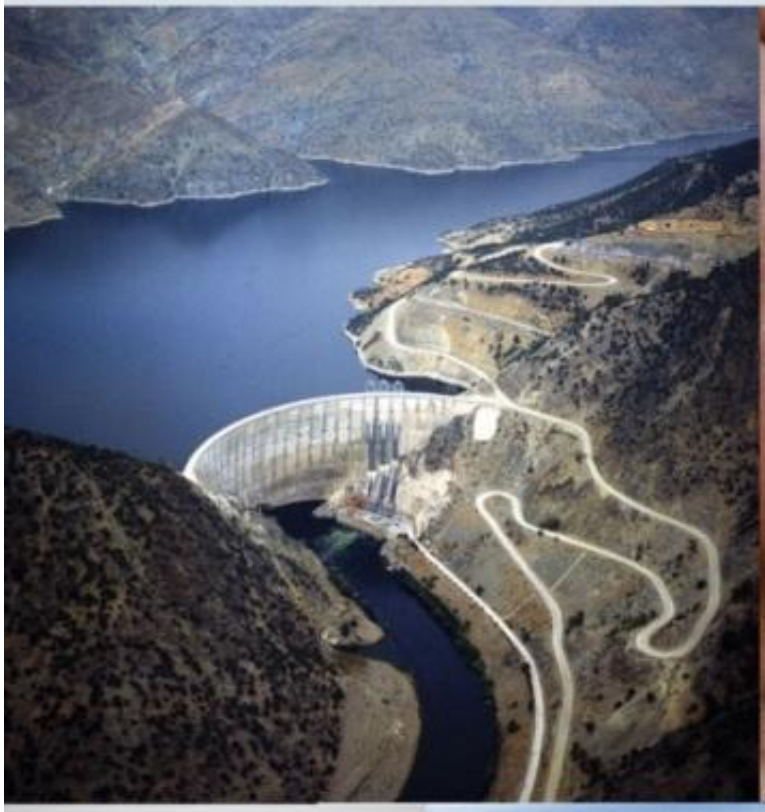


ORSAM WATER BULLETIN

Weekly Bulletin by ORSAM Water Research Programme

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





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09 April – 15 April 2012

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❖ Power shuffle in Syria may result in drought in Israel

Israel is closely watching the unrest in Syria. There are fears that a power change in Damascus could lead to a conflict over the strategically vital territories of Golan Heights - a crucial source of water for Israel.

The Golan Heights stretch between the borders of Lebanon, Jordan and Syria, and the only freshwater lake in Israel adjoins this territory. It provides about thirty per cent of the country's water. Water is pumped to the south and the center of the country, where it's used for agriculture and domestic purposes.

"If the water becomes polluted, if they start pumping water away, who knows? There are a number of issues in this scenario. And it's totally unacceptable because it would totally change the whole landscape of the state of Israel, including the Golan," Marla Van Metter from Golan Residents' Committee told RT.

Ever since Israel occupied the Golan Heights over forty years ago, Damascus has been eager to get it back. In 1991 Syria's President Bashar al-Assad demanded that Israel withdraw to the shores of the Sea of Galilee. However, rounds of talks have led to nothing.

If power in Syria changes hands, many fear that the new authorities might abandon negotiations and resort to more decisive actions.

"Power shuffle in Syria may result in drought in Israel",09/04/2012, online at: http://rt.com/news/israel-syria-golan-heights-water-602/

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❖ Iran starts water desalination project

The implementation of the Caspian Sea water desalination project has started in the Mazandaran province in Iran, Iranian television reported.

The Khatam-ol-Anbia Headquarters of the Iranian Islamic Revolutionary Guards Corps engaged in construction took responsibility for the project implementation.

"More than $1 billion will be allocated for the project implementation. The project will be implemented within two years," Safi Commander Mozafari-Shams said.

He added that modern technology will be used in the desalination.

After the process is over, the population will get drinking water.

The provinces of Qom and Siman will receive desalinated water. This will help solve the drinking water problem, he said.

"Iran starts water desalination Project", 09/04/2012, online at: http://en.trend.az/regions/iran/2012205.html

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❖ Getting the Arab Spring Greener; Being Burned by a Heat Wave

Thomas Friedman on climate change in the Middle East Noting that 12 of the 15 most water-scarce countries in the world are in the Middle East, *New York Times* columnist Thomas Friedman argues that climate issues provided some the kindling for the fire called the Arab Spring now consuming the region. "The Arab awakening was driven not only by political and economic stresses, but, less visibly, by environmental, population and climate stresses as well," he writes. Syria, one of the region's most volatile, is a good example. 60 percent of it experienced drought in the five year preceding the conflict there today, leading to widespread crop and livestock failure. Water and food shortage exacerbate tensions between people and government, the latter often unable to meet the former's needs. "We and the Arabs need to figure out — and fast — more ways to partner to mitigate the environmental threats where we can and to build greater resiliency against those where we can't," Friedman concludes.

NPR on how too much sunshine isn't a day in the park We ordinary folks have perhaps enjoyed this early spring in the U.S., inconveniences aside, but climate scientists are worried. "They say all these sunny days are actually an extreme weather event, one with local and global implications." On a weekend edition of *All Things Considered*, Laura Sullivan runs down some of the dire consequences of the warm winter, including maple syrup production being down in Vermont and crops running ahead of schedule in Iowa, dangerous if there's a sudden frost. As for, say, the tornadoes in Texas, scientists hesitate to make direct links between global warming and specific extreme weather events. Nevertheless, the UN released a report last week warning of "more intense heat weaves, heavier rainfalls and longer droughts" in the coming decades as a result of climate change.

The Daily Climate on when wildfires hit rainforests Forest fires usually aren't thought of as a problem for rainforests, named such because of their high levels of precipitation, but parts of the Amazon are drying out so bad some years that they soon may become a regular occurrence. Unheard-of rainforest fires occurred in 2005 and 2010 in Brazil, Peru, and Bolivia, reports The Daily Climate's Barbara Fraser, which scientists believe were caused by higher-than-average temperatures in the Atlantic Ocean those years. "As the Atlantic warms, it draws moisture away from the forest, priming the region for bigger fires." Aside from the localized problems such as food insecurity, smoke-induced respiratory illnesses, and loss of life, the greenhouse gasses released from fires in the Amazon, which is usually a net absorber of carbon from the atmosphere, could intensify global warming.

***Scientific American* on a cleaner rickshaw** The auto rickshaw, a three- or four-wheeled motorized version of the traditional human-pulled rickshaw, has some curious advantages as a eco-friendly vehicle since it wears road less than regular automobiles and take less materials to make, given its size. But they're usually powered by dirty two-stroke engines, prompting calls for reform to capitalize on their green potential in developing Asian countries, where the vehicles are popular and where pollution is a huge issue. In one city in India, cleaner, compressed natural gas rickshaws were mandated, greatly improving its air-quality ranking. In another city in the Philippines, citizens were incentivized to trade in two-stroke models with loans and free medical checkups.

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Reuters on what's ailing the polar bear Polar bears, whose numbers have been harshly affected by climate change, are often taken up as a symbol of the movement against climate change. Usually their plight has something to do with melting us ice, but today we can add another problem to their list: a new mysterious disease. As Yereth Rosen for Rueters reports, "Nine polar bears from the Beaufort Sea region near Barrow were found with patchy hair loss and oozing sores on their skin, similar to conditions found in diseased seals and walruses." The outbreak occurred among the seals and walruses last summer in Alaska, resulting in the deaths of some, but these nine polar bears otherwise seem healthy, according to the U.S. Geological Survey. Scientists are still trying to pin down the cause of the illness, though one potential culprit, radiation poisoning from Japan has been ruled out.

"Getting the Arab Spring Greener; Being Burned by a Heat Wave", 09/04/2012, online at: http://www.theatlanticwire.com/global/2012/04/getting-arab-spring-greener-being-burned-heat-wave/50892/

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❖ Caspian Sea-Persian Gulf canal contradicts international standards

Iran, ignoring the interests of regional states, launched implementation of a new project. It intends to build a transcontinental navigable canal with length of 600 kilometers worth $6.5-7 billion from the Caspian Sea to the Persian Gulf, desiring to overshadow the strategic importance of the Suez Canal, Iranian Energy Minister Majid Namjoo told Iranian IRNA news agency. According to the minister, one of the main tasks is also desalination of the Caspian Sea water through special facilities for use for industrial and agricultural needs.

To begin the construction of a canal and talk about its operation, without taking into account international conventions and intergovernmental agreements, and without solving the status of the Caspian Sea, means nothing more than a populist statement, which has no political or economic reasons. By creating difficulty in determining the status of the Caspian Sea, Iran can only hinder the negotiation process.

The Caspian Sea is the largest closed lake, so it was called the Sea, situated at the crossroads of European and Asian continents. Some 130 rivers flow in the Caspian Sea, forming nine deltas, and the volume of sea water is constantly changing due to changes in water level, depending on climatic, geological and anthropogenic factors. The Caspian Sea has a very rich fauna, numbering about 2,000 animals, and flora, represented by more than 700 species.

It is known that the international marine canals are artificially created sea routes. From this perspective, the creation of such routes without determining the status of the sea contradicts international standards.

Negotiations on the legal status of the Caspian Sea continue, and this process will continue in 2013. The Caspian Sea on the physical and geographical conditions is a closed basin, deprived of communication with the ocean. The UN Conventions on the Environmental Protection reflect the duties and tasks assigned to each state for the protection of marine flora and fauna fulfillment of which is important. Marine pollution occurs mainly as a result of land-based sources, hazardous waste, which falls into the water along the traffic route of vessels, toxic, poisonous and hazardous substances falling into water during transportation.

Iran once again can be reminded that on November 4, 2003 in Tehran, the Caspian states (Azerbaijan, Kazakhstan, Russia, Turkmenistan and Iran) signed the Framework Convention for the Protection of the Marine Environment of the Caspian Sea.

The purpose of the Convention, which entered into force on August 12, 2006, is the protection, restoration of the environment of the Caspian Sea and a long and effective use of its biological resources, including the prevention of pollution of the Caspian Sea. So, next mega-project of Iran can be considered extremely risky from an environmental point of view.

It also shouldn't be forgotten that in July 1998 Kazakhstan and Russia signed an agreement on the delimitation of the northern part of the Caspian Sea in order to exercise sovereign rights to the subsoil, and in May 2002 - Protocol to the agreement. On November 29, 2001 and February 27, 2003

Kazakhstan and Azerbaijan signed an agreement on the delimitation of the Caspian Sea and the Protocol thereto, respectively. Also, Kazakhstan, Azerbaijan and Russia on May 14, 2003 signed an agreement on the delimitation of adjacent sections of the Caspian Sea.

"Caspian Sea-Persian Gulf canal contradicts international standards", 12/04/2012, online at: http://en.trend.az/news/politics/2013838.html

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❖ How to Road Trip in the Galilee and Golan Heights in the Spring

Like other Middle Eastern countries, Israel continuously suffers from a chronic water shortage, which is most often seen in the water level in it's historic water supplier, the *Kinneret* or Sea of Galilee. But due to above average rainfall this past winter (the Sea rose 2 meters!), Israel's green areas, including the Galilee region and Golan Heights, are decked out in Mother Nature's annual spring greenery and floral displays.

This lush beauty was revealed to us during a day long spring foliage tour to these areas this week.

We began our tour by traveling through Wadi Ara, passing communities like Umm al Fahm, continuing into the Lower Galilee through some of Israel's lushest agricultural regions, and past 588 meter high Mt.Tabor , which is often used as a "launch pad" by paragliding enthusiasts.
Upon reaching the Sea of Galilee, we were happy to see how high the lake had risen; former green areas and "islands" had again disappeared under the rising waters. We began our ascent onto the Golan Heights at the northeast end of the lake and continued on highway 87 toward what was to be our first stop on the Heights, the ancient archeological site of Katzrin which is now a regional park. The archeological excavations reveal an ancient settlement of Jewish scholars who lived there from the 4th to 7th centuries CE and whose inhabitants' lifestyles have been recreated for park visitors.

These include a house with furnishings, kitchen utensils and food storage, wine and olive presses, and a partial restoration of the community's synagogue which also served as the community's educational and social center.

Ancient Katzrin was inhabited by this community for 300 years and the inhabitants are said to have contributed to the compilation of the Talmud, the commentaries on Jewish Law that instructs Jews not only on how to observe their faith but which occupations to be involved in as well.

We continued our journey through some of the Golan Heights' pastoral regions where numerous herds of cattle could be seen as well as vineyards and orchards of fruit trees, whose pink and white flowers added a lovely touch to an already picturesque landscape.

Off in the distance, Israel's highest mountain, 2,814 meter high Mt. Hermoncould be clearly seen, complete with remaining snow. Mt. Hermon, which is "shared" by both Israel and Syria, is actually a series of peaks of which the highest in Israel's section reaches a height of 2,236 meters. As we neared Mt. Hermon, we passed numerous orchards owned by local Druze inhabitants, and stopped for lunch in the Druze town of Mas'ade.

The Druze (read about Gamila and her soap)rely mainly on agriculture for their livelihood; but due to the growing number of restaurants and other business that have signs posted in at least three languages, Golan Druze appear to be interested in making money from outsiders. These include foreign tourists, Israeli day trippers and UN personnel.

The largest Golan Druze community, Majdal Shams, while continuing to attest their loyalty to the government of Syria, are interested making a Shekel off Israelis and other visitors. The town has a

number of hotels and pensions, including the three star boutique hotel The Narkis that offers free Wi-Fi hookups, LCD cable TVs and even Jacuzzis.

The town also has a number of medical and dental clinics which appear interested in serving visitors as well. The road leading into Majdal Shams is now literally abloom with fruit tree blossoms, especially cherry and apple trees. And one cannot visit Majdal Shams without seeing the famous monument to itsfolk hero, Sultan al-Atrash, who led the Syrian rebellion against the French in 1925.

Our last stop was the impressive Sa'ar Stream waterfall, located just east of the Banias nature park. The waterfall attracts visitors year round and Local Druze farmers take advantage of this beauty spot by offering local produce and Druze culinary specialties in a number of stands outside the entrance to the waterfall observation site.

Those more adventurous can descend a steep pathway to the bottom of the falls located in a narrow gorge some 200 meters below. The Sa'ar Stream is one of the tributaries of the Jordan River and most of its water comes from springs and melting snow on Mt. Hermon.

After leaving the Golan we passed through the entrance to the Hulah Valley, through which run other Jordan River tributaries, including the Dan and Snir streams. The Hulah Valley runs parallel to the entire length of the Galilee "panhandle" and is Israel's major migratory bird flyway, through which thousands of migratory birds including ducks, pelicans and storks pass annually.

While these areas are still green a visit to them is well recommended before they change color to gold and brown during the hot and dry summer months.

"How to Road Trip in the Galilee and Golan Heights in the Spring", 11/04/2012, online at: http://www.greenprophet.com/2012/04/galilee-golan-heights-israel-road-trip/

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❖ Palestinian, Israeli officials to meet on water issues

RAMALLAH, April 12 (Xinhua) -- Palestinian and Israeli officials will meet next week to discuss water issues that affect the two sides, a Palestinian official said Thursday.

The meeting mainly aims to "overcome Israeli obstacles" on water projects in the West Bank and the Gaza Strip, said Shadad Al- Otili of the Palestinian Water Authority.

The meeting comprises members of the joint water committee which was formed after Israel and the Palestinians signed Oslo accords in 1993, Al-Otili told Xinhua.

The problems include shortage and pollution in drinking water, aggravated mainly due to a corrosive network of sanitation. These problems are more notable in C areas of the West Bank, where Israel retains security and administrative control, Al-Otili explained.

The Israeli restrictions on some water projects were imposed 10 years ago, but Israel "started recently to deal positively with implementing these projects," Al-Atili said, attributing this progress to "perils that started to threaten both Palestinian and Israeli areas."

