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***** Four million Syrians are unable to produce or buy enough food

If conflict continues, Syria's food prospects will be seriously at risk in 2014, joint FAO/WFP report finds

5 July 2013, Rome - Syria's food security situation has significantly deteriorated over the past year and domestic agricultural production will further decline over the next 12 months if the present conflict continues, according to a new report published by the UN Food and Agriculture Organization (FAO) and the World Food Programme (WFP).

"Crop and livestock production, food availability and access to food have all taken an increasingly heavy toll over the last year," said the FAO/WFP report issued after a Crop and Food Security Assessment Mission visited Syria between May and June.

If the present conflict continues the food security prospects for 2014 could be worse than they are now, the report states. "With so many adverse factors now stacked against the crop and livestock sectors, and assuming that the present crisis remains unresolved, domestic production over the next twelve months will be severely compromised."

Limited window

"There is a limited window of opportunity to ensure crisis-affected families do not lose vital sources of food and income," the two UN organizations said.

The FAO/WFP Mission forecasts wheat import requirement of about 1.5 million tonnes for the current 2013/2014 season. Current wheat production is 2.4 million tonnes, some 40 percent less than the annual average harvest of more than 4 million tonnes before the crisis and 15 percent lower than the reduced harvest of 2011/2012.

The livestock sector too "has been seriously depleted by the on-going conflict," the report says. Poultry production is estimated to be down by more than 50 percent compared with 2011, while sheep and cattle numbers have also significantly declined.



High costs

Household food insecurity has been driven up by massive population displacement, disruption of agricultural production, unemployment, economic sanctions, currency depreciation and high food and fuel prices. The average monthly price of wheat flour more than doubled between May 2011 and May 2013 in several locations. With serious bread shortages across the country, this April WFP started distributing wheat flour.

Food production has been hampered by high costs and reduced availability of inputs, damage to agricultural machinery and storage facilities, the threat of violence and the flight from the land by farmers. Some crops may not be harvested, the report warns.

Irrigation canals and cotton mills, among other infrastructure, have also suffered damage. Wheat flour milling factories and bakeries are either no longer operating or are operating at low capacity. In addition, sanctions have exacerbated the situation, leading to shortages of agricultural inputs, crop-protection materials, diesel, and spare parts.

There has been a very substantial exodus from Syria over the last 18 months, including 1.6 million refugees who have been registered and others who are awaiting registration.

Risk of animal diseases

With the veterinary sector significantly eroded and vaccines in short supply, there is a serious risk that livestock diseases could be transmitted to neighbouring countries. In order to avoid a serious regional animal health problem, vaccines need to be provided and cold chains re-established in order to facilitate their distribution, the Mission recommends.

Other recommendations include repairing rural infrastructure and providing inputs, tools, technical advice and provide access to land to those who have had to leave their homes.

Since the beginning of this year, FAO has supported close to 70 000 people. Assistance provided includes animal feed, poultry packages, small ruminants, and seeds and tools. With available funding, FAO will be providing support to a further 216 000 people with similar assistance.



Working with partner organisations in Syria, WFP reached 2.5 million people with food assistance in June, is planning to feed 3 million people in July and is ramping up logistics and operational capacity to feed 4 million people by October. In addition, WFP is providing food assistance to nearly one million refugees sheltering in neighbouring countries.

FAO has issued an urgent appeal for \$41.7 million to assist 768 000 people. So far, only \$3.3 million or less than 10 percent has been received. The funds are needed for seeds, fertilizer and veterinary supplies as well as cash-for-work programmes.

Support to the coming planting season will be critical. Funding must be secured by August in order to provide farmers with fertilizers and seeds to plant in October. Without such support, many will be unable to harvest wheat until mid-2015.

WFP is seeking to raise more than \$27 million every week to meet the food needs of people affected by the conflict both inside Syria and in neighbouring countries. Under the revised Syrian Humanitarian Assistance Response Plan (SHARP), WFP's requirements for its operations inside Syria alone until the end of 2013 totalled \$490 million. For the July - September period the WFP operation in Syria is only 48 percent resourced.

"Four million Syrians are unable to produce or buy enough food", 05/07/2013, online at: <u>http://www.fao.org/news/story/en/item/179446/icode/?utm_source=facebook&utm_medium=social+media&utm_campai</u> <u>gn=fao+facebook</u>

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* Containing disease in a Syrian refugee camp in Iraq

DOMIZ CAMP, 3 July 2013 (IRIN) - On a hot June afternoon, 27-year-old Gharib Mohammed stands outside his tent at this camp for Syrian refugees in Iraq, shovel in hand.

Sewage and garbage have blocked the small stream that runs the length of his dusty avenue and the smell has entered his tent.

"There are some other streams but I can't clean them all. I just clean the one in front of my home. If everybody did the same thing, the camp would be clean, but not everybody does it."

The water running past Mohammed's house is what is technically known as "grey" water - cooking and washing water that is not contaminated with sewage. Or at least it is not supposed to be.

Mohammed points to the septic tank behind his tent, which he says is shared by 25 families.

"In two days, it gets full [then] it overflows and mixes with the other water."

In the three months he has been living there, government contractors have emptied the tank three times, he said. He once had to resort to paying the truck driver 5,000 Iraqi dinars (US\$4.30) to empty it.

Aid agencies say overcrowded living conditions in Domiz (Duhok Province) - built for 25,000 refugees but now accommodating almost twice that number - have put refugees' health at risk.

"Water, sanitation and hygiene facilities on the site are far from adequate, increasing the risk the camp could become fertile ground for the spread of disease," Mahendra Sheth, regional health adviser for the UN Children's Fund (UNICEF), which is responsible for water and sanitation activities, <u>said</u> at the start of summer.

In April, a number of measles cases were reported in the camp, and between mid-March and mid-May, the number of diarrhoea cases tripled, the medical charity Médecins Sans Frontières (MSF) said.

An assessment conducted by MSF in April showed "clear inequalities" in water distributions, it said in a 15 May <u>press release</u>. Some areas of the camp receive only four litres per person per day, MSF said, far less than the minimum 15-20 litres per person recommended in humanitarian emergencies.

"In some instances, people simply do not have access to water or sanitation," MSF emergency



coordinator Stéphane Reynier wrote. "This is simply not acceptable."

Massoud Barzani, president of the Kurdistan Regional Government (KRG), recently accused the international community of "abandoning" the Syrian refugees in Kurdistan and asked foreign officials to bring the situation to the attention of their governments.

Overstretched

Aid agencies have vaccinated people and are trying to increase water and sanitation services in the camp, but the problem, explains Jaya Murthy, head of communications for UNICEF, is that the camp is overstretched.

"Services were only planned for [25,000] people, so when you [nearly] double that number, of course those services are stretching, which means less for everybody."

Many irregular settlements and transit areas have emerged, he said, and some of the people on the fringes may not even have access to some of those regular services.

The differences between the original areas and the irregular and transit areas of the camp are stark. Approved tents in the first three phases of construction of the camp each have their own latrine and share one septic tank for every four tents.

In Phases 1-3, Swedish NGO Qandil contracts a waste removal company to empty tanks when families report them full. "The trucks stand by 24 hours a day," says Salar Rasheed, Iraq programme coordinator, "so the truck is available even at night."

But residents in unapproved tents and in some of the transit areas share one latrine between 29 to 189 people, according to a Norwegian Refugee Council (NRC) <u>report</u> based on February data from the UN Refugee Agency (UNHCR). In one case documented by NRC, residents had to keep using a communal latrine that was overflowing for lack of an alternative.

To address the overcrowding, the UN is working with the Kurdish authorities to allocate more land for new camps. KRG has approved the construction of two new refugee camps in the region - one in Erbil Province, scheduled to open this month, which will house 2,000 families; and one in Sulaymaniyah, designed to hold 1,500 families.

Although there were initial hopes to install proper sewage systems in both camps, the cost of doing so - around \$5 million dollars each - was prohibitive given the region's limited budget.

"It can be done," says Qandil's Rasheed, "but it costs a lot of money."



A neglected crisis?

In June, the UN issued the largest appeal for funding in history to address humanitarian needs related to the Syrian crisis. Included is a request for \$37 million for water, sanitation and hygiene services in Iraq, including ensuring safe water and sanitation throughout Domiz.

But aid workers say the international community has neglected the Syrian crisis in Iraqi Kurdistan, focusing instead on Jordan and Lebanon, where donors perceive the needs to be higher. Aid agencies in Iraq have received just 14 percent of the funding requested for their humanitarian response to Syrian refugees in 2013. As a percentage, and also by raw figures, this makes Iraq the least-funded of the four countries in the <u>Regional Response Plan</u> that border Syria.

"The Syrian refugees have the same right to vital assistance, wherever they flee to seek protection. However, it has - unfortunately due to various political and economic reasons - been very difficult to attract funding to the projects in Iraq, and the refugees are the ones paying the price," <u>said</u> Toril Brekke, acting secretary-general of the Norwegian Refugee Council, which just published a<u>report</u> on how the international community is "failing" Syrian refugees in the Kurdish region of Iraq.

Rising disease risk

In the meantime, government authorities and aid agencies are trying to prevent a disaster with the little funds they do have. With temperatures rising (in July, they often surpass 40 degrees), the risk of water-borne diseases is increasing.

"Over several weeks [the number of reported cases of diarrhoea] went down but it can come up at any time so ensuring access to sanitation and safe water is absolutely critical," said UNICEF's Murthy. "So as new people keep coming and settling in these irregular areas, we have to be really on top of it to ensure that [the water supply] is properly maintained and those services are delivered to everybody. Otherwise contagious diseases like diarrhoea and other water-borne diseases can catch very quickly."

The Duhok Province authorities provide a water network to the original settlements and, for the time being, water trucks take care of the rest of the camp.

Thanks to a grant of \$4.5 million from the Japanese government, UNICEF is currently planning to lay a pipe network in one of the newest areas of the camp, Phase 7.

UNICEF and NRC are about to start a water monitoring project, checking that the levels of chlorine are adequate.



WATER RESEARCH PROGRAMME -Weekly Bulletin-

As well as putting together a cholera prevention plan, UNICEF and MSF have started to send health and hygiene promoters around the camp, tent to tent, to teach families how to minimize the risk of disease and infection. It is particularly important to help residents used to living in modern urban environments to adjust to their new conditions, Murthy said.

"Hygiene promotion is one area that we really need to critically scale up. It's really, really our priority area." There are 64 hygiene promoters working in Domiz, "but we need to double or triple that."

"Containing disease in a Syrian refugee camp in Iraq", 03/07/2013, online at: http://www.irinnews.org/report/98349/containing-disease-in-a-syrian-refugee-camp-in-iraq

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✤ Syria's forgotten crisis: sanitation

DUBAI, 2 July 2013 (IRIN) - Bombs, clashes and airstrikes have killed at least 92,000 in Syria, according to the UN High Commissioner for Human Rights. But millions of people - and more still across the region - are at risk due to something much less discussed: sanitation.

Summer heat, shortages of clean water, a <u>crumbling health system</u>, breakdowns in waste management services, and overcrowded conditions in common shelters have led to a rise in potentially life-threatening diseases.

As summer temperatures rise, poor hygiene and sanitation are an increasing concern. The World Health Organization <u>wrote</u> last month: "outbreaks are inevitable."

Up to 8,000 Syrians leave every day, often for overcrowded camps in neighbouring countries. The scale of population movement means that the threat is not just confined to Syria. Already, diseases have appeared in Turkey and Jordan that had not been seen for years, if not decades, before the Syrian crisis.

"The international community must now seriously view the ever worsening humanitarian and health situation as a threat to regional security and their own national interests," public health doctors Adam Coutts and Fouad M. Fouad<u>wrote</u> in The Lancet medical journal on 29 June.

"Syria's forgotten crisis: sanitation", 02/07/2013, online at: <u>http://www.irinnews.org/report/98336/syria-s-forgotten-crisis-sanitation</u>

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In Domiz refugee camp, Iraq, a Syrian family makes the best of a terrible situation

President and CEO of UNICEF Canada David Morley visits with a Syrian refugee family at Domiz camp, Iraq.

DOMIZ CAMP, Iraq, 5 July 2013 – "In Syria," Mahmoud said, his eyes watering with the memory, "we lived like kings and queens."

And then he fell silent.

I am not sure it was like royalty, but it was a life with a future. Mahmoud was a driver in Damascus. "I can drive anything, lorries, buses, taxis." One day, as he came home from work, he found his street filled with bodies. "It looked like a river of bodies." And so Mahmoud and his family fled here to Domiz refugee camp.

We were sitting in their family tent. Well, two families, actually. Nine people are living in this very small space -I doubt there is much room on the floor for any more. They have a tiny shop outside - that's how we came here. I was looking for a bite to eat, and next thing we knew, we were invited through the shop into their tent for a cup of scalding hot sweet tea.

