

ORSAM WATER BULLETIN

Weekly Bulletin by ORSAM Water Research Programme

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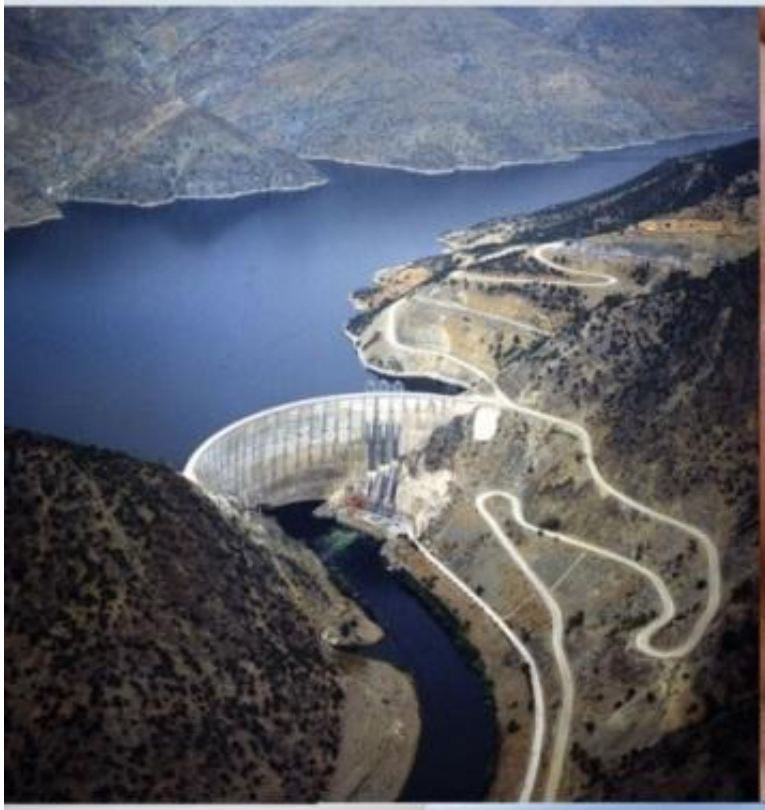



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❖ Turkish dam to transport water to Cyprus in final stages

Aquaduct for 75 mln cubic metres under Mediterranean

(ANSAmed) - ANKARA, OCTOBER 15 - The first phase of a huge project launched by the Turkish government to transport 75 million cubic metres of fresh water under the Mediterranean to the Turkish part of Cyprus has almost been completed, report Turkish media.

The construction of the Alakopru dam in the Mersin province (where the water will be collected for Cyprus) is expected to be completed in a few weeks, said project director Ali Cakmak. In a few years, water from Anatolia will flow from Alakopru to Cyprus through a 78-kilometre pipeline under the Mediterranean between Mersin and Gecitkoy, near Girne (Kyrenia) in the northern part of Cyprus. About 15 million cubic metres of water will go to the taps of Turkish Cypriot homes, while another 60 million will be earmarked for irrigation purposes, reports Zaman Online. The island of Cyprus (split down the middle by the Turkish military intervention in 1974 in the northern section, where a breakaway Turkish Cypriot Republic was proclaimed that has been recognised only by Turkey) suffers regularly from periods of drought. The governor of Mersin recently called the project "the pride of Turkey". The arrival of water from Anatolia, Hurriyet said, is expected to contribute a great deal to the development of the Turkish Cypriot economy, especially as concerns agriculture. (ANSAmed).

"Turkish dam to transport water to Cyprus in final stages",15/10/2013, online at: http://www.ansamed.info/ansamed/en/news/sections/economics/2013/10/15/Turkish-dam-transport-water-Cyprus-final-stages_9466666.html

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❖ Turkey Plans $819 Million of Water Purification, Sewage Works

Turkey plans 604 million euros ($819 million) of infrastructure investments on water purification and sewage systems in eastern and southeastern regions, the Environment & Urbanization Ministry said today.

The water investments will be made through 2020, the ministry said in a statement.

"Turkey Plans $819 Million of Water Purification, Sewage Works", 14/10/2013, online at: http://www.bloomberg.com/news/2013-10-14/turkey-plans-819-million-of-water-purification-sewage-works.html

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❖ Iran: Ahvaz residents protest regime diversion of Karun River

NCRI - Residents of the southern Iranian city of Ahvaz formed a human chain on Wednesday to protest against the regime's plans to divert water from the Karun river to central Iran.

The move would deprive the city of drinking water, and increase illness and air pollution - already occurring in the Ahvaz due to the low river level.

The 720km-long Karun was once the largest river in Iran, but locals blame the regime authorities for a series of rivers in country running dry.

The river rises in the Zard Kuh mountains of the Bakhtiari district in the Zagros Range, and is joined by tributaries including the Dez and the Kuhrang before passing through Ahvaz, the capital of the Khuzestan Province of Iran, and meeting the Persian Gulf.

In Biblical times, the Karun was known as the Pishon, one of the four rivers of Eden/Paradise.

"Iran: Ahvaz residents protest regime diversion of Karun River", 19/10/2013, online at: http://ncr-iran.org/en/news/society/14980-iran-ahvaz-residents-protest-regime-diversion-of-karun-river

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❖ UNECE - United Nations Economic Commission for Eur : Iraq and Tunisia express interest in joining UNECE Water Convention

"We must make sure that water remains a catalyst for cooperation not conflict among communities and countries" stated United Nations Secretary-General Ban Ki-Moon at the opening of the Budapest Water Summit on 8 October 2013, while underlining the role in this regard of the UNECE Convention on the Protection and Use of Transboundary Watercourses and International Lakes (Water Convention): "This (Convention) will soon be available to all United Nations Member States. I urge countries outside the UNECE region to join the Convention and further develop it." An amendment opening up this previously regional agreement entered into force in February 2013 and countries are expected to be able to join from early 2014.

The Secretary-General's words were echoed by Sven Alkalaj, UNECE Executive Secretary, who also underlined the complementarity of the Water Convention with the United Nations Convention on the Law of the Non-navigational Uses of International Watercourses - also known as the United Nations Watercourses Convention. "Cooperation on water resources shared by two or more countries is vital for peace, stability and economic growth and a precondition for sustainable development", he said.

The United Nations Watercourses Convention is expected to enter into force by the end of 2013, thus creating, with the UNECE Water Convention, a comprehensive international legal framework for transboundary water cooperation and the avoidance of conflict. The new treaty regime will strengthen transboundary water cooperation if, as earlier called for by the Secretary-General, the two legal frameworks are implemented in a synergistic way.

It was against this background that a panel discussion was held later in the Budapest Water Summit, on 9 October, to examine how global frameworks strengthen transboundary water cooperation in practice. During the discussion, the Minister of Agriculture of Tunisia, Mohamed Ben Salem, reconfirmed Tunisia's interest in joining the UNECE Water Convention - in a spirit of cooperation and good neighbourliness - and also explained how Tunisia was already cooperating with neighbouring countries over shared water resources, such as with Algeria.

Other non-UNECE countries manifested similar intentions. The Ambassador of Iraq to Hungary, on behalf of the Minister of Water Resources of Iraq, Mohanad Salman Al-Sady expressed his country's

willingness to join the UNECE Water Convention, explaining that Iraq believed that the two Conventions - the United Nations Watercourses Convention and the UNECE Water Convention - are "complementary for an effective role in the region in supporting and strengthening the cooperation on sustainable water management". He further explained that the legal aspects of the United Nations Convention could be perfectly supported by the institutional model that had been developed by the UNECE Convention over the past 20 years.

Katariina Poskiparta, State Secretary in the Finnish Ministry of the Environment, presented her country's rich experience in transboundary water cooperation and its support of the two global agreements. André Laperrière, Deputy CEO of the Global Environment Facility, provided practical examples of investments under the Facility's international waters programme.

"UNECE - United Nations Economic Commission for Eur : Iraq and Tunisia express interest in joining UNECE Water Convention", 16/10/2013, online at: http://www.4-traders.com/news/UNECE-United-Nations-Economic-Commission-for-Eur--Iraq-and-Tunisia-express-interest-in-joining-UN--17368340/

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❖ 'Threat multiplier' role of drought in Arab Spring in Syria

The role of climate change and its impact on society were described as "threat multipliers" for the Arab Spring. Although rising food prices caused by drought are not the main reason for these events, they are believed to have acted as a trigger.