In 2009, an international rights group accused Israel of preventing the Palestinians from getting adequate water.

The London-based Amnesty International said that Israel uses four times as much water as Palestinians and the Jewish state gets most of the water from an aquifer mostly located in the occupied West Bank.

"Palestinian, Israeli officials to meet on water issues", 12/04/2012, online at: http://www.chinadaily.com.cn/xinhua/2012-04-12/content_5669238.html

❖ Bitter Harvest

The provision and denial of water in Palestine-Israel masks ulterior political motives that seek to replace one population with another.

Writer: Mark Zeitoun

It will be another meager crop this year for the Palestinian subsistence farmer in the Jordan River Valley. Casting an eye over dusty fields in Fesa'el, he contemplates whether he should continue to eke out a living this way, or move to Nablus and work as a day laborer like so many before him. He turns his back on the lush orchards of the adjacent Israeli agri-business settlement of Tirzah, which has taken land away from villages like his own. Climate-proof thanks to a reliable and cheap supply of water, such settlements continue to expand as ever-more people are lured to them.

Along this west bank of the Jordan River, there is considerable evidence that the allocation of water is a mechanism for ulterior political goals. A December 2011 French Parliamentary report by MP Jean Glavany suggests "water apartheid" policies are designed to keep Palestinian and Israeli communities in the West Bank separate, while journalist Ben Ehrenreich notes in the same month's Harper's that water is used for ethnic cleansing. However, the manner in which it is provided or denied suggests a nuanced perversion of the life-providing essence of water: to replace one population with another.

Water as a military tool

The diplomatic and academic community usefully questioning environmental conflicts would do well to also engage with the implications this particular use of water has for theory, for conflict management practice, and for action. Water expert Peter Gleick has identified how groups use water as a military tool for political ends – a practice which has been honed to near-perfection in the protracted conflict for the West Bank. Here, the broader Palestinian-Israeli conflict determines the use of water, meaning environmental peacemaking efforts interested in more than shallow water cooperation must consider control of the resource: both the mechanisms that enable control, and the politics and ideology that drive it.

That control in rural areas throughout Israel and Palestine has been in the hands of successive Israeli governments, and achieved through a very effective use of combined hard and soft power. Converting control of water into a demographic shift is evidently simple: first, an area is rid of its inhabitants by denying access to water resources or to basic water services. The area is then populated with the preferred inhabitants, by providing the water services that were previously denied.

The United Nations' (UN) formal recognition of the Human Right to Water in 2010 coincided with a stepped-up violation of that right, just west of Bethlehem. To maintain an income there, farmers who have to battle an array of army jeeps, zoning regulations and the wall have been trickling away for decades. In the Yatta governorate south of Hebron, Israeli army destruction of the most basic of water infrastructure, such as family rainwater reservoirs, has increased dramatically since about the

same time. It may be difficult to believe – but visible to anyone who visits – that these people are prevented even from collecting the rain.

Israeli citizens are not spared the pain, particularly the inhabitants of 'unrecognized villages' who have largely been denied basic water services since Israel's establishment in 1948. The recent moves to push over 30,000 Bedouin people into 'government-recognized settlements' will be only the latest in a long chain of transgressions against them. And it shows how water can cleanse: if the communities had been provided with a regular and safe supply of water in the 1950s, it would have been much more difficult – if not impossible – to uproot them today.

Just as it will be difficult to uproot the Israeli settlers back in the West Bank, who have grown accustomed to the shield of law and a cheap and reliable water supply. Water attracts rather than repels here, and while the success of the Israeli settler project derives from political Zionism, credit is also due to the efforts of the Israeli water engineers. The awkward pipes and jerrycans of the first colonizing settlers serve as umbilical cords to sustain the domestic needs of hilltop outposts, and are soon replaced with world-class design buried networks that anchor agri-business.

Ideology trumps rationale

The terms of the 1995 Oslo II Interim Agreement have ensured that water distribution between Palestinians and Israelis is so asymmetric that water supply for settlements outstrips demand. So, as more land is grabbed, the Minister of Infrastructure calls for more settlement water pipes, and the water will follow. The budget for sewage treatment is not so easy to clear, however: the hilltops stolen by the Yitzhar or Ariel settlements south of Nablus bloom as the raw settler sewage flows into the withered Palestinian fields in the valleys below. Meanwhile, the Palestinian political class who signed the agreement appear more focussed on the UN than on their own backyard, and ignore the plight of their farmers (see related video on dual expropriation of Palestinian farming land).

Unrepresented by their government, and unable to eke a living off of the land, Palestinian parents scramble to send their kids to the urban centres, or preferrably Europe and the US, while Israeli governments subsidize the settlement of Zionist North American and European parents. Judging by the rate of cleansing over the last 16 years, there is about a generation or two to go.

Unrecognized Bedouin villages are not connected to Israel's national water grid, forcing residents to travel long distances to access water. Source: Physicians for Human Rights – Israel.

The use of water to transfer populations in this way may seem surprising, given the well-known Israeli advances in water technology. The country's wastewater reuse and desalination projects are of such magnitude that they can significantly reduce tensions over freshwater sources. But those hoping for science to lead us to peace – the way we used to pray for rain – are missing the point entirely. Ideology can overwhelm rationale, and the suffering of those forced off their land is not due to a lack of rain – it's what is in the minds of those who allocate the water that counts.

A fair distribution of resources in rough accordance with international norms may be less on those minds than fundamentally discriminatory ideas about securing water supplies for exclusive use. Ultimately this is a shortsighted route to water security. The contamination of groundwater due to

constricted development of Palestinian villages and unchecked construction of Israeli settlements will affect everyone drawing from the aquifers – rich or poor, Jewish or Muslim, Palestinian or Israeli, Zionist or anti-Zionist. Unless, of course, the population transfer is completed before the aquifer collapses entirely.

From an analytical perspective, the perversion of water's essence is more elegantly explained through political ecology theory than the (more popular) approach of environmental determinism. The former can inform the efforts of those involved in managing the water conflict, who must question if their quest for stability actually hampers the positive change that is needed to reverse the ethnic cleansing. Given the strength of the forces driving the mal-distribution of water, analysis and policy must also give wind to the sails of the many managers, scholars and activists who fight chauvinism in Palestine and Israel – and clear the way for social equality, political representation and fair water-sharing. Future harvests may not be so bitter, for our efforts.

Mark Zeitoun is the author of Power and Water in the Middle East (IB Tauris), which was released in paperback in January 2012. He has worked as a water engineer and strategic negotiations advisor for several years in the West Bank and Gaza.

This article appeared in the print version of Revolve's Water Around the Mediterranean special report in association with the Union for the Mediterranean on pages 26-27.

"Bitter Harvest", Revolve / Al-Haq, 14/04/2012, online at: http://mideastenvironment.apps01.yorku.ca/?p=4795

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❖ Accredited labs to improve industrial wastewater monitoring

AMMAN — Three labs in the country will be internationally accredited for testing the quality of industrial wastewater by mid-2014, officials said on Wednesday.

The labs will be located in the northern, central and eastern regions of the country under three memoranda of understanding (MoU) signed on Wednesday between the Ministry of Environment, three universities and USAID.

The MoUs detail the universities' commitment and USAID's support for capacity building and accreditation of the three laboratories at the University of Jordan, Mutah University and Al al Bayt University with the aim of improving industrial wastewater testing.

During the signing ceremony, which was held at the Jordan Institute for Standards and Metrology, Environment Minister Yaseen Khayyat said the training will ensure that effluent from industrial wastewater treatment plants meets local standards and has no negative impact on public health.

Khayyat noted that the goal is to expand the ministry's access to accredited laboratories that can perform industrial wastewater testing and thereby support its industrial pollution enforcement and compliance activities.

The USAID-funded Water Reuse and Environmental Conservation Project will implement the training and capacity-building programme in cooperation with the Ministry of Environment and the universities, according to officials.

Thomas Rhodes, director of USAID's water resources and environment office, said signing the MoUs is an important step in protecting the environment in Jordan.

Rhodes told The Jordan Times that the ministry and factories will be responsible for collecting samples of industrial wastewater and providing them to the labs.

He noted that the three labs have already been established, but USAID will be providing employees with training and accreditation to improve the monitoring of industrial wastewater.

The five-year USAID Water Reuse and Environmental Conservation Project works with regulators and industries throughout the Kingdom to provide training in pollution prevention and environmental management systems.

"Accredited labs to improve industrial wastewater monitoring", Jordan Times, 11/04/2012, online at: http://mideastenvironment.apps01.yorku.ca/?p=4797

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❖ Yarmouk reserve to expand eco-tourism activities

AMMAN — Hiking trails and biking trips will be among eco-tourism activities offered to visitors at the Yarmouk Nature Reserve starting this year.

A visitors centre with a café and a nature shop will also be established to promote products made by area residents from locally grown ingredients, Yarmouk Nature Reserve Director Ali Subeihat said on Saturday.

"A range of programmes will be organised starting this year as part of a strategy to develop eco-tourism in the area including training local guides, providing accommodations and camping sites and promoting local products," Subeihat said.

The strategy will be implemented under a memorandum of understanding between the Royal Society for the Conservation of Nature (RSCN), which is tasked with managing the country's nature reserves, and the Ministry of Tourism and Antiquities signed earlier this year.

"Implementation of the eco-tourist activities will commence after the strategy, which is being evaluated, is approved," Subeihat noted.

One of Jordan's newly created protected areas, the eco-tourist destination is located in the northwest of the country in Irbid Governorate.

More than 100,000 tourists visit the area annually to enjoy its panoramic views of the Yarmouk River, Golan Heights and Lake Tiberias.

Established in 2010 to preserve vital and rare ecosystems, particularly deciduous oak trees, the reserve is home to 85 per cent of the country's population of deciduous oak, which constitutes the bottom of the food pyramid in the reserve, as several wildlife species directly and indirectly feed and benefit from it, according to ecologists.

Rich in biological diversity and home to many globally and regionally threatened species, the 20-square-kilometre sanctuary houses 255 plant species including Orchis Anatolica and Orchis papilionacea, which are rare orchids threatened with extinction.

The reserve is also home to 20 mammals such as otters, wolves and hyenas, and 15 kinds of reptiles. It also supports many rare animals including the globally threatened mountain gazelle and one species of fish found only in the Yarmouk catchment, according to the RSCN website.

In addition, the reserve is an important bird-watching area, with 58 species registered, constituting 14 per cent of the bird species recorded in the Kingdom, according to the society.

"Yarmouk reserve to expand eco-tourism activities", Jordan Times, 14/04/2012, online at: http://mideastenvironment.apps01.yorku.ca/?p=4789

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❖ Mario Cucinella: Interview With Gaza's Green School Architect

We speak to Mario Cucinella the architect behind Gaza's eco schools about building under conflict, water, education and bringing hope to a desperate region

Early 2013 will see the launch of a green school which will collect rainwater and regulate internal temperature using thermal technologies. Whilst such a project would not be noteworthy in Europe, this project is coming to the energy-scarce, water-poor and conflict-ridden region of the Gaza Strip. Constructing a green building in such a region definitely comes with a whole cache of problems- it also comes with a whole load of benefits. Building green schools that save water and reduce the amount of energy needed offers huge benefits to the people of Gaza. I caught up with Mario Cucincella, the architect behind the project to find out more.

Aburawa: Looking back at the profile of your work, most of the projects you are involved in are based in Italy. How did you get involved in the scheme to bring eco schools to Gaza?

Cucinella: I got involved in this project as I was invited to a conference by the Italian government which was about the future of Palestine and how a green economy could help Palestine's economy and encourage development. At that meeting I met with UNRWA which is the UN organisation for Palestinian refugees and we talked about presenting a project about the green buildings I had worked on in the last couple of years as they were interested in the integration between green issues and architecture.

They took me to visit refugee camps and we went to Gaza to see the schools and so I proposed to them an idea of building a different quality of school. I mean, UNRWA builds a lot of schools as they are in charge of education and health and social problems- so they build schools, hospitals and lots of other things- and there was a big programme to build one hundred schools in Gaza and they were really interested in a new style or standard of building. Well, these things grow very fast and they were excited about my proposals and I guess, here we are.

Aburawa: There has been lots of press attention around the concept of green schools- could you tell us about some of the green features of the Gaza schools?

Cucinella: Well as you know, Gaza has a real issue with access to lots of resources. So for example, water is really polluted and 40% of the population still don't have access to potable water. There's also significant energy blackout and so that does affect how you can run schools and hospitals. The first idea was to collect rainwater as they don't collect rainwater and in Gaza there are between 100-600mm of water a square a year- which is not lot but it's still free water. They also don't recycle water so the principle is to be able to collect maximum water for the school.

The other issue is that the schools are very low quality and they are not suited to their environment. In the summer the buildings are very hot and it's hard for children to focus on their studies when it's 38 degrees in the classroom. So another important feature is creating a sufficient thermal mass so that energy is stored and temperature can be better regulated. These two are not very complex principles

but when you put them together you get something quite special which can really improve the people's quality of life. And that was the agenda behind these buildings.

In Gaza it is notoriously difficult to construct buildings as there are issues around the ability to bring in materials due to the blockade. How will you be working around these restrictions to make sure the schools are built?

Cucinella: Well, it's a complicated situation because as you know you can find almost any type of material in Gaza due to the tunnels but the problem is that the United Nations cannot buy anything from the black market. So everything has to come from Israel and that is slowing the process but we are hoping to make some of the materials in Gaza on site so that we can employ more people. But we will still need to bring in the pre-fabrication materials into Gaza before we can start.

In the last couple of months, the conflict between Gaza and Israel has flared up with both sides exchanging fire and a number of casualties in Gaza. How does this impact the progress of the schools?

Cucinella: This conflict has been going on now for more than forty years and sadly, you come to see the situation as the norm. It's been like this for some time and there isn't much you can do – the UN has been building schools and hospitals throughout the conflict and they accept that this is the situation that they are working in. There was a discussion at one stage about whether building green schools in a place where it is difficult to find food was a good idea but the thinking was that this is still very important. To design new schools and imagine a new life for the people of Gaza – it's a different approach to humanitarian action. The project is also part of a programme of re-education with local engineers and also teaching the staff and pupils how to look after a green building. I mean giving schools free water and also the means to regulate the temperature are so important for the Gazan population.

We also hoping that our green approach will be part of the solution to the demographic boom in Gaza where people are struggling to build homes and schools with the resources they have. So, these (green buildings) are actually really useful for Gaza. Indeed, we are currently working with refugee camps in the West Bank around how we can improve the quality of life for people living in the camps. And how can we implement technologies such as solar panels and thermal technologies that help make them more autonomous from Israel.

What have the reactions been like to the project? Are they mostly negative or positive and has there been some reluctance to embrace the concept of a green school in the Middle East?

In the beginning it was a little difficult as people are naturally reluctant to change but after you explain the case and the changes that the school could have on the conditions the children study in, they recognise the benefits of the project. In fact when we presented the project at a conference I was surprised how optimistic and enthusiastic people were and they were saying if you can do this project in Gaza, you could do any project anywhere in the world! I mean we worry about this catastrophic vision of the world where there are no resources, no money, no energy and basically you don't have to dream that in Gaza- it's already like this. In a way, what I came away with is that the frugality of

people is greater than any oppression – people are strong and are able to adapt to really difficult situations.

For me, it was also really exciting talking to the engineering students in Gaza – these people don't really have any future, there is no work in Gaza and yet they go to school, they go to university and study engineering because they hope that something will change. For me, that was really inspiring. And I guess one day or another, this story of conflict will be finished. Maybe that day will be tomorrow or maybe it will be in another two hundred years but it will be over. Also when you are there you feel that the people of Gaza are more optimistic about their future than the people on the outside.

Who is the project financed by and when can we expect to see the first school to be opened?

