayat level, it provides for the setting up of a gram panchayat groundwater committee but specifically provides that where a village water and sanitation committee already exists, the latter will automatically serve as groundwater committee (ibid: S 17(1)).

The Groundwater Model Bill, 2011 further recognises that it is unrealistic to expect every local institution to have the scientific and technical expertise necessary to perform all the given functions. As a result, a series of information and monitoring cells and supporting institutions are constituted to assist and help in the effective implementation of the Groundwater Model Bill, 2011. In an attempt to avoid the creation of additional capacity where it already exists, it is expected that these cells will draw on an existing institutional, scientific and technical capacity at all levels within the state, in particular the state groundwater department and its district offices or the state pollution control board and its district offices (ibid: S 29(2)). In addition, the state government can notify agencies constituted under the law that can assist and help effective implementation, such as the state groundwater department, the state pollution control board and the groundwater department (ibid S 30). All these supporting institutions are duty-bound to assist and help authorities as per their demands from time to time (ibid: S 31(1)).

3.3Groundwater Protection Zones

The Groundwater Model Bill, 2011 is built around the need to ensure that the resource itself is protected and can provide a sustainable basis for meeting the basic needs of every person for decades to come. It thus integrates protection principles, such as the prevention and precautionary principles (ibid: S 6(2)).

The Groundwater Model Bill, 2011 introduces two innovative instruments to foster groundwater protection, groundwater protection zones, and groundwater security plans. These are conceived primarily for areas that suffer from groundwater depletion and are thus to be implemented according to the needs of specific areas.

The Groundwater Model Bill, 2011 first provides for the possibility to demarcate Groundwater Protection Zones. The objectives for the demarcation of groundwater protection zones link environmental and socio-economic aspects. Thus, groundwater protection zones are, for instance, demarcated to "[p]rotect the natural recharge and discharge areas of the aquifer from threats such as physical deterioration" and at the same time to "[p]rovide for sufficient quantity and safe quality water required to meet the basic water supply for human and animal needs" (ibid: S 11(1)a and d).

Groundwater protection zones are to be demarcated by a process that is in part driven by the state groundwater board in consultation with other relevant bodies. It ends with a submission to the "appropriate authority"23 within which falls the geographical limit of each zone (ibid: S 12).

There exist two types of groundwater protection zones. Groundwater Protection Zones 1 are areas where no extraction or use of groundwater is allowed, apart from its use as basic water, except under special sanction by the appropriate authority (ibid: S 13 (3)). In these zones, the appropriate authority is mandated to develop and apply rules regarding, among others, forestation and deforestation, a prohibition of waste disposal of any kind and the banning of any mining lease. In Groundwater Protection Zones 2, a much less stringent set of rules is to be introduced, such as regarding distance to new wells and pumping regulation for existing wells (ibid: S 13(4)).

Groundwater protection zones are linked to another innovation - the introduction of groundwater security plans. Section 14 provides that a groundwater security plan shall be prepared at the lowest possible administrative level that encompasses the whole aquifer. Groundwater security plans are compulsory where a groundwater protection zone has been defined and their preparation is left to the discretion of the appropriate authority in other cases (ibid: S 14 (3)). Groundwater security plans must "provide for groundwater conservation and augmentation measures, socially equitable use and regulation of groundwater, and priorities for conjunctive use of surface and groundwater" (ibid: S 15 (1)). Groundwater security plans are adopted by the appropriate authority and valid for five years; they must then be revalidated or amended.

3.4Regulation of Use

The Groundwater Model Bill, 2011 is based on an understanding that different groundwater uses need to be regulated differently, something that was not done earlier. It starts by giving a general framework for the prioritisation of groundwater uses to guide authorities in the regulatory decisions they take (ibid: s 10). The first priority is meeting the right to basic water for rural and urban residents. Beyond this, two categories of uses are defined: primary uses include direct use of groundwater for livelihoods, including agriculture and non agriculture-based livelihoods and municipal use, including public facilities for recreation; secondary uses include commercial activities, including power generation, industry and large-scale commercial farms and private

facilities for recreation.

The Groundwater Model Bill, 2011 first recognises that groundwater users also have a series of duties linked to their use. These include avoiding waste or contamination of groundwater, conservation through appropriate agricultural and industrial practices and measures to replenish or recharge groundwater (ibid: S32). The Groundwater Model Bill, 2011 also calls for water harvesting and catchment conservation, as well as recycling and reuse of groundwater (ibid: Ss 33 and 34).

Beyond these general stipulations, the Groundwater Model Bill, 2011 regulates separately some of the main groundwater uses. Concerning basic water, the Groundwater Model Bill, 2011 specifies some of the elements of the right to water (ibid: S 36). These include a reassertion of the universality of the entitlements contained in the right in a context of non-discrimination. It also includes a specific provision making drinking water standards existing in different non-binding forms binding on drinking water supply agencies extracting groundwater.

With regard to the use of groundwater for livelihoods and irrigation, the starting point is that every person is entitled to use groundwater for their livelihood needs (ibid: S 37(1)). The Groundwater Model Bill, 2011 further recognises that the "livelihood pattern and the resultant needs should be incorporated in groundwater security plans" (ibid: S 37 (2)). At the same time, there is no absolute entitlement and in case of severe drought or where the area has been declared a Groundwater Protection Zone 2, limits may be imposed for restricting water use (ibid: S 37 (3)). In the case of a Groundwater Protection Zone 2, where water-intensive cash crops are grown, an undertaking shall be obtained for a change from water-intensive crops.

In the case of industrial, commercial and other bulk uses of groundwater, including major or medium irrigation projects, the Groundwater Model Bill, 2011 provides for a system of permits to abstract groundwater (ibid: SS38 and 37(4)). These permits can be granted to applicants fulfilling the conditions laid down with the exception of Groundwater Protection Zones 1 where permits cannot be granted. The Groundwater Model Bill, 2011 also provides that industrial or bulk groundwater use shall be priced and a water rate shall be charged. Funds collected through water rates are to be used for groundwater conservation and augmentation activities (ibid: S 42).

3.5Effective Implementation

The Groundwater Model Bill, 2011 includes a series of provisions that seek to ensure the smooth and effective implementation of its substantive stipulations. A separate chapter is devoted to social and environment impact assessment, transparency and accountability. This builds largely on existing legal instruments, giving them a specific groundwater focus.

This is, for instance, the case with regard to impact assessment. The Ground-water Model Bill, 2011

builds on the Environmental Impact Assessment Notification, 2006 and defines impact assessment in a groundwater-specific context. It also adds a social impact assessment with a view to consider both aspects simultaneously. Environmental and social impact assessments are required at separate points in the Groundwater Model Bill, 2011. Thus, Section 10 provides that the use or appropriation of water for secondary purposes (following discussion on secondary uses), which is likely to have significant negative impacts on local sources of groundwater, shall be subject to an environmental and social impact assessment. Similarly, the permits to abstract groundwater for industrial use or infrastructure projects are granted on the basis of an impact assessment (ibid: S 39(4)).

The Groundwater Model Bill, 2011 also includes a duty to establish transparency systems. This builds on the Right to Information Act, 2005 and includes proactive mandatory disclosure, the right to inspect all documents and offices, and ensuring the transparency of the decision-making processes (ibid: Ss 45 and 46). The Groundwater Model Bill, 2011 also includes a provision for social audits to be conducted every 12 months. This is to be linked to other social audits mandated under other laws or guidelines (ibid: S 47).

With regard to dispute resolution, the Groundwater Model Bill, 2011 starts by encouraging mediation and conciliation. Where disputes need to go through a formal process, the Groundwater Model Bill, 2011 sets up a framework that seeks to keep the process as close as possible to litigants while ensuring that the persons in charge are able to comprehend the technical issues that may arise. It does so through the provision of groundwater grievance redressal officers at the block level who must have experience and qualification in the field of law or hydrogeology or science and technology or social service or management or water policy or human rights or public administration (ibid: S 53). In addition, the Groundwater Model Bill, 2011 also provides for a Nyaya Mitra holding a bachelor's degree in law at the district level to assist groundwater grievance redressal officers in discharging their duties (ibid: S 55).

Groundwater grievance redressal officers are given jurisdiction over all complaints arising within the area for which they have been appointed. They are given the same powers and obligations as vested in a civil court. Appeals from the groundwater grievance redressal officers can be preferred to the Gram Nyayalya set up under the Gram Nyayalayas Act, 2008 in rural areas and before the sub-court in urban areas.

4 Conclusions

The Groundwater Model Bill, 2011 provides a basis for rethinking groundwater regulation. It is appropriately framed as a model bill that needs to be tailored to the needs and circumstances of individual states. This also fits with the fact that it is states that have legislative competence for regulating water.

The existence of a new model that can be used by states for drafting legislation is a welcome step forward. It provides a template that incorporates various things that states must do because they are part of the legal framework applicable throughout the country and provides the flexibility to adopt substantive, procedural and institutional provisions to the specific legal framework in place at the state level.

The theoretical and constitutional flexibility that exists is a positive element of a federal democracy. At the same time, the history of the Model Bill, 1970/2005 does not indicate that the possibility to adapt a model bill to regional needs is necessarily taken up in every case. It is thus essential to ensure that the Groundwater Model Bill, 2011 does not follow the same path. This will require doing several key things in each state. First, very little work has been done to analyse the way in which traditional rules have been applied in practice either at the local or state level. The main source of information is court judgments, which only provide a snapshot of the reality on the ground. Second, there has been little interest in the groundwater laws based on the Model Bill, 1970-2005. A much more in-depth understanding of the reasons underlying the lack of implementation, the successes and the failures are necessary to ensure that the next model builds on existing experience. Third, this analytical process must be followed by the involvement of all groundwater users in turning the model bill into legislation at the state level. This includes an effective participation from the panchayat/ward to the state level. This is not specific to groundwater but requires strong reaffirmation following the adoption of some water laws without sufficient participation in general, and even without sufficient debate in the legislative assembly.