Slowly, the rest of the family gathered. Their elder daughter Falak came back from the school we've been helping and started to do her homework. Mahmoud's wife Rosala and their younger daughter came back from shopping. The food voucher system means people get coupons to get their food at the local market instead of receiving bags of food – it is a cheaper way to get food to refugees and allows for more freedom of choice for them, too.

"The children were so afraid in Damascus," said Rosala. "If they heard a plane, they would come running to us. They couldn't sleep. They are calmer now; it is safer here."

But it isn't without its problems. "There isn't enough water. Things get so dirty here. And there is dirty water in too many places – that can make the children sick."



UNICEF supplies water in the camp, but it is hard to keep up with demand. The number of Syrian refugees in Iraq has almost tripled since December, and it is expected to double again by the end of the year. Domiz camp was built for 22,000 people, and twice that number live here now. We're providing water and sanitation to almost 30,000 people – that's like building and operating a water system for everyone in Charlottetown, Prince Edward Island, in just 12 months – but it still isn't enough. It is as though the world has forgotten these people, and when the world looks away, it means we don't get the money we need to provide the help to the victims of this war.

Now, it isn't as though the people who live here in Domiz are just waiting to be given things. Mahmoud and Rosala want clean water, yes, but most of all, said Mahmoud, "I want to get a job. I have to do something to support my family."

So often, people think of refugees and refugee camps as places where people wait for the next handout. That is never the case. Yes, they are traumatized – they have fled the most brutal war in the world today. Yes, they need help.

But they are also taking control of their lives – you see it in the little shops set up in front of the tents, you see it in some of the dwellings which are changing from tents to cement block, you see it in the shwarma stand where we ate falafels for lunch. People want to make a better life for themselves here.

But, still, "We want to return to our home," said Mahmoud, his handsome face showing the strain. "We are afraid to go home, and we don't know what will come next. But, in the meantime, my children must go to school; I do not want my daughters to be illiterate. But, I want peace so I can go home."

"In Domiz refugee camp, Iraq, a Syrian family makes the best of a terrible situation", 05/07/2013, online at: <u>http://www.unicef.org/infobycountry/iraq_69777.html</u>

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✤ Israelis, Palestinians talk water cooperation

Scientists from France, West Bank, Gaza, Jordan and Israel to travel to southern town of Sde Boker to discuss common water production issues. 'Water can be an issue for peace or for conflicts,' says French ambassador to Israel

VIDEO – Under the patronage of the French Embassy in <u>Israel</u>, scientists from France, the West Bank, Gaza, <u>Jordan</u> and Israel will travel to the southern town of Sde Boker to talk common water production issues.

At the French ambassador's villa in picturesque Jaffa, overlooking the Mediterranean Sea, yet another cocktail party is being hosted, but this event is very special because sworn enemies are here to talk their future survival.

"We think that water can be an issue for peace or for conflicts," says French Ambassador to Israel Christophe Bigot. "Of course water is very scarce, very rare in this region, and of course water has to be shared by all the people of this region. So they may either fight to get it or they may cooperate.

"Cooperation is obviously a way that we promote, and I think if you look at the history of the matter, people are cooperating on water much more in advance before being in the position to make peace. So water and working on water can also be a way to promote peace."

One of the major partners on the other side is Prof. Yusuf Abu Mayla from Gaza, who realizes if the sides won't sit down now, it will lead to a catastrophic future for all those involved.

"I think regarding the water issues, all people all over the world should talk together because its shared water," he says. "No one can have his own water. We have shared water with the Israelis, we have the shared water with the Egyptians, we have shared water between the Israelis and the Jordanians, between all the countries together in the region.

"I think it is important to sit, to talk, to meet each other and then have some new issues, new technique or something to imply something like that. But it is really very important to improve the situation on the ground. It's really very important for all the scientific and academic staff to talk together about the academic and technical issues, which I think is very important for our futures."



'Water doesn't recognize international boundaries'

For every gathering like this to happen, there has to be someone who believes he can move mountains to convince everyone involved it can be done. In this case it is Ben-Gurion University Prof. Eilon Adar, who has done everything within his powers to make this summit a reality.

"We are partners, real scientific partners, practical partners for many years, in spite of what's going on," he says. "In spite of the political difficulties, we keep working together. Unfortunately not very close recently, but still we work together and this is, I think, the best example that we can. I think it is important.

"In my philosophy we should do the best we can to speak the same scientific professional language, and for that you have to keep working together. I hope that sometimes in the future, very near, some agreement will be reached. The professionals – such as the hydrologists in Gaza, Israel, Palestine, the West Bank – will come up with reasonable or fissionable solutions for the common water resources.

"Water does not recognize international boundaries, so something has to be done about it. Now, I prefer that these issues will be agreed among professionals so we shall be able to provide the politicians with true, realistic facts about water issues. Let the politicians then use solid information, agreed among the professionals, among the scientists, the engineers.

That is the mission. That is why I work so hard to keep these scientific relationships active, alive. It is not easy, but it can be done."

It is truly inspiring to see how much can be achieved when scientists come together to solve common issues without involving any political animosity

"Israelis, Palestinians talk water cooperation", 06/07/2013, online at: <u>http://www.ynetnews.com/articles/0,7340,L-4391090,00.html</u>

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State Chemicals Moves Dead Sea Salt for \$1 Billion

At Israel's southern Dead Sea pools, where visitors bob in water so dense with salt they float, David Zvida gestures toward hotels lining the coast.

Standing at one of the world's top tourist destinations, where travelers are told King David once took refuge from a vengeful King Saul, Zvida singles out a hotel close to being flooded. The spa industry is threatened because water levels have risen as companies extracting minerals leave salt deposits on the seabed, displacing millions of gallons of the Dead Sea.

"When these hotels were built here 30 years ago, they knew the water levels were slowly rising and the state took responsibility for protecting the hotels," said Zvida, senior vice president at Dead Sea Works Ltd. The unit of Israel Chemicals Ltd. (ICL) runs evaporation pools to extract minerals.

Since then, the state decided Israel Chemicals needed to chip in. ICL agreed, in a deal that also called for higher royalties, to pick up a \$1 billion tab to remove salt accumulating on the sea floor from its evaporation pools, elevating water levels in the basin between Israel and Jordan. Collecting potash and other minerals is a business dominated by Dead Sea Works and Jordanian rival Arab Potash Co (APOT).

ICL, the world's seventh-largest potash producer, hired staff for a new division that will remove 20 million tons a year. The project, expected to start in 2015, will dredge the salt, move it on a conveyor belt and dump it via a barge back into the northern part of the sea, from which water is hauled back to southern pools by canal.

Two Million Visitors

While the much larger Dead Sea basin to the north is shrinking at a record rate, the more lucrative southern basin's levels have surged enough to threaten the \$300 million health industry and a tourism business that drew about 2 million visitors from Israel and abroad in 2012, according to the Central Bureau of Statistics.

Now, under public pressure for companies to pay more taxes, the Israeli government is studying raising other levies on natural resource companies such as Israel Chemicals.



Finance Minister Yair Lapid in April said he would form a panel to examine royalties from natural resource producers as he scuttled merger talks between Israel Chemicals and Potash Corp. of Saskatchewan Inc. The decisions underscore hardships that companies face from an administration increasingly willing to squeeze businesses to maintain popularity and raise revenue.

Profit Margin

A heightened regulatory environment and public sentiment against Israel's largest companies currently runs from the telecommunications industry to banking.

It led analysts from Barclays Plc to Excellence Nessuah Brokerage Ltd. to reduce price estimates for ICL, the country's second-largest company by market value, which made a profit of \$1.3 billion last year on \$6.67 billion in revenue.

The stock fell 1.7 percent today in Tel Aviv, bringing its decline this year to 18 percent including reinvested dividends compared with a 2.3 percent rise in the TA-25 benchmark index.

"The overall environment is making investors concerned," said Guil Bashan, an analyst at IBI-Israel Brokerage & Investments Ltd. who reduced his price estimate to 46 shekels from 53 on May 7, citing regulatory concerns. "The risk from greater regulatory oversight should not be underestimated.""

The harvesting of potash and minerals from the Dead Sea leaves salt residue to build up on the seabed and contributes to higher sea levels.

Dredging Salt

In late 2011, amid nationwide protests calling for more social justice, ICL agreed with the state to shoulder about 80 percent of the cost to harvest the salt and to double royalty payments to 10 percent on potash production at certain levels. Analysts such as IBI's Bashan hailed the agreement as positive for ICL at the time as it would help put the tax story to rest.

Now, less than two years after the agreement, a new government has decided to re-examine taxes on natural resource producers including ICL. The panel studying the issue, dubbed "Sheshinski 2" in Israel, will be headed by Eytan Sheshinski, a professor emeritus from the Hebrew University of Jerusalem who led a committee whose recommendations three years ago helped the government double its share in gas and oil profits.



"The company is concerned that international investors might perceive Israel to be less of an attractive market to invest in due to the current uncertainty in the Israeli economic environment and because they find the Israeli government to be unreliable," ICL Communications Manager Amir Avramovitz said in May, commenting on the decision to form a panel two years after an agreement was made.

'No Contradiction'

The "Sheshinski 2" goals "are not to hurt specific companies but to contribute to the broader Israeli public welfare," the Finance Ministry said in a statement dated June 25.

"There is no contradiction between the salt harvest agreement signed a year ago and the establishment of a Natural Resources Committee," it said. "The government's decision did not explicitly forbid making changes in fiscal policy. It should be emphasized that the Israeli government sees great importance in fulfilling its agreements."

Mud Baths

The depleting Dead Sea is a source of concern for Israelis who visit the site by the busload every day to enjoy the restorative powers of its mud baths and mineral waters. ICL, a company with a 46 billion-shekel (\$13 billion) market value controlled by billionaire Idan Ofer's Israel Corp., runs a chemicals factory of smokestacks and salt-encrusted pipes that help make it one of the biggest fertilizer makers on Earth.

It also contributes to the drying of the sea, according to the Friends of Earth Middle East. Half the drop in Dead Sea levels can be attributed to Israel Chemicals (ICL) and Jordan's Arab Potash (APOT), according to Gidon Bromberg, Israeli director of the Friends of Earth Middle East. The company says it's far less, attributing most of the drop to water used upstream.

"Israel Chemicals Moves Dead Sea Salt for \$1 Billion", 03/07/2013, online at: http://www.businessweek.com/news/2013-07-03/israel-chemicals-moves-dead-sea-salt-for-1-billion

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Whitewashing Apartheid: Israel's Dirty Water – OpEd

Last week, on June 23, Israeli President Shimon Peres and Chicago Mayor Rahm Emanuel attended a ceremony in Jerusalem in honor of a new joint initiative between Israel's Ben-Gurion University and the University of Chicago.

Hailing the Peres-Emanuel presence as an instance of "rare political star power", the Chicago Tribune explains:

"The two schools soon will begin funding a series of research projects aimed at creating nanotechnologies that address water shortages in arid climates. The project's goal is to find new materials and processes for making clean, fresh drinking water more plentiful and less expensive by 2020."

Among Israel's qualifications in the business of dealing with water shortages is, of course, its legendary success in "making the desert bloom" via the removal of Palestinians that began in the 1940s.

Indeed, Peres himself wrote in his 1970 book David's Sling: The Arming of Israel:

"The country was mostly an empty desert, with only a few islands of Arab settlement, and Israel's cultivable land today was indeed redeemed from swamp and wilderness."

The expulsion of more than 750,000 Palestinians during the creation of the state of Israel no doubt assisted somewhat with the cultivation of the "empty desert" myth. Blooming projects have presumably also benefited from Israel's diversion of various regional bodies of water.

Water Apartheid

A 1993 article in The New York Times outlines two competing visions of Israeli water policy:

"What Arabs depict as Israel's disproportionate use – even theft – of water, Israelis portray as the result of foresight, technological advances like computerized irrigation and good management in securing and exploiting supplies."

Of course, "theft" would appear to be an accurate description of Israeli practices such as usurping Palestinian springs for the benefit of illegal settlers in the West Bank.

As for managerial deftness in the exploitation of supplies, consider this Reuters report from 2009: "Amnesty says Israel curbing water to Palestinians." Citing Amnesty International's calculation that per capita water consumption in Israel was four times higher than in the Palestinian territories, Reuters quotes an Amnesty official's concern:

"Water is a basic need and a right, but for many Palestinians obtaining even poor-quality, subsistence-level quantities of water has become a luxury that they can barely afford."



For one thing, the glaring discrepancy in water allocation from West Bank supplies leaves Palestinian residents of the territory reliant on water from tankers that are "forced to take long detours to avoid Israeli military checkpoints and roads off-limits to Palestinians".

According to a 2012 Oxfam briefing paper, tankered water is up to five times more costly, "further erod[ing] Palestinian farmers' and herders' profits, and reduc[ing] their ability to pay for essentials such as food, health care, and education for their children".