The project is financed by the Islamic Development Bank but I also want to add that without UNRWA and the support of the General Commissioner, this project would have very difficult and almost impossible. We are going to Gaza in April and in the summer we are going to start construction so the first building should be open at the start of next year in 2013. It will be probably be six months of work. I think what's really exciting about this project is that when you work in Europe, there is always a choice or another option, but when you deal with sustainable development in a place like Gaza it's a real challenge. To be able to apply our knowledge and skills in a completely different region and see that it is really helpful is really inspiring.

"Mario Cucinella: Interview With Gaza's Green School Architect", Arwa Aburawa, 09/04/2012, online at: http://www.greenprophet.com/2012/04/mario-cucinella-interview-with-gaza%E2%80%99s-green-school-architect/

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❖ Israel's Current Demand: Most of the West Bank

In the first stage we shall see euphoria, upon our return to our ancient sites. Next we shall see the emergence of a messianic, radical and dangerous nationalism. In the third stage we shall see Israeli society becoming more brutal and the emergence of a police state.—Israeli philosopher Yeshaya Liebowitz, shortly after Israel's victory in the June 1967 war.

Peace talks between Israel and the Palestinians began in 1991 and have continued intermittently since then, with the two sides steadily moving farther apart. Meanwhile Israel has been building settlements that today house half a million Israelis—Jewish only—on Palestinian land. The Palestinians frequently complained they were negotiating with Israel over the division of a pie while Israel was busy eating it. Israel is now offering to give back some of the crumbs.

Israeli negotiators announced in late January that their guiding principle for a two-state solution would be for existing settlement blocs to become permanent parts of Israel, with the new boundary defined by the separation barrier that has been under construction since 2006. The Palestinians charged that the proposal amounted to an abandonment of international law, since it assumes that both sides have an equal claim to the West Bank—when in fact Israel's continued occupation and its settlements are in violation of the 1949 Geneva Conventions and several U.N. Security Council resolutions.

Designating the separation wall as the new boundary between Israel and the Palestinians would mean giving Israel more than 10 percent of the West Bank and leaving the Palestinians with the rest: 12 percent of original Palestine instead of the 22 percent they are asking for. Even that 12 percent would be a fragmented territory, divided up by Jewish-only highways, Israeli military bases, and the proliferating outposts established by ultranationalist militants.

The barrier that Israel wants to make the permanent border runs well east of the Green Line and in many places separates villagers from their farms and orchards. Chris Hedges, former Middle East correspondent for *The New York Times*, has described the wall as confining Palestinians to "a series of podlike militarized ghettos," while giving Israel the West Bank's most valuable water acquifers and more than 40,000 acres of its prime agricultural land.

Israel's insistence on annexing the major Jewish settlements means that until there is a firm peace agreement, Israel can go on expanding its reach into West Bank territory indefinitely. Indeed, it is doing so as rapidly as possible. Obviously aware of this fact, four members of the U.N. Security Council—Britain, France, Germany and Portugal—issued a statement in late December asking Israel to stop all settlement construction in the West Bank and East Jerusalem, and pointing out that the settlements are illegal under international law.

The Security Council members were calling into the wind as far as Israel was concerned. As the year ended, plans were going ahead for 3,690 new apartments in East Jerusalem and 1,000 in nearby settlements. Peace Now reported a 20 percent increase in settlement construction in 2011, with 1,850 new units going up in settlements east of the separation wall, and 3,500 elsewhere in the West Bank. Human rights groups noted a corresponding increase in home demolitions in the West Bank and East Jerusalem.

At the end of January, a day before Netanyahu won re-election as head of the Likud party, he designated 70 settlements as priority areas for expansion, with subsidies for new housing and development. The decision, according to the prime minister's office, was "designed to encourage positive migration to the communities" and help ease Israel's housing shortage. Since 57 of the settlements to be developed are east of the wall and

deep inside the West Bank, Israel's action amounted to the further battering of a moribund peace process, and an end to any hope of a two-state solution.

Palestinians living within range of the settlements have more immediate problems, however, since there seems no limit to the brutality of settlers and the army. In late December, a coalition of human rights groups, including Human Rights Watch and Amnesty International, reported that during 2011 settlers destroyed hundreds of homes, water wells and farm structures, as well as 10,000 olive trees, some of them dating from Roman times. As Palestinians struggled to get by with ever scarcer land and water, the Israeli army destroyed a land reclamation project funded by the Dutch government and a solar energy project funded by Spain.

On Jan. 23, 100 Bedouins in Anata, northeast of Jerusalem, were forced into the cold outdoors just before midnight, when army bulldozers arrived without warning and demolished their entire community, including all their personal belongings. Many of the displaced were children and babies. On Jan. 25 near Hebron, Mohammed Abu Qbeita was building a house on his own land when soldiers came and ordered him to stop. When he refused to move, an army officer truck knocked him to the ground and drove a trailers attached to a tractor over his legs, crushing one of them.

No one is safe from the random cruelty. Shortly before Christmas an Anglican choir from the Bethlehem Bible School was returning from a concert in Nablus when their bus was attacked by a group of settlers who smashed the windshield and several windows, forcing the driver to drive away at high speed.ü

More than 90 percent of Palestinian complaints filed with the police are ignored, but the response was markedly different when Jewish extremists attacked an Israeli army base in mid-December. They vandalized vehicles, threw bricks and smashed windows in reaction to a rumor that a few outposts were to be dismantled. Five of the attackers were arrested for conspiracy to riot and for gathering military intelligence on Israeli troop movements. Defense Minister Ehud Barak called their actions "homegrown terror."

The militants are reported to have close ties to some members of the Knesset and to members of the army who kept them informed when an outpost was scheduled to be dismantled. They are also supported by the American Friends of Likud, chaired by American millionaire Kenneth Abramowitz.

Whatever their eventual fate, the Israeli detainees are certain to avoid the treatment accorded most Palestinian prisoners, often including children. They were not beaten, subjected to harsh interrogation, or confined indefinitely without trial. The handful of Israelis who have been arrested for taking part in arson attacks on mosques and other Palestinian property were not even jailed, but only barred from the West Bank for periods ranging from 3 to 12 weeks.

Even more serious damage is being done to Palestinian society and governance by the Israeli government, with help from the U.S. Israel's withholding of millions of dollars in Palestinian tax payments, and a cut of $147 million in U.S. aid have together contributed to a financial crisis for the Palestinian Authority. The penalties were imposed in retaliation for the Authority's petition for full membership in the U.N., and its acceptance as a member of the U.N. Economic, Scientific, and Cultural Organization (UNESCO). Israel and the U.S. have threatened even greater punishment if President Mahmoud Abbas carries through with his agreement to join in a unity government with Hamas.

The basic cause of the Palestinians' financial problems and the stifling of their economy, however, is not the cuts in foreign aid, but Israel's occupation. Israel controls 60 percent of the land on the West Bank, as well as its borders and most of the water. The PA must import electricity from Israel, and monthly bills have doubled

and even tripled, according to the Consumer Protection Society. The Palestinians also must import most of their consumer goods from Israel, and prices keep rising. The cost of chicken has doubled in recent years.

Missing from the punitive measures imposed by Israel and the U.S. is any semblance of rationality. The Palestinian Authority under the leadership of President Abbas, and especially Prime Minister Salam Fayyad, has greatly reduced corruption and established the institutions that could someday be the basis of a stable and independent state. The PA has also restored law and order to the West Bank and helped provide Israel with the security it demands.

The obligation to provide free education for a million schoolchildren and support some 96,000 needy families, including those of prisoners in Israeli jails, has placed a heavy burden on a Palestinian economy suffering under tight Israeli restrictions. In order to continue providing vital services and cope with a $1.1 billion deficit, the PA has been forced to raise taxes and propose early retirement for 20,000 workers. The result is growing unrest among Palestinians, who in recent weeks have taken to the streets in protest demonstrations.

Like others around the world, Palestinians undoubtedly want a future in which they are able to get an education, raise their children without fear, earn a livelihood, be able to travel, and above all be free of an occupation that impinges on every aspect of their lives. With Hamas willing to renounce violence and enter serious peace negotiations, Israel now has an opportunity both to fulfill these hopes and assure its own security.

The agreement signed on Feb. 6 by Hamas leader Khaled Meshal and Abbas to form a unity government headed by Abbas is designed to prepare the way for elections in the West Bank and Gaza and eventually a Palestinian government that represented all factions of Palestinian society. Netanyahu responded to the news by threatening to end all peace efforts. "Hamas is an enemy of peace," he said. "The only thing that ensures our existence, security, and prosperity is strength."

The Obama administration has so far withheld judgment, but since congressional amendments require that no U.S. aid go to Hamas, even the aid that goes to maintain Palestinian security forces will be stopped (see p. 31 of this issue).

Unfounded Fears of Hamas

Fears of Hamas as a terrorist organization are unfounded, according to Khaled Hroub of Cambridge University, who says there has been a major shift in the strategy of Hamas away from armed resistance. "The whole nonviolent strategy has shown its effectiveness," Hroub said. "The Arab Spring has proved this with the fall of strong governments in Egypt and Tunisia."

Meshal, who survived a 1997 Israeli assassination attempt in Amman, has conveyed this message to several Arab leaders. In late January he and several members of Hamas' political bureau traveled to Jordan with a delegation that included the crown prince of Qatar, Sheikh Tamim bin Hamad al-Thani, to meet with King Abdullah II. After the meeting, the royal palace issued a statement calling for a two-state solution and citing "the importance of unity among the Palestinian groups." Hamas in turn praised the visit as "a good start" and expressed an awareness of Jordan's need for security and stability.

Opposition by Washington and Israel to a unity government that represents all Palestinian factions is dangerously short-sighted, since such a government would be the only guarantee of a lasting peace agreement.The history of such countries as South Africa, Israel, and most recently Egypt, where the Muslim Brotherhood is now the majority party in Parliament, shows that groups that once relied on violence become

far more pragmatic when they are accepted into the political system and have a stake in its success. Statements by prominent Hamas members such as Meshal and Ismail Haniyeh expressing a willingness to work with Abbas indicate that Hamas would be no exception.

Hamas "is going through the same process as the Muslim Brotherhood elsewhere," according to Mahdi Abdul Hadi, director of a Palestinian research group in Jerusalem. "The new political Islam is practical and realistic."

If Israeli leaders truly wanted peace with the Palestinians, they would recognize that once there is a peace agreement that provides independence for the Palestinian people in a state of their own, any Palestinian faction that tried to disrupt that agreement and reignite the conflict would be condemned by a majority of Palestinians. An independent Palestinian state that fulfilled the aspirations of an overwhelming majority of Palestinians is the surest way to assure Israel's security.

Israel's latest demands suggest, however, that Israel's first priority is not security, but continued dominance over the Palestinians. There is no other explanation for the Netanyahu government's determination to build more West Bank settlements, and its insistence that most of those settlements, along with the Jordan Valley, become a permanent part of Israel. The Israelis are calling on the Palestinians to return to the negotiating table without conditions, but their continued settlement expansion and opposition to reconciliation of Hamas and Fatah indicate they have no interest in peace.

“Israel's Current Demand: Most of the West Bank”, Rachelle Marshall, March-April 2012, online at: http://www.wrmea.org/archives/380-washington-report-archives-2011-2015/march-april-2012/11085-israels-current-demand-most-of-the-west-bank.html

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❖ Opinion: Water shortage poses global threat

Water Risk Threatens Businesses, National Security

One of climate change's biggest impacts is on water systems. Unreliable water can impact both corporate bottom lines and jeopardize natural security, as two recent reports point out.

Climate change is changing precipitation patterns and intensity, increasing the incidence of droughts, floods, and erosion. These changes are making water supply and quality more difficult to obtain, affecting runoff and soil moisture, increasing water temperatures, decreasing snowpack and lake and river ice, threatening fish and aquatic species, and allowing saltwater intrusion and sea level rise. These changes are difficult to plan for, as past water patterns can no longer be used to predict the future. That uncertainty is problematic for businesses and can cause political strife, but some states and regions are taking proactive steps to avoid water trouble and will therefore be more reliable places to do business.

A recent report from the Natural Resources Defense Council ranked U.S. states based on how their governments are planning and preparing for the water–related impacts of a changing climate, including whether they have strategies to reduce the greenhouse gas pollution that contributes to climate change and whether they have adaptation plans for projected climate-related impacts. The report includes an interactive online map highlighting the unique water vulnerabilities each state faces and what each is doing — or not doing — to prepare. Climate modeling was drawn in part from a 2009 report(PDF) from the U.S. Global Change Research Program, but the NRDC report also considered state's policies. It said:

Some states are leading the way in preparing for water-related impacts with integrated and comprehensive preparedness plans that address all relevant water sectors and state agencies. Unfortunately, other states are lagging when it comes to consideration of potential climate change impacts — or have yet to formally address climate change preparedness at all.

Ranked highest were Alaska, California, Maryland, Massachusetts, New York, Oregon, Pennsylvania, Washington, and Wisconsin. Of these, Alaska, California, Maryland, and Massachusetts had adaptation plans as well as greenhouse gas pollution reduction plans. All four except Alaska also had the more stringent greenhouse gas reduction target.

At the bottom of the heap were Alabama, Arkansas, Indiana, Iowa, Kansas, Missouri, Montana, North Dakota, Ohio, South Dakota, Texas, and Utah. These states have done no adaptation planning, according to the report. Arkansas, Iowa, Missouri, Montana, Texas, and Utah do have greenhouse gas pollution reduction plans, and Utah also has the more stringent greenhouse gas reduction target.

Meanwhile, another report (PDF) from the National Intelligence Council, released in February, warned of security threats due to water issues. The NIC is a government entity that incorporates information from a range of national security agencies, including the Central Intelligence Agency, the National Security Agency, the Federal Bureau of Investigation, and several others. The public version of the report did not list specific countries but only watersheds of concern (Nile, Tigris-Euphrates, Mekong, Jordan, Indus, Brahmaputra, and Amu Darya) that corresponded with nations that are strategically important to the United States, illustrating the intersections between water challenges and U.S. national security. The report said:

During the next 10 years, many countries important to the United States will experience water problems — shortages, poor water quality, or floods — that will risk instability and state failure, increase regional tensions, and distract them from working with the United States on important US policy objectives. Between now and 2040, fresh water availability will not keep up with demand absent more effective management of water resources. Water problems will hinder the ability of key countries to produce food and generate energy, posing a risk to global food markets and hobbling economic growth. As a result of demographic and economic development pressures, North Africa, the Middle East, and South Asia will face major challenges coping with water problems.

As agricultural accounts for 70 percent of the world's freshwater use, the report suggested that improvements in water management, such as the increased use of drip irrigation, could help.

The NRDC report recommended that states implement "multiple benefit"strategies, such as green or porous infrastructure and water conservation and efficiency that address existing water challenges, while simultaneously building resilience to climate change impacts. On the other side of the coin, said the report, states should be cautious about investing in hard or grayinfrastructure, such as sea walls, that is costly and inflexible as hydrologic conditions change and may actually slow effective adaptation.

The NRDC report also suggested that framing climate change vulnerability and preparedness planning in terms of emergency or risk management could be useful, as many state and municipal officials are already familiar with those concepts. And because watersheds often cross jurisdictions, broad partnerships will be needed for effective management.

"Water Risk Threatens Businesses, National Security", 10/04/2012, online at:
http://www.forbes.com/sites/ericagies/2012/04/10/water-risk-threatens-businesses-national-security/

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❖ Drought menaces Arab Spring

ISN'T it interesting that the Arab awakening began in Tunisia with a fruit vendor who was harassed by police for not having a permit to sell food -- just at the moment when world food prices hit record highs?
And that it began in Syria with farmers in the southern village of Dara'a, who were demanding the right to buy and sell land near the border, without having to get permission from corrupt security officials?

And that it was spurred on in Yemen -- the first country in the world expected to run out of water -- by a list of grievances against an incompetent government, among the biggest of which was that top officials were digging water wells in their own backyards at a time when the government was supposed to be preventing such water wildcatting? As Abdelsalam Razzaz, the minister of water in Yemen's new government, told Reuters last week: "The officials themselves have traditionally been the most aggressive well diggers. Nearly every minister had a well dug in his house."