Groundwater is now the main source of water for all main water uses and needs to be given the policy attention it deserves. The fact that it is a politically sensitive topic because any reform will affect some powerful constituencies cannot be an excuse anymore for lack of action. Inaction only increases existing inequalities in access to groundwater by progressively reinforcing the power of bigger landowners at the expense of other water users. Further inaction has a price that will be borne by future generations since use beyond yearly replenishment is by definition an "unsustainable" use of groundwater in the longer term. The fact that this may be beyond the time horizon of the average office holder cannot be an excuse for delaying action until it is too late.

Notes & References can be viewed at: (http://www.epw.in/perspectives/groundwater-model-bill.html)

"The Groundwater Model Bill: Rethinking Regulation for thePrimary Source of Water", 05/11/2012, online at: http://www.waterworld.com/news/2012/11/05/the-groundwater-model-bill-rethinking-regulation-for-theprimary-source-of-water.html

BACK TO TOP

❖ India, Bangla near historic agreement on Teesta water

India and Bangladesh could soon break a politically significant logjam to sign an interim Teesta water-sharing pact following talks between water resources minister Harish Rawat and visiting Bangladesh agriculture minister Begum Matia Chowdhury. An earlier attempt to resolve a deadlock over how to share the waters of Teesta, which flow from India's West Bengal into Bangladesh, had been opposed by West Bengal chief minister Mamata Banerjee.

Rawat told the Bangladesh minister that India would sign a provisional treaty till a permanent settlement is found, sources said. Bangladesh wants greater access to Teesta waters, citing a fair-use policy but that may require India to use less.

The Tipaimukh Hydro-Electric Project in the Northeast has long fuelled concerns of the neighbouring country that it could impact on Bangladeshi agriculture because it would control water flow from India's Barak river. India sought to allay fears of Dhaka, holding that there's no evidence that the dam would hurt farming there.

India is ready to offer commercial power or related benefits from the project, which could be a deal-maker, sources said. In a sign of progress, Dhaka sought Indian help in building a slew of irrigation infrastructure projects. "Indian irrigation experts will visit Bangladesh after the request is formally put in motion," an official said.

"India, Bangla near historic agreement on Teesta water", 08/11/2012, online at: http://www.hindustantimes.com/India-news/NewDelhi/India-Bangla-near-historic-agreement-on-Teesta-water/Article1-956444.aspx?utm_source=Circle+of+Blue+WaterNews+%26+Alerts&utm_campaign=1438c41468-RSS_EMAIL_CAMPAIGN&utm_medium=email

BACK TO TOP

Mithat Paşa Caddesi 46/4 Kızılay-Ankara TURKEY
Tel: +90(312)4302609 Fax: +90(312)4303948 orsam@orsam.org.tr

❖ Delta farmers seek water till February-end for 'thaladi' crop

Estimating that a substantial portion of the samba crop might be lost due to recent rain triggered by cyclone Nilam, the Cauvery Delta Farmers' Welfare Association (CDFWA) has urged the State government to release water till the end of February for the late 'thaladi' crop.

Mannargudi S. Ranganathan, general secretary of the association, told *The Hindu* that due to global warming there had been a sea-change in the pattern of rainfall necessitating a change in the agricultural operations as well.

For instance, the southwest monsoon had failed in Karnataka and Tamil Nadu but the northeast monsoon, which normally benefited only Tamil Nadu, had ensured copious showers in Karnataka in the last couple of days. "This is totally unusual and hence a bonus for that State."

In the 24 hours ending 8.30 a.m. Friday, Madikeri, the main rain gauge station for Coorg, had recorded rainfall of 61 mm and the thumb rule of the Tamil Nadu PWD is that every millimetre recorded in Madikeri amounted to 1,000 cusecs inflow into the Cauvery. Besides, the rain had been fairly widespread in Karnataka.

He lamented that as the Mettur dam could not be opened on schedule (June 12) for delta irrigation and water could be released only three months later (September 17), kuruvai, the cash crop of delta, was lost to an extent of more than 75 per cent.

The samba cultivation, which could begin in most of the areas only during October, had been affected by the cyclone. The crops in the coastal tracts of the Cauvery delta had been totally submerged.

"It looks like there is no possibility of the crops being saved. That is why our association has sought a special insurance cover for the coastal farmers," he said. Besides, the samba crop raised late in other areas, especially the low-lying regions, had also severely affected.

Mr. Ranganathan pleaded that the farmers should be helped to raise another crop, some short duration variety suited for late thaladi season.

He pointed out that Tamil Nadu Agricultural University had a number of suitable seeds. If the farmers were to go in for such crops, they would definitely require water till the end of February.

He was confident that the Mettur dam would also have appreciable inflow thanks to the precipitation due to the north-east monsoon and if Karnataka also released some water following the bountiful monsoon.

"Delta farmers seek water till February-end for 'thaladi' crop", 05/11/2012, online at: http://www.thehindu.com/news/states/tamil-nadu/delta-farmers-seek-water-till-februaryend-for-thaladi-crop/article4065144.ece?utm_source=Circle+of+Blue+WaterNews+%26+Alerts&utm_campaign=e813fb7e79-RSS_EMAIL_CAMPAIGN&utm_medium=email

BACK TO TOP

Mithat Paşa Caddesi 46/4 Kızılay-Ankara TURKEY
Tel: +90(312)4302609 Fax: +90(312)4303948 orsam@orsam.org.tr

❖ Kalabagh dam: a bargain chip

According to a press report five Awami National Party provincial ministers and Senator Afrasiab Khattak criticised remarks of Chief Justice Lahore High Court (LHC) that "objections of Khyber Pakhtunkhwha (KP) and Sindh to the construction of Kalabagh dam (KBD) were political in nature". He was hearing several petitions submitted in the public interest urging construction of Kalabagh dam. (Oct 27)

Remarks by Chief Justice Umar Ata Bandial were fully justified. The ANP's criticism was mostly political rhetoric. However, comments on certain relevant observations by Senator Afrasiab Khattak, ANP's spokesman, follow.

1) KBD issue is already settled since provincial assemblies of KP, Sindh and Balochistan passed resolutions against it.

Re 1): Foregoing ANP statement endorsed Chief Justice Bandial's above noted remarks as decision of the three assemblies was political since no competent engineer was consulted by any assembly regarding technical aspects of the multi-purpose great dam.

2) The ANP claimed that according to reports by Pakistan's and foreign engineers that "KBD would be detrimental to the interest of KP as the most fertile land of the province would be seriously affected".

Re 2): I never came across such a report though associated with Kalabagh, Mangla and Tarbela dams since June 1956, before WAPDA came into being. Regarding damage to fertile lands of the province, it is wrong. KBD backwater would remain at least 10 miles downstream of Nowshehra in the event of worst ever flood in the River Indus.

3) Bhasha dam is a useful alternative to the KBD.

Re 3): Diamer-Bhasha dam of roller compacted concrete with unprecedented height of about 900 feet would be of deadly risks for the people and their country as repeatedly forewarned by me for the last over four years through media. Furthermore, Bhasha dam may not be built for decades since premier funding institutions like World Bank and Asian Development Banks have declined to finance it being risky investment.

Be that as it may, my KP friends should be aware that KBD was used by their predecessors as a bargain chip by preferring construction of Bhasha dam instead of KBD in exchange for its hydel

royalty which was not available in the case of the latter since its powerhouse was to be located in Punjab instead of KP.

"Kalabagh dam: a bargain chip", 07/11/2012, online at: http://www.pakistantoday.com.pk/2012/11/07/comment/editors-mail/kalabagh-dam-a-bargain-chip/

❖ Scarcity of Water and Land Shifts Geography of Food Production and Irrigation Networks to China's Northeast

Rich land, ample water, and human persistence have turned virgin prairie into the nation's primary breadbasket.

YOU YI, Heilongjiang Province, China — On the south side of the two-lane highway leading to the largest farm in China, the angled sun paints a curtain of water from a spray irrigation rig the colors of a rainbow. All aluminum tubes and angled corners, the rig spans a sugar beet field so large that a tractor at the far end looks as small as the period at the end of this sentence.

On the highway's north side, men and women wield shovels to tap mud against the walls of new concrete irrigation canals. Loose ends of white scarves that the women wrap around their hair and faces fall to strong shoulders. The sounds of the construction project — tap, tap, tap — mix with laughter on a sunny June morning. Pride and good cheer are evident everywhere on the state-owned, 120,000-hectare (296,000-acre) You Yi Farm.

Sixty years ago, more than 100,000 Chinese soldiers were dispatched here to plow virgin prairie and plant rice and corn. Last year, Heilongjiang and its network of state-owned farm enterprises became the top grain-growing province in China, making up about 10 percent of the nation's 571-million-metric-ton grain harvest, which was the world's largest. By any measure, Heilongjiang's farm productivity is an exceptional achievement that is celebrated nationally.

In fact, the northeast region of China — which includes not only Heilongjiang, but also neighboring Liaoning and Jilin provinces — harvests more than 100 million metric tons a year, or about 18 percent of the country's grain, and is now among the world's most important breadbaskets.

By 2020, China anticipates needing nearly 600 million metric tons of corn, rice, and wheat annually, which is about 5 percent more than is grown now, to feed its people — and China is counting on these three northeastern provinces to deliver 80 percent of that increased harvest.

In elevating Heilongjiang and its neighboring provinces from the bottom of the farm production pack to the very top during this decade, China has shifted the geographic center of its grain harvest from

Henan and other central provinces to the northeast, where there is abundant water and some of the world's most fertile black earth.