The Arab Spring broke out in Tunisia in early 2011, but popular and political mobilization had been on the rise due to social, environmental and economic problems for the previous couple of years. The growing tension between people and the government in Syria, and then the emergence of anti-government movements, especially in reaction to prolonged dry spells caused by climate change, are considered examples of this phenomenon.

According to studies conducted by the United Nations Development Program (UNDP), Syria, which was once a water-rich country, is now experiencing water scarcity due to its growing population, drought and a mismanagement of water resources.

The popular movements which had been developing in Middle Eastern countries since January 2011 broke out in Daraa, a poor agricultural area of Syria experiencing water scarcity, in March. Daraa is one of the biggest Syrian governorates, in the plains of Hauran, where agricultural activity is intense. Daraa has been facing water scarcity due to a fall in precipitation and a long-term mismanagement of water resources. Although the authorities pointed to an extended drought as the cause of water scarcity, the main reason for the problem is found to be the mismanagement of water resources, according to a report by the International Crisis Group titled "Popular Protest in North Africa and the Middle East (VI): The Syrian People's Slow-motion Revolution."

The fact that local authorities allowed the illegal overuse of groundwater is one example of this mismanagement. The situation has caused substantial damage to the agricultural sector. Long-term water scarcity has also led to poverty and emigration from the region. Local tribes were caught between smuggling and the much-reduced agricultural sector, and thus popular tension increased due to a lack of support from the regime.

Moreover, the UN suggests that 6 percent of Syrians, or 1.3 million people, have been affected by drought. It is stated that the drought from 2006–2011 was the worst long-term drought, affecting 60

percent of Syria's land, known as the fertile crescent, and the Global Assessment Report on Disaster Risk Reduction (GAR) issued by the UN in 2011 stated that Syrians engaged in agriculture were in the most perilous position. As a result of the drought of 2006-2011, the al-Hasakah Governorate and southern Syria suffered a yield loss of around 75 percent, while livestock breeding and agriculture experienced a loss of 85 percent in northeastern Syria, and 160 villages were abandoned.

The International Federation of Red Cross and Red Crescent Societies' (IFRC) 2009 report states that the annual incomes of those engaged in agriculture decreased by 30 percent in three years because of drought. In January 2011, on the other hand, some 200,000 villagers migrated from rural areas around Aleppo to urban areas due to the decrease in agricultural yield. Malnutrition and disease were caused by drought, and issues such as migration, financial difficulties, unemployment and changing jobs resulted from the damaged agricultural sector.

In addition to the impact of climate change, which should not be underestimated, the most significant impact on agriculture in Syria was the mismanagement of water resources. Producing water-intensive cotton and wheat, Syria uses conventional irrigation methods and thus wastes a great amount of water. Besides, Syria sold the vast majority of its wheat reserves when global wheat prices were on the rise and then had to purchase wheat from other countries during dry spells.

Groundwater has started to be used intensely in agriculture. The area irrigated by groundwater increased from 650,000 hectares in 1985 to 1.4 million hectares in 2002. Also, the fact that the number of illegal wells has doubled to 213,000 in the last eight years decreased the groundwater tables, and wells near the sea have become salinated. The existing water problem has worsened through this process.

In early 2008, the US Embassy in Damascus warned of the effects of drought and stated that migration caused by drought would create social and economic pressures in the country that would undermine its stability.

While the drought of 2006–2011, which affected most parts of the world, caused trouble in wheat-exporting countries in terms of production, it appeared as high inflation of food prices in importing countries. Also, drought caused major damage to agriculture, especially in Syria and the Middle East,

as well as creating rural-urban migration. The economic and social impacts of drought have played a major role in the rise of unrest in these countries. Although the implications of drought and water scarcity were not the main triggers of the Arab Spring that broke out in January 2011, they are one factor that accelerated the process.

"'Threat multiplier' role of drought in Arab Spring in Syria", Tuğba Evrim Maden, Todays Zaman, 20/10/2013, online at: http://www.todayszaman.com/news-329218-threat-multiplier-role-of-drought-in-arab-spring-in-syria.html

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❖ Dammed, dirty, drained by war: can Iraq's Tigris River be restored?

Nature Iraq wants to restore the Tigris, which contributed to the birth of agriculture about 7,000 years ago, to its free-flowing, clean former self. The environmental group is swimming upstream.

Fifty years ago, wooden rafts called *keleks* regularly plied the Tigris River, carrying people, livestock, and cargo – with loads up to 35 tons – from southern Turkey to northern Iraq. Built from logs lashed together and made buoyant by inflated goat skins, a fully loaded *kelek* could travel the 250-mile distance from Diyarbakır, Turkey, to Mosul, Iraq, in just six days.

Today, the rafts' long, heavy wooden oars push slowly through the brown, flat waters of the Tigris as they traverse northern Iraq. Sometimes **t**heir bottoms scrape the riverbed, the water levels low enough on a late September day for a tall man to stand waist-deep in the middle of the river. It takes a full day of hard effort to row eight miles.

Heavily dammed and diverted, the Tigris has “lost many of the qualities of a natural river,” says Jantine van Herwijnen, the outreach coordinator for Nature Iraq. To draw attention to the river's plight, the Sulaimaniyah-based environmental group has been taking a *kelek* and two other traditional Mesopotamian vessels—the basket-like *guffa* and the canoe-like *tarada*—on a 750-mile journey down the embattled waterway, bordered by steep and craggy terrain on one side, rolling and golden landscape on the other.

Though the original plan for the Tigris River Flotilla had been to row, paddle, and float the entire way, dams and other blockages on the Tigris, security concerns, and visa and permit hassles have periodically forced the group to load its boats onto trucks and skirt the most difficult portions of the river. Similar problems likewise have stymied attempts to protect the Tigris. Protection of this river, one of two that gave life to ancient Mesopotamia (which means "land between two rivers") and remains crucial to watering modern Iraq, has taken a backseat in Baghdad, according to Nature Iraq founder Azzam Alwash.

The Iraqi-born, US-educated engineer has been working since 2003 to revitalize the marshlands of southern Iraq, which lie at the intersection of the Tigris and Euphrates rivers. This year, his efforts yielded a Goldman Environmental Prize, whose $150,000 award is funding the flotilla, and the designation of the marshes as Iraq’s first national park.

Ninety percent of the marshes, a rare desert wetland, were drained in the 1990s by diversion projects that Saddam Hussein ordered to thwart and punish political opponents. Though the marsh ecosystem has made a striking recovery, it is starting to shrink again due to pressures on the river's water from Turkey, Syria, and Iraq itself, according to Shirouk Abayachi, a senior adviser for the Iraqi Ministry of Water Resources.

"Iraq is downstream, so we are very vulnerable to what is being done in neighboring countries. We can only save the life of the Tigris if we manage it as a whole system on the national and regional level," Mr. Abayachi says.

The Tigris River Flotilla, which the water ministry has supported by helping authorize travel permits and sending staff members along as participants, highlights the importance of the river, "not only from a historical perspective but also as a complete ecosystem," Abayachi adds. "The river doesn't recognize or acknowledge political boundaries – whatever you do in one part of it affects the whole thing."

The alluvial plain in southern Iraq that contains the country's marshlands was formed by sediments coming down from the mountains in Turkey where the Tigris has its headwaters. Today, what's flowing downstream is much diminished, and often polluted, to the detriment of what was once very fertile agricultural land.

"At least once a day since passing through Baghdad, we've hit a point where it's obvious there's raw sewage flowing into the water," says James Wudel of Nature Iraq, which receives funding from the Italian and German governments and has worked closely with the Iraqi Environment Ministry to identify ecologically important areas for protection.

Wudel described the stretch between the Iraqi capital south to Amarah, where the environmental group was carrying out a river cleanup early last week, as "dirty and smelly." He said local residents reported seeing far fewer migratory birds and catching far fewer fish than they had in the past.

Industrial and urban pollution, inefficient irrigation practices, and badly damaged infrastructure in Iraq all play a role in the current state of the Tigris. But the biggest threat is being created upstream,

particularly in Turkey, which already has more than 2,000 dams and aims to nearly double that number by 2023 to meet burgeoning energy demand.