All these tensions over land, water and food are telling us something: the Arab awakening was driven not only by political and economic stresses, but, less visibly, by environmental, population and climate stresses as well. If we focus only on the former and not the latter, we will never be able to help stabilise these societies.

Take Syria. "Syria's current social unrest is, in the most direct sense, a reaction to a brutal and out-of-touch regime," wrote Francesco Femia and Caitlin Werrell, in a report for their Center for Climate and Security in Washington.

"However, that's not the whole story. The past few years have seen a number of significant social, economic, environmental and climatic changes in Syria that have eroded the social contract between citizen and government. ... If the international community and future policy makers in Syria are to address and resolve the drivers of unrest in the country, these changes will have to be better explored."

From 2006 to last year, they note, up to 60 per cent of Syria's land experienced one of the worst droughts and most severe set of crop failures in its history.

"According to a special case study from last year's Global Assessment Report on Disaster Risk Reduction, of the most vulnerable Syrians dependent on agriculture, particularly in the northeast governorate of Hassakeh (but also in the south), 'nearly 75 per cent ... suffered total crop failure'. Herders in the northeast lost around 85 per cent of their livestock, affecting 1.3 million people."

The United Nations reported that more than 800,000 Syrians had their livelihoods wiped out by these droughts, and many were forced to move to the cities to find work -- adding to the burdens of already incompetent government.

"If climate projections stay on their current path, the drought situation in North Africa and the Middle East is going to get progressively worse, and you will end up witnessing cycle after cycle of

instability that may be the impetus for future authoritarian responses," argues Femia.

"There are a few ways that the US can be on the right side of history in the Arab world. One is to enthusiastically and robustly support democratic movements."

The other is to invest in climate-adaptive infrastructure and improvements in water management -- to make these countries more resilient in an age of disruptive climate change.

An analysis by the US National Oceanic and Atmospheric Administration (NOAA), published last October in the Journal of Climate, and cited on Joe Romm's blog, climateprogress.org, found that droughts in wintertime in the Middle East -- when the region traditionally gets most of its rainfall to replenish aquifers -- are increasing, and human-caused climate change is partly responsible.

"The magnitude and frequency of the drying that has occurred is too great to be explained by natural variability alone," noted Martin Hoerling, of NOAA's Earth System Research Laboratory, the lead author of the paper.

"This is not encouraging news for a region that already experiences water stress, because it implies natural variability alone is unlikely to return the region's climate to normal."

Especially when you consider the other stresses. Nafeez Mosaddeq Ahmed, the executive director of the Institute for Policy Research and Development in London, writing in The Beirut Daily Star in February, pointed out that 12 of the world's 15 most water-scarce countries -- Algeria, Libya, Tunisia, Jordan, Qatar, Saudi Arabia, Yemen, Oman, the United Arab Emirates, Kuwait, Bahrain, Israel and Palestine -- are in the Middle East, and after three decades of explosive population growth, these countries are "set to dramatically worsen their predicament.

"Although birth rates are falling, one-third of the overall population is below 15 years old, and large numbers of young women are reaching reproductive age, or soon will be."

A British Defence Ministry study, he added, "has projected that by 2030 the population of the Middle East will increase by 132 pe rcent -- generating an unprecedented 'youth bulge'".

And a lot more mouths to feed with less water than ever. As Lester Brown, the president of the Earth Policy Institute and author of World on the Edge, notes, 20 years ago, using oil-drilling technology, the Saudis tapped into an aquifer far below the desert to produce irrigated wheat, making themselves self-sufficient.

But now almost all that water is gone, and Saudi wheat production is, too. So, the Saudis are investing in farm land in Ethiopia and Sudan, but that means they will draw more Nile water for irrigation away from Egypt, whose agriculture-rich Nile Delta is already vulnerable to any sea level rise and saltwater intrusion.

If you ask "what are the real threats to our security today," said Brown, "at the top of the list would be climate change, population growth, water shortages, rising food prices and the number of failing states in the world. As that list grows, how many failed states before we have a failing global

civilisation, and everything begins to unravel?"

Folks, this is not a hoax. We and the Arabs need to figure out -- and fast -- more ways to mitigate the environmental threats where we can and to build greater resiliency against those where we can't. Twenty years from now, this could be all that we're talking about. NYT

"Drought menaces Arab Spring", 09/04/2012, online at:
http://www.nst.com.my/opinion/columnist/drought-menaces-arab-spring-1.72202

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❖ Climate change threatens all of civilization

Isn't it interesting that the Arab awakening began in Tunisia with a fruit vendor who was harassed by police for not having a permit to sell food — just as world food prices hit record highs? And that it began in Syria with farmers who were demanding the right to buy and sell land near the border, without having to get permission from corrupt security officials? And that it was spurred on in Yemen — the first country in the world expected to run out of water — by a list of grievances including that top officials were digging water wells in their own back yards just as the government was supposed to be preventing such wildcatting?

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"The magnitude and frequency of the drying that has occurred is too great to be explained by natural variability alone," noted Martin Hoerling, of NOAA's Earth System Research Laboratory. "This is not encouraging news for a region that already experiences water stress, because it implies natural variability alone is unlikely to return."

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The real threats to our security, said Brown, are climate change, population growth, water shortages and the number of failing states in the world. How many states must fail before we have a failing global civilization, he asks.

Hopefully, we won't go there. But, then, it was Leon Trotsky who said: "You may not be interested in war, but war is interested in you."

You might not be interested in climate change, but climate change is interested in you.

"Climate change threatens all of civilization", 09/04/2012, online at:
http://www.modbee.com/2012/04/09/2150787/climate-change-threatens-all-of.html

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❖ Start-up firms bloom in wake of Arab Spring

DUBAI - Jordanian entrepreneur Majied Qasem waited three years before arranging outside funding for his start-up company, d1g.com, an Arabic social media and content-sharing platform. He finally succeeded in September 2011, eight months after Arab Spring uprisings erupted in the region.

The company now has over 35 million page views per month, with growth in traffic stimulated by online debates about a wide range of political and social issues, says Qasem, 40.

Like many entrepreneurs in the Arab world, he believes the region's political and economic upheaval has helped rather than hurt his business, by creating fresh demand for his products, persuading investors to seek new opportunities, and making governments more sympathetic to the needs of start-ups.

"Investors historically targeted well-established companies that had very low risk and provided high returns. But now, after the Arab Spring, investors are pouring the same amounts of money into multiple smaller companies, betting a few of them will see a remarkable success story," said Qasem.

"We're seeing unprecedented amounts of money paid by investors, governments and development funds to seed start-ups and small firms."

The economic damage caused by the Arab Spring has not yet faded. Egypt and Tunisia are coping with waves of industrial unrest as they seek to rebuild their tourism industries and lure back foreign investors. Libya is recovering from a civil war, while sectarian unrest still weighs on Bahrain's economy. In countries such as Jordan, governments have boosted welfare spending to try to buy social peace, undermining their finances.

But a positive result of the turmoil is that in some ways, conditions for entrepreneurs are improving, officials and businessmen say. Previously, start-up firms were sometimes discouraged by authorities as threats to small groups of privileged businessmen cooperating with authoritarian regimes. Now they are more often welcomed as tools to create jobs.

Arif Naqvi, group chief executive of Abraaj Capital, the Middle East's largest private equity firm with over $6 billion under management, said one of the most dramatic changes in the region's economic thinking since the Arab Spring was the realization that smaller firms, not big state-linked ones, would be the engine for growth because they could create more jobs.

"I'm a great believer that the Arab Spring has more in common with the Occupy Wall Street movement, the street riots in London, and the food riots in Mumbai than it had with political change," said Naqvi.

"Mohamed Bouazizi wasn't sending a political message when he set himself on fire. He wanted to work, to live and to survive," Naqvi added, referring to the Tunisian vegetable seller whose suicide in December 2010 triggered the upheaval in the region.

FUNDING

Difficulty in obtaining loans from risk-averse Arab banks, which often focus on serving large clients, has long been a major obstacle to setting up businesses in the region. Foreign aid donors such as the European Union, the United States and multilateral lending bodies have stepped up efforts to fill this gap since last year.

Mouayed Makhlouf, regional director for the International Finance Corp, a unit of the World Bank, said the IFC had invested $2.2 billion in the Middle East and North Africa since January 2011, becoming a significant source of capital for private firms.

"Back in 2005 we were doing in the range of $300 million in MENA. We're now allocating more than $2 billion a year," mainly investments in small and medium-sized enterprises, he said, adding that the IFC saw investment opportunities in Lebanon, Jordan, Egypt, Iraq, Tunisia and Morocco.

While endorsing the idea of developing smaller firms, cash-strapped governments in oil-importing Arab countries have mostly lacked the resources to give them more access to funding. Distracted by political change, parliaments in those countries have been slow to make legal changes that would help start-ups, such as reforming tax and labor laws.

But governments in wealthy Gulf states, seeing unemployment as a potential source of social unrest, are paying more attention to funding smaller firms. Last year, the state-affiliated Saudi Industrial Development Fund began guaranteeing as much as 80 percent of commercial bank loans to small firms, up from 50 percent previously.

Increased government support is in turn encouraging more private investors within the Middle East to consider funding start-ups, businessmen say.

Abraaj, through its $650 million Riyada Enterprise Development Fund, has invested in 13 SMEs since 2009. It says the fund screened over 400 companies for possible investment in 2011, roughly four times the number in 2010.

"Large pools of money are being set up to invest in the right venture. More than before, investors believe in the economic, social and financial value of seeding start-ups," said Fadi Ghandour, founder and chief executive of Dubai-listed logistics company Aramex.

Ghandour, along with Abraaj's Naqvi, founded a fund in 2010 which acts as an "angel investor" in Middle Eastern start-ups. It has so far made investments in over 40 companies, more than half of the deals closing in 2011.

TECHNOLOGY

Some entrepreneurs think the Arab Spring is creating business opportunities for them by refocusing the attention of governments on mass living standards and social welfare.

Two such entrepreneurs founded Agricel in Dubai earlier this year. The company is promoting a soil-less, water-saving farming technology which it says can be used in arid terrain including deserts as well as urban areas.

Kunal G. Wadhwani, co-founder of Agricel, says the firm will offer the technology to Arab governments which, thanks to the political upheaval, have become more sensitive to the dangers of high food prices, water scarcity and mass poverty.

"Against the background of young populations and popular uprisings, and given the challenges of food security and water scarcity in the medium term, the region will benefit from our ability to aid new governments face these problems," he said.

Agricel's founders say they initially funded the firm themselves with support from family and friends, but recently obtained funding from a bank in Dubai. Wadhwani is a veteran entrepreneur who was involved in setting up a regional business information service a decade ago; his colleague Yalman Khan is a former investment banker.

Other firms think they will benefit because the government will get out of their way. Tunisia's revolution has removed the grip of businessmen close to former ruler Zine al-Abidine Ben Ali from the economy, says Ridha Charfeddine, founder of Unimed, a group of pharmaceutical laboratories in the country.

"Generally speaking, now that the rules of the game are clear, everybody is equal and has their chance," he said, adding that deals and tenders involving the government had become more transparent.

Partly as a result, he said, Unimed's revenues grew at a double-digit rate last year. The company obtained a fresh investment from Abraaj Capital and investment firm Proparco in April 2011 to support its expansion.

“Start-up firms bloom in wake of Arab Spring”, 11/04/2012, online at: http://www.cnbc.com/id/47016366

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❖ What happens when all the wells run dry?

The Arab awakening was driven not only by political and economic stresses, but, less visibly, by environmental, population and climate stresses.

ISN'T it interesting that the Arab awakening began in Tunisia with a fruit vendor who was harassed by police for not having a permit to sell food - just at the moment when world food prices hit record highs?

And that it began in Syria with farmers in the southern village of Daraa, who were demanding the right to buy and sell land near the border, without having to get permission from corrupt security officials?

And that it was spurred on in Yemen - the first country in the world expected to run out of water - by a list of grievances against an incompetent government, among the biggest of which was that top officials were digging water wells in their own backyards at a time when the government was supposed to be preventing such water wildcatting?

Advertisement: Story continues below

As Abdelsalam Razzaz, the Water Minister in Yemen's new government, told Reuters last week: "The officials themselves have traditionally been the most aggressive well diggers. Nearly every minister had a well dug at his house."

All these tensions over land, water and food are telling us something: The Arab awakening was driven not only by political and economic stresses, but, less visibly, by environmental, population and climate stresses. If we focus only on the former, and not the latter, we will never be able to help stabilise these societies.

Take Syria. "Syria's current social unrest is, in the most direct sense, a reaction to a brutal and out-of-touch regime," write Francesco Femia and Caitlin Werrell in a report for their Centre for Climate and Security in Washington. "However, that's not the whole story. The past few years have seen a number of significant social, economic, environmental and climatic changes in Syria that have eroded the social contract between citizen and government."

From 2006 to 2011, they note, up to 60 per cent of Syria's land experienced one of the worst droughts and the most severe set of crop failures in its history. The United Nations reported that more than 800,000 Syrians had their livelihoods wiped out by these droughts, and many were forced to move to the cities to find work - adding to the burdens of already incompetent government.

"If climate projections stay on their current path, the drought situation in North Africa and the Middle East is going to get progressively worse, and you will end up witnessing cycle after cycle of instability that may be the impetus for future authoritarian responses," argues Femia.

An analysis by the US National Oceanic and Atmospheric Administration, published last October in the *Journal of Climate*, found that droughts in winter in the Middle East - when the region

traditionally gets most of its rainfall to replenish aquifers - are increasing, and human-caused climate change is partly responsible.

"The magnitude and frequency of the drying that has occurred is too great to be explained by natural variability alone," noted Martin Hoerling, of NOAA's Earth System Research Laboratory, the lead author of the paper. "This is not encouraging news … because it implies natural variability alone is unlikely to return the region's climate to normal."

Especially when you consider the other stresses. Nafeez Mosaddeq Ahmed, the executive director of the Institute for Policy Research and Development in London, writing in Beirut's *The Daily Star* in February, pointed out that 13 of the world's 15 most water-scarce countries - Algeria, Libya, Tunisia, Jordan, Qatar, Saudi Arabia, Yemen, Oman, the United Arab Emirates, Kuwait, Bahrain, Israel and Palestine - are in the Middle East, and after three decades of explosive population growth these countries are "set to dramatically worsen their predicament".

A British Defence Ministry study has projected that by 2030 the population of the Middle East will increase by 132 per cent. A lot more mouths to feed with less water than ever.

As Lester Brown, the president of the Earth Policy Institute and author of *World on the Edge*, notes: 20 years ago, using oil-drilling technology, the Saudis tapped into an aquifer far below the desert to produce irrigated wheat, making themselves self-sufficient. But now almost all that water is gone, and Saudi wheat production is, too.

So the Saudis are investing in farmland in Ethiopia and Sudan, but that means they will draw more Nile water for irrigation away from Egypt, whose agriculture-rich Nile Delta is already vulnerable to any sea level rise and saltwater intrusion.

"If you ask, 'What are the real threats to our security today'," said Brown, "at the top of the list would be climate change, population growth, water shortages, rising food prices and the number of failing states in the world. As that list grows, how many failed states before we have a failing global civilisation, and everything begins to unravel?"

Hopefully, we won't go there. But, then, we should all remember that quote attributed to Leon Trotsky: "You may not be interested in war, but war is interested in you." Well, you may not be interested in climate change, but climate change is interested in you.

"What happens when all the wells run dry?", 10/04/2012, online at: http://www.theage.com.au/opinion/politics/what-happens-when-all-the-wells-run-dry-20120409-1wl3a.html

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❖ Environmentalists slam energy ministry's changes to water law

The proposed changes include new conditions for water drilling, a severe increase in fines for lawbreakers and, for the first time, the requirement to prepare a long-term plan for water usage in Israel.