Advocates say that plans to rebuild and expand irrigation networks here will increase crop yields. But deep doubts abound in universities and on the street with regard to China's relentless pursuit of ever-larger harvests and the rising risks to erodible land, water supplies, water quality, and public safety that China seems prepared to accept in its northeast and other farming regions.

"China has reached the stage where these concerns cannot be ignored, and they aren't being ignored," said Qian Yi, a professor of environmental policy and dean of the Qingdao University of Science and Technology. "We're doing better, but we still have a lot of problems. We've got a lot of work to do."

How China, a nation that knows starvation, developed such assurance is a history lesson in the convergence of central planning, technology, and human determination with fertile ground and ample water resources.

Good Soil, Ample Water

You Yi and much of Heilongjiang Province is located atop a crescent of deep and fertile black dirt, comparable to Ukraine's wheat region and America's Midwest Corn Belt, that reaches from the Russian border north of here all the way to Jilin Province, thousands of kilometers to the south.

Though there are other soil types, northeast China's black earth, encompassing 10 million hectares (25 million acres) and irrigated by the ample waters of the Songhua River Basin, supported 60 percent of Heilongjiang's 55.7 million metric tons of grain that were harvested last year. That is more than double the harvests of wheat, rice, corn, and soybeans that Heilongjiang's farms produced in 1991, according to China's National Bureau of Statistics.

Considering that the national grain harvest rose from 435 million metric tons in 1991 to 571 million metric tons in 2011, Heilongjiang's grain producers — by themselves — have accounted for almost one-quarter of China's steadily increased harvests.

And Chinese farm authorities are now pressing these northeast farms to produce even more. One signal of the geographic shift in production is to provide farms with cleaner sources of water and to provide water to land that is not currently irrigated.

Li Fanghua, a senior engineer at the Water Conservation Institute of Heilongjiang Province, said that northeast China is determined to keep its place in the nation's rice and corn pecking order. According to Li, 80 percent of the anticipated increase in the nation's grain harvest over the next decade will occur because of the increases in yield from better water and more water to larger expanses of lands that are not served by irrigation channels. There is no question, she said, that northeast China will achieve its grain production targets.

"Our geography. Our weather. The amount of land we irrigate and will irrigate," Li told Circle of Blue. "We will reach and exceed those targets."

Such tactics make sense. Heilongjiang has 80 billion cubic meters (21.1 trillion gallons) of fresh water in reserve, some of the most abundant and accessible freshwater resources in the country. Precipitation and river level records show they are also among the most stable.

Heilongjiang also has an irrigation network as extensive as any in China.

In 2010, according to provincial records, 5 million hectares (12 million acres) were irrigated here, which is about one-third of the province's total 16 million hectares (39.5 million acres) of cropland. Earlier this year, China's central government announced a five-year, $US 6.3 billion (38 billion RMB) program to rebuild and expand irrigation networks in Heilongjiang, Jilin, Liaoning, and eastern Inner Mongolia. Replacing northeast China's leaky, half-century-old, mud-bottom irrigation canals with concrete channels and expanding the irrigation network to the expanses of farmlands that are not currently irrigated will raise yields per hectare by an estimated 20 percent or more over the next decade.

"We have enough water," Li said. "But it is not distributed everywhere. There are 240 million mu (16 million hectares, 39.5 million acres) of farmland here. One-third is irrigated, and two-thirds of farm production comes from irrigated land. You can see why irrigation is so important."

Fertilization and Pollution

Good soil and seed. Adequate nutrients and moisture. These are the essential elements of crop production in every nation, including China. Since a catastrophic famine from 1958 to 1962 caused the starvation deaths of 30 million to 45 million Chinese peasants — the result of the central

government's focus on industrial advancements instead of grain production — a top priority of modern-day China's leadership is generating sufficient stores of food.

China has plenty of good seed and nutrients. The nation's network of agricultural universities and its big grain companies have developed strains of rice, wheat, corn, and soybeans that grow well in China's various climates and soil types.

Northeast China's powerful harvests — along with increasing farm productivity in Hebei, Henan, Shandong, and several other big agricultural provinces — have clarified China's proven capacity to feed itself. The prospect of food shortages is no longer in question, at least not for decades, say You Yi Farm managers and agricultural authorities.

The bounty of Chinese harvests is on display in the outdoor markets of Harbin, Heilongjiang's capital. Crowds of buyers press around vendors offering a cornucopia of grains, vegetables, fruits, meats, and other foods in an abundance, color, and variety that is rarely matched in the United States. Likewise, indoor supermarkets are a rushing stream of shoppers, gathering up fruits and meats and packaged products, most of which are produced in China.

What is in worrisome is the damage to the nation's water and land that China appears ready to accept to ensure that its growing population — with its much stronger appetite for grain-fed beef, pork, and chicken — is handsomely fed.

The risk to natural resources is apparent here. Heilongjiang's farmers are among China's heaviest users of fertilizer to boost yields, which have doubled from 2.5 metric tons per hectare (2,200 pounds per acre) in 1994 to more than five metric tons per hectare (4,400 pounds per acre) in 2010.

But provincial environmental reports show that Heilongjiang's $US 22.4 billion (RMB 135.6 billion) farm sector uses 74 percent of the province's water supply and last year contributed most of the 3.81 million metric tons of ammonia and nitrogen in the province's treated and untreated wastewater.

The result is excessive levels of water pollution.

On the national level, Chinese farmers applied 55.6 million metric tons of fertilizer to grain fields in 2010, according to the National Bureau of Statistics. That is more than three times as much nutrients

as U.S. farmers used that same year and a big reason why runoff from farm fields is a critical water pollution problem in China.

Some 60 percent of the waters of the Songhua River Basin, which supplies water to this region's irrigation networks, are rated as so contaminated with agricultural chemicals and industrial wastes that they are unfit for human contact, according to China's Ministry of Water Resources.

Erosion and Desertification

The environmental risks of expanding grain production also apply to the land, which is in short supply, according to Duan Aiwang, the dean of the Farmland Irrigation Research Institute in Xinxiang, a city of 5.7 million residents in Henan Province, the nation's largest wheat producer.

"It is difficult to find new farmland in China," he explained. "In central China, we are already using every piece of land. In northern China, there is land, but there isn't much water."

China's response to these impediments is to expand irrigation networks to Heilongjiang and three other northeast provinces, including a plan to open highly erodible grasslands to crop production.

A five-year research program on erosion by scientists at the Heilongjiang Agricultural Modernization Research Institute found such serious soil erosion in the black earth crescent that, in some places, fertility and organic matter had dropped by more than 50 percent. The researchers also found that the original thickness of the black earth, which measured 30 centimeters to 100 centimeters (12 inches to 79 inches) deep before the great grain expansion, was 0.3 to 1 centimeters (0.1 to 0.4 inches) thinner.

There are few large stretches of unbroken and fertile prairie left in the eastern regions of Heilongjiang, Jilin, and Liaoning provinces. As a result, Duan told Circle of Blue, central government planners are giving serious consideration to opening crop production to 30,000 hectares (74,000 acres) of highly erodible, high plains grasslands where the dry western regions of the three provinces bump against the border with Inner Mongolia.

China's experience with grasslands agriculture has been miserable, say global experts. According to conservative estimates by the United Nations, Inner Mongolia is losing about 5,000 square kilometers (1,900 square miles) annually to the desert — in other words, an area the size of New Hampshire is lost to sand and wind every five years.

The prospect of plowing grasslands in northeast China invites further abuses to the land, raising alarms among land and water conservation groups who consider the proposal a serious ecological mistake.

"It is a terrible idea," said Li Qinglu, a retired chemical engineering professor, grasslands expert, and consultant to PanJin Environmental, a non-profit group in Shenyang, the capital of Liaoning Province. "Productive cropland depends on water. There is not enough water in those areas. The land is dry."

Li explained that an early experiment in grasslands cultivation after World War II resulted in such extensive erosion and destertification in western Liaoning Province that government authorities quickly curtailed the project and focused on restoring the damaged land.

"Our grasslands recovered quite well," Li told Circle of Blue. "Grass grew waist high. There was still some damage, but it was not serious."

In 1983, though, as the central government called for more grain, grasslands in the region were reopened to cattle and sheep grazing and some dry-land crop production. Again, Li said, huge expanses turned to dust. The depleted land no longer was capable of growing crops, and farming stopped.

There is ample reason for China's farm authorities to view the country's grasslands as a potential source of new cropland. Of the country's 330 million hectares (815 million acres) of undeveloped grassland, almost half are located in the desert regions of northern China.

When asked about the effects of developing new irrigated cropland from these desert grasslands, Duan Aiwang acknowledged the high risks.

"Water shortage is serious there," he said. "If we develop new irrigation, we will carefully research the situation."

Irrigation and Production

China irrigated 62.6 million hectares (154.7 million acres) in 2010, the latest year for accurate figures, or a little more than half of the 120 million hectares (300 million acres) of the country's

cultivated cropland. Much of the nation's irrigation network is constructed of leaky concrete trunk canals and mud-lined feeder networks that lose water.

The national network is divided into 6,000 local irrigation projects, said Duan of the Farmland Irrigation Research Institute. Each of the 285 largest irrigation districts, he said, water more than 20,000 hectares (50,000 acres).

Because canals and feeder lines are expensive to build and rebuild, China's program to modernize and expand its irrigation network — the most extensive of any nation — has not attained the same level of attention or funding as other infrastructure programs, like high-speed rail, highways, and the South-North water transport project, to name a few.

Still, China has increased the expanse of irrigated cropland an average of 645,000 hectares (1.6 million acres) a year since 1990. A $US 6.3 billion (38 billion RMB), five-year project to expand irrigation in Heilongjiang and three other northeast China provinces represents the largest single investment in canal modernization and expansion in recent memory, Duan said.