Other scenarios also underscore the irony of Israel's position at the forefront of the global battle against water scarcity. The Oxfam paper notes:

"Restrictions on granting permits mean that water cisterns used by Palestinian farmers to collect rainwater are frequently demolished by the Israeli authorities."

A 2013 report by the human rights organization Al-Haq determined that West Bank settlers currently consume six times more water than their Palestinian neighbors.

Palestinians 'Blame', Israelis 'Innovate'

In a 2012 dispatch for the ultra-right wing FrontPage Magazine, Jack Schwartzwald, clinical assistant professor of medicine at Brown University, offers a thorough distortion of reality, insisting that "Palestinians steal Israeli water... while Israel exports volumes to the West Bank greatly in excess of what is mandated by the Oslo Accords".

Schwartzwald glorifies Israel's technological prowess in the water industry, citing "SmarTap" faucets and drones that detect water pipe leaks, and maintains that, while the Palestinians waste their time "blam[ing] Israel, Israelis work on innovative solutions" to the region's water crisis.

The problem, of course, is that Israel's "innovative solutions" are so often dependent on the exploitation of Palestinians. In a 2009 Guardian piece lambasted by Schwartzwald, the paper's former associate foreign editor Victoria Brittain discusses the lack of uncontaminated water and the unprecedented rate of nitrate poisoning in besieged Gaza, where "sewage and wastewater flows into public spaces and the aquifer".

According to a 2009 report by the Israeli human rights group B'Tselem, meanwhile, 90-95 percent of Palestinian wastewater in the West Bank is not treated at all, along with a substantial portion of wastewater from the settlements.

In an email to me, West Bank-based environmental expert Alice Gray described Israel's policy of "environmental unilateralism' – preventing Palestinians from building sewage treatment plants themselves, and then prosecuting them under international law for cross-border pollution".

The process, it seems, works like a charm:

"Palestinians then have to pay for the construction of sewage treatment plants in Israel. Israel then treats the water to a much higher standard than is actually required under international law (at the expense of the Palestinians) and uses the effluent for agriculture. In the meantime, they create the



erroneous impression that the Palestinians lack the organization, the institutions, the technical expertise and the will to manage their environmental impacts and [that] they need modern, advanced, environmentally responsible Israel to do it for them. This is a camouflage and a greenwash for systematic theft of resources and obstruction of development that is actually destroying the land."

Manufacturing Crisis

Schwartzwald's enthusiastic greenwashing of "Israel's life-sustaining desalination plants" and its Desalination Master Plan – the goal of which is to drastically increase the production of potable water via reverse osmosis – conveniently ignores desalination's role in the discharge of chemicals and resultant disappearance of marine species off the Israeli coast.

Desalination is one of the areas in which Ben-Gurion University and the University of Chicago will collaborate in their apparent quest to combat water shortages. Interestingly enough, however, Alice Gray points out that "[t]he Palestinian water crisis is manufactured – man-made" and that "[t]here is enough water in the region for everybody to have the World Health Organization's recommended minimum of 100 liters per person per day without even using up 25 percent of available supplies".

Of course, this is before factoring in the precedence that Israeli agriculture takes over Palestinian lives.

As a Jerusalem-based water policy consultant commented to me, Israel has in fact made useful contributions in water conservation technologies such as drip irrigation, but "the development of all these 'technological innovations' (which are... nothing more than a big business) tends to go hand in hand – in Israel's case – with unsustainable water practices for the past 60 years... and (ethnic) discrimination regarding water access/rights".

Regarding the blooming of the desert, she stressed that, paradoxically, the pursuit of "the Zionist dream went hand in hand with serious environmental degradation" in the form of over-pumping of the Coastal Aquifer and other projects.

It remains to be seen what sort of innovative degradation may be achieved by the UChicago-Ben-Gurion alliance. But the attendance by neoliberal privatization addict Rahm Emanuel at the inaugural ceremony in Jerusalem serves as a reminder of the potential profitability of policies of resource denial vis-à-vis inferior populations. For further reading on Emanuel's ideology, check out the recent Huffington Post article: "Chicago Schools May Be Forced To Choose Between Toilet Paper, Teachers Due to Budget Cuts".

In the meantime, leave it to the Israelis to whitewash apartheid with dirty water.

"Whitewashing Apartheid: Israel's Dirty Water – OpEd", 02/07/2013, online at: http://www.eurasiareview.com/02072013-whitewashing-apartheid-israels-dirty-water-oped/

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Conversations with Water Leaders: International Desalination Association (IDA) President Dr. Corrado Sommariva on Desalination Technologies and Environmental Solution

Fifth in a series, "Conversations With Water Leaders," conducted by OOSKAnews in association with <u>Singapore International Water Week</u>.

In this edition, Dr. Corrado Sommariva, President of International Desalination Association (IDA), talks with OOSKAnews correspondent, Renee Martin-Nagle about various desalination technologies, management of the environmental footprint from desalination operations, the role of desalination in the Middle East and recent IDA activities.

Good morning, Dr. Sommariva. You have worked for many years in the Middle East where the arid climate has caused those countries to rely heavily on desalination for many years. How would you describe the role of desalination there?

Desalination has provided a reliable source of fresh water in the Gulf region for nearly half a century, and real development in the Middle East was only possible with the parallel development and implementation of desalination. Some countries in the Gulf region rely on desalination to produce 90% or more of their drinking water, and overall this region has about 40% of the world's desalinated water capacity. Since there are no natural resources and water storage is limited to 24 hours, the emphasis has always been on reliability and robustness of operation. Today a gradual but constant effort is taking place towards more sustainable water solutions that would enable a lower energy footprint and environmental impact.

Various desal technologies are in use, including multi-stage flash distillation (MSF), multiple effect distillation (MED), reverse osmosis (RO), seawater reverse osmosis (SWRO), and forward osmosis (FO). Nanofiltration in a tri-hybrid application is a recent option, and then there are the chemical processes, such as electro-dialysis de-ionization (EDI) and low-pressure distillation (LPD). Solar membrane distillation systems are being piloted, and Egypt is testing a low temperature distillation (LTD) system to reduce the need for heat and thus energy. Which technologies do you believe will be the trends for the future?

Thermal desalination technologies have been traditionally less energy- efficient than membrane processes, such as SWRO. The two major thermal desalination processes are Multi-Effect Distillation, or MED, and Multi-Stage Flash, or MSF. MED technology is substantially more energy efficient than MSF technology, and in some cases, even more energy efficient than RO. For many years, MED technology could not find an entry point in the implementation of large scale projects, but it has now found its way into the market as there is a serious technology drive towards increasing the distillers' performance ratio. Whereas 10 years ago, one distiller could produce 7 kg of distillate water per kg of steam, the trend is now more towards 9 or 10 kg. There are a lot of very good concepts in the market, including forward osmosis, membrane distillation, tri-hybrid applications and



low temperature distillation. These are excellent concepts that can challenge established technologies.

One of the major challenges for desalination is the intense amount of energy required for the process, which emits greenhouse gases that have been linked to climate change. How can a lower energy footprint be achieved?

Two levels of actions require urgent attention. The first one is the creation of policies that encourage energy efficiency, providing a realistic price for energy even in oil-rich countries and rewarding energy efficiency. On the technical level, it is necessary to educate managers and plant operators on how to operate plants in a much more energy efficient manner with relatively few changes.

Solar power seems like an obvious choice to provide energy for desal operations in an environmentally friendly way, especially in an area like the Middle East where sunshine is plentiful. What are the barriers to solar power for desal?

The main obstacle to matching desalination with solar power is the intrinsic high-energy footprint associated with the desalination technologies. Finding a way to couple a desalination concept to a renewable source is not a technological challenge. Reducing the energy footprint is. The same applies to SWRO, which can be easily powered by photovoltaic.

The MASDAR project, supported by IDA, is promoting the use of new technologies having a lower energy footprint and therefore capable to be more easily matched with renewable technologies. Concepts such as forward osmosis, membrane distillation and tri-hybrid applications are rarely given a chance beyond the laboratory or pilot scale project. Therefore, there is a risk that some of them will never be able to develop into an industrial reality.

You have lectured at Genoa University on material selection in desal plant construction. Why is material selection so important for desal plants?

Material selection is extremely important for the lifetime planning of a desalination asset. Seawater is generally corrosive, but, when used for desalination, seawater needs to be chlorinated, and this makes the corrosion potential worse. For thermal desalination where seawater is used at high temperature, the corrosion potential becomes even worse. Therefore, for thermal desalination, copper-nickel alloys and duplex stainless steel are used for the heat transfer tubes and evaporator shell construction. This makes these technologies extremely sensitive to market price indexes for metals, and the CAPEX is very sensitive in these aspects. SWRO technology relies heavily on super duplex stainless steel, but generally plastic or GRP is used for all low pressure applications. Materials science in desalination is developing fast and may offer new and more cost effective solutions.



In addition to the greenhouse gas footprint of desal operations, the resulting brine that is left over after extraction of fresh water presents another environmental issue. How should the brine that results from desal be managed?

There is a little bit of misconception about the impact on coastal ecosystems from brine discharge. A desalination plant does not make anything "new" but instead returns to the sea the same salts that have been abstracted from the sea, although at a higher concentration. Residual chlorine concentration in seawater discharge is generally very low due to the chlorine absorption in the process of seawater sterilization. A great emphasis needs to be placed in reduction of chemicals -- not only chlorine but antiscale and antifoam -- whose residuals are discharged back into the sea, although the amount of chemicals that are used and discharged in desal is a small fraction of what other industries use. Locally, impacts can be mitigated with the use of diffusers that improve the mixing between the brine and the surrounding environment. A long term plan is the use of partial or total zero load discharge (ZLD).

More complex is the discharge from thermal desalination where, in addition to the salinity plume, a substantial thermal plume is discharged to the sea. The best way to combat this effect is to increase the efficiency of the thermal desalination plant. In this manner, less energy is required to produce water, and less energy in the form of heat is discharged back to the sea.

The IDA World Congress on Desalination and Water Reuse will be held in Tianjin, China from 20-25 October. What do you see as outcomes of the Congress?

The IDA World Congress is the world's premier event for the global desalination community, and the theme of this conference is "Desalination: A Promise for the Future". China is a very important emerging market for desalination and has established some ambitious goals for desalination as part of its 12th Five-Year Plan, so the timing for this event is ideal. The programme is strongly oriented towards innovation and sustainability, and efforts in the direction of energy efficiency are a major topic. IDA has put a lot of efforts in the last six years towards environmental, energy and social responsibility and innovation targets. I trust that the conference will represent a platform to develop these efforts further and create an awareness of what can be and needs to be achieved.

Singapore has been in the forefront of many of the leading technologies and practices in fresh water management. In your view, how has Singapore contributed to the global water dialogue? The role that public corporations such as PUB have in the promotion of sustainable goals is unique. In general, innovation and particularly R&D is very often led by the industry to design new products that allow a manufacturer to get an edge on the competition. In Singapore, the driving force is coming from the public sector, which has always put a direct emphasis on innovation and R&D in relation to the sustainability goals for the community. I believe we all should thank Singapore for having been always a role model in creating awareness of water solutions and pursuing new ideas and models of water efficiency and environmental stewardship.



After being elected as president of IDA in 2011, you said you wanted to bring the IDA and the industry closer. What steps have you taken to achieve that goal?

There are players in the industry who are not yet aware of what desalination could achieve and are also not aware enough of what IDA can offer – particularly key figures in the planning and decision-making of desalination projects. I believe that greater involvement with IDA would lead to more informed decisions during the initiation of projects. A sharp step forward was made with IDA's support of the IWS and the MASDAR initiative where for the first time in its history, IDA has been a supporter and endorser of a state initiative. We reached North Africa with our first conference in Casablanca in 2012, and we are planning our first large conference in Latin America.

Also, within the last two years, we established the IDA Desalination Academy and have conducted the first training seminars. We have established strategic alliances to support the Academy's programs, including an alliance with Heriot-Watt University leading to a Master of Science degree in Desalination, courses with PUB, and an online course with David H. Paul, Inc., leading to an international certification in reverse osmosis for plant operators.

I'm sure that the time has passed quickly, but you are nearing the end of your two-year term as President of IDA. As you reflect on your term in that office, what activities would you like to highlight?

I am particularly proud of the IDA Humanitarian Outreach Program through which IDA sponsors conferences whose net proceeds are donated to water-related humanitarian projects. For example, the "Desalination Industry Action for Good" conference in Portofino, Italy, raised US\$120,000 – US\$60,000 each from IDA and Rotary International -- to help alleviate water shortages for residents of Ankililoaka, Madagascar. The recent conference "Desalination for Oil and Gas Industry" in Banff, Canada, raised almost US\$500,000. The outreach program means a lot to me.

You have enjoyed a long, active and distinguished career in engineering and water. What advice would you give to young people who are just starting their careers?