The Energy and Water Resources Ministry has recently begun to promote changes in the Water Law based on two-year-old recommendations from a state inquiry commission, much to the chagrin of environmental organizations.

The proposed changes were sent in the past few weeks to ministries, the Supreme Court and various organizations, and include new conditions for water drilling, a severe increase in fines for lawbreakers and, for the first time, the requirement to prepare a long-term plan for water usage in Israel.

A plethora of environmental organizations, headed by the Society for the Protection of Nature in Israel, severely criticized the proposed changes, saying they ignore the environment's needs, fail to address the problems of information transparency, and fall short of doing enough to include the general public in the process of decision making.

According to the proposed changes, the head of the Water Authority will grant permits to produce water after considering three goals: the preservation of water sources and their quality; the level of service received by customers; and the promotion of competitiveness in the water market.

The changes include fines of up to NIS 450,000 for lawbreakers, including whoever pollutes or illegally overpumps water sources. Presently, fines for such actions are considerably lower.

Another significant change is the demand to draft a long-term master plan for the use of water. The plan would have to be approved by the Water Authority council, but the minister of energy and water resources would be authorized to demand changes. This plan would determine the level of investment in the water market, as well as ultimately influencing water prices. Another change would be to weaken the power of the head of the Water Authority.

The SPNI requested further changes be added to the law. The environmentalists claim that, due to the importance of drilling permits, it should be determined that yet another goal be added: the preservation of nature and landscapes. This demand is part of the organizations' long struggle to ensure water flow to reservations, wells and springs.

Furthermore, the environmentalists argue that the proposed changes do little to increase the transparency of information brought to the public - a problem the commission was well aware of. The organizations would prefer more binding regulations concerning the activity and decisions of the Water Authority, noting that last year, the protocols of the Water Authority council were not made public.

The new changes, they claim, do not guarantee the public's participation in decision making, and therefore binding regulations concerning publication of full information should be formulated. There should also be more representatives of the public in the special council that would draw the master plan, and serve as the minister's consultant body. The environmental organizations oppose the proposal that the minister himself should head the council.

A spokesperson for the ministry said that all remarks and ideas concerning the proposed changes would be reviewed by its officials.

"Environmentalists slam energy ministry's changes to water law", 09/04/2012, online at: http://www.haaretz.com/news/national/environmentalists-slam-energy-ministry-s-changes-to-water-law-1.423295

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❖ Egypt is losing its grip on the Nile

Political uncertainty in post-revolution Egypt is allowing other Nile states to wrest control of the world's longest river.

CAIRO, Egypt and MARAWI, Ethiopia — Amid the barren, earth-dug canals and emaciated livestock that stalk the dirt roads of Ethiopia's northern highlands, Teshale, a 25-year-old farmer, waits idly for the rain to come.

His small, parched field of maize — sometimes wheat, if the weather permits — relies solely on the area's seasonal rainfall to produce its harvest, which fails to turn even a meager profit.

If Teshale could just harness some water from the mighty Blue Nile River nearby, which eventually cascades north to meet the White Nile in Sudan, flowing onward to Egypt, he might finally be able to halt his endless cycle of poverty, he says.

Until now, Ethiopia has lacked both the technical capacity and the diplomatic support to trap its Blue Nile waters — which give Egypt's Nile 86 percent of its own flow — for domestic use. A 1959 colonial-era treaty brokered by Great Britain gave Egypt, and to a lesser extent Sudan, unrivaled "historic rights" over nearly all of the Nile River's resources.

But now all that could be changing as upstream states like Ethiopia and Burundi seize on Egypt's post-revolution political uncertainty to finally wrest at least some control of the world's longest river.

More from GlobalPost: Could Egypt be out of water by 2025?

Just 16 days after President Hosni Mubarak stepped down in February 2011, Burundi reneged on its erstwhile promise to Egypt not to sign a new treaty that seeks to adjust water rights in the basin. If ratified by other basin states, the agreement would strip Egypt of its majority share of the river's water.

The most serious threat, however, comes from Ethiopia, already Egypt's regional rival. In May 2011, Ethiopia announced plans to build a massive, $4.8 billion hydropower dam — known as the Grand Renaissance Dam — along the stretch of river within its own borders, despite Egypt's opposition to the project.

"Most of us here are eager to use the Nile. But every farmer expects Egypt to be the enemy," said Manichey Abey, a 33-year-old Ethiopian farmer.

While hydropower dams — used to generate electricity — in theory eventually allow the dammed water to flow through, Egyptian officials remain wary of Ethiopia's intentions. They demanded in October of last year the creation of a tripartite committee, now at work, to study the new dam's effects and are worried the project could set an unwelcome precedent for more ambitious schemes in the future.

At 6,000 megawatts, the dam would be the largest hydroelectric power plant in Africa, with a reservoir capable of holding roughly 65 billion cubic meters of water.

“It will be a renaissance for the Ethiopian system,” Abey said. “The Nile is the main source of Egypt’s economy, and if the amount of water they use is reduced, it will be a big problem. But we have the right to use it.”

More from GlobalPost: Ethiopia claims its fair share of the Nile

Such ambitions by upstream states are contributing to the gradual loosening of Egypt’s 5,000-year grip on its nearly sole source of freshwater, threatening not only the desert nation’s ability to grow enough food for its expanding population, but also its political stability and regional hegemony.

Egypt’s uprising ushered in a period of political and monetary volatility, stalling the economy, shaking up relations with the US and kicking off a year of sporadic protests and clashes between protesters and Egyptian security forces.

All of this has diminished the Egyptian government’s traditional ability to stonewall both financing and diplomatic support for independent Nile Basin projects.

“Ninety-five percent of Egypt’s water comes from the Nile. We depend on the Nile more than any other country,” said Hani Raslan, an expert on water politics at the government-affiliated Al-Ahram Center for Political Strategic Studies in Cairo.

“But right now, the [Egyptian] government is only a transitional government,” he said. “It has nothing to do with the long-term plan for the Nile, and is only paying attention to our internal affairs.”

The importance of the Nile to Egypt is hard to exaggerate. Like a slender, green thread, the waterway fastens Upper Egypt in the south to Lower Egypt in the north, and has nurtured agricultural civilizations in its verdant Delta for millennia.

More from GlobalPost: Could a lack of food and water spark Egypt's next revolution?

As a result, and also because of significant US financial and military patronage over the years, Egypt has long been able to dominate the terms of Nile basin negotiations, thwarting independent water projects by other countries and manipulating international customary water law to maintain the status quo, water experts said.

“Egypt did have, until fairly recently, some kind of ideological hegemony [in the Nile Basin],” said Richard Tutwiler, director of the Desert Development Center at the American University in Cairo, a research facility aimed at serving Egypt’s desert communities.

“They were able to frame the entire issue of Nile waters in their own context, both within the basin, but more importantly outside the basin and in international forums and so forth,” he said.

For years, Egypt also skillfully influenced international financial institutions such as the African Development Bank and World Bank to sustain its outsized water quota, says Christine Anderson, former associate professor of international water law at the American University in Cairo.

"The UN moved on to an international water law treaty standard incorporating equitable distribution [of water resources]," Anderson said. "But the IMF and World Bank … upheld their regional alliance structures in Egypt's favor … thus preventing any forward movement for the rest of the Nile states."

Since Egypt's revolution, however, its new rulers have made decisions that run afoul of the organizations that once helped it maintain its control over the Nile.

Last spring, for instance, Egypt's headstrong military rulers scoffed at the International Monetary Fund's offer of a $3.2 billion loan package — only to later backtrack and ask again for the funds. They also brazenly put American democracy activists and their Egyptian colleagues on trial for attempting to subvert the state, souring relations with the US, the IMF's largest stakeholder.

Analysts say Western donors are wary, and that the Egyptian government's erratic behavior may temper support for its Nile dominance in the future.

In addition, Anderson said, China's willingness to finance a number of Ethiopia's dams, including the new Grand Renaissance Dam, has startled Egyptian officials, and indicates a potential new regional order in which US largesse may no longer secure Egypt's place as the Nile Basin's most powerful state.

Egyptian officials, for their part, remain defiant.

"Egypt has been asking these countries to come together so we can reach an agreement on the Nile," said Al Ahram's Raslan, adding that because Egypt receives negligible rainfall, its water quota should remain the same under any new agreement.

"But no one is responding to Egypt's call. These countries, especially Ethiopia, are making a grave mistake," he said. "Because Egypt is not a weak country. If it was ever in real peril, it won't be silent."

"Egypt is losing its grip on the Nile", 09/04/2012, online at: http://www.globalpost.com/dispatch/news/regions/middle-east/egypt/120406/egypt-losing-its-grip-the-nile

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❖ Egypt's next revolution

Will Egypt's impending food and water crisis spark another uprising?

CAIRO, Egypt — Pouring onto the streets in an unprecedented uprising last year, Egyptians toppled their dictator of three decades with resonating, populist chants for "bread, freedom and social justice."

But while more freedom and social justice remain a possibility for Egypt, bread might be harder to come by.

The country's growing population, and its loosening grip on the Nile, are threatening its water supply, weakening its capacity to irrigate crops and boosting the desert nation's reliance on food imports from an increasingly volatile global commodities market.

It's a dangerous situation many fear could lead to renewed political strife.

"People are scared of going hungry. They'll give up anything but bread," said 32-year-old Mohamed Maysara Hassan, an employee at one of the many bakeries that sell Egypt's subsidized bread — a staple — in the heart of Cairo.

If the ailing government was forced to lift its hefty bread subsidy, which keeps one saucer-sized loaf at just $0.008, "There will be another revolution," Hassan said.

More from GlobalPost: Egypt is losing its grip on the Nile

Egypt, with its long history, is no stranger to food-based unrest.

As far back as the pharaohs, who presided over one of human civilization's first recorded droughts, food shortages brought on by water scarcity led to a political breakdown, war and depopulation.

More recently, the "bread riots" of 1977 and 2008 — where rising prices or rumors of impending subsidy cuts led to deadly protests in the streets — exposed the dangers Egyptian leaders face when the country's poor can't afford food.

"Bread can be the fire-starter or the fire extinguisher of a revolution," said Noor Ayman Nour, a prominent pro-democracy activist and son of Egyptian presidential candidate.

As much of 80 percent of Egypt's 80 million people rely on subsidized bread.

"The regime [of Egyptian President Hosni Mubarak] was very successful in keeping prices high enough so that people were on just the brink," Nour said. "They were just insecure enough to remain subdued but not uncomfortable enough to revolt."

More from GlobalPost: Could Egypt be out of war by 2025?

But more than a year after Egypt's revolution, food prices and the cost of basic commodities, like cooking gas, have hit some of their highest levels.

Egypt imports about 60 percent of its total food supply, because just 6 percent of the country is agricultural land — some of which is used to grow luxury cash crops for export. The rest is hyper-arid desert. The Nile is almost the only source of freshwater.

With rising inflation, a large and swelling population, and the threat of increased use of the Nile by upstream neighbors, Egypt's capacity to feed itself is under threat. That makes Egypt's vulnerability to global food shocks more acute than ever.

"After Jan. 25, [the current military rulers] have gone back to the Mubarak tactic of allowing prices to rise," Nour said. "But blaming those who protest [against them]."

While bread is arguably the most crucial staple of the Egyptian diet, it remains somewhat shielded by the government's $2.45 billion in annual bread subsidies.

But according to Magda Kandil, director of the Egyptian Center for Economic Studies, other important parts of the Egyptian diet are also being threatened.

"[M]any of the food items in the consumption basket of Egyptians — fruit, vegetables — have gone up over the years," she said. If the price of importing food continues to rise, "it would make the cost of living unbearable."

More from GlobalPost: Video: Ethiopia, at Egypt's expense, claims its fair share of the Nile

Already the price of tomatoes — widely used in Egypt — has risen nearly 150 percent since Mubarak stepped down in February 2011, according to the government-run Central Agency for Mobilization and Statistics.

Food accounts for 44 percent of the Egyptian consumer price index, an economic indicator used to measure household expenditures on things like food, electricity and transportation — and as much as 40 percent of Egyptians live on less than $2 per day, according to the World Bank.

In contrast, food accounted for an average of 3.9 percent of the US urban consumer price index from February 2011 to February 2012, according to the US Bureau of Labor and Statistics.

Sayed Radwan goes to the subsidized bakery in his working class Cairo neighborhood every day to buy cheap bread for his family of four, spending just $1.15 to $1.30 per week. But that still gives him cause for concern.

When the prices of other food items or commodities go up, he said he has to buy less food.

"It is a constant worry," he said. "We can barely sleep at night. We buy less fresh food. You can't have a decent life."

More from GlobalPost: [Photos: With Nile only miles away, Ethiopia's farmers struggle to find water]

Egypt's foreign currency reserves, which it uses to purchase imported wheat for its government-supported bakeries, fell to $15 billion in March 2012, down from $35 billion in the month before Mubarak resigned.

If Egypt's post-uprising economy continues to falter, the issue of food security will be pushed to the forefront, analysts said.

"Food has proven a force for revolutionary change in the past," wrote Christine Anderson, a former associate professor of international water law at the American University in Cairo, in her book, "Climate Change, Water Governance, Law and State Survival in the Arab World."

"Egypt's next revolution", 09/04/2012, online at: http://www.globalpost.com/dispatch/news/regions/middle-east/egypt/120406/nile-river-egypt-water-food-politics-revolution

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❖ It's Beginning To Look Like Egypt Could Run Out Of Water By 2025

KAFR AL SHEIKH, Egypt and MARAWI, Ethiopia — When construction began on the Nile's Aswam Dam in 1960, in the southern reaches of Egypt, Egyptians were sure they were about to tame the world's longest river.

"Before the dam, the people's lives here were much worse. The water would rise and fall without predictability," said Abdullah Ati, a 42-year-old wheat and clover farmer in the northern agricultural province of Kafr Al Sheikh, relaying his father's tales from the pre-dam era.

But more than 50 years after Egypt's firebrand socialist president, Gamal Abdel Nasser, seized on fevered Egyptian nationalism to build the dam and establish the country's dominance over the Nile, this arid North African nation is facing threats to its near-sole source of freshwater.

With rapid population growth, limited agricultural land and recent challenges to its majority share of Nile waters by upstream states, the United Nations now says Egypt could be water scarce by 2025.

More from GlobalPost: Egypt is losing its grip on the Nile

"In a sense, the average Egyptian is deprived of water," said Hani Raslan, an expert on water politics at the government-affiliated Al-Ahram Center for Political and Strategic Studies in Cairo.

"The average per capita water use in Egypt is 700 cubic meters [per year], while around the world, it's about 1,000 cubic meters," he said. "We are trying to find new sources of water. But soon, [there] will be less than 500 cubic meters."

It is not that Egyptians are necessarily thirsty. Domestic consumption of freshwater in local households makes up less than 20 percent of the roughly 64 billion cubic meters of water Egypt consumes each year, 55.5 billion of which come from the Nile.

The issue lies in Egypt's pressing need to feed its exploding population through the expansion and irrigation of the country's farmland — just 6 percent of its total area —with the same or an even lesser amount of water.

According to the Ministry of Water Resources and Irrigation, Egypt will need 20 percent more water in 2020. Its population, according to government projections, will likely grow from 80 million now to 98.7 million in 2025.

"Egypt is changing, and it has a lot to do with population growth," said Richard Tutwiler, director of the Desert Development Center at the American University in Cairo, a research facility aimed at serving Egypt's desert communities. "Everything is irrigated here, yet the water resource has not increased."

More from GlobalPost: Egypt's next revolution could be over food and water

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Today, Egypt's irrigation network draws almost entirely from Nasser's dam, called the Aswan High Dam, which regulates more than 18,000 miles of canals and sub-canals that push out into the country's farms adjacent to the river.