"This whole area has changed since the age of dams began," says Dr. Mukdad Al-Jabbari, a professor of water resources and environmental studies at the University of Baghdad. In the early 1950s, the biggest environmental challenge facing Iraq was floods, "but when these dams began being built, we had to start talking about desertification, about drought," Al-Jabbari says. "Declines in water volume also create sharp increases in the concentration of pollution in the water."

Though the governments of both Iraq and Syria have criticized Turkey for years over the impacts of its dams on downstream water supplies, Turkey is currently building its largest hydropower project yet, the Ilısu Dam in the country's southeast. The dam is controversial because if it is built as planned, a nearby archaeologically rich Turkish town with a history of settlement dating back to 9500 BCE will be flooded and water flows to the Iraqi marshes would be greatly restricted.
The Turkish town, Hasankeyf, is where the Tigris River Flotilla began its journey last month, with ceremonial visits from Arab sheiks from Iraq's southern marshlands, where the trip ended Tuesday.
"It may seem ridiculous to be talking about the environment during a civil war, but there will come a time when these conflicts are done," Alwash says. "If we want the Iraqi marshes to survive, and for agriculture to survive in the land where it was born, we need to put water on the discussion table."

"Dammed, dirty, drained by war: can Iraq's Tigris River be restored?", 17/10/2013, online at: http://www.csmonitor.com/Environment/2013/1017/Dammed-dirty-drained-by-war-can-Iraq-s-Tigris-River-be-restored

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❖ EU-Palestine water cooperation stronger after implementation of research project

The production of a business plan, enhanced capacities in research fund raising, technical knowledge, and stronger potential for more integration in the European Research Area: these are some of the outcomes celebrated during the final conference of the PERA (Palestine for European Research Area) project, which has taken place in Tulkram, Palestine. The meeting examined the positive impacts that the EU supported project has had on the capacities of the Palestine Technical University research centre, working towards answering some of Palestine's most important societal challenges related to water and energy scarcity issues in Palestine.

The conference saw the participation of all the important water and energy related stakeholders, who offered a high level of support and involvement in the project. Four final sessions were held, instead of the originally two planned, in order to accommodate and present the extra research produced. PERA has involved the collaboration of four different academic institutions and businesses (Politecnico di Torino, Europe for Business, Palestine Technical University and Fundació CTM Centre Technologic), and has supported the participation of Palestine in FP7. The project was able to weave together structurally important support schemes in a politically and geographically complex context such as Palestine.

These achievements and milestones have also been presented in a video, which illustrates PERA's legacy of laying the foundations of future EU-Palestinian Energy and Water Science and Technology collaboration. Dr. Samer Najjar, the Coordinator of the project, said: *"PERA has achieved all its objectives and more, in terms of improving the capabilities of the Palestine Technical University to carry out sustainable research in Water & Renewable Energy sectors."*

PERA – Palestine for European Research Area - is funded under FP7, the **Framework Programmes for Research and Technological Developmen**t, also called Framework Programmes, created by the European Union in order to support and encourage research in the European Research Area (ERA).

"EU-Palestine water cooperation stronger after implementation of research project", 15/10/2013, online at: http://enpi-info.eu/mainmed.php?id=34826&id_type=1&lang_id=450

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❖ GE to Supply Israeli Wastewater-Treatment Plant With Gas Engines

General Electric Co. (GE) agreed to supply eight 1.4-megawatt biogas engines as part of a project to provide on-site renewable heat and power for the Shafdan wastewater-treatment plant, the biggest of its type in Israel.

The facility south of Tel Aviv treats municipal wastewater for 2 million people in the Dan region of central Israel, GE Power & Water said in a statement. The engines being used in the new biogas power plant are due to be delivered to Israel in April and installed by next October, the company said yesterday.

"GE to Supply Israeli Wastewater-Treatment Plant With Gas Engines", 16/10/2013, online at: http://www.bloomberg.com/news/2013-10-16/ge-to-supply-israeli-wastewater-treatment-plant-with-gas-engines.html

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❖ ACT: Gaza to run out of drinking water

Gaza's population of 1.6 million Palestinians are without clean drinking water. The only source of water they can access—the underground water aquifer—is being over-utilized and is now highly polluted with sea water and sewage intrusion. The UN warns that unless a solution is found to provide Gaza with safe and affordable water, Gaza's aquifer will become unusable by 2016, and irreversibly damaged by 2020.[1]

Today, only 5% of the water Gazans extract from the Coastal aquifer is now safe to drink. Most families in Gaza are forced to buy drinking water from private companies at high cost, with some paying as much as a third of their income on water.

The portion of the Coastal aquifer running beneath Gaza represents only a small percentage of the total freshwater resources available to Israelis and Palestinians. Israel continues to exploit 90% of the available freshwater for exclusive Israeli use – particularly the underground Mountain aquifer in the occupied West Bank – while Palestinians have access to less than 10%. It does so in violation of international water law, which calls for these resources to be shared "equitably and reasonably" between Palestinians and Israelis.

There is a solution, and it starts with the implementation of Palestinian water rights. If Palestinians have access to their rightful share of the available water resources, and if Israel lifts its blockade over the Gaza Strip, which restricts water imports as well as the entry of materials and goods needed to upgrade and repair its deteriorating water infrastructure, many of Gaza's water problems would be solved.

The Thirsting for Justice campaign for Palestinian water rights needs your help! If this petition reaches 100,000 signatures, campaign ambassadors will lobby European governments and deliver them your signatures, and demand that they take concrete action. Don't wait until Gaza's aquifer collapses, sign this petition now, and help us to ensure water rights for Gaza!

"ACT: Gaza to run out of drinking water", 15/10/2013, online at:
http://www.alternativenews.org/english/index.php/politics/activism/7181-act-gaza-to-run-out-of-drinking-water-by-2016

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❖ 5 springs in Bethlehem area 'dangerously contaminated'

ETHLEHEM (Ma'an) – Research by high school students has concluded that five major springs which serve as a main source of water in the south Bethlehem area are inadequate for human use as a result of the high rates of fecal coliform bacteria contaminating that water.

The research was organized as an extracurricular activity by a well-known teacher from Bethlehem Secondary Boys School on Oct. 6.

The teacher took a number of distinguished students to visit five springs and take samples for lab tests. The tests were conducted twice to make sure the findings were accurate, the teacher said.

The findings showed that water in Ein Salih, Ein Atan, Ein al-Farrouja, Ein al-Burak, and Ein Artas springs is dangerously contaminated and completely inadequate for human use.

As a result, the school's administration, teachers and students appealed to Palestinian officials to deal with the dangers which could harm residents if they continue to use water from those springs.

"5 springs in Bethlehem area 'dangerously contaminated'", Ma'an, 17/10/2013, online at: http://mideastenvironment.apps01.yorku.ca/?p=7650

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❖ Environment: Overhauling water management in Israel

To cope with rapid urbanization and climate change, future cities will need to encourage innovation and promote water efficiency.

Critical to the "city of the future" will be efficient, overhauled urban water management systems, which are rooted in solid and sustainable financial systems capable of withstanding ongoing climate change.

Anthony Cox, head of the Organization for Economic Cooperation and Development's Environment Directorate, stressed such views to The Jerusalem Post in a phone interview from his Paris office on Thursday morning. Cox will arrive in Israel this week to chair a session on urban water use at the annual WATEC Israel: Water Technology and Environment Control Exhibition and Conference in Tel Aviv on Tuesday, titled "Joining Forces to Develop Smart, Cost-Effective Urban Water Utilities."

The OECD's Environment Directorate, in conjunction with its Horizontal Water Program and a few other directorates, is leading a new project titled "Water Policies for Future Cities," which will aim to provide governments with guidance on how to confront the economic and bureaucratic challenges cities will be facing regarding water.

Among the most pressing burdens to the global water sector is the increasing rate of urbanization, Cox explained. By 2050, the OECD projects that 70 percent of the world population will be living in cities, in comparison with the approximately 50% right now – and demand for water will increase by about 55%.