Love for what you are doing is generally the key of success in all human activities, and to the young readers starting their careers, I cannot recommend anything else but to love their job. Those in desalination should think of themselves as the inventors of new solutions that will solve the next generation's water problems, which can inspire them throughout their careers to continue their development. I would encourage them to not only acquire substantive technical information but also continue their professional growth and contribute to the industry. Each one of us should recognize that our work can make a difference to many others' lives in a unique and meaningful way.

What final message you would like to leave with our readers?

Finding new and sustainable ways to produce water is a tremendous social responsibility that we all hold towards our future generations. We must never be complacent. We must continue to innovate



and find new solutions for better and more sustainable water production. In this way, desalination has a lot to offer to humanity.

I also believe that working with this sense of responsibility will make us discover that water connects us and is a common denominator to find solutions well beyond the borders defined in the water market.

About Dr. Corrado Sommariva: Sommariva is is presently the Managing Director of ILF Consulting Engineers Middle East and the head of the company's worldwide desalination activities. He joined ILF in 2009 after working nine years with Mott MacDonald, where he led the desalination and water treatment group as Managing Director of Generation Middle East.

He has worked for the last 20 years in the desalination sector. He has experience in thermal, reverse osmosis and wastewater systems and served in all the major desalination developments in the Middle East in various roles. Sommariva, who is President of IDA for the 2011-2013 term, has served on the IDA Board of Directors for the last 12 years. Within his main activities in IDA, Sommariva served as 1st Vice President in 2003-2004 and Chairman of the Affiliate Committee. He was also the Technical Co-Chair of the IDA World Congress in Dubai. In addition, he has served on the European Desalination Society (EDS) Board of Directors for the last 14 years, and was President in 2004-2005. An advocate for social responsibility in desalination, Sommariva started IDA's humanitarian outreach initiative that culminated in the establishment of the Association's Humanitarian Outreach Committee, which he leads. He has also been the Chairman of the World Health Organization (WHO) committee for the establishment of safe drinking water from desalination.

Sommariva is an honorary Professor at Genoa and L'Aquila Universities where he holds regular courses on desalination and water reuse related matters. He also holds regular courses with IDA and the Bushnak Academy. He has published over 50 papers on desalination covering leading edge research and economics, and has authored two books on desalination management and economics and project financing.

Dr. Corrado Sommariva spoke with Renee Martin-Nagle, a Visiting Scholar at the Environmental Law Institute in Washington, DC.

"Conversations with Water Leaders: International Desalination Association (IDA) President Dr. Corrado Sommariva on Desalination Technologies and Environmental Solution", 03/07/2013, online at: <u>http://www.ooskanews.com/story/2013/07/conversations-water-leaders-international-desalination-association-ida-president-dr</u>

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✤ Israel calls for closer cooperation with China

TEL AVIV, Israel- Israeli Economy Minister Naftali Bennett Thursday called for strengthening innovation <u>cooperation</u> between Israel and China in the fields of technology, water, <u>energy,agriculture</u> and biomed in order to push bilateral <u>trade</u> and economic relations to a new height.

"I think there is so much that we can do together and right now it's only a little drop in a big ocean of the trade and business relations between the two nations," Bennett told Xinhua in an interview at his office in the Israeli coastal city of Tel Aviv, referring to the great potential in China-Israel trade.

The two-way trade between China and Israel reached nearly \$10 billion in 2012, making China Israel's largest trading partner in Asia and its third largest trading partner in the world.

Bennett will leave for China Saturday with a delegation of Israeli businessmen from the IT,<u>finance</u> and other sectors for a week-long visit, which will take him to the capital <u>Beijing</u> and<u>Shanghai</u>.

"It's not only my first visit as minister to China, it's my first visit abroad as economy minister, I decided that my first visit will be to China before any other country, because of the unique importance," he stre<u>ssed</u>.

China is "a major power and player in the international market" and Prime Minister Benjamin Netanyahu "set an objective for the ministers of the government to create strong viable relations with China," he said, adding that "we've made a strategic decision to go to the east, to go to China."

The main goal of this visit is "to strengthen the ties between the Israeli and Chinese economies, to open up a pipeline of business, to make actual connections between business people on both sides and primarily to open up a channel of innovation, because that's what we in Israel do best, we innovate, we manufacture innovation ... and that's a sort of thing that I think is a huge win for China and a huge win for Israel," he said.

"We have a great desire to share our technology with the Chinese people, and we also want to create a special innovation relationship with China. We want to see Chinese business people come to Israel,



and Israeli business people live for a while in China and sort of being economic ambassadors of both sides," said the 41-year-old minister, who was a successful software entrepreneur.

"We need to be working together, we need to be doing business together, we need to be bringing new technology to the world together, and I can not think of a more exciting match than the Israel-China cooperation," he said when talking about the need to enhance cooperation between Israeli and Chinese companies.

Bennett denied there are restrictions on Israel's high-tech exports to China.

"I don't believe that there is any restriction on high-tech. In security areas, there's restriction all over the world. It's not unique. In fact, I'm bringing along with me a delegation of software entrepreneurs and <u>CEO</u>s in the IT sector and the financial services sector, and we are all about sharing and growing together, " he said.

According to Bennett, his upcoming China visit is one of the steps taken by Israel to implement the consensus Netanyahu reached in May with Chinese leaders to further tap bilateral trade and economic cooperation potential. After his visit to China in May, Netanyahu established a ministerial committee chaired by himself and an inter-ministerial committee to promote economic ties with China.

"The Chinese and Israeli governments have formed a joint committee, a bilateral committee, to implement the vision of growing the business relationship and economic relationship between the two peoples. I'm actually the vice chair of this committee from the Israeli side ... We expected to put it into action in the next few months," Bennett said.

The minister also expressed Israel's intention to start free trade talks with China. "One of our goals is to initiate it (the talks) right now. So this is a goal. But it's going to take a while ... I'm very excited about this opportunity," he said.

As to Israel's cooperation with China in doing business in third countries, Bennett said Israel's skills and expertise combined with China's know-how will be "a huge win" for both countries.



When talking about his impression of China, Bennett, who visited China in 2008, said he was very impressed by "the sizzling of entrepreneurship" in China and the desire of the Chinese people to grow businesses.

"I'm (also) impressed by the (Chinese) government who is doing an amazing job that the world is admiring," he added.

"Israel calls for closer cooperation with China", 05/07/2013, online at: <u>http://usa.chinadaily.com.cn/business/2013-07/05/content_16736685.htm</u>

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How to save the world food chain

Socially responsible investors will want to look at a nascent hive of activity where governments and the private sector are lumbering to save the world food supply threatened by mass crop displacement. The survivability of the tiny, nuisance bee is one key to that monumental task.

Bee populations around the world dropped by some 30 percent to 50% over the past seven years, suffering Colony Collapse Disorder (CCD). Fruits and vegetation such as alfalfa feed for dairy and beef cattle depend on bee pollination. Fewer bees mean higher consumer prices and less inventory.

The US consumes 400 million pounds of honey every year, but production fell below 150 million pounds in 2012, and prices rose 14% in one year. The price for healthy worker behives jumped from \$75 to over \$150 per hive over the past few years.

No research yet pinpoints a single cause of CCD, but the US Department of Agriculture (USDA) identifies four possibilities: pathogens, parasites, management stress and environmental stress.

A pathogen (infectious agent) load of viruses and bacteria are suspect as a culprit in CCD. Environmental stress such as droughts and polluted water sources are likely causes. Exposure to widespread use of pesticides in lethal doses is a factor. At the end, the queen bee has only a few adults to service her before the colony totally collapses, and the bees die or disappear. Cellphone transmission waves are not believed to be a significant factor in CCD.

Developing nations heavily rely on bee pollination for their food supply. India has nearly 10 million hives. The US has 2,400,000 hives and nearly three million fewer bee colonies (down from five million to 2.4 million) today than several decades ago.

Every third bite of food an American takes, according to the USDA, is dependent on honeybee pollination. They add \$15 billion in value through their pollination of US fruit crops, while CCD caused a \$75b. loss to agriculture worldwide over the past several years. One hundred crop species provide 90% of our food worldwide, and 71 of them are pollinated by bees.



Israel produces more than 2,500 tons of honey each year worth \$12 million from 100,000 hives. One thousand five hundred tons of honey is imported each year to cover demand shortfall in "the land of milk and honey." Inconsistent rainfall and rapid land development are eliminating natural habitats of open fields of flowers, so the Jewish National Fund plants up to 100,000 nectar-producing saplings each year to enhance bee population growth.

Investigator Ahmen Jabril, reporting for Thomson Reuters, links CCD threats to national defense. Food shortages and high prices have spurred riots and brought down governments before (think France, bread riots in Egypt and Russia). The European Commission is likely to outlaw certain pesticides this December because of the devastation to European honey production over the past few years.

Shortages of bee byproducts are driving up the costs of vitamins, medicines and cosmetics. Propolis, a sticky sealant bees make from sap to seal their hives, is effective for antibiotic and antifungal use, against immunostimulant effects and skin-burn treatments. Candle making, polishes, food coatings and pharmaceuticals that depend on beeswax are also casualties.

Treatment for CCD is a \$1 billion to \$3b. global market. The US Department of Defense is testing military technologies in CCD research. The USDA, the Environment Protection Agency and the European Union are committing resources.

However, Prof. Chancing (Alex) Lu, of the Harvard School of Public Health, recently told me momentum has slowed since early 2012, with no dramatic research findings, and the resignation at the Environmental Protection Agency (EPA) of the person dedicated to this problem. "EU might be the first political entity to take some meaningful action to mitigate the losses of honeybees by restricting the use of neonicotinoids [a group of chemicals used as insecticides]," he said.

Hebrew University's Triwaks Bee Research Center, founded in 1976, focuses on bee foraging behavior, secretions and mite control. In 2009, Israeli professors identified Israeli Acute Paralysis Virus (IVAP) as a possible leading cause of CCD. It was found in imported bees from Australia and jelly from China. The work led to a commercial start-up company founded in September 2011.



Monsanto Corporation acquired Israel's Beeologics, based in Rehovot and Miami, whose Remebee® is sold as an antiviral bee treatment awaiting FDA and EPA approval as an intervention method in the fight against IVAP. Some say the purchase is to study and improve the pesticides Monsanto sells that allegedly cause CCD.

BeesFree, Inc. (BEES), based in Florida, is "Saving hives. Saving Lives" with an all-natural approach. Its stock is barely hanging on at 20 cents with almost no activity. BeesFree claims carbohydrates, essential amino acids, lipids, essential oils, minerals and antioxidants strengthen the bees, enabling them to withstand greater environmental toxins and stress, promote brood rearing, control infestations and helps prevent CCD.

The USDA recommends the public help by eliminating pesticides, especially mid-day when bees forage for nectar and store pollen. Home owners should plant pollinator plants such as red clover. In these lazy, hazy hot summer days, don't swat that pesky bee. Killing a bee is a danger to the food ecosystem. Our problem, according to Drs. Seuss and Lu, is that "Our old bee-watching man just isn't bee-watching as hard as he can... The thing that we need is a Bee-Watcher Watcher."

Dr. Harold Goldmeier is the managing partner of Goldmeier Investments LLC and an instructor of business and social policy at the American Jewish University, Aardvark Israel, in Tel Aviv.

"How to save the world food chain", Jerusalem Post, 02/07/2013, online at: http://mideastenvironment.apps01.yorku.ca/?p=7362

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* North Lebanon dam project finally set to begin

BEIRUT: The cornerstone for a controversial dam in Batroun, north Lebanon will be laid Sunday, with the Energy Ministry promising that the project will meet the water needs of more than 40,000 residents. A statement by the ministry, issued Friday, said the Balaa dam project represents "the first large-scale water project" in the area. It is expected to create a fixed reservoir of around 1.2 million cubic meters of water with an additional storage capacity of up to 2.1 million cubic meters.

The statement said the dam would be approximately 35 meters tall at its highest point, and 400 meters long.

The project previously faced strong opposition from local politicians, who are at odds politically with caretaker Energy Minister Gebran Bassil.

They objected to his signing a memorandum of cooperation with Iran last year, which would have secured \$40 million to fund the dam project. It is unclear what happened to this money.

A group of March 14 officials met in Batroun Friday and issued a statement slamming Bassil for what they said was a failed attempt to bring in an Iranian company to build the dam and sideline Moawad-Edde, whose winning bid was less than \$34 million.

"Aren't you the one who delayed the launch of the project for two years?" the officials asked Bassil.

The statement said Moawad-Edde would carry out the project, after he won the tender in 2011. The order to begin the project was given last year, the ministry said, after expropriation payments were completed.

"North Lebanon dam project finally set to begin", Daily Star, 02/07/2013, online at: <u>http://mideastenvironment.apps01.yorku.ca/?p=7356</u>

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***** Ethiopia Ignores Egypt's Empty Threats and Continues with Construction of Dam

Despite the stiff opposition from Egypt, Ethiopia is ploughing ahead with the construction of the Grand Ethiopian Renaissance Dam, a \$4.2 billion hydroelectric dam that is located on the river Nile, and when completed will be Africa's largest, with a generating capacity of 6,000MW.