The system, however noble in its intentions, is highly inefficient, irrigation experts say. The surface irrigation of crops through the canals, for instance, means as much as 3 billion cubic meters of Nile water is lost each year to evaporation under Egypt's hot, desert sun.

Also, farmers located at the heads of canals have better access to an abundant supply of quality water than those at the canals' tails, says Ahmed Al Hennawy, professor of irrigation and soil sciences at Kafr Al Sheikh University.

"The farmers, they take the water from the canal without any planning," Al Hennawy said. That forces farmers in his village at the end of a canal to use run-off and even sewage water from farming hamlets nearby to irrigate their cotton, rice and corn fields.

"A lot of Egyptians don't realize we have a lot of water issues," said Sherif Hosny, CEO of a for-profit company called Schaduf — the German word for a simple agricultural tool used in some of the early gardens of ancient Egypt. His company helps low-income families use hydroponics, a process of growing plants without soil, to establish small gardens on Cairo's many rooftops.

It's an irrigation method, Hosny says, that uses 20 percent less water than the current canal system.

"They see the Nile flowing," he said. "And they think everything is fine."

More from GlobalPost: Video: Ethiopia claims the Nile

Having the Nile as the solitary source of freshwater was once a blessing for Egypt's rulers, enabling the pharaohs and subsequent governments to forge a centralized system of administration and infrastructure anchored in the river and its adjacent communities.

But now, to ease over-crowding near the river, Egypt's government is encouraging its swollen population to move away from the Nile and into the desert — which makes up 95 percent of its area. About half of Egypt's 80 million people live in the fertile Nile Delta north of Cairo.

The government is offering tracts of sandy wasteland at low-cost if settlers pledge to irrigate the barren parcels.

The Egyptian government has managed to boost its tillable land over the last 50 years by one-quarter, using canals to bring Nile water to the desert. But most of those plots were snatched up by commercial mega-farms that churn out cash crops — like strawberries — for export rather than local consumption. In the end, these green desert farms did little to ease the scarcity of food in Egypt.

"The policy for 60 years has been to expand the cultivated surface of Egypt, getting people out of the valley and into the desert," Tutwiler said. "But it's a different environment out there. The drainage

issues are different. And the irrigation, it needs more power. It involves a much higher capital investment that poor farmers just don't have."

More from GlobalPost: Photos: With the Nile just miles away, Ethiopia's farmers struggle to find water

Indeed, blooming the desert requires funds to build modern irrigation systems capable of pumping water, with energy-fueled, pressurized pipes, out of the Nile Valley.

While it helps alleviate pressure on the Nile Delta, experts say the desert irrigation program only reduces Egypt's ability to conserve water.

"Think about Egypt as kind of a valley. Gravity suggests if you put too much water on your field in upper [southern] Egypt, it trickles back into the Nile, and you can put it back on a field in lower [northern] Egypt," said Tutwiler, describing the flood irrigation system that originates at the Aswan Dam in the south.

"But if you take the water out of the valley and put it in the desert, it doesn't go back into the Nile. It's lost in the sand."

"It's Beginning To Look Like Egypt Could Run Out Of Water By 2025", 09/04/2012, online at: http://www.businessinsider.com/its-beginning-to-look-like-egypt-could-run-out-of-water-by-2025-2012-4

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❖ Does India Manage Its Water Like a 'Banana Republic?

India's water supplies might be drying up and the government is finally waking up to that fact. The question remains, though, if its efforts will be sufficient to avert a possible crisis.

India has more than 17% of the world's population, but has a mere 4% of the world's renewable water resources and 2.6% of the world's land area.

New Delhi is finally beginning to realize the precariousness of those statistics. The Ministry of Water Resources earlier this year drafted a national water policy outlining a framework for the country.

Some of the key concerns that the policy raises include:

- Large parts of India have already become water stressed. Rapid growth in demand for water pose serious challenges to water security.

- Access to safe drinking water still continues to be a problem in some areas. Skewed availability of water between different regions and different people in the same regions is iniquitous and has the potential of causing social unrest.

- Groundwater is still perceived as an individual property and is exploited inequitably and without any consideration to its sustainability leading to its over-exploitation in several areas.

- Inter-state, inter-regional disputes in sharing of water hamper the optimum utilization of water.

These are among the issues that will likely be addressed during "India Water Week," a three-day conference organized by India's Ministry of Water Resources starting Tuesday.

The water ministry is set to release a set of recommendations based on the draft water policy as early as this week. But what do experts make of the draft so far?

This is a more comprehensive policy than the one currently in place because, in a first, the government is waking up to the fact that water can be depleted, says Sunil Sinha, head and senior economist at Crisil Ltd., a rating agency owned by Standard & Poor's. Mr. Sinha authored a recent report on how corporate India needs to embrace for an impending water crisis and switch to sustainable water practices.

"Whenever the issue of water has been discussed in the Indian context, most of the discussion was on augmenting the water resources," says Mr. Sinha. "The conversation always is that the supply doesn't meet the demand and how do we increase the supply. One good thing about this policy is that it's recognizing that water is not an unlimited resource."

Water, the draft says, should be treated as an economic good so as to promote its conservation and efficient us. It needs to be managed as a community resource held, by the state, under a public trust doctrine to achieve food security, livelihood, and equitable and sustainable development for all.

The draft adds that each state should establish a system for a water tariff and have in place a criteria to charge for water. And it acknowledges one of the pet peeves of a lot of planners: a lot of water, and electricity, is

wasted because electricity is heavily under priced by several governments and this, it says, needs to be reversed.

But not everyone is impressed.

"It is not the absence of money, expertise or water because of which [Indians] have such a poor service," says Prof. Asit Biswas, president of the Third World Center for Water Management in Mexico, and a water expert who has been advising governments and companies on their water management for several years. "It is simply bad planning and management. India may be an emerging economic power, but its urban water and wastewater management is akin to that of a banana republic."

Prof. Biswas says many of the ideas in the new draft were promoted in the previous policy but were never implemented.

"In case of India, the ideological discussion as to who provides the water, public or private sector, is a red herring," says Prof. Biswas.

Currently less than 1% of India's population receives water from the private sector. And even under the most optimistic scenario, he says, this number will remain under 10% even by 2030.

"The main question India should be asking is how to improve the dismal performance of the public sector since even in 20 years´ time more than 90% of the Indians will be receiving water from the public sector," he says.

The country needs to make some tough decisions but lacks the political will, he says. "Equally, unfortunately, the Indian public is so used to a third class water service for generations that it accepts this third-grade service without any complaint."

Prof. Biswas says the country can start with three immediate changes: replace career bureaucrats who head water utilities with professional, technically knowledgeable managers, who can spend at least six years running the utility so that they have enough time to develop and implement a plan; price all water, and have special tariffs for the poor who shouldn't pay more than 2% of their household income ("free water is a sure recipe for a third grade delivery service," he says); remove the excess fat from Indian utilities so that they can turn around to become financially viable.

(To be fair, the draft does say that states should establish a water tariff.)

Crisil's Mr. Sinha is not as pessimistic about the draft in its current form. He says he is encouraged that the government is realizing that it can't really increase the supply of water and will have to make more judicious use of water and focus on water wastage. "Here is a lot of movement forward," he says.

"Does India Manage Its Water Like a 'Banana Republic?",09/04/2012, online at: http://blogs.wsj.com/indiarealtime/2012/04/09/does-india-manage-its-water-like-a-banana-republic/?mod=google_news_blog&utm_source=Circle+of+Blue+WaterNews+%26+Alerts&utm_campaign=5942cf8dcd-RSS_EMAIL_CAMPAIGN&utm_medium=email

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❖ Chile to extend energy rationing amid drought, delays-paper

World's top copper producer seeks to avoid blackouts

* Drought, power station delays hit central Chile

* Energy-saving measures likely extended to Oct

SANTIAGO, April 6 (Reuters) - Chile will likely extend energy-saving measures through October, as a drought slows hydro power generation and delays starting up two new coal-fired plants hits an already blackout-prone, fragile electric grid, a senior energy official was quoted as saying on Friday.

The world's top copper producer will probably decide next week to prolong for a third time measures first introduced last year to reduce voltages and cut use of water from r e servoirs, Deputy Energy Minister Sergio del Campo told El Mercurio newspaper.

The country's third consecutive drought and the delays starting up two new power stations have compounded energy problems in Chile, whose grid is already suffering from years of underinvestment and a massive earthquake in early 2010.

"Everything indicates it would be reasonable to extend (rationing)," del Campo was quoted as saying.

He said newly-named Energy Minister Jorge Bunster, the fifth person to occupy the post during President Sebastian Pinera's two-year administration, will likely announce the extension of the power-saving measures.

The measures, which had been due to expire this month, include reducing voltage by up to 10 percent in the country's central energy grid.

The central grid, or SIC in its Spanish initials, which supplies more than 90 percent of the population, is most likely to be hit by the energy squeeze because of its reliance on hydro power. The far northern grid, which powers miners in the copper-rich north, mostly uses energy generated by thermal plants.

Generator Colbun's Santa Maria coal plant will come on line in June, as opposed to April, and generator Endesa's Bocamina II will come on line in August, instead of June, del Campo said.

"This is clearly bad news but it doesn't put the system at risk," he said.

Energy blackouts remain a risk, former energy minister Rodrigo Alvarez told Reuters in February, and it will take years to head off a repetition of massive blackouts such as one in September 2011 that hit operations at major mines and cost state copper giant Codelco over 1,400 tonnes in lost output.

The government estimates that to keep up with rising energy demand, some 8,000 megawatts of capacity will need to be added by 2020 to the current 17,000 megawatts in the country's power matrix.

"Chile to extend energy rationing amid drought, delays-paper", 06/04/2012, online at: http://www.reuters.com/article/2012/04/06/chile-energy-rationing-idUSL2E8F62CN20120406?utm_source=Circle+of+Blue+WaterNews+%26+Alerts&utm_campaign=5942cf8dcd-RSS_EMAIL_CAMPAIGN&utm_medium=email

❖ Track-II: Pakistan, India move to avert water war

ISLAMABAD: Pakistan and India have agreed in principle of a need to set up an independent office of the Indus Water Commission (IWC) comprising neutral experts from outside the South Asian region with an unblemished record and integrity to avert wars on water issues between the two neighbourly nuclear states.

The understanding was reached during a dialogue on strategic relations including water disputes under the track-II diplomacy held in New Delhi on March 28-30

Both sides also developed a experts from various international agencies such as the Work Bank, the UNEP and the EU. This independent commission of experts shall work directly under the UN to monitor and promote sustainable development in Kashmir and HP (Himachal Pradesh).

The independent IWC will also arrange real time data of minor, major tributaries and at all headworks, dams by website including three dimensional models of dams -- a three-dimensional model to represent geometric data of dams (flood storage+ ROR [3] Hydropower projects) for clarity of the global community.

Both sides also agreed for installation of satellite based real-time telemetry system in Indian-held Kashmir at a minimum 100 locations for monitoring water quality and quantity. This would also help remove mistrust on data exchange between the two countries.

The special debate was on water issues held wit Dr Axel Harneit-Sievers, Germany in the chair and attended by Ramaswamy R Iyer, former Secretary, Ministry of Water Resources, India, Arshad H Abbasi, Water and energy expert, and Salman Haider, former Foreign Secretary.

The session ended with the outcome of a set of strong and applicable recommendations from both sides that the two countries should first erase the mistrust on water data pleading for the installation of telemetry system in IHK at a minimum 100 locations in trans-boundary rivers for monitoring water quality and quantity.

According to the cope of the outcomes of the dialogue of which a copy is available with The News, Arshad H Abbasi, water and energy expert associated with SDPI prevailed and succeeded to safeguard the Pakistan water interests with convincing arguments owing to which the Indian side acknowledged that it should be mandatory and important to setup dam safety measures in consultation with Pakistan when Abbasi drew the attention of Indian experts to the fact that India has been planning to start more than 67 dams for hydropower generation since long and all these dams fall under the category of large dams. Unfortunately, India's dam-failure record has been the worst, as nine of its dams have collapsed so far. J&K area is earthquake prone hence a minor failure can result into a catastrophe for the downstream areas.

It has also been agreed upon that Article VI of the Indus Waters Treaty explicitly elaborates the need and compulsion to exchange information and data related to the projects to be installed on the Indus River. Besides the parameters defined in the treaty, India and Pakistan are bound to exchange such

information/data under the obligation of the commission on large dams as members of the commission.

It was also agreed during the special debate on water issues that environmental threats do not respect national borders. During the last three decades, the watershed in IHK has badly degraded. To rehabilitate watershed in IHK and Himachal Pradesh, both countries are to take initiative for joint watershed management.

Arshad Abbasi during the dialogue suggested that to rehabilitate watershed in IHK and HP, an environmental impact assessment is the best instrument to assess the possible negative impact that a proposed project may have on the indigenous environment, together with water flow in rivers. He also told during the debate that the United Nations Economic Commission for Europe's Convention on Environmental Impact Assessment in a Trans-boundary Context provides the best legal framework for Trans-boundary EIA for sustainable flow in Indus River System, so that India should share TEIA before physical execution of any project including hydropower.

Both sides also developed consensus that the glaciers are an important and major source of the IRS. To preserve these glaciers, there is an immediate need to declare all Himalayan glaciers as "protected area" including immediate demilitarisation from Siachen to preserve this second longest glacier of the planet to fall in the watershed of the Indus River.

"Track-II: Pakistan, India move to avert water war", 06/04/2012, online at: http://www.thenews.com.pk/Todays-News-13-13729-Track-II-Pakistan-India-move-to-avert-water-war?utm_source=Circle+of+Blue+WaterNews+%26+Alerts&utm_campaign=8de9a0fe54-RSS_EMAIL_CAMPAIGN&utm_medium=email

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❖ Chilean court rejects opposition to Patagonia dam

Environmentalists and local groups say plan for five giant dams will damage wildlife and endanger people living downstream

Chile's supreme court has green-lit a controversial dam project in the Patagonia that could generate up to 20% of the country's electricity demand in 2020, but is opposed by environmentalists and local groups for the damage it will cause the region.

The highest legal authority in Chile rejected seven appeals filed against Project HidroAysén, which plans to build five dams, flooding 6,000 hectares. The government had approved the project last year but the case was taken to the supreme court after objections were raised over the environmental impact study.

Judges on Wednesday rejected all claims by opponents, including allegations that the study had failed to properly evaluate the effects on endangered Huemul deer, on the national park Laguna San Rafael and the dangers to people living downstream.

"This wasn't a surprise. We didn't have any confidence that the court was going to make a favourable decision," said Luis Mariano Rendon, co-ordinator of Acción Ecológica that last year organised protests of 40,000 people against HidroAysén in Santiago. "Unfortunately this means that once again citizen protests are only way that we have left to defend the Patagonia."

The dams will have a capacity of 2,750MW to power Chile's rapidly growing economy, and the government has said that hydroelectric energy will be crucial for the country's future energy security. But Wednesday's court decision is expected to spark further unrest, particularly in the Patagonian region of Aysén where many locals feel that decisions are being taken without their consent.

"We are a close people here, very kind, very warm, always around a fire, sharing. It is a rich family-centred quality of life that has developed here and we do not want to lose it," said Hugo Díaz, a local businessman whose great-grandparents first came to Aysén in the pioneer boom of the 1920s.The string of communities the settlers left behind in the Patagonia, are used to their independence. Isolated towns such as Caleta Tortel, downstream and fiercely resistant to the dams, were only connected by road to the rest of Chile in 2003.

Even now Tortel's buildings are connected by wooden walkways rather than roads, built over the hundreds of small waterfalls and shrubs of wild fuchsia in the Gulf of Sorrow. "Things are done differently out here in the Patagonia – slowly. We do things to the rhythm of rains, of the moon, many of us sow our crops like that still and this is the life that we want to keep," said Hugo.

But HidroAysén's promises of cheaper electricity and a new hospital have convinced many other Ayséninos that the dams are worth having. "I get the feeling that there could be a balance of people for and against," said Dr Giovanni Daneri, scientific director of the Centre of Ecosystem Investigation in the Patagonia.