"What we have to do now is look at the water resource management systems we have in place," he told the Post. "Are they capable of meeting the demands that are going to come from this increased competition? Are we able to improve the water efficiency sufficiently?" To do so, Cox explained, cities have to ensure they have proper pricing and financial systems in place, which encourage innovation and are consistent with the watershed the municipalities receive. Meanwhile, governments must recognize that ongoing climate change is having an enormous impact on water, causing extreme weather events such as floods and droughts and affecting the availability of a stable water supply.

"Climate change is essentially water change, so that will be the first important way in which climate change will be felt," Cox said. "If we don't have the systems in place that allow us to respond to the changing climatic conditions, then it's going to be a real challenge."

While emphasizing that "there is no one model" that all cities will be able to adhere to when overhauling water infrastructure – because the world's urban environments and their needs do vary – Cox emphasized that "there are some key features that every city has to have," within "a clear and credible and consistent policy surrounding water."

Perhaps the most crucial point is a sustainable financial model for managing the resource, with a clear tariffsetting system, clear regulations and a clear understanding of institutional arrangements regarding price-setting and financing of the water, he explained.

A second key requirement for all cities will be a recognition of how they fit into their larger watershed, according to Cox. Urban environments must understand that they cannot upgrade their infrastructure in isolation from the rest of the users and stakeholders of the local watershed, keeping in mind that they need an institutional arrangement with a more holistic approach.

These institutional arrangements are a third factor that all cities will need to take into consideration, as one of the biggest challenges in urban water management is the fact that multiple agencies often participate in water management. Consequently, these agencies must "make sure they work together," creating "a joined-up policy around how the different aspects have an impact on the urban water," Cox continued.

The Water Policies for Future Cities project will look at all of these issues and solutions, analyzing examples from selected cities to provide policy guidance on water infrastructure financing, implementation of ecological innovation, and watershed linkage between urban and rural environments.

A major workshop or conference will likely take place during the second half of 2014, to exchange best practices and further develop policy guidance principles, according to the project's goals.

Such a conference could be instrumental in refining the project's messages prior to the 2015 World Water Forum in Korea, during which the project leaders aim to present their work.

When asked if he already had some OECD cities or countries in mind that were already performing optimally in terms of urban water management, Cox responded that "the word 'optimally' is probably a loaded term." However, he explained, although no city is perfect, there are some locales that have strong policies in place and provide pockets of good examples.

Continuing to stress that "ensuring financial sustainability is essential," Cox said that the UK – particularly England and Wales – already have good tariff systems in place, which are clear about the roles of the water utilities and the regulator. These systems provide transparency and accountability to their customers.

Following a visit to Lisbon earlier this week, Cox said that Portugal's capital has also undertaken many reforms in the past 20 years, to ensure the city's infrastructure climbs to very high standards with a strong financial basis.

Another country with strong urban water management, in Cox's opinion, is Israel – which is making enormous reuse of treated domestic wastewater, employing recycled rather than potable water for large portions of agriculture.

"There are a lot of very innovative and strong features around Israel's urban water management that we often make use of in our work on water as an example of good practice," Cox said.

Israel, he noted, has made great strides in trying to bring about a more integrated approach in terms of water policies, and combining water needs with those of agriculture, regional development and energy.

"Israel also makes good use of pricing mechanisms. It is very innovative on the consumer side and the demand side," Cox added.

Regarding the urban implementation of gray water – the reuse of shower and laundry water for activities like flushing toilets – Cox said that each country must decide how it wants to use water resources, depending on a full range of cultural and historical issues. Israel's Health Ministry still opposes the practice, yet environmentalists have long been pushing for the reuse of such water.

"We think that it's a potentially important part of the water cycle," Cox explained.

"Reusing water is a way to expand and enhance water availability, improve water productivity."

Although there exists a "social acceptability issue there that many countries are grappling with," Cox pointed out that the modern nation of Singapore readily makes use of gray water in its closed water system.

"It's up to each country to have the debate, but in principle they should be very open to the use of gray water, water recycling and water recovery," he said.

While overhauling entire urban water infrastructure systems is a very expensive undertaking, Cox said he feels discussion will inevitably translate into action among city governments, as "the cost of inaction is very high." If cities do not embrace innovative ways to manage and finance their water use, they will accrue further costs in the future, he added.

Most OECD countries have water infrastructure that has already existed for about 100 to 150 years, so the renewable process will be very expensive, he acknowledged.

"In comparison, for developing countries, the challenges are quite different – it's about building infrastructures," Cox said. "One of the questions for developing countries is, what kind of urban water infrastructure would best meet your needs?" Developing countries must decide whether they should follow in the footsteps of OECD nations with large infrastructure such as big pipelines and expensive networks, or whether they should "leapfrog OECD countries" – installing more semicentralized systems, with more local, flexible deliveries enhanced by modern technologies, Cox explained.

Financing the overhauls and construction of new infrastructure will be a challenge for both developed and developing countries alike, according to Cox.

"For both developing and developed countries, there are three sources of revenue that can cover water infrastructure development: tariffs, taxes from general taxation and transfers, overseas aid component – the 'three Ts,'" Cox said. "These are the only ways that you can finance water; there is no money coming from anywhere else."

While countries like France, Japan, the UK and Australia have opted for reliance on tariffs with very low public subsidies from general taxes, many developing countries do not yet have very high tariffs due to the inability of citizens to pay, he explained.

"What we're finding is that developing countries are beginning to realize they can ask their citizens to pay tariffs, because consumers are paying for water one way or the other," Cox said.

Such a system, the countries realize, is often preferable to requiring women and children to trek long distances to manually collect water – acts that reduce productivity and increase costs, he added. In some developing nations, urban areas still receive water via trucks, ratcheting the cost of the resource up to 100 times more what it would be through a pipeline, Cox continued.

This practice, however, is ultimately changing, he stressed. "Countries are more willing to impose tariffs and consumers are willing to pay for more reliable water," Cox said. "So you get into what you call a virtuous cycle of water financing."

"Environment: Overhauling water management in Israel", 17/10/2013, online at: http://www.jpost.com/Features/Front-Lines/Environment-Overhauling-water-management-in-Israel-329054

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❖ In a Mideast Water Project, Hope and Realism

Re "In a Polluted Stream, a Pathway to Peace" (Op-Ed, Oct. 10):

Jeff Wheelwright has good intentions, but his ideas don't reflect the on-the-ground realities.

During my time working for the Civil Administration, a branch of the Israeli Defense Ministry that coordinates civilian and humanitarian projects in the West Bank in collaboration with international organizations, the Palestinian Authority and the Israel Defense Forces, I found out quite quickly that an "uncontroversial civil project" doesn't exist.

The "mutual trust" he hopes for is almost always squandered because of ideology, inefficient procedures and political interests.

Just talk to the United States Agency for International Development, the World Bank, the Red Cross or the countless other international relief delegations that work on infrastructure-building projects. They know and the West Bank community knows that projects will be built with little to no long-term operational training to maintain and sustain the effort. Thus, the local people are left with the same sewage and problems they can't fix. By that time, the relief agency is long gone.

This is not to say that good work has not been done by both sides, but they are short-term Band-Aid solutions to decades of human suffering.

Now is the time for a moment of truth — a moment that is now happening at the peace table. And we can only hope that those negotiations will move away from the "polluted stream" and toward a fresh spring.

"In a Mideast Water Project, Hope and Realism", 14/10/2013, online at: http://www.nytimes.com/2013/10/15/opinion/in-a-mideast-water-project-hope-and-realism.html?_r=0

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❖ Kenya, Ethiopia Mediating Omo River Water Controversy

WASHINGTON — An environmental controversy surrounding the construction of Gilgel Gibe III Dam in Ethiopia's Highlands appears to be close to resolution. Kenyan authorities have raised concerns about the dam because it is being built along Ethiopia's Omo River which is the major source of water for Kenya's Lake Turkana.

The United Nations Environmental Program (UNEP) has been working with Kenyan and Ethiopian governments on developing a joint project on sustainable development of the basin.

An agreement between the two water ministries may be signed in November, said an official for UNEP in Nairobi. The draft agreement proposes joint management of all natural resources in Lake Turkana and its river basin which extends upstream into Ethiopia.

Lake Turkana defenders in Kenya anticipate an agreement could save the lake.