No province irrigates more land than Henan. Duan's second floor office is within sight of northern Henan Province's wheat fields. A latticework of canals transport water from the Yellow River to irrigate about half of the 5.28 million hectares (13 million acres) of wheat in Henan that is irrigated. In all, 5.1 million hectares of Henan's 9.7 million hectares (12.6 million acres of 24 million acres) of land sown in grain is irrigated.

The next closest province was Heilongjiang. Because adequate moisture is so critical to crop yields, it is not surprising that Heilongjiang and Henan are China's two largest grain producers.

50 Years of Centralized Farming

Not all that long ago grass was all that grew where the state-owned You Yi Farm now operates. In the early 1950s, Mao Zedong's central government first dispatched 100,000 soldiers to northeast China's wild prairie to turn virgin black dirt to produce grain. Waves of other settlers dragooned by the government also were sent to Heilongjiang throughout the 1950s and 1960s to break the prairie and to sow grain.

The You Yi Farm is the first, and — at 120,000 hectares (296,000 acres) — the largest of 114 state-owned and state-managed farms in Heilongjiang Province. You Yi means "friendship," and the farm, one of 177 similar large projects nationwide, takes its name from the cooperative agreements that Mao's government signed with the Soviet Union for assistance in developing the prairie.

The farm, established on 20,000 hectares (49,500 acres) in 1954 when the Soviet Union provided a grant to China, was the beneficiary of squat, gray tractors and Soviet advisors who taught the Chinese soldiers how to mechanize agriculture and how to build settlements. The earliest farmers lived in wood and mud huts without running water and endured winters that can be Siberian cold and summers that can be desert hot.

Zhao Yu Fu, a 49-year-old agricultural technology specialist, was raised on You Yi Farm, where his parents worked starting in 1958 and where he has spent his entire career. He remembers, in the 1970s, when he was a teenager, the relationship between China and the Soviet Union grew tense. By then, the farm was managed with military discipline, Zhao told Circle of Blue, and he can recall how he and other teenage sons and daughters of the first-generation farmers were trained in the use of firearms and field maneuvers.

"The mindset was military. We prepared for invasion, if it came," Zhao said. "Our mindset was defense. We trained in a bootcamp. We learned to use a bayonet. We ran a lot. The border is just a 300-kilometer drive from here."

During a mid-morning tour of the You Yi Farm, Zhao dropped to his knees at one end of a long row of planted soybeans to explain some of the farm's agricultural prowess.

The contemporary farm employs 120,000 people and is managed from a city of 40,000 of the same name. You Yi's yields are prodigious — 350,000 metric tons of corn, 650,000 metric tons of rice, 150,000 metric tons of sugar beets. Most of the harvest is irrigated, and 70 percent to 80 percent is exported to other provinces.

The You Yi Farm used to be a huge producer of soybeans, Zhao said. But provincial and central government officials determined that it is cheaper to import the bulk of the nation's soybean demand, he said.

From one end to the other, the row was covered with a thin sheet of clear plastic. Zhao dug beneath the plastic and pulled a thin plastic tube, with perforations every few centimeters, from the dark soil. There are thousands of linear meters of similar drip irrigation tubing just beneath all of the planted rows in this field. Zhao explained that the tubing prevents evaporation and saves water by delivering moisture directly to plant roots.

Chinese agronomists, he said, had worked with Israeli drip irrigation specialists to develop the system of drip tubing and plastic covering. Chinese engineers built the equipment to bury the tubes and simultaneously seal the rows.

The visual effect is arresting. The sun reflects off the plastic, like tin foil in an oven. The dark soil runs to the horizon in straight black lines. Early in the planting season, You Yi grain fields look like huge bakery shelves, with long rows of neatly wrapped loaves of fresh-baked bread.

"We spent 10 years developing this system," Zhao said. "In the dry season, it has a big benefit. The ground stays wet. Yields stay high."

"Scarcity of Water and Land Shifts Geography of Food Production and Irrigation Networks to China's Northeast", 09/11/2012, online at: http://www.circleofblue.org/waternews/2012/world/scarcity-of-water-and-land-shifts-geography-of-food-production-to-chinas-northeast/

BACK TO TOP

Mithat Paşa Caddesi 46/4 Kızılay-Ankara TURKEY
Tel: +90(312)4302609 Fax: +90(312)4303948 orsam@orsam.org.tr

❖ China's Water Supply Could Limit Economic Development

China's Communist Party set moderate economic development targets that now appear difficult to achieve. China is running low on the water necessary to generate the power it needs to meet those goals, *The Wall Street Journal* reported.

China's undersea oil and gas reserves could be the largest in the world, scientists estimate. Conflict in the South China Sea, Financial Times reported, could balloon out of competing territorial claims to oil rights between Vietnam, the Philippines, Taiwan, Malaysia, Brunei and China.

Conservation, Pollution in the States

Per capita water consumption in Sacramento, California region dropped 15 percent from 2006 to 2010. A new report from the Sacramento Water Forum pegged the drop on a state law requiring water utilities to trim consumption 20 percent by 2020, *The Scaramento Bee* reported, and growing awareness that the region consumed more than its share of water.

The Pennsylvania Department of Environmental Protection decided not to report certain metals that it found in a hydraulic fracturing wastewater site. Department officials tested for a range of metals, *The New York Times*reported, but did not include elements like copper, nickel and zinc in the final report because the state's oil and gas division of the EPA did not request the full range of results.

Shifting Monsoons

India's monsoon rainfall in the southwest and northeast has shifted due to climate change, a farmer's welfare association said. The association is asking the state of Tamil Nadu to delay the release of a supplementary water supply, *The Hindu* reported.

"China's Water Supply Could Limit Economic Development", 05/11/2012, online at: http://us1.campaign-archive1.com/?u=cb4d96410aa2ebf5c8d0b17a3&id=e813fb7e79

BACK TO TOP

❖ China Buys Japan Water Rights on Two-Decade Land Price Slump

Morihiro Oguma's phone rang every day with calls from brokers representing foreign investors who wanted to buy his Japan Mineral water-bottling business.

"In many cases, I was told I could name my price," Oguma said in an interview, adding he had no interest in selling the Hokkaido-based company. "It seems what they really wanted was our rights to groundwater."

A two-decade slump in Japan's real estate prices, an incomplete land registry and lax rules on buying forest with water rights are attracting investors led by China and come amid a fraying of ties between the two countries over a territorial dispute. Some areas of remote woodland in Japan, the only country in the Asia-Pacific region that doesn't regulate property investment by foreigners, can be bought for 60 U.S. cents a square meter including groundwater.

Japan, whose population is shrinking, ranks in the top 10 percent of countries by water resources, while China and India, with the opposite demographic trend, will face shortages from 2030, according to a United Nations report in August. Almost half of China's economy is already based in water-scarce regions, HSBC Holdings Plc (HSBA) said in a Sept. 12 report.

The biggest spike in forest purchases by non-Japanese is in Hokkaido, Japan's northern island that is about the size of Austria and has triple the average water reserves of other Japanese prefectures, according to Hokkaido government figures. It has about 60,000 square kilometers (23,170 square miles) of forest, a quarter of the nation's total, and supplies 20 percent of Japan's food.

Governor Concerned

While the relative size of land owned by non-Japanese remains small -- 3,700 hectares (37 square kilometers) -- almost a third of it is on Hokkaido. The island attracted 90 percent of forest purchases and non-Japanese investors bought 20 times more land in Hokkaido in 2009 than two years earlier, according to local government data.

Hokkaido Governor Harumi Takahashi said the concern she has about some of the land purchases stems from a lack of information, especially about the development plans of the overseas investors.

"There emerged cases where we weren't sure about the reasons why investors were purchasing such vast areas of land," Takahashi said in a Tokyo press conference on Oct. 18. Hokkaido welcomes investment regardless of where the investor is from, yet needs to ensure proper use of water resources, she said.

China Buying

China leads the purchases of Hokkaido forest and water rights with 21 transactions of a total 57. Hong Kong buyers using Virgin Island-registered offshore companies accounted for another nine and Singapore investors eight, said Masayuki Mitobe, the head of water and land economic research for Hokkaido's government. He said he could not name the investors due to privacy laws.

A quirk in Japanese law allows buyers of non-agricultural land to report the transaction after it's complete. Hokkaido closed that loophole in April (APR) when it found some addresses used by overseas buyers were false, raising concern dummy companies were being used for the deals.

While Hokkaido authorities now need to be notified of a deal three months before it's agreed, so they can investigate the transaction, only three of Japan's 47 prefectures have done the same. Even the new regulation doesn't allow blockage of land deals, as it lacks legal authority.

"Forests with abundant water resources are being bought and sold," said Masaru Onodera, a member of Hokkaido's prefectural assembly. "Some land is vital to national security, some to protect food supplies."

Global Concerns

Investor interest in Japan's water resources comes amid global concern about future supply. The United Nations has warned that two-thirds of the globe may be "water-stressed" by 2015, while places such as India's Rajasthan region have banned new bottling plants and breweries to conserve aquifers.

A lack of conservation and monitoring may lead to conflicts over water resources, the UN said in its August report.

"In many countries, national security has historically been defined as military security," the UN said. "It is now understood that military might is only one element in the human security equation, and that water can play a determining role in international, national and transboundary conflicts."

Chinese investors have been looking at the water assets in Japan with the idea of exporting the bottled resource, said Hokuto Okudera, head of M&A Support Inc., a Tokyo-based broker focusing on mergers and acquisitions for small- and mid-sized companies.

Overheated Interest

"There was an especially overheated interest from 2010 through early 2011" in Japanese water bottling assets, Okudera said. "In countries like Canada and India the governments are tightening regulations on underground water extraction. Some investors targeted Japan as its rules aren't as strict."