Before the protests took over, the argument was played out on local radio stations and across giant billboards. Posters for and against were slashed and "HidroAysén = $" signs were replaced overnight with "No dams!" in yellow spray paint.

With the new announcement tensions have risen again. A general strike was called for within hours of the court's decision as well as a series of national protests. As town squares filled up with protesters on Wednesday evening, the political battle remains far from over. Project HidroAysén's plans for a transmission line stretching more than 2,000km to Santiago still needs to be revised by the government.

Until then relocation plans for local people remain uncertain. Seven years have passed since Elisabeth "Lili" Schindele first heard about the dams and she is no closer to knowing what will happen to her home on the edge of the River Baker. It was almost a year ago that Lili found herself trapped with officials during the first of the violent protests. "There was all this noise outside," said Lili. "The intendant of Aysén turned to the journalists and said: 'Now that this project has been approved, all the people of Aysén can be at peace.' It's been many months since then and I still can't get those words out of my head: 'Now the people can be at peace'."

"Chilean court rejects opposition to Patagonia dam", 05/04/2012, online at: http://www.guardian.co.uk/environment/2012/apr/05/chilean-court-patagonia-dam?newsfeed=true&utm_source=Circle+of+Blue+WaterNews+%26+Alerts&utm_campaign=8de9a0fe54-RSS_EMAIL_CAMPAIGN&utm_medium=email

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❖ Water conference to discuss developments for the region

Gulf and Arab countries gathered at the four-day Water Desalination Conference in the Arab Countries (ARWADEX 2012) in Riyadh to discuss developments in the techniques and methods of water desalination in the region and activating the exchange of experiences gained from regional and global organizations in the field.

Abdullah Al-Hussayen, minister of water and electricity and chairman of the National Water Company, thanked Custodian of the Two Holy Mosques King Abdullah for his patronage of the event, which began at King Faisal Hall for Conferences yesterday. The Ministry of Water and Electricity and Saline Water Desalination Research Institute are organizing the event.

In a statement on the occasion, Al-Hussayen said this sponsorship reflects the keenness and interest of the king and the government in water services that are being provided to citizens.

The minister said the conference was one of the important specialized conferences to be held to address issues of water desalination and discuss the scope of research in water desalination, technologies and sustainable economies.

He said this is the most important channel of communication to identify and achieve common goals sought at state level and by designers, manufacturers, contractors and developers.

He said previous conferences have contributed to the introduction of investment opportunities available to the private sector in the field of water desalination and research in matters relating to advisory activities and contracting. However, the minister said, this conference aims at developing desalination in the Arab countries.

The governor of the General Organization for Water Desalination (GOWD), Dr. Abdul Rahman Al-Ibrahim, said the patronage of the king for the conference underlines the importance of this industry and the growing need in Arab countries in light of the scarcity of water available from potable resources and increasing population and urbanization.

He said: "The deterioration of water resources is one of the important issues faced by many Arab countries that are experiencing rapid population growth and facing a decline in the capacity of natural water sources, which requires nontraditional and innovative methods such as desalination of water."

He emphasized this conference comes in the context of interest in technology and the feasibility economics of the industry and its costs, operation and maintenance, as well as giving importance to environment. He added previous experiences would be reviewed and evaluated for probable use in the reorganization and restructuring of the sector and the water desalination in the Arab countries.

The conference program is as follows:

On Tuesday, the session will be addressed by Dr. Osaman Ahmed Hamad of the Saline Water Desalination Research Institute to discuss the Desalination Economics and Cost Evaluation. A panel of international experts will discuss the solution for membrane fouling. They include Prof. Harvey Winters, Prof. Harry Ridgway and Muhammad Tariq Khan of King Abdullah University for Science and Technology, and Dr. Mohammed Saeed of SWDRI. Dr. Saleh Alfozan of SWDRI will talk on corrosion in desalination and power plants.

On day two, a number of work papers will be discussed under the chairmanship of Prof. Gary Amy, director of water desalination and reuse center at KAUST, while the first paper on limitations, improvements, alternatives of the silt density index will be presented by Dr. Abdusalam Al-Hadidi from University of Twente, Netherlands.

A second paper on treating salt and color water by ceramic membrane will be presented by Prof. Belouatek Aissa from the University Center of Relizane, Algeria.

A third paper on development and testing of new class of membranes for RO desalination will be presented by Prof. S.M. Javaid Zaidi, from KFUM; a fourth on performance evaluation of five years operation experience of WMZM RO desalination plant presented by Aziz Yousef Yaseen, head of the production quality unit at Jordan Company; and a fifth paper on synthesis and characterization of a carbon nonotube/polymer nanocomposite membrane for water treatment will be presented by Prof. Hosam A. Shaky, head of the water desalination unit at the Desert Research Center, Cairo.

"Water conference to discuss developments for the region",09/04/2012, online at: http://arabnews.com/saudiarabia/article608280.ece

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❖ Dialogue of the deaf

A new "powerhouse" is emerging in the frontier state of Arunachal Pradesh, north-eastern India. Public and private companies have proposed 168 massive dams, to produce 57,000 megawatts of hydropower, in this strategically important region, which borders Myanmar in the east, Bhutan in the west and China in the north.

There is big money involved. Arunachal Pradesh amassed 168.7 crore Indian rupees (nearly US$34 million) from hydroelectric projects' processing fees and developer premiums alone in the year 2010 to 2011. Apart from the micro hydroelectric projects, mega-schemes have been planned on the five major river basins of the state, Kameng, Subansiri, Siang, Dibang and Lohit.

All of these dams are proposed for the upper reaches of the Brahmaputra River and its tributaries in Arunachal Pradesh and in Assam, the next state downstream. The Brahmaputra – known as the Yarlung Zangbo in Tibet, where it originates, and the Jamuna in Bangladesh – is one of the world's largest rivers. Together with the Barak River, it ties together much of north-eastern India, a region known for its flora, fauna and cultural diversity.

The issue of big dams in north-east India is getting more complex every day. Resentment against the projects has already led to a series of agitations, mostly in Assam. The epicentre of the controversy now is theLower Subansiri Dam, a 2,000 megawatt hydroelectric project being built by the state-owned National Hydroelectric Power Corporation (NHPC). The project is located in Gerukamukh on the lower reaches of the Subansiri, a tributary of the Brahmaputra, on the border of Assam and Arunachal Pradesh and is the largest dam in India now under construction.

But, since December 16 last year, work on the project has been almost at a standstill, thanks to opposition, led in Assam by a farmers' organisation called Krishak Mukti Sangram Samiti (KMSS). The protesters say the dam will affect the flow of water on the Brahmaputra, which will impact irrigation downstream, and increase the danger of sudden floods in an area that is already highly flood-prone. The protesters have clashed with the police many times. On one occasion, the police opened fire, injuring many protesters.

Dissent is also growing over the proposed 1,750-megawatt Demwe Lower Hydroelectric Project, positioned barely 800 metres from Parsuram Kund, a sacred Hindu site on the Lohit River in Arunachal Pradesh. Reports say the 13,000-crore rupee (US$2.6 billion) project will likely involve the felling of more than 43,000 trees and threaten endangered wildlife species including the Bengal Florican and the Ganges River Dolphin.

Discord over the dam has triggered animated debates on television and in public forums; protests; motorcycle rallies; road blockades; and even violence. Activists hold that engineers and technocrats alone cannot determine all aspects of the impact of dams on people downstream. They argue the

authorities must also involve social scientists, who will understand how the identity of certain ethnic communities will be lost forever if they are uprooted from their homelands.

Ethnic minority communities like the Lepchas of Sikkim and Idu Mishmis of Arunachal Pradesh have expressed apprehension about the multiple mega-dam projects on their native soil. But at the same time, some of the 20-odd major tribes in Arunachal Pradesh have supported the dams. Environmentalists say that the support is coming from tribes with a stake in the state's ruling Congress party, while those who would be displaced by the dams are from smaller tribes, with fewer votes.

Raju Mimi, a young activist from the Idu Mishmi tribe of Arunachal Pradesh, explained how his community of around 12,000 has been protesting against construction of the 3,000-megawatt Dibang hydroelectric project in the Lower Dibang Valley: "The whole dam-building process has been going on without taking the people into confidence or their participation. Most of the local people are dependent on agriculture and are not ready for such big dam projects. They will be further marginalised culturally, economically and politically." Mimi also said that powerful tribes have been promised money or other benefits from the projects and see them as a route to power and riches.

The NGO Forum for Siang Dialogue has been leading the movement against the 2,700-megawatt Lower Siang Dam in Arunachal Pradesh and a 10,000-megawatt dam on the Upper Siang. (The Yarlung Zangbo is called the Siang as it enters Arunachal Pradesh from China; it becomes the Brahmaputra further downstream.) The forum's spokesperson Vijay Taram said: "In the belts inhabited by the Adi tribe [which has a population of over 150,000], 43 massive dams are coming up. We are on the verge of being annihilated by all these developmental activities. Our language, forest, rivers, culture, tradition and identity will perish.

"This land belonged to our forefathers and today we are being asked to vacate our land. The compensation offered is also meagre – just 1.5 lakh rupees [US$3,000] per hectare." He added that their village elders have repeatedly pleaded for the Siang to be able to "flow of its free will". The forum supports construction of small dams.

The proposed dam sites are ecological hotspots. Wildlife biologist Firoz Ahmed said: "A dam kills the river and its ecosystem over a period of time, putting at risk all flora, fauna as well as human beings. Wildlife species like the river dolphins, elephants and tigers will be affected." Fish and other species in the rivers are also likely to be drastically impacted by the flow regime, which will artificially change the river flow in line with electricity-generation needs.

Developers point out that each hydro project was approved by the state and federal governments only after a detailed Environmental Impact Assessment (EIA). Under the law, open consultations with affected people – called public hearings – are supposed to be integral to an EIA. Activists and local residents argue that these public hearings were not held in a transparent or inclusive manner.

There is little sign so far that either the state authorities or India's central government is going to agree with the opponents of the dams. Apart from the hydroelectric potential of these projects, security analysts in India point out another reason why they would like the dams to be built. Medha Bisht of the influential think-tank the Institute for Defence Studies and Analyseswrote recently, "The urgency of dam building in Arunachal Pradesh on the part of the Indian government can also be gauged from the strategic importance that water rights have for states sharing trans-boundary rivers. Diversion of the Brahmaputra by China has received much attention in the past few months. The spate of dam building in Arunachal Pradesh therefore has to be situated in this broad context of establishing 'prior use' on Brahmaputra waters."

There is serious concern in India that the Chinese government is planning to divert the waters of the river to the parched regions of northern China. This is the western route of the South-North Water Transfer Project, which Beijing says it has dropped because it is not feasible. But alarm bells ring loudly in India every time someone in China says something in support of the diversion plan, and the Chinese government is repeatedly forced to deny that there is any such plan. According to the authorities in Beijing, there is only one hydroelectric project being built on the Yarlung Zangbo before it crosses into India, and that is a "run of the river" project which does not involve holding back water behind a dam. The unease in India persists despite these assurances, and those researching the subject say it will be better for everyone if China and India enter into a transparent and fair water-sharing pact on the Brahmaputra.

One major problem surrounding any debate over the dams is lack of data. "Very little scientific information and documentation on which a good debate can be held is available," said Partha Jyoti Das, senior scientist at the NGOAaranyak, who has been studying the Brahmaputra basin and local dam projects. There is little data in the public domain on seasonal changes in the current water flow in the various rivers, let alone how that flow will be affected by the dams. Similarly, lack of data makes it difficult to accurately predict the effects of the dams on the ecosystem.

There are also serious data gaps when it comes to the lifestyles of the many tribes and communities who live in this part of India. Right now, these gaps are being used by project supporters to describe the criticisms as "mere emotional outbursts". But in future, such gaps can become major obstacles in the process of rehabilitating people displaced by the dams.

Apart from the committed supporters and opponents of the dams, public opinion in north-eastern India is veering in favour of a consensus based on scientific opinion. But both physical and social scientists are working in largely uncharted waters. There is an immediate need to study the hydrology, ecology and society of the entire Brahmaputra basin in far more detail than has been done to date.

"Dialogue of the deaf", 09/04/2012, online at: http://www.chinadialogue.net/article/show/single/en/4856

❖ Zimbabwe ill-prepared for climate change challenges - experts

BULAWAYO, Zimbabwe (AlertNet) – Zimbabwe's lack of preparedness for the impact of climate change is coming under increasing scrutiny, as the nation faces another year of drought and the government admits it has done little to mitigate the crisis.

Smallholder farmers, the main producers of maize, the country's staple food, are suffering poor harvests because of sparse rainfall and rising temperatures. With the threat of food insecurity being felt across the country, the government is under pressure to formulate a comprehensive climate change policy.

The agriculture ministry said last year that sufficient crops had been planted to feed the nation. But rain expected in late December came only in March, forcing a revision of the projected output.

"No one knows anymore when the rains will fall. We are only seeing the rain now after having planted last year," said Thembiso Mkhwebu, a smallholder in rural Gwanda, some 100 km (63 miles) south of Bulawayo.

"Our maize wilted a long time ago and this rain is useless now," she added. "We cannot start planting now."

REQUEST FOR FOOD AID

Despite previously insisting that Zimbabwe was able to feed itself, the government last month appealed to international humanitarian agencies for help. The US government's Famine Early Warning Systems Network estimates that up to 2 million people will require food assistance.

The international community has yet to respond to Zimbabwe's appeal, which comes after scores of non-governmental organisations were banned from operating in the country because government officials claimed they were meddling in politics.

At the commemoration of World Water Day in March, President Robert Mugabe noted the huge impact of climate change on agricultural production and said that the scarcity of rain posed a threat to the country's food security. Zimbabwe's agriculture is heavily rain-fed, and irrigation schemes are too expensive for most rural smallholder farmers.

Mugabe's acknowledgement presents fresh challenges to the government's agrarian reform programme. The country's inadequate grasp of how to deal with changing weather patterns is typified by the Meteorological Services Department, which over the last year has had to revise its forecast for the coming of the planting season rains a number of times when prior predictions failed.

The government last year began broad consultations to map out a climate change policy in partnership with the Climate and Development Knowledge Network (CDKN), an international non-governmental agency that supports climate-smart development and policy making.

CDKN-supported research suggests that Zimbabwe will have to cope with changing rainfall patterns, temperature increases and more extreme weather events such as floods and droughts. According to CDKN, longer and more frequent droughts could substantially reduce crop yields, including maize.

LACK OF POLICY

The Zimbabwe Regional Environment Organisation (ZERO), a local NGO, says that for a long time there have been no comprehensive programmes to address the crisis presented by changing rainfall patterns.

"What we have seen is little attention to climate change by (the) government," said Tyson Machingura, a climate change researcher with ZERO. "For example, smallholder farmers are still clueless about when to plant and when not to plant as they continue following traditional seasons, yet so much has changed in climate patterns."

Machingura called for a ministerial taskforce to plan proper adaptation measures that would benefit ordinary people.

Government officials admit they need to do more to ease the frustration of smallholders like Mkhwebu who at present lack reliable information about when to plant their crops.

"Government is working on climate change programmes designed to address concerns of rain-fed agriculture where poor harvests could mean the whole nation starves," said Abiatha Ndlovu, an extension officer with the agriculture ministry.

"But we still (have) a lot of convincing to do as many smallholder farmers ignore advice to shift their planting seasons," Ndlovu added.

"Zimbabwe ill-prepared for climate change challenges – experts", 12/04/2012, online at: http://www.trust.org/alertnet/news/zimbabwe-ill-prepared-for-climate-change-challenges/?utm_source=Circle+of+Blue+WaterNews+%26+Alerts&utm_campaign=039fe37f5a-RSS_EMAIL_CAMPAIGN&utm_medium=email

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❖ Africa: U.S. Scientists Lend Skills to Water Resource Protection

Washington — Whether monitoring the flow of the Yangtze River in China, assessing available water in Kabul, or predicting the possibilities for flood and drought in Saudi Arabia, scientists of the U.S Geological Survey are working in many ways and in many places to ensure the best use of freshwater resources.