The dam is being constructed in the Benishangul-Gumuz region, near to the border with Sudan, and a workforce of 5,000 Ethiopians, led by 200 expats from 20 different nations work in shifts to keep construction going 24 hours a day. The project has a completion date set for 2017.

Plans exist to begin filling the dam's reservoir next year, a task that is expected to take around five years to complete. Simegnew Bekele, the leading engineer on the project, said that "during the filling of the reservoir, which will take five to six years, we won't have any fixed impoundment rate to make sure the water flow downstream will not be significantly affected."

Egypt are worried that damming the Nile could reduce the flow of water that passes through their country, but there could also be another reason for their opposition; bitterness.

In 1929 Great Britain gave Egypt veto power over all projects along the river Nile, then in 1959 Egypt decided to split the power with Sudan. Only last month did the <u>Nile Basin Initiative</u>, a collection of East and Central African countries, sanction the new Nile River Cooperative Framework Agreement which effectively means that Egypt has lost its control over the Nile. Upstream countries formed the Nile Basin Initiative after finally being *"tired of first getting permission from Egypt before using river Nile water for any development project like irrigation."*

In response Egyptian politicians have suggested supporting attacks against Ethiopia in order to sabotage the dam. Security at the construction site is high, with several checkpoints and screenings needed before visitors may enter the site, and soldiers guarding the entire facility.

David Shinn, the former US ambassador to Ethiopia, said to <u>CS Monitor</u> that he doubted Egypt would ever actually take up arms against Ethiopia over the dispute. *"Following long periods of silence, there are periodic outbursts as we have seen in the past month. I expect this trend to continue but not to result in conflict between the two countries."*



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To be honest, I don't think Egypt is in much of a position to be launching sabotage missions into Ethiopia at the moment. They have a few problems closer to home to sort out first.

"Ethiopia Ignores Egypt's Empty Threats and Continues with Construction of Dam", 04/07/2013, online at: <u>http://oilprice.com/Latest-Energy-News/World-News/Ethiopia-Ignores-Egypts-Empty-Threats-and-Continues-with-Construction-of-Dam.html</u>

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Sudanese Minister Supports Dam Construction in Ethiopia

Sudanese Agriculture and Irrigation Minister, Abdelhalim Almutaafie said that his country is supportive of the construction of the Grand Ethiopian Renaissance Dam which is being constructed at a place only about 40 Kms from his country's border.

The Minister said the rationale behind the support of Sudan to the construction of the Ethiopian dam is that the dam is a "model "of development in the region.

He also said that it is better to build dams in Ethiopia that in the Sudan or Egypt because of topographical reasons. "The level of evaporation in Sudan is higher than in Ethiopia for dam water reservoirs in Sudan and Egypt would be exposed to higher temperature from the environment and the sun as they would be in flat lands while in Ethiopia reservoirs are built in deep gorges."

Almutaafie also pointed out that the tripartite dam investigative committee established by Ethiopia, the Sudan and Egypt shows that the dam construction in its first report presents positive developments of the dam construction.

Regarding the Egyptian concern over the dam construction in Ethiopia the Minister said that it is political issue that a technical one. "Some Egyptian politicians have used the issue as a political instrument to pressurize their opponents." Otherwise it is known that the building of dam is beneficiary for downstream countries as it enables them to receive regulated and siltation free water sustainably, he said.

Almutaafie said that the dam construction should be executed with sense of cooperation and mutual benefit for the Sudan and Egypt badly needs the Nile water for agricultural development and Ethiopia to generate electric power. Otherwise, nobody will benefit from individual utilization of the waters, he added.

According to the minister, Sudan has also been working to for to normalize relations between Ethiopian and Egypt by repeatedly telling Egyptian brothers that the construction of the dam would have common benefit.


Concerning the agricultural development in Sudan, the minister indicated that his country is now emerging as one of the major exporter countries of agricultural products and livestock in Africa. For example, this year, 2013, the agricultural export has increased to 2 billion USD from only 1,200,000,000, he said.

In 2012 the country exported 4 million live sheep to various countries and indicated that Sudan is becoming an agricultural investment spots for international business people in the area. This export volume is expected to grow to 5 million this year.

According to the minister, 33 per cent of the Sudanese land is arable and out of these 18 million hectares has been developed so far. Sudanese agricultural production is expected to grow by 20 per cent this year.

"Sudanese Minister Supports Dam Construction in Ethiopia", 05/07/2013, online at: <u>http://www.newbusinessethiopia.com/index.php?option=com_content&view=article&id=1082:sudanese-minister-supports-dam-construction-in-ethiopia&catid=38:government&Itemid=38</u>

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Historical roots of the Blue Nile conflict between Egypt and Ethiopia and its present reflections

The importance of the Nile for Egypt has been referred to many times since ancient times.

The first reference is "Hymn to the Nile," known to have been written for the river around 2100 B.C. In the hymn, the River Nile is considered as keeping Egypt alive and is praised. Another reference was made by the well-known Greek historian Herodotus. Herodotus called Egypt "the gift of Nile."

In modern times, the most important emphasis on the importance of the Nile for Egypt is the statement made by Anwar Sadat, then president of Egypt, after signing the peace treaty with Israel on March 26, 1979. Stating that the only issue that could drag Egypt into a war was water, Anwar Sadat both declared that the dominant role of Egypt in Arab-Israeli conflict was over, and also highlighted the vital importance of the Nile for Egypt.

Many countries are located in the Nile basin as it is the longest river in the world. The number of countries in the basin reached 11 after South Sudan gained its independence from the Khartoum administration in July 2011. The basin, which covers more than three million square kilometers, has neither economic nor strategic integrity. Hence, adopting a joint position in terms of using the Nile waters through mutual compromises among the basin countries gets more difficult.

Egypt became an important hub for cotton production starting from the period of Muhammad Ali Pasha, who later launched a revolt against the Ottoman Empire. Gaining more importance in international trade after the opening of the Suez Canal, Egypt began to play a key role in terms of British colonial policy. After the British invasion of Egypt in 1882, Britain attached a particular importance to cotton production in Egypt for its textile industry. Starting from that period, Britain, which was aware of the fact that it was not possible to produce cotton without irrigation, initiated certain international regulations to prevent upper riparians from using the Nile waters before they reach Egypt. Those regulations were made by European colonialist states seizing control of the territories located on the upper side of the basin during that period. Those regulations can be listed as follows:

April 15, 1891 -- Protocol between the United Kingdom and Italy

Article III of the protocol, signed between Britain and Italy on East Africa in 1891, states that Ethiopia will not attempt any water resource development activities on Atbarah -- one of the tributaries of Nile.

May 15, 1902 -- Treaty between Great Britain and Ethiopia

In the Britain-Ethiopia treaty dated May 15, 1902, Ethiopia agreed on not to build any constructions that might obstruct the river's waters on Lake Tana, the source of Blue Nile and Sobat River, without



agreeing with the British administration in Sudan. However, in the 1950s, Ethiopia stated that the Treaty was never ratified and was not binding for that reason.

May 9, 1906 -- United Kingdom-Belgium Agreement

In 1906, the Belgian Congo administration undertook not to construct, or allow to be constructed, any work over or near the Semliki or Isango River which would diminish the volume of water entering Lake Albert except in agreement with the Sudanese Government.

Dec. 13, 1906 -- United Kingdom-France-Italy Agreement

Through this agreement Britain, France and Italy agreed to safeguard the interests of Great Britain and Egypt in the Nile Basin, more particularly as regards the regulation of the waters of the Blue Nile River and its tributaries.

The 1925 Exchange of Notes between Britain and Italy

In the 1925, with the Britain-Italy exchange of notes, the Italian government guaranteed not to perform any hydraulic work on the Blue Nile and accepted the "vested rights" of Egypt and Britain.

May 7, 1929 -- Exchange of Notes between the United Kingdom and Egypt on Use of Waters of the Nile for Irrigation

The 1929 Agreement was signed between Egypt and Britain representing Sudan, Kenya, Tanzania and Uganda. The agreement prioritized Egypt's utilizations of the Nile water. In accordance with the agreement, Egypt and Sudan utilized 48 and 4 billion cubic meters of the Nile flow per year, respectively; the flow of the Nile from January to July (dry season) was reserved for Egypt; and Egypt reserved the right to monitor the Nile flow in countries upstream and to veto any construction projects that would affect her interests adversely. However, this agreement was never applied in Kenya and Tanzania, and those countries asserted that the agreement became obsolete after they gained their independence.

An article in the 1929 Nile Waters Agreement that states there can be no irrigation or energy project in Sudan or any other region under Britain's control, on the Nile or the lakes that are the source of Nile which will decrease or delay the waters flowing to Egypt shows the importance that Britain attributed to Nile and on agricultural production in Egypt.

Nov. 8, 1959 -- Egypt-Sudan Nile Waters Agreement

This was the most comprehensive agreement related to the Nile basin. According to the agreement, the quantity of average annual Nile flow was settled and agreed to be about 84 billion cubic meters



measured at the Aswan High Dam in Egypt. While the agreement granted Egypt the right to construct a dam in Aswan, it granted Sudan the right to construct the Rosaries Dam on the Blue Nile. It is also decreed that additional water, gained from the development works on the White Nile, would be shared equally by the two states. Both countries agreed to establish a Permanent Joint Technical Commission, and to adopt a joint approach in case other riparian states demanded the reallocation of waters. What grabs attention regarding the agreement is the fact that Egypt and Sudan did not operate any consultancy mechanism with other basin countries while carrying on negotiations.

In 2010, Rwanda, Ethiopia, Uganda and Tanzania signed the Nile Basin Cooperative Framework Agreement as a result of years of efforts regarding the utilization of the Nile. In the 1990s, the Nile Basin Initiative (NBI) was launched as a partnership to seek a solution for problems in the basin. However, as downstream riparians, Egypt and Sudan continued to ignore the rights of the upstream countries on the utilization of the river's waters and insisted that the international regulations dating back to the colonial period were still binding. The 2010 Agreement, which can be regarded a reaction to this situation, emphasizes the rights of each basin country to equitably utilize the Nile waters. Although Ethiopia signed the agreement, it was not accepted in the parliament until June 13, 2013, after being threatened with military intervention by Egypt.

Although Ethiopia contributes 85 percent of the total Nile flow annually, the country cannot considerably benefit from the river. Going through long-term internal conflicts and a cycle of war, Ethiopia has a quite low income per capita. Ethiopia, which needs electricity for both its developing industry and domestic use, turned towards hydroelectric power generation, which the country considered the cheapest resource. Ethiopian laborers and civil servants contributed a lot to finance the Grand Ethiopian Renaissance Dam, with the capacity to generate some 6000 MW of energy, and the dam became a national issue for Ethiopia. Egypt's objection to the diversion of the river waters, which is a basic technique for the construction of a dam and to the dam itself is inexplicable in political terms. The Renaissance Dam is being constructed only with the aim of generating energy. This means that the dam will not consume water; namely, there will not be any change in terms of the amount of water flowing down the Nile.

Looking from Egypt's point of view, the current problem highlights that Egypt will no more benefit unilaterally from the waters of the river Nile as it did for centuries. Egypt's objection to construction of the dam can be explained by the policy of preventing any upstream riparian utilization from the Nile waters. This policy has no applicability these days and it is doomed to fail. Any policy to prevent upstream riparians from utilizing the river water does not yield results anymore. The Egyptian government might try to take advantage of the situation to overcome the hard times it has been going through in domestic politics. However, Sudan, which has been its loyal ally in terms of the Nile River so far, has also begun to regard the dam being constructed in Ethiopia as "beneficial." It should be taken into consideration that Egypt needs Sudan for a military intervention in Ethiopia over the dam. The Egyptian air forces have no tanker aircraft, which would be needed for such a



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military operation. The Egyptian aircraft would be able to reach Ethiopia only if Sudan provided them with an airbase. Nevertheless, it is understood from the latest statements from Sudan that it does not favor this option. In the event that Ethiopia rejects military cooperation, another option would be a military operation to be carried out with Special Forces, but this is also doubtful. The Renaissance Dam is so grand that it cannot be damaged through materials carried by a small team. Another option for Egypt is that the construction of the dam can be prevented through support to certain opposition groups in Ethiopia. The military capacity of those groups is not known. It is not hard to predict that Ethiopia will take counter measures after hearing all those options to prevent them from being implemented.

In conclusion, it should be acknowledged that the political turmoil in Egypt limits the realm of activity of the government. The disturbance of the so-called Arab Spring is still being observed in Egypt as the army ousted former President Mohammed Morsi. The idea of undertaking an external military adventure seems highly unlikely in a period like this.