Control of water resources is important for food security and national security. In Asia, Taiwan restricts overseas investment in land that has water or forest resources, according to a 2011 report on Asia-Pacific real estate by Jones Lang LaSalle Inc. and Blake Dawson.

New Zealand requires buyers to get prior permission to purchase land with forest or water resources, while South Korea requires the same for areas close to military installations, the report said.

'No Rules'

"In Japan you can even buy land next to a military facility or an airport, there are no rules against it at present," said Hideki Hirano, author of "Buying Japan" and an analyst at the Tokyo Foundation think tank, in an interview. "In today's world you cannot stop foreign investment, but we must make sure the investment is regulated."

On Sept. 28, U.S. President Barack Obama blocked a Chinese- owned company from developing a wind farm on land close to the Boardman Navy base in Oregon, citing security concerns. The Delaware-based company, Ralls Corp., is suing Obama after he ordered it to remove all property from the land and sell the wind project within 90 days.

A list of questions on China nationals buying land in Hokkaido that was faxed to China's embassy in Tokyo today didn't receive an immediate response.

Niseko town, one of Hokkaido's most famous ski and hot spring resorts, enforced two ordinances in May last year to restrain development of areas with water sources and the extraction of underground water. The town plans to purchase all land above water sources in Niseko to ensure stable supply, Noriyuki Higuchi, an official at the town's planning and environment division, said Oct. 24 by phone.

Land Registry

Japan doesn't have a complete land registry to keep track of ownership and boundaries. The nation began compiling a nationwide registry after World War II. Half has been completed and at the current pace it will take another 30 years to finish, author Hirano estimates.

Hokkaido authorities have no address information for owners of about 40,000 hectares of forest land, assembly member Onodera said. He added that 10 percent of letters sent to foreign buyers of woodland in Hokkaido were returned with the listed address unknown, he said.

Chinese interest in Japanese land is a sensitive issue in part due to the territorial dispute over islands known as Senkaku in Japanese and Diaoyu in Chinese. The conflict sparked nationwide protests in China this year and led to attacks on Japanese stores, restaurants and car dealerships.

Bringing Jobs

Near Mount Fuji, Osaka-based Seven Yellow Ltd. pumps 500,000 liters of water a month from a well and exports as much as 80 percent of it to China.

"Some people know and some people don't" know that the company's biggest shareholder is a Chinese citizen, Katsuhisa Yoshida, the managing director, said in Seven Yellow's office near Lake Shoji, one of the five lakes surrounding Mount Fuji.

The Osaka-based textiles firm expanded into water and organic farming about one year and a half ago at the suggestion of its Chinese shareholder, who wanted to go into health foods, Yoshida said. The investment of Seven Yellow has helped create jobs in rural Japan that's starved of local initiatives and is losing young people to the city, he said.

"We're not just buying up Japan's resources, we create local jobs," Yoshida said. "We do need to protect our forests to save the water, and that's a task for whoever the landowner is, be they a foreigner or a Japanese."

In Japan, a landowner's intake of water from rivers is regulated, yet the use of groundwater is entirely at the owner's discretion, Hokkaido's Mitobe said.

Cheap Land

Go Okazaki founded the Tokyo-based Standard & Initiatives Properties three years ago to invest in forest land.

"Japan's land is cheap," Okazaki said. "The water business is quite easy to get into and from a commercial standpoint, it's a limited resource."

Given current prices and the closed nature of Japan's timber market compared with North America and Russia, it makes sense to buy forest for water resources, Okazaki said. The cost of cutting trees and reforestation is almost three times the timber prices, he said.

A square meter of forest land sold for an average of 47 yen (60 U.S. cents) in March, compared with a peak of 89 yen in 1983, Japan Real Estate Institute said in a September report.

"What water volumes you'll get and how deep you'll need to drill depends on the place," Okazaki said. "But if you dig you're bound to strike water anywhere in Japan."

"China Buys Japan Water Rights on Two-Decade Land Price Slump", 06/11/2012, online at: http://www.businessweek.com/news/2012-11-05/china-buys-japan-water-rights-after-two-decade-land-prices-slump?utm_source=Circle+of+Blue+WaterNews+%26+Alerts&utm_campaign=0f9eeae2dd-RSS_EMAIL_CAMPAIGN&utm_medium=email

BACK TO TOP

❖ Laos approves Xayaburi 'mega' dam on Mekong

Laos has given the go-ahead to build a massive dam on the lower Mekong river, despite opposition from neighbouring countries and environmentalists.

A formal ceremony marking the start of full construction at Xayaburi would be held on Wednesday, the government said.

Countries downstream from the $3.5bn (£2.2bn) dam fear it will affect fish stocks and the livelihoods of millions.

The announcement came as leaders from Asia and Europe began a two-day meeting in the Laos capital, Vientiane.

Mithat Paşa Caddesi 46/4 Kızılay-Ankara TURKEY
Tel: +90(312)4302609 Fax: +90(312)4303948 orsam@orsam.org.tr

Landlocked Laos is one of South-east Asia's poorest countries and its strategy for development is based on generating electricity from its rivers and selling the power to its neighbours, says the BBC's Jonah Fisher in Bangkok.

Xayaburi is being built by a Thai company with Thai money - and almost all of the electricity has been pre-sold to Thailand, our correspondent says.

Countries such as Cambodia and Vietnam point to a report last year that said the project should be delayed while more research was done on the dam's environmental impact. Up to now Laos had promised not to press ahead while those concerns remained.

Four dams already exist in the narrow gorges of the Upper Mekong in China but until now there have been none on the slower moving lower reaches of the river, our correspondent says.

Laos deputy energy minister Viraphonh Virawong said work on the Xayaburi dam itself would begin this week, and hoped it would be the first of many.

"I am very confident that we will not have any adverse impacts on the Mekong river," Mr Viraphonh told the BBC. "But any development will have changes. We have to balance between the benefits and the costs."

Mr Viraphonh said he believed that concerns about fish migration and sediment flow had been addressed thanks to modifications to the original dam design costing more than $100m.

Sediment will be allowed out of the bottom of the dam periodically through a flap and lifts, and ladders will help the fish travel upstream.

"We can sense that Vietnam and Cambodia now understand how we have addressed their concerns. We did address this properly with openness and put all our engineers at their disposal. We are convinced we are developing a very good dam," Mr Viraphonh said.

There was no immediate reaction from Cambodia or Vietnam, whose prime ministers are in Laos for this week's Asia-Europe summit.

Under the terms of a longstanding agreement on the Mekong, there must be consultation between countries on any development on the river.

"Laos approves Xayaburi 'mega' dam on Mekong", 05/11/2012, online at: http://www.bbc.co.uk/news/world-asia-20203072

BACK TO TOP

❖ Worst flooding in a decade in Mekong Delta

Although the flood season this year has not been as severe as previous years, in urban areas in the Mekong Delta such as in Can Tho City and Soc Trang and Vinh Long Provinces, high tide flooding has been the worst in a decade.

The annual flood season is gradually abating in the Mekong Delta. According to scientists, floodwater levels this year were 1.3-1.6m lower than last year and 0.9-1.1m lower than average levels in last several years.

However, high tide inundated tens of streets and alleys in inner city areas in Can Tho City, with some places under 0.5m of water.

In Soc Trang Province, high tide from Hau River breached nearly 600m of dyke and embankment sections in Cu Lao Dung District, causing damage of billions of dong. Flood waters even flowed over Highway 1A in Ke Sach District.

Tens of thousands of houses were submerged along Highways 1A and 61 in Hau Giang and Soc Trang Provinces.

Explaining the worst flooding of the decade, Ky Quang Vinh, head of the Climate Change Office in Can Tho City, said that the City is located in the low lying areas of the Mekong Delta.

For the last 30 years, the sea level has risen an average 3cm a year, which has affected Can Tho City. Besides land depression has occurred from excessive underground water exploitation and rapid urbanization.

Mr. Vinh said that the Mekong Delta needs an overall plan to cope with escalating and inevitable climate change. Authorized organs should update the map and revise sea level heights across all localities of Can Tho City.

Pham Van Nhon, former deputy director of the Department of Construction and former head of the Planning and Architecture Institute in Can Tho City, said that the City is located over an ancient river bed, located 45-50m below the present ground surface.

Such porous soil faces depression, which has escalated in pace with increase in underground water exploitation and rapid growth in infrastructure and urban construction.

"Worst flooding in a decade in Mekong Delta", 09/11/2012, online at: http://www.saigon-gpdaily.com.vn/National/Society/2012/11/103260/

BACK TO TOP

Mithat Paşa Caddesi 46/4 Kızılay-Ankara TURKEY
Tel: +90(312)4302609 Fax: +90(312)4303948 orsam@orsam.org.tr

❖ Laos holds ground-breaking ceremony for Mekong dam project

Laos on Wednesday held a ground-breaking ceremony to launch the riverbed construction stage of a3.5-billion-dollar hydropower dam on the lower Mekong River, which neighbours, environmentalists and Thai communities have opposed.

The religious in Xayaburi, in northern Laos, was presided over by Vice Prime Minister Somsavat Lengsavat and attended by the Thai partners in the project and the ambassadors of Cambodia and Vietnam, neighbouring countries that have raised objections to the dam in the past, officials said.

"Normally, before we start blasting in the river, the Buddhist tradition is we request the spirit in the area to forgive us for disturbing the river," said Viraphonh Viravong, deputy minister of Energy and Mines, the chief technocrat behind the project.

The 1,200-megawatt Xayaburi hydro-power plant will be the first dam built on the lower Mekong, South-East Asia's longest river, which is also shared by Cambodia, Thailand and Vietnam.