At issue is the question of whether Ethiopia's Gilgel Gibe 111 dam will drain upstream waters to irrigate large plantations on the Ethiopia side of the border, a move that Kenya fears will critically damage Lake Turkana, 675 kilometers downstream. More than 80 percent of the Kenyan lake's waters come from the Omo in Ethiopia and water levels in the lake could drop by as much as 10 meters once the dam is operational. Lake Turkana is also a World Heritage site where some of earliest evidence of man has been found and is currently home to thousands of fishermen and others who use the lake waters for their livestock.

"Our big concern is the water levels of Lake Turkana," said Thomas Wildman, Horn of Africa director for Oxfam Great Britain. "The big question is whether Ethiopia is going to release all the water from the dam once they've drawn it for hydro or if they're going to keep any of that water."

Irrigation a major concern for Kenya

The Gilgel Gibe III is the third of three dams to be built on the Omo River and its tributaries that run south and empty into Lake Turkana across the Kenyan border. Recent Ethiopian proposals to divert Omo waters for irrigation of a major sugar plantation in the basin have alarmed officials in the administration President Uhuru Kenyatta.

"For the first time this year, the president of Kenya actually accepted that the dam has an impact on Lake Turkana," said Akil Angelei, president of The Friends of Lake Turkana. "After years of back and forth, UNEP is trying to convene meetings to look at a way forward on the issue."

As part of its development strategy Ethiopia is seeking to become a major source of global sugar. It is building 10 new refineries and devoting another 5 million hectares to growing sugarcane. South Omo is to host six of those factories and half of the plantation lands.

Oxfam said the Omo River dam construction – originally identified as a hydroelectric project – is now viewed as "quite a large-scale irrigation project which could really reduce the levels and create an ecological impact on the fish populations which are a primary sources of livelihood for the people on the lake and on the floodplain for livestock."

"We know that Ethiopia's main drive had been not just hydro but irrigation," said Angelei, "so we are trying highlight that we need them to look at what the entire basin needs."

Thousands displaced by the dam

Another issue of concern surrounding construction of the Gilgel Gibe III dam is the displacement of people. Claudia Carr at the University of California at Berkeley reported that large numbers of Mursi people in the north of the basin and Dasanech groups along the eastern shore have already been removed by the Ethiopia government. The Dasanech occupy the northern and eastern shores of the lake and straddle both countries. Gabbra and Turkana groups live to the south and west of the lake.

More than a dozen indigenous tribes have lived in the basin for centuries, raising cattle and goats and fishing the lake. Some estimates say that beyond the 20,000 who depend directly on the lake's waters, more than 200,000 Kenyans and Ethiopians would be impacted by a drop in lake waters.

Cattle raids and tribal clashes are frequent among the tribes such as the Rendille. Many who study the region are concerned that reduced water flows will increase competition for water and lead to increased clashes. Rights groups have reported that in Ethiopia many villagers been removed to provide up to 300,000 hectares in South Oromo for proposed sugar and cotton plantations.

An early champion of Lake Turkana, Kenyan paleoanthropologist and conservationist Richard Leakey said four years ago that the Gilgel Gibe III was based on flawed studies and "the dam will produce a broad range of negative effects, some of which would be catastrophic to both the environment and the indigenous communities living downstream."

The ongoing debate focuses on an under-populated desert region where the borders of Ethiopia, Kenya and Sudan – and the disputed Ilema Triangle – meet. Recent news of the satellite-based discovery of a vast network of subterranean aquifers holding 250 billion cubic meters of fresh water could boost the fortunes of this drought-prone corner of Kenya but will not impact the future of Lake Turkana. Now the fate of the region depends on the ability of Kenya and Ethiopia to jointly manage the waters of the Omo River in the Turkana basin.

"Kenya, Ethiopia Mediating Omo River Water Controversy", 16/10/2013, online at:
http://www.voanews.com/content/kenya-ethiopia-mediating-omo-river-water-controversy/1770973.html

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❖ Ethiopia and Egypt face off over billion-dollar Nile dam Project

Ethiopia, Egypt and Sudan will hold discussions next week over the effect of a new billion-dollar hydro plant along the river Nile, which Egypt fears will hurt water supply to its 84 million people.

The meeting will be the first since experts submitted their recommendations on the $4.3bn (Dh15.79bn) Grand Ethiopian Renaissance Dam project more than three months ago.

"The meeting is scheduled to take place on Oct. 22, 2013 between officials of the three countries," the Ethiopian foreign ministry said.

Egypt fears the 6,000 megawatt plant is likely to hurt its water supply when it comes on-stream around 2017. The majority of the Egyptian population is centred near the Nile valley and the desert nation depends on the river for around 95 per cent of its water.

In June, former Egyptian President Mohamned Morsi said that Egypt would "defend each drop of the Nile with our blood". Egypt is fiercely opposed to the dam but years of political turmoil have weakened the nation's influence in the region.

The experts' report is yet to be made public but according to Fekahmed Negash, the director of boundary and trans-boundary rivers at Ethiopia's Water, Irrigation and Energy ministry, the experts recommend further studies to analyse the effect of the dam on Egypt's water supply. Ethiopia plans to take up to six years to fill the dam's 74 billion cubic-metre reservoir but insists this will not adversely affect the river's downstream flow.

Addis Ababa, which is fully funding the project, has pledged to sell excess power to Egypt. Early this year, Ethiopia ratified the Nile River Cooperative Framework deal, challenging the colonial-era treaty that guarantees Egypt "natural and historic rights" over the Nile waters. Lower basin nations including Ethiopia, Kenya, South Sudan and Uganda are all opposed to the treaty. In June, Uganda's President Yoweri Museveni said that Egypt should not continue to "hurt countries" in the Nile River basin by restricting power projects along the river. Uganda is developing several hydro power projects along the Nile.

"Ethiopia and Egypt face off over billion-dollar Nile dam Project", 16/10/2013, online at:
http://www.thenational.ae/world/africa/ethiopia-and-egypt-face-off-over-billion-dollar-nile-dam-project

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❖ Downstream countries to hold talks with Ethiopia over dam row

October 18, 2013 (ADDIS ABABA) – Officials from Ethiopia, Egypt and Sudan will meet next week to commence discussions over concerns about a massive hydropower plant project that Addis Ababa wants to build on the Nile River.

"The meeting is scheduled to take place on 22 October between officials of the three countries", said Fekahmed Negash, boundary and trans-boundary rivers affairs director at the ministry of water, irrigation and energy.

According to Negash, the three parties will discuss ways of implementing the final recommendations announced in June by the international panel of experts who were tasked to assess the possible impacts of Ethiopia's grand renaissance dam project on downstream countries.

In their final findings, a panel of 10 experts conclused that the dam project won't have a significant effect on lower riparian countries.

Following the report's release, Sudan accepted the final findings and even offered to send experts and technicians to help with the construction of the dam.

However, Egypt has refused to accept the report's conclusions, calling for more studies and consultations with Ethiopia and Sudan.

The meeting, which has previously been cancelled twice before, will be held in Khartoum.

According to the ministry, the tripartite meeting will be the first since the international panel of experts submitted their final findings to the governments of the three countries.

The panel's report hasn't yet been made public, but Negash says experts recommended further studies to analyse the impact of the dam on Egypt's water use and future Nile dams to be built by Sudan and Ethiopia.

Egypt fears that the $4.6-billion mega dam project, which Ethiopia is building near the Sudanese border, would diminish water flows to its territory and insists that its historic water rights be respected.

The Nile River, of which Ethiopia sources 85%, is a lifeline to over 90% of Egyptians.

When the 6,000 megawatt plant is completed, Ethiopia plans to sell clean and cheap energy to neighbouring countries, including Egypt.

The project, which Ethiopia is fully funding from its own coffers, is currently 23% completed.

"Downstream countries to hold talks with Ethiopia over dam row", 18/10/2013, online at: http://www.sudantribune.com/spip.php?article48488

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❖ As China's demand for grain rises, its water tables drop

In 2006, China produced a surplus of grain, allowing it to export 10 million tons. Since then, the rising demand for meat has grown rapidly, and with it the demand for feed grain. This trend lead China to import 23 million tons of grain this year, according to the USDA. "China will be turning to the outside world for ever growing quantities of grain," Lester Brown said today in a teleconference. "Then the question is, can the world meet this demand?"