"Historical roots of the Blue Nile conflict between Egypt and Ethiopia and its present reflections", 07/07/2013, online at: <u>http://www.todayszaman.com/news-320078-historical-roots-of-the-blue-nile-conflict-between-egypt-and-ethiopia-and-its-present-reflections.html</u>

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* In Ethiopia, the massive Nile River dam project is compared to the story of Hoover Dam

ASSOSA, Ethiopia — The book, a history of Hoover Dam, fell from the dashboard as Simegnew Bekele drove through the rugged mountains where the engineer is leading construction work on Ethiopia's massive Nile River dam.

"This book," he said, picking it up, "I am reading it now ... It's a fascinating story. This dam too (has) a history one day someone will write about."

Simegnew's sentiment illustrated the great expectations of a dam that has raised tensions between this Horn of Africa nation and Egypt, which is concerned the ongoing project will diminish its share of Nile River waters. Reading the book, a gift from Ethiopians he met in New York recently, the engineer has come to see similarities between the Ethiopian dam-in-progress and Hoover Dam, the Great Depression-era project that in its time became an icon of American enterprise under difficult economic conditions.

"Hoover Dam was constructed when America was (in) depression," Simegnew said. "It was an enormous success. I am sure our dam too will herald a bright future for this country and also for the whole region."

Despite the concerns of Nile-dependent Egypt, Ethiopia —whose economy suffers frequent power failures —has vowed to proceed with the dam that would become the biggest hydro-electric power station in Africa. In May, Ethiopia started to divert Nile waters to make way for the \$4.2 billion dam which, when it is finished, will have the capacity to produce 6,000 megawatts of electricity. Ethiopia's national electricity corporation says potential buyers of Ethiopia's electricity will include the two Sudans, Kenya, Djibouti, Somalia, Uganda and even wary Egypt.

In Ethiopia's Benishangul-Gumuz region near Sudan, some 800 kilometers (500 miles) from the capital, workers labor under intensely hot conditions and gigantic machines smash boulders in order to make the dam a reality by July 2017. Even as Egyptian and Ethiopian diplomats talk over the dam's impact on the volume of Blue Nile waters flowing to Egypt, construction work is proceeding



apace here in a sign of Ethiopia's determination to resist Egyptian pressure. Some 5,000 Ethiopians, joined by 200 expatriates from 20 nations, work in shifts 24 hours a day. Visitors here have to go through multiple security checkpoints that are manned by soldiers wearing "anti-guerrilla" tags on their fatigues. The Italian construction firm Salini is building the dam while the Chinese company Electric Power Equipment and Technology Co. Ltd. is building power lines for it.

Simegnew, the engineer, told reporters last week that some of the diverted Nile waters are accumulating in a temporary coffer dam, and officials say that the filling of the reservoir will start next year. Power lines to connect the dam's output with the national grid are being put up, and cables from the national grid extend to Djibouti, Sudan and, later, Kenya.

"During the filling of the reservoir, which will take five to six years, we won't have any fixed impoundment rate to make sure the water flow downstream will not be significantly affected," Simegnew said.

"In Ethiopia, the massive Nile River dam project is compared to the story of Hoover Dam", 02/07/2013, online at: http://www.washingtonpost.com/world/africa/in-ethiopia-a-massive-nile-river-dam-project-inspires-comparison-with-thestory-of-hoover-dam/2013/07/02/a892917e-e32e-11e2-bffd-37a36ddab820_story.html

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* Ethiopia: Big Nile dam could ease Africa power failures

Ethiopia: Big Nile dam echoes the Hoover Dam in scale and scope, offering the hope of a brighter economic future in Ethiopia and the Nile region. Ethiopia's big Nile dam – called the Grand Ethiopian Renaissance Dam – will cost \$4.2 billion and be able to produce 6,000 megawatts of electricity.

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Ethiopia's Nile project has won the support of upstream countries in East and Central Africa that have been meeting under the banner of the Nile Basin Initiative, which endorsed the new Nile River Cooperative Framework Agreement. That accord, ratified last month by Ethiopia's parliament, was conceived to replace the 1929 treaty written by Britain that awarded Egypt veto power over other countries' Nile projects. Sudan and Egypt signed a deal in 1959 splitting the Nile waters between them without giving other countries consideration. Egyptian politicians have suggested attacks against Ethiopia to sabotage the dam, and Egyptian President Mohammed Morsi last month warned that "all options are open" to challenge the project.

Ethiopian Prime Minister Hailemariam Desalegn said last week that, while he was willing to accommodate Egypt's concerns, the continued constructing of the dam and its size are "red lines" that will not be crossed by the negotiations.

If the dam is completed without incident, it would be a remarkable achievement for Ethiopia's leaders who dreamed of something big and wanted an equally grand name for the dam. Originally a secret project called X, the dam was later called the Grand Ethiopian Renaissance Dam.

David Shinn, former U.S. ambassador to Ethiopia, said he doubted Egypt's dispute with Ethiopia over the Nile River would degenerate into armed conflict.



"Following long periods of silence, there are periodic outbursts as we have seen in the past month," said Shinn, who is now a professor at <u>George Washington University</u>'s Elliott School of International Affairs. "I expect this trend to continue but not to result in conflict between the two countries." The Ethiopian government, which secured a \$1 billion loan from China for power lines for the Nile dam, says it will continue to raise more funds domestically. Government employees have for the second time paid their one-month salary to buy bonds the government is selling. Private banks are ordered by the central bank to buy bonds worth millions of the Ethiopian birr.

Yilma Seleshi of the Ethiopian Water Resource Institute says the dam would consistently bring in hard currency for at least a century, returning the massive investment it is requiring. In his study presented during a meeting at Ethiopia's Addis Ababa University last week, he estimated that Ethiopia would earn 2 million euros in daily income from power sales to neighboring countries.

"Ethiopia: Big Nile dam could ease Africa power failures", 03/07/2013, online at:

http://www.csmonitor.com/Environment/Latest-News-Wires/2013/0703/Ethiopia-Big-Nile-dam-could-ease-Africa-power-failures

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* Uganda: The Nile Water Controversy, Uganda and the Position of International Law

A number of articles have been written on the controversy on the equitable use of River Nile by the River States especially in respect of the recent outburst by Egypt.

The source of the Blue Nile and the White Nile are in Ethiopia and Uganda respectively. Lake Victoria contributes about 70% of the waters of the White Nile.

The River Nile basin is shared by 10 riparian States which are Uganda, Egypt, Sudan, Ethiopia, Burundi, Congo, Eritrea, Rwanda, Tanzania and Kenya. Though the River Nile may not flow through some of the above States they feed the River Nile with water from their lakes and tributaries. The question is can the Nile River States use the river without taking into consideration the interests of other river users? States have traditionally argued that they have a sovereign right to utilise resources in their boundaries in any way they chose.

However, the use of shared resources by one State may affect others. International law provides for the use of shared water and transboundary resources. The legal obligations of river States can be found in international conventions or treaties, general principles of international law and customary rules of international law.

The starting point in the current system of international law is based on the concept of sovereignty of States. The most important tenet of international law is that States have exclusive control over their territories, the air, water and the living things that inhabit them.

In addition, States have exclusive control over their territories, which gives them rights to regulate how the air, water, land and other resources are used by individuals. However, the concept of sovereignty is not absolute but relative, restrained by the rights of other States determined by international obligations.

The obligations of the River Nile States on its use can be found in a number of treaties. As stated by Minister Richard Todwong in his article 'AU should clean the colonial mess on the Nile Water usage' in the New Vision of June 25, 2013 these include: the treaty between Britain and Ethiopia of May 15, 1902; the agreement between Britain and independent Congo of May 9,1906; the Tripartite (British-



France- Italy) treaty of December 13, 1906; the Anglo- Egyptian Sudan Agreement of May 7, 1929 and the 1959 Nile Agreement between the Sudan and Egypt for full utilisation of the Nile Water. Some of the Nile River States were not party to the agreements signed by the other States. Hence the obligations and rights may vary. Some of the agreements were signed by the then colonial power - Britain on behalf of her colonies.

The Nile Treaty of 1929 was signed between Egypt and Britain on behalf of Sudan and the East African States holding Lake Victoria. It was done by Exchange of Notes. The main objective of the treaty was to increase the volume of water going to Egypt - increase the yield from the swamps in Southern Sudan, increase flood control, over year storage.

The said agreement had a clause where Britain undertook not to construct any irrigation or power works on the Nile or associated lakes in the territories under its administration (including the Uganda Protectorate) without the consent of Egypt, if such constructions would have the effect of reducing or delaying the water destined for Egypt. It cannot be denied that the said agreement was tilted in favour of Egypt hence denying the other States an opportunity to fully harness the Nile waters for their own uses such as irrigation.

As to whether the later independent countries can be bound by a treaty signed by their former colonial master the case of the Passage of India by Portugal is helpful. In the said dispute it was found that India was liable for an arrangement by its former colonial master that gave Portugal a right of passage of its soldiers over territory held by India. However, it is stated that Egypt and Sudan replaced the treaty of 1929 with the Agreement for the full utilisation of the Nile Waters in 1959.

The Owen Falls Agreement for the construction of the Owen Dam was also done by Exchange of Notes between Egypt and Britain acting for Uganda in 1949. The Agreement had two objectives: 1) to control the flow of the Nile and, therefore, create storage head; 2) to produce hydroelectric power for Uganda. "The Egyptian government saw a need for research, observation and recording of meteorological and hydrological data for the basin of the East African lakes including Lake Victoria."

Two other agreements were signed by Britain and Egypt relating to the construction of the Owen Falls Dam: the Agreement on Approving the Contract for the Owen Falls Dam of December 5, 1949



and the Agreement on the Financial Arrangements of January 5, 1953. In the latter agreement "Egypt paid the Uganda Protectorate to raise the Dam by 1.3 metres above the originally intended level to allow additional storage of water to be released to her." Egypt also agreed to pay Uganda Electricity Board for "consequential loss of hydro-electric power and recognition of unspecified damage below Owen Fall Dam" which it allegedly never did. The Agreement did not provide for water quality standards for the two parties.

The Kagera Basin Organisation was established in 1977 by the governments of Burundi, Rwanda, Tanzania and Uganda. The main objective was to promote the co-operation among member States through the joint efforts in the development and the management of the Kagera River Basin. The Agreement aimed at integrated conservation and development of natural resources and the environment of the basin States. The above organisation had set backs due to the political instability within the basin States at that time.

In respect of international conventions, under Article 287 of the Constitution, Uganda is bound by treaties made before the coming in force of the Constitution. On the other hand, Objective XXVII of the Constitution provides that the utilisation of the natural resources of Uganda shall be managed in such a way as to meet the development and environment needs of the present and future generations of Uganda. It was argued and held by an Indian Court that the objectives stated in a constitution constituted a contract between a state and its people. Hence the Government of Uganda has the task of balancing the need to make optimal utilisation of the environment including the use of River Nile on the one hand and respecting international treaties entered into by it on the other.

In the event the River Nile States dispute the treaties entered into on their behalf, international law makes provision for the use of general principles of international law and customary law. As regards their use of resources, Principle 21 of the Stockholm Declaration provides:

"States have in accordance with the Charter of the United Nations and the principles of international law, the sovereign rights to exploit their own resources pursuant to their environment policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction."

Principle 21 of the Rio Declaration on Environment and Development states that



"States have the sovereign right to exploit their own resources but a responsibility to ensure that activities within their jurisdiction... do not cause damage to the environment of other States or areas beyond the limits of national jurisdiction."

Though the above principles are soft law, their legal effect cannot be underestimated. These principles are expressed by reference to the maxim "Sic utere tuo, ut alienum non leadus" or the principle of good neighbourliness. The maxim is restated as to use what which belongs to you not to injure others. Almost all the principles of international environment law, whether in treaties, custom or general principles concerning state liability for transboundary environment damage appear to founded on the said maxim. It reminds one of the biblical commandment, treat your neighbour as you would like to be treated, or more precisely "love your neighbour as yourself." The principle of neighbourliness has become essential in international law because environmental resources including air, water and wildlife cannot be confined within a State's boundaries. Therefore the River Nile States should be good neighbours.

The principle of prior notification requires a State planning an activity involving the use of a shared natural resource to transmit to potentially affected States all relevant information to enable the affected State address any potential damage and to enter into consultation with the acting State. Two further principles the "Polluter Pay" principle and the principle of "Equal Access and Non-discrimination" have become of increasing significance in the development of international environment law

Customary international law forms the key body of the international legal rules and principles that govern the access to, and use of international courses. A state which appropriates a water use for a river shared by more than one, or two or more States asserts a right to that use. The right of all riparian States cannot be denied. Likewise upper riparian States cannot deny lower riparian States good quality water by polluting it. In this respect Ethiopia and Uganda cannot deny the other users of River Nile the use of its water. The leading case on the customary rule on state liability for transboundary environmental damage is the Trial Smelter Arbitration case where it was stated "no state has a right to use or permit the use of its territory in such a manner as to cause injury by fumes in or the territory of another." Hence if the use of River Nile by one of the riparian States causes injury to another the latter State would be entitled to damage.