Under a 1995 regional agreement, any project on the lower Mekong should seek a joint agreement from the riparian countries before proceeding.

The Xayaburi project has been delayed by opposition from Cambodia,Thailand and Vietnam in the past.

In December, members of the Mekong River Commission's council,consisting of water and environment ministers from Cambodia, Laos, Thailand and Vietnam, urged a delay to allow further studies on how to mitigate the environmental impact of the dam, the first proposed for the lower Mekong.

In response, Laos and its chief partner in the project, Thailand's Ch Karnchang Public Co Ltd, agreed to spend an additional 100 million dollars to revamp the design of a fish ladder and sediment flowgates.

The Lao government said it has satisfied the demands of thecouncil, and on Wednesday commenced construction in the riverbed.

There are another 10 proposed dams on the lower Mekong, whichenvironmentalists say could follow the Xayaburi model. The lower Mekong Basin has a fisheries sector worth an estimated 2billion dollars per year.

Environmentalists have questioned whether the fish ladder at the Xayaburi dam will work, noting that the technology has never been tried on a river in the tropics.

"Laos is playing roulette with the Mekong River, offering unproven solutions and opening up the Mekong as a testing ground for new technologies," said Pianporn Deetes, a spokeswoman for the conservationist group International Rivers.

The Xayaburi project, to be operational by 2019, will be one of the country's largest, with more than 90 per cent of its electricity to be exported to neighbouring Thailand.

"Laos holds ground-breaking ceremony for Mekong dam project", 08/11/2012, online at: http://www.nationmultimedia.com/aec/Laos-holds-ground-breaking-ceremony-for-Mekong-dam-30193918.html

BACK TO TOP

❖ Vietnam drops objections to Laos dam on Mekong

HANOI, Vietnam (AP) — Vietnam has apparently dropped its objections to a dam that Laos is constructing on the Mekong River, saying Thursday that the neighboring country has made changes in the design to mitigate any negative downstream impact.

Laos officials reportedly said this week that construction of the Xaburi dam was going ahead, and they took several journalists and diplomats to the site of the proposed dam on Southeast Asia's mightiest river. Construction of approach roads and support buildings has already begun.

Vietnam and Cambodia last year proposed a 10-year moratorium on any dams on the Mekong. They have expressed concern that the dam would kill fish and affect the livelihoods of millions of people living along their stretches of the river, which begins in China and empties into the South China Sea

Vietnamese foreign ministry spokesman Luong Thanh Nghi said Thursday that Laos had decided to build the $3.5 billion dam "after adjusting the project design to mitigate the impact on the downstream."

The U.S. on Monday criticized the decision to go ahead with the dam, citing feared negative environmental impact downstream.

Opponents say the dam in central Laos would open the door for a building spree of as many as 10 other dams on the 3,000-mile-long (4,800-kilometer-long) river.

Laos is one of Asia's poorest nations and hydropower is already a key source of revenue. The project will generate electricity for sale to neighboring Thailand.

"Vietnam drops objections to Laos dam on Mekong", 08/11/2012, online at: http://www.google.com/hostednews/ap/article/ALeqM5iMa1jOk8bh4lPAk7RcGZdZAzX9Nw?docId=76443311b85274114aa2a5894c9a3051d

BACK TO TOP

Mithat Paşa Caddesi 46/4 Kızılay-Ankara TURKEY
Tel: +90(312)4302609 Fax: +90(312)4303948 orsam@orsam.org.tr

❖ Laos Breaks Ground for Controversial Mekong Dam

BANGKOK — Laos formally began building a controversialhydroelectric dam on the Mekong River on Wednesday, despite comments from the country's prime minister that the project had been delayed.

"We held the groundbreaking ceremony today," said Rewat Suwanakitti, the deputy managing director of Xayaburi Power, the company leading the project. "The Lao authorities told us that we could begin construction."

The dam is the first of several planned for the river, and is being built despite concerns that the dam will irreparably harm fish stocks, which are an important food source for millions of people in Thailand, Laos, Cambodia and Vietnam.

Electricity produced by the Xayaburi dam, named for the surrounding province in Laos, will be exported to Thailand, and Laotian officials say they are counting on billions of dollars in revenue from the project.

The prime minister of Laos, Thongsing Thammavong, told The Wall Street Journal on Tuesday that the project was awaiting further study. But at the dam site, preliminary work has already reached an advanced stage. The Thai construction company in charge of building the dam, CH. Karnchang, has been carving roads through the jungle to the remote site and putting equipment in place for two years.

The groundbreaking ceremony on Wednesday included senior officials from the Laotian government and diplomats from Vietnam and Cambodia, Mr. Rewat said.

Environmentalists have accused Laos of ignoring criticism of the dam and pushing ahead with construction. The governments of Vietnam and Cambodia, which are downstream from the site, have called for a delay until environmental concerns are addressed.

The State Department said on Monday that it was concerned that neighboring countries had not reached a consensus on the dam and that the severity of its environmental impact was still unknown.

"Laos Breaks Ground for Controversial Mekong Dam", 07/11/2012, online at:
http://www.nytimes.com/2012/11/08/world/asia/laos-breaks-ground-for-controversial-mekong-dam.html?_r=0

BACK TO TOP

Mithat Paşa Caddesi 46/4 Kızılay-Ankara TURKEY
Tel: +90(312)4302609 Fax: +90(312)4303948 orsam@orsam.org.tr

❖ Laos pushes ahead with Mekong dam and risks destroying the region's lifeblood

Gland, Switzerland – The Lao government's determination to plow ahead with construction of the controversial US$3.5-billion Xayaburi hydropower dam in northern Laos puts the mighty Mekong River's spectacular biodiversity, rich fisheries and livelihoods - vital to nearly 60 million people - in grave danger, warns WWF.

Despite fierce opposition from neighbouring countries, and some concerns raised this week by delegates attending the Asia-Europe Summit (ASEM 9) in the Lao capital, Vientiane, Laos' Deputy Minister of Energy and Mining, Mr Viraphonh Viravong, announced that Laos will hold a ground-breaking ceremony at the dam site on Wednesday, 7 November. Mr. Viravong also told a group of journalists, "It [Xayaburi dam] has been assessed, it has been discussed the last two years. We have addressed most of the concerns."

Criticism of the Xayaburi project has been mounting over the past year, with concerns centred on the serious gaps in data and failures to fully account for the impacts of the dam, particularly concerning fisheries and sediment flows.

"Laos appears to be recklessly intent on forging ahead with construction before the agreed impact studies have been completed," said Dr Li Lifeng, Director of WWF's Freshwater Programme.

"If the region's governments fail now to reaffirm their concerns on Xayaburi, they risk resting the future of the Mekong on flawed analysis and gaps in critical data that could have dire consequences for millions of people living in the Mekong River basin."

In June 2010, Thailand's electricity utility, EGAT, signed an initial agreement with Ch. Karnchang to purchase over 95 per cent of the Xayaburi dam's electricity, and at least four Thai banks have expressed their interest in providing loans to the project, despite the acute environmental and social costs, and the uncertainties surrounding the financial return of the project.

"Thailand has a huge stake in the project and should not turn a blind eye to the potentially

devastating consequences the project will wreak on their neighbours, and their own people," added Li. "Thailand must take responsibility and join calls to stop the dam construction and cancel its power purchase agreement until there is regional consensus to build the dam."

Laos' actions fly in the face of the decision last December by Cambodia, Laos, Thailand and Vietnam to delay building the dam on the Mekong mainstream pending further studies on the sustainable management of the Mekong River, including impacts from mainstream hydropower development projects. However, no timeline has yet been set for when the further studies will be completed.

Fisheries and sediment impacts

A recent review of the dam development identified uncertainties and weaknesses with the proposed fish passes, and confirmed the Xayaburi project will block part of the sediment flow and that important gaps in knowledge concerning the sediment aspects remain.

The Lao government and Ch. Karnchang agreed to spend an additional US$100 million on modifications to the dam design in an attempt to mitigate the adverse impacts, but experts warn this will fail to solve the problems given the remaining gaps in key data and science, and the clear risks associated with using unproven technologies.

"Laos expects its neighbours to trust that the clear risks associated with this project will somehow be resolved while construction moves ahead," added Li. "In pushing ahead with their Mekong dam experiment, Laos is jeopardizing the sustainability of one of the world's great river systems, and all future transboundary cooperation."

An important precedent for 10 other dams

As the first dam project to enter the Mekong River Commission's (MRC) formal consultation process, the Xayaburi project will set an important precedent for 10 other dams proposed for the lower mainstream of the river.

"The Asia-Europe meeting brought together about 50 Asian and European leaders in Laos this week under an umbrella of "Friends for Peace, Partners for Prosperity." But few voices of concern were raised about a project set to spread instability throughout the region and undermine development goals. The international community must not remain silent on Xayaburi," added Li.

WWF urges Mekong ministers to defer a decision on the dam for 10 years to ensure critical data can be gathered and a decision can be reached using sound science and analysis. WWF advises lower Mekong countries considering hydropower projects to prioritise dams on some Mekong tributaries that are easier to assess and are considered to have a much lower impact and risk.

About the mighty Mekong

TEDxWWF talk by WWF-Greater Mekong Interim Representative, Stuart Chapman, on hydropower development on the Mekong River.

"Laos pushes ahead with Mekong dam and risks destroying the region's lifeblood", 06/11/2012, online at: http://wwf.panda.org/wwf_news/?206630/Laos-pushes-ahead-with-Mekong-dam-and-risks-destroying-the-regions-lifeblood

BACK TO TOP

❖ US criticizes Laos decision to build Mekong dam

WASHINGTON (AP) — The United States on Monday criticized a decision by the struggling Asian nation of Laos to build the first dam across the mainstream of the Mekong River, a project that environmentalists warn could affect tens of millions of livelihoods and trigger a dam-building spree along Southeast Asia's mightiest waterway.