Brown is President of the Earth Policy Institute and is a guest contributor to TreeHugger. He has been studying world agricultural trends, and finds the trajectory in grain consumption, and the correlating water consumption, "rather disturbing."
That's because China has been tapping into its aquifers, underwater reservoirs deep underground, to irrigate its farm land. Brown said these ancient waters reserves are "like an oil field." When it's gone, it's gone. He said that the rate at which aquifers are being depleted varies from region to region, but Chinese researchers have reported aquifer levels in the North China plains to be dropping by as much as 10 feet per year.

Draining aquifers is also a problem in parts of U.S., such as northern Texas and Oklahoma. However, these regions only account for a small percentage of the country's grain production.

Continuing to increase China's imports may not be a possible solution. "We're seeing a lot of growth in grain demand because of rising affluence," said Brown. "But grain yields are starting to plateau." In the U.S., the corn crop hasn't increased in the last four years. In the biggest wheat producing countries in Europe, yield has plateaued for the last 10 years. Grain prices have steadily risen, even with a global bumper crop this year.

Brown said the availability of water is a major limiting factor to grain production, along with land. Growers have become skilled at increasing yield from a fixed amount of land, but now, Brown says we need policies that can "raise water productivity." One policy measure could be putting a higher price on water to avoid waste.

"It's taking us into a new area," said Brown. "Throughout our lifetimes irrigated areas were increasing, but now they're beginning to decline."

"As China's demand for grain rises, its water tables drop", 16/10/2013, online at: http://www.treehugger.com/sustainable-agriculture/chinas-demand-grain-rises-its-water-tables-drop.html

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❖ No politics should be played over south Bengal floods: CPI(M)

CPI(M) today asked all political parties not to play politics over floods in south Bengal and said the government had been warned about possibility of rise in water level in the state due to rains during Durga Puja.

"No one should try to play politics over the issue. The government should speed up the process of providing relief to the affected people," Politburo member Surjya Kanta Mishra said.

Claiming that he had cautioned the state government about floods if the water level rises in neighbouring Jharkhand and Bihar, Mishra said he had cautioned state Chief Secretary Sanjoy Mitra and state Industries minister Partha Chatterjee about it.

"I had personally called the Chief Secretary and Partha Chatterjee about the outcome if water level rises in Jharkhand and Bihar due rains as an outcome of Cyclone Phalin in Odisha. I had told them to take precautionary measures last week, but they didn't pay heed. They were busy with Durga Puja," Mishra told reporters.

"They are running the government for the past two and half years and should have known the consequences of the rise of water level in a dam, because a dam has to release excess water, otherwise it would burst," he added.

Mishra also rubbished the claims by Chief Minister Mamata Banerjee that the floods in West Bengal was "man-made."

"We don't believe in such man-made floods and don't support such statements," he said.

"No politics should be played over south Bengal floods: CPI(M)", 17/10/2013, online at: http://www.business-standard.com/article/pti-stories/no-politics-should-be-played-over-south-bengal-floods-cpi-m-113101701036_1.html

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❖ Nigeria: American Firm to Fund Construction of 350MW Gurara II Dam

The 350 megawatt (MW) Gurara II multipurpose dam project located in Niger State is set to become the first private sector-led green field large hydro power project in Nigeria following the conclusion of plans by an American firm, Transatlantic Investment and Development Company (TIDC) to fund its construction.

Disclosing this in Abuja at the weekend, the company's legal adviser, Mr. Bem Atetan, told journalists that TIDC has completed major milestones in conformity with the Electric Power Sector Reform Act of 2005 (EPSRA), adding that the partnership with the Niger State Government began in 2008 when a Memorandum of Understanding was signed during the Governor's visit to Atlanta, USA, to join the project as equity participants.

He explained that the development was a culmination of years of hard work aimed at the provision of electricity, irrigation, flood control, water supply, fisheries and tourism to the people of Niger State and Nigeria in general, adding that the project would kick-off as soon as a Water License is issued by the Ministry of Water Resources

"TIDC started work on the project in 2005 when the company commenced reconnaissance studies at various locations in Nigeria before selecting the present site located around the middle Gurara River to generate 350MW of electricity and to also provide other ancillary services like irrigation, fisheries, ecotourism and community development. A pre-feasibility study of the project was completed in 2009," Atetan said.

Accordingly, he added that the Governor subsequently issued a Certificate of Occupancy for the reservoir area and constituted of a Special Inter-Ministerial Committee to work on advocacy and development of the Project.

He stated that the Environmental Impact Assessment (EIA) on the project has been carried out which was approved by the Ministry of Environment in January 2009 adding that the company has further embarked on community awareness to ensure a hitch-free project implementation.

Atetan noted that in June 2009, the company engaged the services of MWH, US-based Consultants, working along with Enplan Group and DamTech Nigeria Ltd to complete the pre-feasibility study on the project which comprised of the main report, hydrology and reservoir operation, geology and seismicity as well as opinion of probable cost.

"Nigeria: American Firm to Fund Construction of 350MW Gurara II Dam", 14/10/2013, online at: http://allafrica.com/stories/201310140220.html

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❖ Rethinking how to help water-logged communities in Bangladesh

KHULNA, 17 October 2013 (IRIN) - Communities in southwestern Bangladesh experiencing prolonged flooding, with pools of stagnant water in their fields, are calling for long-term solutions.

"We live an inhuman life here," Amina Hasan, a 37-year-old mother of three who lives in a water-logged village in Satkhira District, told IRIN. "We are farmers; we know agriculture, but now our fields are water - there is no way we can work, and there is nowhere for us to live in a clean or safe way."

Estimates of the number of people affected by water-logging over time vary, but government data after heavy monsoon rains in 2011 indicated that more than 800,000 people were affected that year in Satkhira District alone.

An October 2013 report by Shushilan, a local NGO, says more than 21,000 families in Sathkira District are currently affected by water-logging.

While a variety of factors lead to water-logging, it is most pronounced in areas where the land is divided by raised earthen embankments or polders.

Research shows that the construction of embankments often results in increased river sedimentation: silt and dirt build up in riverbeds instead of being deposited on flat land during floods. This results in the riverbeds rising. When embankments are in place and water spills over the edge during a high tide or heavy rain, trapped water cannot recede, leading to water-logging, which has affected some areas for more than a decade.

Some experts and activists are now arguing that the best long-term solution is a greater focus on managing rivers rather than trying to control them.

Differing responses

"We have moved three times in the last decade due to water-logging," Sufia Khanam, a health clinic worker in Shoriyulia, Satkhira District, said. "We have left our family land, left our farming plots because they are ponds now, and we live together in a small house without enough land to grow food for everyone."

The coastal region of southwestern Bangladesh is an extremely vulnerable partof one of the most flood-prone countries in the world.

While some migrate, others have adjusted to the protracted flooding by cultivating fish, prawns, or shrimp.

"I had a lot of land from my father's family so once it flooded I rented it to some shrimp businessmen and I have the money from that rental now," said Bidan Dhar, a farmer in Jessore District.

Shrimp cultivation, however, is not without controversy.

Scientists say that using water-logged land for commercial cultivation of shrimp leads to increased water salinity, which causes soil to become infertile.

Some organizations say shrimp farms also mask water-logging's problems instead of catalysing communities to demand long-term solutions.

"Shrimp is appealing because it is big money made off of a small amount of space," Dillip Kumar Datta, a professor of environmental sciences at Khulna University, explained.

"But even in the best case, shrimp farming can last for an absolute maximum of 10 years - and by the time local people learn how to do shrimp well, the environment is so badly damaged they cannot turn back to farming when shrimp fail," he said, citing research by local experts.

Let the rivers flow?

"Water-logging is engulfing communities, rivers are dying, and lives are becoming more difficult," said Rezaul Haq, an adviser to Shushilan.

"The question before us is: when something has gone so terribly wrong and so many people are suffering, how do we change it without making it worse?"

Some experts favour Tidal River Management (TRM) to provide a long-term solution to water-logging. TRM reopens river flows by cutting through embankments at strategic locations and removing other impediments to natural water flow.