There are five doctrines in international law that are used or have been used to regulate the use of shared water resources by riparian States.

The first doctrine is that of absolute territorial sovereignty. This doctrine holds that States have the right to do anything within their own borders regardless of their effects on other States. This doctrine is also known as the Harmon Doctrine, named after the US Attorney General who defended the United States diversion of the Rio Grande River in a dispute with Mexico around 1894. Mexico complained that the diversion of the Rio Grande water for irrigation threatened its water supply. The Attorney General argued that that "... the possible consequences of the right asserted by Mexico show that its recognition is entirely inconsistent with the sovereignty of the United States over its natural domain." The dispute was eventually settled by an international convention between the United States and Mexico.

If Ethiopia and Uganda were to argue that since the River Nile originates from them, they are entitled to absolute use of it, they would be living in the Stone Age or rather the Harmon era. International law has since moved on. The concept of absolute territorial sovereignty was rejected in the Lake Lanoux arbitration between France and Spain where it was stated that "... the upstream state, has according to the rules of good faith, the obligation to take into consideration the different interests at stake, to strive to give them all satisfaction compatible with the pursuit of its own interests, and to demonstrate that on this subject, it has real solicitude to reconcile the interests of the other riparian with its own." The principle of sic utere tuo rejects the absolute view of territorial sovereignty and requires each state to put into consideration the rights of others while conducting its domestic affairs.

The second theory is that of absolute territorial integrity which is based on the concept that those States lower down the river have a right to an unrestricted and unadulterated flow of water. The theory is stated as follows: "Every State must allow rivers over which it does not exercise unrestricted territorial sovereignty... to follow their natural course; it may not divert the water to the detriment of one or more of the other States with rights to the river, interrupt, artificially increase or diminish its flow." This theory has also been discarded.

The third and fourth doctrines of limited territorial sovereignty and limited territorial integrity respectively are in practice observed together, thereby imposing corresponding rights and



responsibilities on riparian States. Limited territorial integrity gives the lower riparian States the right to a full flow of natural quality. Any interference with the flow of natural water by the upstream States would thus, require the consent of the lower riparian. International practice indicates that upstream States are not obliged only to act with the consent of the lower riparian States, but are bound to notify and consult with other riparian States.

The last doctrine is that of community of interests. "Under this principle the sovereignty of a state over portions of an international water course within its jurisdiction is qualified by recognition of the equal and correlative rights of other States". Such water courses are thus, shared resources subject to equitable utilisation by all riparian States. This principle favours a community of interests over international water courses and entails a balance of such interests.

In 1929, the Permanent Court of Justice in a case concerning the International Commission on the River Oder concluded that riparian States shared a "natural community of interest" and, therefore, a "common legal right" in the equal use of both contiguous and successive rivers. The Helsinki Rules on the Use of Waters of International Rivers embodied this concept and adopted the notion of equitable utilisation. Chapter 2 of the Rules dealing with the equitable utilisation of the waters on an international drainage basin states in Article IV that "Every basin State is entitled, within its territory, to a reasonable and equitable share in the beneficial use of the waters of an international drainage basin."

The Helsinki Rules have been superseded by the recently adopted 1997 Convention on Nonnavigational Uses of International Watercourses. Article 5 of the Convention states:

"1. Watercourse States shall in their respective territories utilise an international watercourse in an equitable and reasonable manner. In particular, an international watercourse shall be used and developed by watercourse States with a view to attaining optimal and sustainable utilisation thereof and benefits therefrom, taking into account the interests of watercourse States concerned, consistent with adequate protection of the watercourse.

2. Watercourse States shall participate in the use, development and protection of an international watercourse in an equitable and reasonable manner, such participation includes both the right to



utilise the watercourse and the duty to cooperate in the protection and development thereof, as provided in the present Convention."

Hence it cannot be denied that all riparian States have a right to an equitable and reasonable use of a watercourse. One country cannot deny another from enjoying an international watercourse.

An issue arises as to whether a riparian state can build a dam or divert a river despite objections from another riparian state. Reference is made to the Lac Lanoux case, already mentioned. In that case France proposed to divert water from River Carol through a channel to a hydro-electric power plant and then return the same amount of water to the river to a point prior to its use by farmers in Spain. Spain alleged the proposal by France would adversely affect the former's rights and interest contrary to a treaty the parties had entered into. The Tribunal held that the proposal by France did not constitute an infringement of Spain's rights under the earlier Treaties. The case acknowledged that a State has a right to utilise, unilaterally, that part of a river which runs through its territory as long as the utilisation does not affect adversely another state, If it only causes a limited amount of damage, a minimum of inconvenience as accepted in the principle of good neighbourliness.

Therefore, in order for the Nile River States resolve any dispute peacefully, they should engage each other in mutual talks taking into consideration the already established and accepted rules of international law in respect of share water resources. The States should not behave like the ostrich that buries its head in the sand. A State should notify the other users of its intended projects. If Egypt, Sudan, Uganda and Ethiopia cannot behave like good neighbours and enjoy the fruits of River Nile peacefully they can refer any dispute to the International Court of Justice which has the mandate

"Uganda: The Nile Water Controversy, Uganda and the Position of International Law", 02/07/2013, online at: <u>http://allafrica.com/stories/201307021234.html</u>

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* Ethiopia to boost defense spending amid tensions with Egypt over Nile dam development

ADDIS ABABA, Ethiopia — The Ethiopian government is set to increase defense spending by more than 15 percent, a rise that comes amid tensions with Egypt over the building of a new dam on the Nile River.

Cairo says the Ethiopian dam project, set to become Africa's largest, could diminish its share of Nile River waters, which provides almost all of the desert nation's water needs.

Ethiopia's parliament on Wednesday debated the proposed budget, which would increase defense spending to \$400 million, up from about \$350 million. The parliament is scheduled to approve the budget on Thursday.

Getachew Reda, a spokesman for Hailemariam, insists the defense increase has nothing to do with the recent disputes with Egypt. Getachew told The Associated Press the increase corresponds to the country's growing economy.

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"Ethiopia to boost defense spending amid tensions with Egypt over Nile dam development", 03/07/2013, online at: <u>http://www.washingtonpost.com/world/africa/ethiopia-to-boost-defense-spending-amid-tensions-with-egypt-over-nile-dam-development/2013/07/03/332e6182-e406-11e2-bffd-37a36ddab820_story.html</u>

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* What to Do in Cambodia, Tonlé Sap Lake

Hanoi, Vietnam -- (<u>SBWIRE</u>) -- 07/03/2013 -- The <u>Tonlé Sap</u>, <u>Cambodia</u>, is the name given to both the largest Lake in Asia and the river that feeds into the Mekong at Phnom Penh. The name actually means large fresh water river but is more often than not, translated as Great Lake. The truth is, it is a combination of a lake and river system. It is as complicated as a waterway could be in many ways. Such is the difference here between the dry and the wet seasons, that the lake swells beyond all recognition as the flood waters pour in. Throughout the dry season it covers and area of just over one thousand square miles and has a depth of only about 4 feet. However during the monsoon, it rises to an incredible 30 feet and covers an area of over 6,000 square miles.

As it floods, the contents of this mineral rich water is deposited over a huge area, bringing the nutrients and irrigation that feeds an enormous number of people. Large areas of this part of <u>Cambodia</u> are taken up by rice farming. The farmers work in traditional ways that have remained unchanged for centuries. The rice here is of exceptional quality and although conditions are sparse, the way of life is secure.

The other quality of this waterway that makes it unique, is the fact that the directional flow of water in the Tonlé Sap River changes direction. The mighty Mekong River that feeds the lake, gathers monsoon water in huge quantities as it makes its way through the Himalayas and the countries of China, Myanmar, Thailand and Laos, on its way into Cambodia. As this immense amount of water converges with the Tonlé Sap it forces the river to change direction. The River actually flows upstream away from the sea. As the Mekong subsides in the dry season the position is reversed and the Tonlé Sap flows in its normal direction emptying into the Mekong.

The amount and quality of fresh water fish in the lake is extremely good and fishermen here make a living, again, in a traditional way. The <u>famous Tonlé Sap lake floating village</u> here is kept fed by the activities of the fisherfolk. These villages are amazing places. Houses, shops, schools, temples, police stations and even basketball courts are built on rafts and boats. At different times of the year they simply move to a more suitable location on the lake.



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Boat trips around the lake run from near Siem Reap. Such is the movable nature of things, the piers are 4 miles from the lake in the dry season and right at the waters edge in the wet. It is a remarkable place, completely unique and fascinating in every detail. The Tonlé Sap is a truly remarkable place.

"What to Do in Cambodia, Tonlé Sap Lake", 03/07/2013, online at: <u>http://www.sbwire.com/press-releases/what-to-do-in-cambodia-tonl-sap-lake-276804.htm</u>

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* Nepal boosts early warning system for climate hazards

KATHMANDU (Thomson Reuters Foundation) - Floods and landslides have hit Nepal hard this monsoon season, bringing high casualties in just the first few weeks.

More than 40 people were killed in 17 districts during the second half of June, mainly in the hills of the mid-west and far-west regions, according to the Nepal Red Cross Society (NRCS), the country's largest aid agency. There are mounting fears the country will see more disaster deaths during the monsoon season, which lasts until September.

Most fatalities have been caused by landslides sweeping through villages, but floods have also exacted a heavy toll, killing livestock and washing away farms, experts say. Most families have had little or no warning of impending disaster.

"One way or another, both landslides and floods have an immense impact on both lives and livelihoods," said Pitamber Aryal, director of the NRCS disaster department.

The problems are in part the result of unexpectedly heavy and early rainfall. In April, the South Asia Climate Outlook Forum of the World Meteorology Organisation (WMO) predicted that Nepal, northern India and Bhutan would see higher monsoon rains than normal – but few saw the monsoon coming early.

Annual rainfall in Nepal averages 1,920 mm. But the South Asian nation received 20 percent of this amount in the past few weeks alone. Data from the Department of Hydrology and Meteorology (DHM) shows that 300mm of rain fell over just three days, from June 16-18.

NEED FOR NEW TECHNOLOGY

Disasters caused by too much or too little precipitation have become much more frequent and widespread in Nepal. Yet very little has been done to develop a system that can provide people with early warning. The country does not even have an effective weather-forecasting radar.



"The radars are very expensive but the need is very crucial for the nation," Rishi Ram Sharma, director-general of the country's meteorology department, told Thomson Reuters Foundation. One of the best-known devices, the Doppler Radar, is priced at over \$3 million, and is costly to maintain.

That lack of preparedness for the effects of extreme weather may now be set to change, however, as non-government players and a multinational bank step in to help Nepal reduce its disaster risk.

The country's meteorology department has been working on a small-scale early warning system with international development group Practical Action, testing it in four major river basins in the east and west.

The initiative includes hydrological monitoring and risk warning, followed up by communication and disaster response. When the latest flood from the Karnali River hit Bardiya and Banke districts, there were no reported casualties and local communities were alerted in good time.

"There is technology today which is more affordable and accessible, and we should take advantage of that to improve our early warning system," said Dinanath Bhandari, disaster risk reduction and climate change programme coordinator for Practical Action.

INTERNATIONAL FUNDING

In April, Nepal's Ministry of Finance and the World Bank also signed off on a \$31 million project to strengthen the country's ability to withstand climate-related hazards. The project aims to modernise its existing hydro-meteorological observation network and improve the accuracy of weather and flood forecasts for vulnerable communities.

The money is being channeled as part of the Pilot Programme for Climate Resilience of the multinational <u>Climate Investment Funds</u> (CIF). The \$7.6 billion funds aim to help developing countries pursue low-carbon and climate-resilient development. The finance is disbursed by multilateral development banks, with 48 countries benefiting so far.

In Nepal today, weather is monitored in most places through an observation network that is mainly manual and has limited real-time data collection, transmission and storage.



"This limits the government's capacity for improving the lead time and accuracy of warnings and forecasts for various hydro-meteorological hazards and events," said Poonam Pillai of the World Bank's special disaster risk management and climate change unit for the South Asia region.

Nepal has 280 rainfall monitoring centres located across the country. But it still lacks a system for issuing authoritative alerts about weather and climate hazards to government authorities and other key groups. And it has no way to issue timely and targeted warnings to at-risk communities.

That's one reason Nepal, widely judged one of the world's most climate-vulnerable countries, was selected to receive backing from the Pilot Program for Climate Resilience (PPCR).

"We urgently need to upgrade our manual stations so that the information can be used effectively for climate services to improve our agriculture, water resources and disaster reduction, and prevent health hazards caused by disasters," said the meteorological department's Sharma.

The project also plans to develop an agricultural management system to help farmers cope with climate-related production risks.