The U.S. has urged a moratorium on such projects until impact studies are complete. But the State Department said Monday that Laos has announced its intention to start construction on the $3.5 billion Xayaburi dam despite lingering concerns downstream.

"The extent and severity of impacts from the Xayaburi dam on an ecosystem that provides food security and livelihoods for millions are still unknown," the department statement said.

Laos is one of Asia's poorest nations and hydropower is already a key source of revenue. The project, which will generate electricity for sale to neighboring Thailand, is strongly opposed by longtime Lao ally, Vietnam.

Opponents say the dam in central Laos would open the door for a building spree of as many as 10 other dams on the 3,000-mile river in Laos and Cambodia, degrading its fragile ecology and affecting the livelihoods of residents who rely on its fish and its water for irrigation.

The State Department said the U.S. has a strong interest in the sustainable management of the river and understands that members of the Mekong River Commission — a regulatory agency that includes representation from all four affected nations — has not yet reached consensus on whether the project should go ahead.

"We hope that the government of Laos will uphold its pledge to work with its neighbors in addressing remaining questions regarding Xayaburi," the statement said.

Vietnam, which has fraternal communist party relations with Laos dating back to the Vietnam War, has urged at least a 10-year moratorium on all mainstream dams on the Mekong.

A commission meeting in April deferred a decision on the dam, but that outcome is not binding. An approach road and other dam-related facilities to the Xayaburi dam are already being built.

Media reports Monday quoted Lao deputy energy minister Viraphonh Virawong as saying full construction would formally start Wednesday. He said that modifications had been made to the design of the dam to address environmental concerns.

Laos is currently hosting a meeting of Asian and European leaders. The Lao Embassy in Washington said Monday it had no information about the dam project.

The dam would cut across a stretch of the river flanked by forested hills, cliffs and hamlets where ethnic minority groups reside in Xayaburi province, forcing the relocation of about 2,100 villagers and impacting many more. Environmentalists say it would also disrupt fish migrations, block nutrients for downstream farming and even foul Vietnam's rice bowl by slowing the river's speed and allowing saltwater to creep into the Mekong River Delta.

China has placed three dams across the upper reaches of the Mekong and more are planned. But otherwise the mainstream flows free.

"US criticizes Laos decision to build Mekong dam", 05/11/2012, online at: http://www.sfgate.com/news/article/US-criticizes-Laos-decision-to-build-Mekong-dam-4010739.php

BACK TO TOP

Mithat Paşa Caddesi 46/4 Kızılay-Ankara TURKEY
Tel: +90(312)4302609 Fax: +90(312)4303948 orsam@orsam.org.tr

❖ Laos: pressing ahead with the Mekong dam despite concerns

High quality global journalism requires investment. Please share this article with others using the link below, do not cut & paste the article. See our Ts&Cs and Copyright Policy for more detail. Email ftsales.support@ft.com to buy additional rights. http://blogs.ft.com/beyond-brics/2012/11/08/laos-pressing-ahead-with-the-mekong-dam-despite-concerns/#ixzz2Br9AyDnU

As construction starts on a controversial hydropower project in Laos, it becomes clearer by the day that this poor and underdeveloped country is likely to place its ambition to be the "battery of south-east Asia" above any cost to the environment – and that price will be considerable.

Construction of a large dam on the Mekong river at Xayaburi began this week despite environmental concerns, which shows a change in attitude from the government that may signal likely endorsement of other foreign-sponsored hydropower projects.

Nguyen Huu Thien, from Mekong Wetlands, a non-governmental organisation in Vietnam, said that Xayaburi would be "a very bad precedent for other decisions on this issue." The largely Thai-funded project is the first of 11 waiting for approval. Nguyen said he expects the other dams to be approved soon.

Laos is a tiny landlocked country of just 6m with a languid Leninist government which increasingly feels it has little option but to invest in hydropower to feed its richer neighbours' appetites for electricity and fuel its own economic growth. The World Bank calculated in 2010 that Laos could become a middle-income country if it achieved 7.5 per cent growth over the next ten years. Hydropower and mining contributed to 2.5 percentage points of the 7 per cent annual growth between 2007 and 2010, and it looks set to be even more valuable in the next decade.

The final decision to begin construction of the $3.5bn Xayaburi dam was announced on Tuesday by the Lao deputy energy minister – although the prime minister swiftly denied it – as an Asia-Europe trade summit convenes this week in the Laotian capital, Vientiane. The dam has been delayed since 2010 amid concerns that fish stocks and the livelihood of millions would be threatened on the region's most important river, the Mekong. Environmental groups have been highly critical of research so far into the possible environmental impact, but the government appears unwilling to delay any longer.

International Rivers, a campaign group, has also expressed concern about Laos's poor record of public sector corruption.

The Mekong River runs from China through Myanmar, Laos, Thailand, Cambodia and Vietnam and is the largest source of freshwater fish in the world, according to the Mekong River Commission. Four dams already exist in the faster moving Upper Mekong, but the Xayaburi dam will be the first to be built in the lower area. The MRC estimated in 2011 that the full hydropower potential of the Lower Mekong Basin was over 30,000 MW (more than enough to power Bangkok) – and less than 10 per cent has been developed so far.

There has been no comment on the dam's approval from Vietnam and Cambodia yet, which both previously opposed the project, although the Lao energy minister Viraphonh Viravong said that he could "sense that Vietnam and Cambodia now understand how we have addressed their concerns", referring to amendments to the original plans which try to resolve some environmental issues.

The Thais, meanwhile, have reinforced their support for the project, albeit in an understated way, when the foreign minister Surapong Tovichakchaikul said on Tuesday that "the Thai government is not opposed to the project."

The Xayaburi dam is a joint venture between Thai companies CH Karnchang, PTT and a state-owned enterprise. Thailand is expected to import around 90 per cent of the power generated by the dam when it is completed in 2019.

Despite rising demand in the region for electricity, particularly renewables, previous investments in hydropower have not always been successful. The Mun River dam in northern Thailand, on a Mekong tributary, went over-budget when it was built in the 1990s and caused widespread environmental damage for little benefit to investors.

Laos clearly has ambitions to be a regional electricity exporter and much foreign investment is being attracted for building projects, but opposition groups may find it difficult in a region where securing economic growth is a priority not easily curbed. In the immediate future, the profits may roll in for Laos, but the eventual price may be much higher.

"Laos: pressing ahead with the Mekong dam despite concerns", 08/11/2012, online at: http://blogs.ft.com/beyond-brics/2012/11/08/laos-pressing-ahead-with-the-mekong-dam-despite-concerns/#axzz2Br92iZ6X

BACK TO TOP

❖ Climate Change Features in State Governors' Races

Washington State and New Hampshire have seen campaigns for governor that prominently feature global warming as an issue

In a year when climate change is low on the national political radar, two states are bucking the trend.

In New Hampshire and Washington state, governors' races are incorporating climate change into party platforms and discussing the issue openly.

"We know we have to deal with climate change. I'm a person who believes in science," said Washington Democratic gubernatorial candidate Jay Inslee, a former congressman, in an October interview with the Washington State Public Affairs Network.

Beyond rhetoric, the results in both state races could determine the fate of proposed ports that would send coal to Asia, changes to state renewable standards and the status of the nation's first operating cap-and-trade program in the Northeast.

The two states also stand out this year because they, along with Montana, are the only races ranked as tossups by political analysis firms like *The Cook Political Report*.

There are 11 governor's races this year in total, and in the handful of cases like New Hampshire and Washington where the political party could flip, Democrats are defending turf, said Jennifer Duffy, a senior editor at *The Cook Political Report*.

Green versus green in Wash.

Washington voters are restless partially because the unemployment rate is higher than the national average and "they've had a Democratic governor for so long," said Duffy.

There, Democratic Gov. Christine Gregoire is retiring, setting up a battle between state attorney general Rob Mckenna (R) and Inslee.

If McKenna wins, it would be the first Republican win of the governorship since 1980, noted Duffy.

As is typical for Washington, the race is further to the left than typical Republican-Democrat debates over energy.

Additionally, Inslee is known for the 2007 book "Apollo's Fire," which outlines an aggressive plan to curb greenhouse gases. Among other ideas, the book describes using state pension fund money to boost energy businesses.

Inslee's official energy plan calls for construction of a new biofuels research center and increasing tax credits for renewable energy development.
His green credentials prompted the League of Conservation Voters to make a rare endorsement -- its backing of Inslee was its first stance on a gubernatorial race in 30 years.

McKenna also has received praise from some environmentalists. As attorney general, he led Washington as a co-petitioner in *Massachusetts v. U.S. EPA*, a 2007 Supreme Court case that determined the agency's power to regulate greenhouse gases as pollutants.
When asked about climate change in a media interview this fall, McKenna said "we should be combating it" and promoted his plan for incentivizing electric cars.

Coal port a burning background issue

Even though both men make similar statements on climate, the differences between the candidates on the issue could be huge, said Ross Macfarlane, a senior adviser at the group Climate Solutions, which is not endorsing either candidate.
Washington is the site of several proposed ports to link coal from Montana and Wyoming to Asia.

The next governor -- via appointments to the state Department of Ecology and directives -- will influence the scope of an environmental reviews of those ports conducted jointly by Washington and the federal government.

The governor could determine whether the upcoming environmental review of Gateway Pacific Terminal in Cherry Point, Wash., for example, considers the effect of global greenhouse gas emissions from shipping coal overseas from the project, and not just local effects such as coal dust from trains, explained Macfarlane.

"If a governor really wanted these ports, he could streamline the process [in the Department of Ecology], as well," Macfarlane said.