"TRM allows the river to do what people here let them do for so long before the embankments started to appear in the 1960s - flow into lowlands, deposit silt, which contributes to healthy soil, then flow out," said Datta, the environmental sciences professor, echoing an Oxfam review which reported that TRM has been shown to make land cultivatable again in 1-2 years.

"These are wetlands, so we need to use a wetland system - the rivers should be naturally managed," said Haq, adding that each community must make adjustments specific to their river.

"The communities here know what to do; it's going back to what they did before the government introduced embankments," he added.

"Rethinking how to help water-logged communities in Bangladesh", 17/10/2013, online at: http://www.irinnews.org/report/98951/rethinking-how-to-help-water-logged-communities-in-bangladesh?utm_source=Circle+of+Blue+WaterNews+%26+Alerts&utm_campaign=2f8f955938-RSS_EMAIL_CAMPAIGN&utm_medium=email&utm_term=0_c1265b6ed7-2f8f955938-250657169

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❖ Water Desalination Capacity Climbs on Power, Energy Needs

Demand for water to generate power, energy and refining needs sparked such growth in desalination plants that 50 percent more capacity is due online this year than in 2012, according to newly published data.

A 30 percent improvement in energy efficiency of the best performing desalination plants contributed to the rise, said Christopher Gasson, publisher of Global Water Intelligence, which today released the DesalData report with the International Desalination Association.

"You could see this as the water–energy nexus in action," Gasson said in a statement. "Theenergy industry needs water, both in refining and power generation as well as upstream. The water industry also needs energy, and the two seem to be coming together in increased demand for desalination."

Desalination plants being commissioned this year alone can produce 6 million cubic meters a day -- as much fresh water as 28 months of rain in London, the report said. That raises the total capacity of the world's 17,277 commissioned desalination plants to 80.9 million cubic meters, it said.

Seawater is the largest source of water for desalination at 59 percent, brackish water is next at 22 percent, then river water 9 percent and wastewater at 5 percent, according to the data. Towns and cities use 61 percent of the desalinated water, industry is the next biggest user at 26 percent, with power stations third at 7 percent.

Saudi Arabia has the largest online capacity of seawater desalination for its energy and domestic needs at 9.2 million cubic meters a day. Next is the United Arab Emirates at 8.4 million cubic meters and Spain at 3.8 million, according to the data.

Cleaning Water

Water cleansed of salt and impurities is used from cooling power plants to oil exploration, where it helps separate oil from sand in a process called low-salinity flooding that boosts recovery from older wells as much as 30 percent, according to data presented online that accompanied today's statement.

More than two-thirds of desalination plants now use more efficient membrane and pumps to purify water, with the remainder employing conventional thermal systems that heat water to boiling and recover the salt-free steam, Oxford, U.K.-based GWI said.

Markets expected to see the fastest growth in desalination during the next five years, more than doubling capacity, are South Africa, Jordan, Mexico, Libya, Chile, India and China.

"Water Desalination Capacity Climbs on Power, Energy Needs", 14/10/2013, online at:
http://www.bloomberg.com/news/2013-10-14/water-desalination-capacity-climbs-on-power-energy-needs.html?utm_source=Circle+of+Blue+WaterNews+%26+Alerts&utm_campaign=769dcbadeb-RSS_EMAIL_CAMPAIGN&utm_medium=email&utm_term=0_c1265b6ed7-769dcbadeb-250657169

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❖ Energy, water and food among top UAE priorities

Entitled "Energy-Water-Food-Nexus", the panel addressed the interrelated issues of water scarcity against rapidly growing energy and food demands across the world.

DAEGU- UAE director of Energy and Climate Affairs Dr Thani Al Zeyoudi said that the UAE is addressing the nation's interconnected energy, water and food challenges as a matter of utmost priority.

The remarks were made during a panel discussion during the World Energy Congress, or WEC, currently being held in Daegu.

Entitled "Energy-Water-Food-Nexus", the panel addressed the interrelated issues of water scarcity against rapidly growing energy and food demands across the world.

Throwing the energy sector's resilience against changing water availability, together with how the sector aligns its value chains with the eco-system, the discussion highlighted the need for policy framework to complement innovation in finding sustainable solutions.

The UAE faces unique challenges with regards to water scarcity, due to a shortage of reliable surface and fresh water sources and less than 100mm of rain water per year. In addition, a population increase of 300 per cent in the last 15 years and the prospect of energy demands doubling by 2030 due to a fast-growing economy are placing additional pressure on energy and natural resources.

"The UAE attaches great importance to the issue of energy–water-food nexus, which is reflected in our collaboration with the 67th President of the UN General Assembly in hosting a high-level thematic debate on energy and water nexus in May of this year," Dr Al Zeyoudi said. regarding about the UAE's policy approach. "We are addressing the challenges of nexus management in many ways, namely by increasing energy and water efficiency and productivity, diversifying our resources, and adopting appropriate policy and regulatory frameworks."

"Our new desalination plants for example are built to the highest efficiency standards, in fact, we recently launched the region's first renewable desalination pilot project, aimed at dramatically reducing the amount of power we consume to produce potable water," he added.

"Energy, water and food among top UAE priorities", 17/10/2013, online at: http://www.khaleejtimes.com/biz/inside.asp?xfile=/data/uaebusiness/2013/October/uaebusiness_October265.xml&section=uaebusiness

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❖ Focus on water solutions for Gulf

Water experts from the UK are set to discuss water scarcity solutions for the Gulf region at a summit to be held in January as part of the Abu Dhabi Sustainability Week.

The International Water Summit will take place from January 20 to 22, 2014, and is being hosted by Masdar and partnered by the Abu Dhabi Electricity and Water Authority (Adwea).

UK's water and wastewater supply chain association, British Water, is encouraging water companies to participate on the official UK Pavilion sponsored by UK Trade and Investment, following a recent road show by organisers, Reed Exhibitions.

The road show also covered Japan, Singapore, France, Germany and Netherlands.

"The International Water Summit is undoubtedly a key event for the Middle East as it faces increasing pressure to find solutions to the issue of water scarcity caused by its hot climate and arid environment," said Lila Thompson at British Water.

"UK companies are particularly experienced in working in quasi-privatised landscapes and as part of PPPs, which are vitally important for the region, and they are keen to contribute to the world, the Gulf and Abu Dhabi by expanding their water-related businesses internationally and sharing best practice and know-how in sustainable water solutions," said Thompson.

Ara Fernezian, divisional managing director UAE for Reed Exhibitions, said the UK's strength in smart water technologies, consultancy services and asset management will bring a wealth of knowledge to IWS 2014.

"The UK Pavilion at IWS is a clear indication of the global approach being brought to the event to address the challenges facing the Middle East in terms of water sustainability and efficiency. We are delighted to have the support of British Water and UK Trade and Investment, and their active participation at IWS 2014 will add to the international expertise being shared," said Fernezian.

"The issues of water scarcity, especially in arid regions like the Middle East, require global collaboration, and equally regional companies and authorities can share their own unique expertise with the world. The international water community is committed to raising the key issues of water sustainability to governments and corporations, and they view the IWS as a critical platform to facilitate discussion and dialogue," he said.

"Focus on water solutions for Gulf", 20/10/2013, online at: http://www.tradearabia.com/news/OGN_244733.html

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❖ Govt secures K575m for construction of dams

GOVERNMENT has secured about K575 million (US$115 million) for construction of dams across the country to boost the aquaculture sector, Agriculture and Livestock Minister Robert Sichinga has said.

Mr Sichinga said in Mbeza area of Chief Nalubamba in Namwala District at the weekend that Government had secured a loan to be invested in the country's fish farming sector.

He said the move was aimed at boosting the local aquaculture sector, adding that it would in turn help in reducing current escalating poverty levels, especially in rural areas.

"As Government, we are committed to uplifting living standards of people in rural areas as evidenced through the various projects Government is implementing in different parts of the country," he said.

Mr Sichinga was in Namwala District for the donation of assorted farming implements by the Zambian Government in partnership with China to enhance conservation agriculture.

He said Government was taking a broader action in developing and improving the performance of the aquaculture sector across the country.

He said the aquaculture sector was an important economic sector which had potential to foster desirable economic development through poverty reduction and job creation.

Mr Sichinga said the Government's vision under the leadership of President Michael Sata was to see that meaningful development was delivered to all parts of the country.