USGS released a summary of its international activities April 6, anticipating that its work overseas will be expanding through the Global Water Partnership announced by Secretary of State Hillary Rodham Clinton on March 22, World Water Day.

Calling water "an essential ingredient of global peace, stability and security," Clinton announced the new partnership of organizations mobilized to respond to water challenges faced by many nations around the world.

"We believe this will help map our route to a more water-secure world," Clinton said, "a world where no one dies from water-related diseases, where water does not impede social or economic development, and where no war is ever fought over water."

The U.S. decision to organize the partnership is bolstered by a global assessment conducted by the intelligence community finding that water scarcity could become serious enough to threaten the stability of some strategically important nations in coming decades.

The water partnership encourages collaboration among government agencies, the private sector and the nonprofit, academic and scientific communities in the United States. These partnerships will mobilize knowledge, expertise and resources to provide safe drinking water and sanitation, improve water resources management worldwide and improve water security around the world.

The USGS, in particular, will provide technical resources to scientists in other countries for activities such as collecting data and creating hydrologic models.

USGS scientists already have a history of providing international assistance and will likely do so on an expanded basis as the Global Water Partnership gears up its activities.

"The USGS expects to increase its international presence, contributing earth science to support developing nations and U.S. foreign policy," said the April 6 release.

Following are highlights of USGS' current international activity:
• USGS is assessing water availability in Afghanistan and analyzing the impact of mineral resources development on water resources. USGS has also assessed water availability at prospective resettlement sites for returning refugees.

• USGS is helping the World Bank and the government of Saudi Arabia to assess the risk of flood and drought.

• USGS assists the U.S. Agency for International Development (USAID) in strategic planning for water resource management in Jordan, with focus on the status of Jordan's groundwater supply.

• USGS scientists and the Chinese Ministry of Water Resources' Bureau of Hydrology are working to compare and test stream-flow monitoring instrumentation, modeling tools and data analysis.

• In El Salvador, USGS scientists are providing technical assistance to rebuild damaged stream-flow monitoring stations in key river basins in advance of the upcoming hurricane season.

Helping nations to provide clean, potable water to their citizens has been a U.S. foreign policy goal since 2005. In her World Water Day presentation, Clinton said a clean water supply is essential for achievement of many foreign policy goals.

Aspirations to make large-scale improvements in global health cannot be met without clean water sources for care facilities and the reduction of water-borne diseases, she said.

Improving opportunities in education and employment for women and girls cannot be achieved when they must devote so much time each day to the pursuit, acquisition and transportation of household water.

"Africa: U.S. Scientists Lend Skills to Water Resource Protection", 09/04/2012, online at: http://allafrica.com/stories/201204100960.html

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❖ Tanzania: Funding Frustrates Dar es Salaam Water Project Initiatives

WATER blues in Dar es Salaam may not come to an end next year as envisaged by the government due to lack of funds for the necessary investment in the project.

During a recent site visit of the Lower Ruvu water supply station in Bagamoyo district, Coast region, the Parliamentary Public Organization Accounts Committee (POAC) was informed about the risks involved on continued dependence on foreign support for execution of water projects.

The committee, headed by its Vice-Chairman, Mr Deo Filikunjombe, (Ludewa - CCM) inquired from the Ministry of Water about efforts made for the realization of the objective. The ministry was represented by Engineer Elizabeth Kingu who briefly said that efforts were underway to secure funds from different sources for implementation of the projects.

"It is extremely inconvenient when demand for funds outstrips supply by far. The government needs to act promptly and provide funds. The pledges by President Kikwete to end water problems in Dar es Salaam must be respected and implemented." "Dawasco and Dawasa are very serious in their efforts to improve water services to the anticipated level but lack of funds frustrates them. Timely funding is necessary for timely delivery.

They must be supported," MP Deo said. Members of the committee who were keen to learn more about the challenges that afflict the sector and possible solutions to ensure smooth implementation of the projects were again informed that funding of the ongoing project to upgrade the Lower Ruvu treatment plant was possible through the Millennium Challenge Account (MCA-Tanzania).

Consulting Engineer of Spencon Services Ltd, the construction company at Lower Ruvu, Tom Rule, said that the project involves construction of a water treatment plant with a capacity of 270,000 cubic metres as opposed to the one currently in use with a capacity of 180,000 cubic metres.

Completion is scheduled for March, next year. Official records indicate that at least 653bn/- is needed for Dar es Salaam city water projects. But records further indicate that around 75 per cent of the 2007 - 2008 water sector budget was foreign-funded, making the water sector development highly dependent on donor support. However, concerned officials said that for a start, two major projects need at least 500bn/- for accomplishment of the major water supply lines under the project.

The committee was informed that the specified amount had been applied for some years back but hardly 8bn/- was allocated to the projects and barely 2bn/- was released for the implementation of the projects. Two water projects scheduled for completion in 2013 in order to supply the city with clean running water are the improvement of Upper Ruvu station in Coast region, as well as the establishment of larger transmission water pipes with a diameter of 1.8 metres.

The pipes will connect the major Lower Ruvu water pump station to the main distribution centre near the University of Dar es Salaam. The pipes currently in use have a diameter of 54 inches. In Dar es Salaam, two public sector institutions are officially responsible for the provision of water and sewerage services.

These are the Dar es Salaam Water and Sewerage Authority (Dawasa) and the Dar es Salaam Water and Sewerage Corporation (Dawasco), as Dawasa are the owners of the city's water supply infrastructure and Dawasco are the suppliers of water. Meanwhile, the Chief Executive Officer (CEO) of Dawasa, Archard Mutalemwa, has said that nearly 90 per cent of formal water supply in Dar es Salaam originates from Ruvu River, and the rest is provided by boreholes.

"The population of Dar es Salaam is growing fast and water demand is equally increasing day by day. Dar es Salaam needs 710,000 cubic metres a day but current production stands at 300,000 cubic metres a day. There is a huge deficit of 400,000 cubic metres," Mutalemwa explained. The parliamentary committee was also informed that nearly 40 per cent of the pumped water is lost on the way and therefore not paid for due to various reasons.

These include illegal connections, wear and tear of the infrastructure, with the water pipe network dating back to the colonial era, and other factors. Responsibility for providing water and sewerage services in the country rests with the Ministry of Water. The Ministry has produced a series of sector policy and strategy documents since the early 1970s.

The latest National Water Policy (2002) has a target of providing universal access to safe water and sanitation by 2025 with the involvement of communities to make sure that water is available in less than 400 metres. Sources from the National Bureau of Statistics (NBS) revealed that the population of Dar es Salaam exceeded 4 million while two million people in addition come and go within twelve months of the calendar.

The Chief Executive Officer (CEO) of Dawasco, Jackson Midala, spoke about efforts to make all connections active, stop illegal connections discovered in Kinondoni, Ilala and Temeke municipalities, increase supply of water and improve the billing system.

“Tanzania: Funding Frustrates Dar es Salaam Water Project Initiatives”, 08/04/2012, online at: http://allafrica.com/stories/201204080206.html

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❖ Africa: UN Resolution Against Iran to Delay Ethiopia's Power Export to Sudan

Addis Ababa — A resolution passed by the UN Security Council to ratify further sanctions on Iranian assets is likely to delay Ethiopia's plans to export electricity to Sudan.

It will affect the Iranian firm that is constructing power substations that would enable Ethiopia to export hydro-power generated electricity to neighbouring Sudan.

Ethiopia state Electric and Power Corporation (EEPCo) in February announced the completion of a power transmission line that links its power grid with Sudan, hoping to begin an initial export of 100 MW of electricity to Sudan, as of May 2012. Djibouti is currently the main importer, paying USD1.5 million for 35 MW every month.

However, without the completion of the three substation projects near the Sudanese border it is unlikely that Ethiopia will start power sale to schedule.

The Ethiopian state utility had delay the remaining payments - amounting some 40 percent of the total contract - to be made to the Iranian company, Iran Power and Water Export of Equipment and Services Company (IPWEESC), because of the UN imposed sanctions on Iranian assets bans member states from making financial transfers from their territory.

"Due to the sanction, we could not effect payments for the outstanding balance," a senior official from the state utility (EEPCo) told a local news paper, Fortune, on condition of anonymity.

Funded by the World Bank, the US$41 million power interconnector is a 230KV and 296KM long transmission line that stretches between the Ethiopian towns of Bahir-Dar and Metema and connects with a transmission line in Sudanese border town of Gedaref where it joins Sudan's power grid.

Following the difficulty, the World Bank along EEPCo are considering other options such as making new deals with the Iranian firm's four international suppliers - Ariva (French), Erickson (Italian), Philips (Dutch), and TBEA (Chinese), for payment for and delivery of the equipment.

Sudan Tribune has learnt that the state utility has begun negotiations with the suppliers.

The Sudanese government has also decided to import US$300,000 worth of equipment to resolve the problem thereby avoid the possible delays of power exports.

Iran has been the subject of recent international pressure as there are allegations that it intends to increase its military capacity; specifically its capacity to strike Isreal.

Sudan is also subject to sanctions, for allegedly harbouring terrorists.

The pariah states of Sudan and Iran have long had close ties, as their isolation deepens these ties have strengthened.

Ethiopia is investing billions of dollars to building power plants hoping to be a regional power hub.

It is currently constructing a massive, controversial hydro-power plant in Nile river near the Sudanese border and plans to increase power exports to Khartoum from the planned initial 100 MW to 1,200MW when the Nile power project is completed in the coming 4 to 6 years.

Ethiopia also has plans to export 400 MW of hydropower-generated electricity to Kenya by 2016 when the transmission line project is complete.

With a potential hydropower capacity of 45,000 megawatts, Ethiopia has future plans to supply power to South Sudan, Tanzania, Somalia, Egypt and Yemen.

"Africa: UN Resolution Against Iran to Delay Ethiopia's Power Export to Sudan", 09/04/2012, online at: http://allafrica.com/stories/201204100170.html

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❖ India: reforms needed for water supply

Indian Prime Minister Manmohan Singh called for transparent pricing of the country's water to avert the country's growing water scarcity.

Speaking at the opening Tuesday of the India Water Week conference in New Delhi, Singh said inadequate and sub-optimal pricing of both electric power and water is promoting the misuse of groundwater supplies.

Indian farmers, many of whom rely on electric pumps to draw groundwater to the surface, are boosted by farm power subsidies, in which they pay only about 20 percent of the true cost of electricity.

"There is no regulation for groundwater extraction and no coordination among competing uses," Singh said.

While India represents more than 17 percent of the world's population, it has only 4 percent of the world's renewable water resources and 2.6 percent of the world's land area. It is the largest user of groundwater.

The prime minister noted that India's National Water Mission, approved last year, aims for a 20 percent improvement in water use efficiency, particularly critical for the country's agricultural sector.

India is expected to finalize the draft of its national water policy this month.

The draft policy says that water should be regarded as an economic good that should be managed as a community resource held by the state under a public trust to achieve food security, sustain livelihoods and for achieving equitable and sustainable development.

Some of the issues the draft policy addresses include: access to safe drinking water; the inequitable and over-exploitation of groundwater as well as interstate and inter-regional disputes over water sharing.

The proposed water policy is more comprehensive in scope than the one now in place, says Sunil Sinha, head and senior economist at Crisil Ltd., a rating agency owned by Standard and Poor's, who wrote a report addressing corporate India's need to adopt sustainable water practices amid an impending water crisis, The Wall Street Journal reports.

While India previously had focused solely on augmenting the country's water resources, Sinha says, the new policy recognizes that "water is not an unlimited resource."

India's Infrastructure Development Finance Co., a non-governmental group, says that 14 of India's 20 major river basins are considered water-stressed, strained by the country's rising population and economic growth.

Nearly 25 percent of the India's population live in water-scarce areas, where per capita availability of water is less than 1,000 cubic meters per year, IDF says, and 75 percent of Indians live in areas considered water-stressed, where per capita availability of water is less than 2,000 cubic meters per year.

"India: reforms needed for water supply", 10/04/2012, online at:
http://www.waterworld.com/index/display/news_display/1641270026.html

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❖ Summit focuses on safety, availability of water supply

Water is a basic and universal need, and in Eastern North Carolina water is everywhere — running by us, near us and in aquifers under us.

Managing this essential resource so it remains safe and attainable, however, is a collective responsibility, and more than 100 community leaders and officials attended a Regional Water Summit on Wednesday at New Bern Riverfront Convention Center to learn more about how to do that.

Summit coordinator Judy Hills is the economic and community development director for the Eastern Carolina Council, which sponsored the all-day summit with North Carolina's Eastern Region and upriver Wayne County.

"All the presentations include important aspects of the total water picture," Hill said. The summit "opens people's minds to the complexity of the water situation, especially those from smaller systems."

River Bend Mayor John Kirkland is one leader from a smaller system who has been on the leading edge of water quality issues in the region, helping to run both a municipal water system and a sewer system that discharges virtually drinkable water into the Trent River.

"Turn the clock back 30 years and it was just a dumping ground," Kirkland said of area waterways. "We've misused them from colonial times to the present, taking potable water for granted."

Kirkland's main interest Wednesday was in "what to do with the treated wastewater," having heard and read some on "aquifer injection, which is now going on in South Carolina and in western states where it's pretty common." It offers an option with potentially fewer adverse effects on the fauna and flora in rivers and streams.

New Bern Planner Mike Avery moderated a session on mining and groundwater withdrawals such as those of PCS Phosphate and Martin Marietta. It sought to answer "Can we have our stone and groundwater resources, too?" and included presentations by Martin Marietta vice president Paxton Badham, Groundwater Management Associations Inc. hydrogeologist Bill Lyke and East Carolina University hydrogeologist and professor Richard Spruill.

"Yes, if…." appeared to be the answer from all who presented pros and cons of some of the methods of extracting limestone in Eastern North Carolina and some of the stalemates created by excessive permitting restraint that endanger progress without really protecting the water supply.

Spruill showed the way reservoirs created in limestone mining such as the Glenburnie area of New Bern, which the city "decided to use in a good way" by putting filtered wastewater into the reservoir rather than in a river.

"This has been shown to dramatically improve the water quality in the Neuse River," Spruill said.

Badham said that the needed newly mined minerals for every person, every year total 38,052 pounds — about 2.6 million pounds during the average lifespan. Hauling them more than about 20 miles is not cost effective, he said, making importing them impractical.

He said the methods now used to mine at its current depth most of the limestone left in Eastern North Carolina does not threaten the aquifers, and mining companies continue to look for positive ways to use the water extracted in the mining process.

All three speakers expressed concern about a state law that prohibits water extracted from mining to be used as drinking water.

Presently, wells are dug near mining sites to extract water directly to lessen the amount wasted in mining.

He said Martin Marietta continues to mine a site at Clarks in Craven County and is seeking permits to use a 1,600-acre section in the middle of a 90,000-acre timber tract owned by Weyerhaeuser near Vanceboro, one of the few rich reserves remaining in Eastern North Carolina.

Craven County Commissioner Tom Mark's main reason for coming "was to learn more about water conservation and about building a method to bank water. Craven County is building a water treatment system, but we're a little behind schedule."

Pamlico County Commissioner Christine Mele, Havelock Planning Director Scott Chase and Jones County officials attended along with others from the immediate area and greater eastern region.

Craven water system manager Rusty Hayes said, "The experts are telling us they are seeing some increase in water volume in the Black Creek Aquifer … but a lot of systems have banked a lot of water in their name. If they call up their allotted capacity, that could lower the aquifer water levels. That's been my biggest surprise."

"Summit focuses on safety, availability of water supply", 11/04/2012, online at: http://www.newbernsj.com/news/water-105727-summit-everywhere.html

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