Neither Inslee or McKenna have a firm position on the issue, but several analysts said McKenna appears friendlier to the coal port option. In a debate this summer, McKenna said coal would travel through Washington on its way to a Canadian port if the state didn't build its own.

"Can these coal projects meet our strict environmental and health processes? If they can satisfy these strict standards, we need the jobs here," McKenna said at the debate.

Differences on renewable portfolio standard

Brendon Cechovic, executive director of Washington Conservation Voters, said the differences between the candidates on coal likely would become clearer after the election. The issue is extremely contentious now, particularly since many labor groups want the ports for jobs, he said.

Inslee and McKenna also differ on the state's portfolio standard, which requires utilities to obtain 15 percent of their power from renewables by 2020. Inslee campaigned extensively for its passage while he was a congressman.

McKenna's plan calls for counting more hydropower as part of the standard and blending it with efficiency measures, so utilities get credit for conserving energy and not just building new power. "That would gut the initiative and defeat the purpose of building new renewables," Cechovic said. His group is spending more than $700,000, the most in its history for a governor's race, to elect Inslee.

Todd Myers, an energy consultant who has advised McKenna, said the Republican candidate doesn't want to get rid of the existing standard.

Inslee, by focusing on tax credits and other financial incentives in his book and campaign, wants to pick business winners and losers, he said. Inslee "seems to be in love with certain technologies, and that is dangerous," he said.

The state Republican Party has sent out numerous press releases noting that some of the renewable businesses supported by Inslee in his book have faced financial troubles.

On hydropower, Myers said there are some years when large amounts of snowpack provides more water for generation than usual in Washington. In those years, it doesn't make sense to "dump water from dams" in favor of wind or solar, he said.
McKenna, he said, thinks it makes sense for that extra hydropower to count under the standard.

Washington already has a much smaller carbon footprint than other states that use a lot of coal. Lowering the state's emissions much more in the electricity sector is like "squeezing more blood from a turnip at this point," he said.

In his plan, Inslee notes excess hydropower capacity but emphasizes "virtual batteries, scheduled transmission improvements and power swaps" as the way to use the extra juice without cutting out other renewables.

His campaign has fired back that Mckenna is distorting Inslee's book. The campaign says the Republican is more likely to send wind and solar jobs to China and end Washington's status as a leader in clean energy.

N.H. nail-biter

Across the country in New Hampshire, the debate over climate change is similarly contentious. Democratic Gov. John Lynch is retiring. Republican gubernatorial candidate Ovide Lamatogne is in a nail-biter race against Democrat Maggie Hassan, a former state senator.

Lamatogne is pushing to follow New Jersey's lead and pull New Hampshire out of the Regional Greenhouse Gas Initiative, a cap-and-trade program limiting utility emissions in New England states, New York, Delaware and Maryland. To Lamatogne, the carbon-trading plan is a tax that is picking energy winners and losers, skewing the free market.

"New Hampshire's participation in programs like the regional greenhouse gas initiative (RGGI) programs that force customers to pay high prices in order to subsidize noncompetitive energy supplies and fund government programs, must come to an end," Lamatogne says in official campaign literature.

He also has sparred publicly with Hassan about the issue in debates. The New Hampshire branch of Americans for Prosperity, a group co-founded by oil billionaire David Koch, has weighed in with radio ads slamming Hassan for supporting the "RGGI tax." The group also named Lamatogne "conservative of the year" in 2011.

Hassan, who was instrumental in bringing the state into RGGI, has been outspoken about defending it.

Lamatogne's position is significant for two reasons, analysts say.

Last year, Lynch vetoed a bill that would have pulled the state out of the program. The state Senate failed to override Lynch by one vote.

If Lamatogne makes it into the governor's mansion, renewed attempts to pass a repeal bill could be successful.

"I have no doubt this will come up again" in the Legislature, said Michael Licata, a vice president of public policy at the Business and Industry Association of New Hampshire, adding that text of repeal bills already are floating around the statehouse.

RGGI decisions could reverberate beyond N.H.

Second, the regional program is undergoing its first major review in three years. Officials in nine states are examining whether to change the program's emissions limits and protocols via public meetings.

An incoming governor dedicated to pulling the state out, in the same way Gov. Chris Christie (R) did in New Jersey, could make it more difficult to make dramatic changes regionally. Even if

Lamatagone were elected and failed in getting a legislative bill through, his rhetoric would be heard elsewhere, said Johnanna Neumann, regional director at Environment New Hampshire.

"The bully pulpit matters," Neumann said.

Critics have long said RGGI has a weak carbon cap and does little to cut emissions. They point to the fact that low natural gas prices and the recession helped push regional greenhouse gas output below emission limits before the program got started in 2009, leaving little incentive for utilities to do anything further (*ClimateWire*, Jan. 12).
But for supporters like Hassan, the program's carbon auctions have funded energy efficiency programs that have cut electricity usage and decreased emissions beyond where they would be otherwise. They point to a 2011 report from the Analysis Group finding that RGGI added $17 million in net economic benefits to the state.

In a *Laconia Daily Sun* editorial supporting Hassan, former New Hampshire Democratic gubernatorial candidate Mark Fernald noted that New Hampshire residents consume electricity from out of state, meaning that state taxpayers would still have to pay for the program via carbon fees on utilities bills if it left the program.
Climate change "may be the biggest issue we face in the world today. Ovide Lamontagne would let the rest of New England take our RGGI money," wrote Fernald.

"Climate Change Features in State Governors' Races", 05/11/2012, online at:
http://www.scientificamerican.com/article.cfm?id=climate-change-features-in-state-governors-races

BACK TO TOP

❖ Who Were the Greenest Presidents

A survey of environmental groups finds that Teddy Roosevelt was the president with the highest environmental cred, followed by Richard Nixon. David Biello reports

Who was the greenest President? A recent survey of green groups aimed to find out which presidents had the most environmentally friendly policies.

The top two spots, naturally, went to Republicans: Teddy Roosevelt and Richard Nixon. Roosevelt dominated the survey for his championing of the nascent idea of conservation more than a century ago. Nixon garnered support for his passage of landmark legislation like the Clean Air and CleanWater Acts as well as the establishment of the Environmental Protection Agency.

Rounding out the top three was Jimmy Carter, who gained points for actions like putting solar panels on the White House.

Who came in fourth? Barack Obama, thanks to often overlooked steps like raising car fuel efficiency standards and making alternative energy projects a big part of the federal stimulus package.

Of course, the modern Republican party, including candidate Mitt Romney, has turned against conservation. If Romney likes coal, then he must love air pollution and global warming. The original Republican president, Lincoln, may have created the first national park, but his heirs today are more interested in opening such public lands for fossil fuel exploitation.

"Who Were the Greenest Presidents", 05/11/2012, online at:http://www.scientificamerican.com/podcast/episode.cfm?id=who-were-the-greenest-presidents-12-11-05&utm_source=Circle+of+Blue+WaterNews+%26+Alerts&utm_campaign=0f9eeae2dd-RSS_EMAIL_CAMPAIGN&utm_medium=email

BACK TO TOP

❖ On international day, Ban underscores bond between peace and the environment

6 November 2012 – United Nations Secretary-General Ban Ki-moon warned today about the precarious links between peace, conflict and the environment, urging the international community to recognize peace and security as "a critical fourth dimension" of sustainable development.

"War and armed conflict shred the fabric of sustainable development," Mr. Ban said in hismessage marking this year's *International Day for Preventing the Exploitation of the Environment in War and Armed Conflict*.

"There can be no peace if the resource base that people depend on for sustenance and income is damaged or destroyed – or if illegal exploitation finances or causes conflict," he added.

Established by the General Assembly in 2001, the International Day for Preventing the Exploitation of the Environment in War and Armed Conflict was created to spotlight the tenuous link between global and regional conflicts and the environment.

According to the UN Environment Programme (UNEP), at least 40 percent of all internal conflicts of the past 60 years have been linked to the exploitation of natural resources, whether high-value resources such as timber, diamonds, gold and oil, or scarce resources such as fertile land and water. Moreover, conflicts involving natural resources have also been found to be twice as likely to relapse into violence.

In his message, the Secretary-General remarked that since 1990, at least 18 violent conflicts had been fuelled by the exploitation of natural resources, while in other areas of the world the discoveries of mineral wealth were quickly transforming already beleaguered nations into potential hotspots.

In Afghanistan, said Mr. Ban, recently discovered mineral deposits worth an estimated trillion US dollars were sparking fears that the newfound natural wealth could perpetuate civil strife. Meanwhile, in the eastern Democratic Republic of Congo, the UN chief noted that rich reserves of tin, tantalum, tungsten and gold were being funnelled to armed groups which used that wealth to prolong violence across the country.

The Secretary-General pointed out that six UN peacekeeping missions had been mandated to support the host country's ability to re-establish control over its resource base and stop illicit extraction by

armed groups, but added that more needed to be done in terms of the role of natural resource management in conflict prevention, peacekeeping and peacebuilding.

"Let us reaffirm our commitment to sustainably managing and safeguarding vital natural resources in times of peace and war," Mr. Ban said in his message. "Let us do more to prevent conflicts over natural resources and maximize their benefits for maintaining and building peace."

"On international day, Ban underscores bond between peace and the environment", 06/11/2012, online at: http://www.un.org/apps/news/story.asp?NewsID=43420&Cr=environment&Cr1=&utm_source=Circle+of+Blue+WaterNews+%26+Alerts&utm_campaign=0f9eeae2dd-RSS_EMAIL_CAMPAIGN&utm_medium=email#.UJpUMW9dbRZ

BACK TO TOP

Mithat Paşa Caddesi 46/4 Kızılay-Ankara TURKEY
Tel: +90(312)4302609 Fax: +90(312)4303948 orsam@orsam.org.tr