On fertilisers, he said Government had completed the manufacturing of the 2013/2014 D-Compound order under the Farmers Input Support Programme (FISP).

He said a total of 71, 000 metric tonnes of basal dressing fertiliser had been produced which was more than the initial target of 70, 000 metric tonnes.

"In terms of distribution, we have done about 80 per cent and I can assure farmers that the distribution of Urea will start soon and we will finish distribution by this monthend," he said.

Government will this year procure top dressing fertiliser under FISP from Saudi Arabia and the transportation of the commodity had since started.

"Govt secures K575m for construction of dams", 16/10/2013, online at:http://www.times.co.zm/?p=37351

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❖ Mekong Delta Explores Ways To Deal With Wastewater Pollution

CAN THO CITY, Oct 16 (Bernama) -- The Vietnamese government is seeking ways to deal with pollution caused by wastewater discharged from industrial parks in the Mekong Delta, Vietnam News Agency (VNA) reported.

During a recent discussion at an international workshop held in Can Tho city, participants were warned that the region is facing a number of adverse environmental impacts such as polluted air and water caused by operations at industrial parks.

The Mekong Delta's 120 industrial parks are reported to discharge an average of 47 million litres of wastewater and 220,000 tonnes of solid waste every year.

Only 66 percent of the region's industrial zones are built with waste treatment stations.

Head of Southwest Environmental Protection Bureau Pham Dinh Don said environmental protection work in provinces and cities has been ineffective for their failure to follow the region's master plan on socio-economic development.

Participants suggested focusing on the industrial parks' development plans in line with local sustainable socio-economic development and environmental protection plans.

They also proposed putting more funds into upgrading infrastructure at the industrial parks to protect the environment.

The Mekong Delta plans to have 240 industrial parks by 2020.

The workshop was organised by the Ministry of Science and Technology, Ministry of Natural Resources and Environment and participants of the German - Vietnamese research project (AKIZ).

"Mekong Delta Explores Ways To Deal With Wastewater Pollution", 16/10/2013, online at: http://www.bernama.com.my/bernama/v7/wn/newsworld.php?id=985746

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❖ Environmental manager defends Laos dam project

Amid growing furore over the controversial Don Sahong Dam – with a proposed canal site just one kilometre north of the Cambodia-Laos border – the environmental manager behind the project said yesterday that he's certain it will have almost no environmental footprint.

"It's definitely a sustainable project. It's diverting only a small portion of the Mekong's flow," said Peter Hawkins, an environmental manager at Mega First Corporation of Berhad, the Malaysian firm behind the dam, which would be the second of 12 lower Mekong projects to start construction.

"We have been doing a lot of research into the impact of this project, and I am confident we can mitigate all of the effects."

That notion was met with disbelief by at least one researcher.

"The Don Sahong Dam would block the most important channel for fish migrations in the Khone Falls area," Dr Ian Baird, a professor of geography at the University of Wisconsin Madison who has studied and written about the Mekong dams extensively, said.

In a 2011 *Critical Asian Studies* article, Baird said the proposed dam would cause widespread losses to fisheries, deplete the Mekong's biodiversity and threaten Cambodia's ability to meet its 2015 Millennium Development Goal to end widespread hunger.
"We know the dam would have a lot of electric benefits, but fish from the Mekong feed millions of people – electricity can't replace that," Meach Mean, a coordinator at the 3S Rivers Protection Network, said.

But Hawkins said such fears are unfounded.

"We hope our project will actually improve fisheries and fishing practices upstream and downstream of the dam," he said. "One of the main [misconceptions] is that the Hou Sahong is the only possible canal for migratory fish to travel upstream, but there's at least one other canal for fish and we plan to develop the other nearby passages as well."

Though the dam's developers have not yet secured a construction contract, earlier this month the Lao government notified the intergovernmental Mekong River Commission of its intention to support the dam.

"By simply notifying the MRC, the Lao government is attempting to bypass the MRC's 1995 Mekong Agreement and its requirement for 'prior consultation'," Ame Trandem, Southeast Asia project coordinator for International Rivers, said.

But the MRC secretariats stood behind the government as following protocol.

"The MRC is not a supranational or regulatory body," Federico Rodriguez, a spokesman for the MRC's Vientiane secretariat, said. "In the Don Sahong hydropower project's case, by submitting the notification, Lao PDR has acted consistent with the provisions of the [Prior Consultation and Agreement] and the Mekong Agreement."

Don Sahong developers are confident the official contract to build will soon be signed and construction under way.

In July 2012, another lightning rod Lao project, the Xayaburi dam, was halted following intense pressure from international groups and Cambodian authorities to conduct further impact studies.

When contacted yesterday about the Don Sahong, officials at the Cambodian National Mekong Committee and Water Resources Ministry refused to comment.

"Environmental manager defends Laos dam project", 15/10/2013, online at:
http://www.phnompenhpost.com/national/environmental-manager-defends-laos-dam-project

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❖ World Food Day: Reggae, Food, and Water

For those of us who were teenagers in the 1980s, it is difficult not to remember the famous *Live* record released in 1983 by the reggae band UB40. Almost 30 years later I am still listening to their sound. As we mark World Food Day on October 16, I am reminded of one of the songs in that album, *Food for Thought*. In fact, I still remember some of the lyrics: "Eat and drink rejoicing, joy is here to stay." Drink, eat, and rejoice – a reminder of the link between water, food, happiness, well-being, and prosperity.

We are living in an era of abundance in which according to FAO estimates, approximately one third of the food that is produced for human consumption is lost or wasted globally. This amounts to 1.3 billion tons per year. An average 747 jumbo jet (one of the largest planes in the world) takes off at a weight of approximately 485 tons. We are looking at the equivalent in weight of 2,700,000 fully loaded jumbo jets wasted every year. The economic value of these losses is estimated at about US$750 billion a year, similar to the GDP of Argentina. This waste translates into misusing all of the inputs (land, water, labor, agrochemicals, etc.) that are required to produce this food.

Food security is an extremely complex challenge that spans across politics, institutional issues, financial, technical and managerial limitations, understanding of markets and access to markets, etc. The supply chain, also known as the 'field-to-fork' chain, requires many steps. And water, as an input into the production, transport, and processing of food, is a critical element. The increased demand for energy and food will put additional pressure on already constrained water resources. But making decisions on water allocations to sustain growth has not been an easy process.

Irrigated agriculture accounts for 70% of the world's water withdrawals. Increasing demand for biofuels will put additional pressures on water resources in the coming decades. Recent estimates show that around 1% of all water withdrawn for irrigation is used for the production of bio-ethanol, and by 2017, the amount of water needed for irrigation would increase by 74% if agricultural practices remain the same. In fast-growing economies with more demand for food and energy, competition for water resources becomes fiercer, especially within a changing climate. Lower rainfall and higher temperatures mean fewer crops and higher prices.

But it gets even more complicated. Energy demands on water – how much water is needed to produce energy - are also increasing. For example, India's agricultural sector is caught in a complex interconnection of groundwater depletion and energy subsidies. This has resulted in the over-exploitation of groundwater and a range of economic, social and environmental distortions. On the other hand, pressures on energy prices are affecting agricultural output. A recent study showed that increasing prices for diesel have a significant impact on irrigation costs in India. Farming enterprises relying on diesel as an energy input to irrigation and water buyers from both diesel and electric wells are being affected.

Within this complex and interconnected landscape, it becomes crucial for countries to improve the management of water; groundwater being an essential aspect. But how do we manage something we cannot see or cannot measure with certainty? There is large consensus that uncertainty about continued access to groundwater is a risk to world food production. But knowledge of the status – quantity and quality – of groundwater is limited, and thus its management becomes a challenge.

To avoid gaps in food and energy production, countries need to take a combination of measures that include cross-sectoral planning, better groundwater governance, water-smart infrastructure that mitigates the effects of climate change and access to innovative technologies that help increase agricultural productivity.

Water is a critical element in food security, and as such, it contributes to poverty reduction and shared prosperity. It is now our time to ensure that water is properly managed to ensure that the goals in food security are secured.

"World Food Day: Reggae, Food, and Water", 16/10/2013, online at: http://blogs.worldbank.org/water/world-food-day-reggae-food-and-water

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