Accurate weather forecasts "will be valuable to give early warning to the farmers so they can plan their harvest, choice of crops and irrigation," said Shib Nandan Prasad Shah, under-secretary at the Ministry of Agriculture Development (MOAD).

Shah's team will work closely with scientists from the Nepal Agricultural Research Centre (NARC) to develop an advisory package in language ordinary farmers can understand.

While weather forecasts consist of data that farmers may struggle to understand, scientists will help translate that information into everyday language for the field workers. They, in turn, will advise farmers to harvest early if heavy rains are expected, or to prepare irrigation systems if droughts are predicted.

"Last year's drought ruined a lot of farmers because we couldn't forecast the disaster, and didn't have a good agricultural information management system," explained Shah.



HELP WITH FARM PLANNING

The 2012 drought destroyed much of the country's maize crops and was financially devastating for Nepali farmers.

"We lost all our maize last year because we didn't know there would be drought," said Jit Bahadur Tamang, a 40-year old farmer in Sanga Chowk village, 50 km from Nepal's capital Kathmandu.

"People come from the government and NGOs to educate us about climate change and alternative methods, but they don't tell us anything that could help us plan our farming and harvesting," he added.

Tamang believes the government's plan to launch an improved agricultural information service for farmers like him will make a big difference.

Farm advisory services are not new territory for the NARC or the agriculture ministry. But the CIF project should help bridge the gap between researchers and field extension workers – something the NARC has long aspired to do.

NARC's chief agronomy scientist, Anand Kumar Gautam, said the new links between weather forecasters, scientists and extension workers should enhance Nepal's agricultural information system, bringing major benefits for farmers.

"It is a great idea to start an early warning system for the farmers who usually do not get any support and are basically on their own during times of disaster, unsure of what steps to take next," Gautam said. "I hope that will now change for the better."

[&]quot;Nepal boosts early warning system for climate hazards", 03/07/2013, online at: <u>http://www.trust.org/item/20130703150545-</u> <u>dtcg9/?source=hptop&utm_source=Circle+of+Blue+WaterNews+%26+Alerts&utm_campaign=63411cd5d2-</u>

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China gears up to tackle tainted water

Government is set to spend 500 million renminbi to clean up groundwater polluted by industry and agriculture.

When rumours swirled earlier this year that factories in Weifang, China, were discharging waste water into the region's aquifers — the principal source of drinking water for the city's 9 million residents — citizens flocked to the Web to register their outrage on microblogging site Sina Weibo. The rumours were finally confirmed by officials in late May, further stoking public fears over an already hot issue: the sorry state of the water that so many Chinese people drink.

Now, a massive government investigation has documented the scope of the problem in northern China, and officials have formulated an ambitious plan to tackle it.

About 18% of the water that China uses comes from groundwater, and more than 400 of the country's roughly 655 cities have no other source of drinking water. Much of the groundwater is contaminated, tainted by fertilizers, pesticide residues and dirty waste water used for irrigation in China's vast rural regions, as well as pollutants from mining, the petrochemical industry, and domestic and industrial waste. Heavy metals are especially problematic, because "once in the groundwater, they don't go away", says Sun Ge, a research hydrologist at the US Department of Agriculture's Forest Service Southern Research Station in Raleigh, North Carolina. "It will be very expensive to clean up, if it is even possible."

In 2006, to assess the scope of the problem, the Chinese Ministry of Land and Resources launched a 6-year investigation focused on the North China Plain, the region most dependent on groundwater, which is home to nearly 130 million people. In late April this year, the government announced a work plan for control of groundwater contamination in the area. "The work plan is actually quite remarkable, and it is certainly a step in the right direction," says Zheng Yan, who studies groundwater pollution and public health at Columbia University in New York.

The extent of the problem is unclear because the full results of the 2006 survey have not been made public. An official at the China Geological Survey, which commissioned the report, declined to offer



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details for fear of alarming the public. However, the government's action plan acknowledges that the levels of pollution are serious. A 2012 report by the land ministry found that of 4,929 groundwater monitoring sites in 198 prefecture-level administrative regions across the country, 41% had poor water quality. Almost 17% had extremely poor water quality, with levels of iron, manganese, fluoride, nitrites, nitrates, ammonium and heavy metals exceeding safe limits.

Also last year, an article by Zhang Zhaoji, a hydrogeologist at the Chinese Academy of Geological Sciences' Institute of Hydrology and Environmental Geology in Hebei and project leader for the 2006 survey, reported that in the North China Plain, some 35% of shallow groundwater sampling points had been contaminated by human activities (Z. Zhang *et al. J. Jilin Univ. Earth Sci. Edn* **42**, 1456–1461; 2012). "Water pollution is a more serious problem than the scarcity of water resources," says Song Xianfang, a hydrologist at the Institute of Geographic Sciences and Natural Resources Research (IGSNRR) in Beijing, part of the Chinese Academy of Sciences.

The contamination rates are "not a surprise, as China is under rapid urbanization and industrialization that bring problems of water pollution for both surface and groundwater", says Sun. And, although it is hard to prove cause and effect, there will probably be fallout for public health, experts say. Government reports stated that in 2004, China had 38.8 million recorded cases of tooth-enamel damage owing to fluoride exposure; 2.84 million cases of bone disease owing to fluoride exposure; and 9,686 cases of arsenic poisoning.

"These diseases are closely related to environmental and geological factors [and are] especially associated with contaminated groundwater," says Yang Linsheng, the director of the department of environmental geography and health at the IGSNRR. The Chinese Center for Disease Control and Prevention did not respond to *Nature*'s request for an interview.

In its plan, the government says that it will divide the North China Plain into 30 units for pollution prevention and control, which it will separate into three severity categories — serious, poor and good — to be addressed differently. The details, which have not been publicly released, include an investment of nearly 500 million renminbi (US\$81 million) between 2013 and 2020 for a raft of measures across the country: to increase pollution assessments and establish a database of results; to



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control river pollution from agriculture and point sources from industry and landfill; to treat of polluted areas; and to conduct more research into clean-up and prevention strategies. Among other things, researchers will look into the effects of shale-gas development on groundwater.

The plan will also beef up environmental regulation. Experts say that will be a key measure, because the country must become more selective in approving industry projects. It must also enhance regulation of polluters, especially small rural companies such as paper mills. Furthermore, farmers must be educated in the proper use of fertilizers. Openness will be crucial in gaining public trust, experts add. "I would advocate data-sharing and transparency in reporting data," says Zheng Chunmiao, director of the Center for Water Research at Peking University in Beijing. "Without this, people will be anxious."

"China gears up to tackle tainted water", 03/07/2013, online at: <u>http://www.nature.com/news/china-gears-up-to-tackle-tainted-water-1.13319?utm_source=Circle+of+Blue+WaterNews+%26+Alerts&utm_campaign=63411cd5d2-RSS_EMAIL_CAMPAIGN&utm_medium=email&utm_term=0_c1265b6ed7-63411cd5d2-250657169</u>

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* Mecca to Boost Desalinated Water Production, Al-Madina Says

<u>Saudi Arabia</u>'s <u>Saline Water Conversion Corp.</u> plans to increase production of drinking water in the Islamic holy city of Mecca by 29 percent to a record 670,000 cubic meters a day, <u>al-Madina</u>reported, citing Abdulrahman Al-Ibrahim, the company's governor.

The state-run company said earlier this month that the city of <u>Jeddah</u>, the kingdom's second-biggest city, is being supplied with 1.2 million cubic meters a day of desalinated water.

Saudi Arabia, the world's largest producer of desalinated water, is building additional plants to meet growing domestic demand. National Water Co. completed 840 million riyals (\$224 million) of waterworks around Mecca on June 17 to accommodate more pilgrims seeking to visit the city.

"Mecca to Boost Desalinated Water Production, Al-Madina Says", 30/06/2013, online at: http://www.bloomberg.com/news/2013-06-30/mecca-to-boost-desalinated-water-production-al-madinasays.html?utm_source=Circle+of+Blue+WaterNews+%26+Alerts&utm_campaign=66e1727903-RSS_EMAIL_CAMPAIGN&utm_medium=email&utm_term=0_c1265b6ed7-66e1727903-250657169

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***** UN Charts 'Unprecedented' Global Warming Since 2000

The planet has warmed faster since the turn of the century than ever recorded, almost doubling the pace of sea-level increase and causing a 20-fold jump in heat-related deaths, the <u>United Nations</u> said. The decade through 2010 was the warmest for both hemispheres and for land and sea, the UN's <u>World Meteorological Organization</u> said today in an e-mailed report examining climate trends for the beginning of the millennium. Almost 94 percent of countries logged their warmest 10 years on record, it said.

"The decadal rate of increase between 1991-2000 and 2001-2010 was unprecedented," WMO Secretary-General Michel Jarraud said in a statement. "Rising concentrations of heat-trapping greenhouse gases are changing our climate, with far-reaching implications for our environment and our oceans."

The report underlines the challenge the globe faces in containing temperature gains since industrialization to the 2-degree Celsius (3.6 Fahrenheit) ceiling set by UN climate-treaty negotiators. The planet is on course to warm by 4 degrees by 2100 because emissions are still rising, the <u>World Bank</u> says.

Deaths from heatwaves surged to 136,000 in the 10-year period from fewer than 6,000 the previous decade, mainly a result of extreme temperatures in <u>Europe</u> in 2003 and in <u>Russia</u>in 2010, according to the WMO. A total of 511 disasters related to tropical cyclones killed 170,000 people and caused \$380 billion of economic damage. Deaths from storms and floods fell.

Preparation Needed

"Given that <u>climate change</u> is expected to lead to more frequent and intense heatwaves, we need to be prepared," Jarraud said. "Despite the significant decrease in casualties due to severe storms and flooding, the WMO report highlighted an alarming impact on health and mortality rates caused by the European and Russian heatwaves."

The average global temperature for 2001-2010 was 14.47 degrees Celsius, according to the report. That's 0.21 degree warmer than 1991-2000 and 0.79 degree warmer than 1881-1890. The increase was recorded even without any "major El Nino" event during the decade, the WMO said. El Nino is a periodic warming of waters in the Pacific that pushes up global temperatures.

Sea levels rose at 3 millimeters (0.12 inch) a year, almost double the 20th-century rate of 1.6 millimeters a year. Seas rise as warmer temperatures cause the water to expand and ice sheets in



Greenland and Antarctica and alpine glaciers around the world melt. Record sea-ice melt in the <u>Arctic Ocean</u> doesn't raise seas because the ice already rests on the ocean.

"UN Charts 'Unprecedented' Global Warming Since 2000", 03/07/2013, online at: http://www.bloomberg.com/news/2013-07-03/un-charts-unprecedented-global-warming-since-2000.html?utm_source=Circle+of+Blue+WaterNews+%26+Alerts&utm_campaign=63411cd5d2-RSS_EMAIL_CAMPAIGN&utm_medium=email&utm_term=0_c1265b6ed7-63411cd5d2-250657169

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✤ Daily showers account for biggest water use in UK homes, figures show

Britons are also inflating energy bills by over-filling kettles and hand-washing crockery rather than using dishwashers

It has become part of our daily routine, although few of us are likely aware of the full financial or environmental costs. Yet showering now accounts for the biggest single use of <u>water</u> in the home – one quarter of the massive 9bn litres of water used by UK households every day – with much of our money spiralling down the plughole.

Britons are also inflating their <u>energy</u> bills by over-filling kettles and hand-washing crockery rather than using more energy-efficient dishwashers.

The findings have emerged from the biggest ever study of how Britons use water, published on Thursday, using data supplied by 86,000 British households and commissioned by the <u>Energy Saving</u> <u>Trust</u>.

Showers are by far the biggest consumers of water in the home, consuming 25%, with toilets second at 22%. An average shower lasts seven-and-a-half minutes, yet cutting just a minute off that time would save British households £215 million on <u>energy bills</u> each year, the report said. On average, Britons shower 4.4 times a week, and take 1.3 baths. People living in larger households with more people take fewer showers each week, but stay in them longer. While a quarter of respondents have efficient eco-showerheads installed, a similar proportion have high-flow - and wasteful - power showers.

The study revealed that 22% of household water is used in the kitchen, with washing machines, dishwashers, kettles and taps all taking their share. More than nine in ten people (95%) boil the kettle every day, with 40% doing so five times a day or more. However, three-quarters of households still boil more water than they need – with overfilling costing £68 million a year, in aggregate.

The average British household washes dishes by hand ten times a week, and only uses the dishwasher three times a week. But larger households could actually make greater energy and water savings by using an efficient, modern dishwasher rather than washing by hand, says the Trust. Households use their washing machine on average 4.5 times each week, yet only a quarter choose to wash at 30C or less.



Andrew Tucker, water strategy manager at Energy Saving Trust, said: "When people think of energy use they think of heating and lighting, running electrical appliances or filling the car with petrol. It's all too easy to turn on the tap and not think about the consequences. But there is an environmental and energy cost attached to water which many people do not consider. On average, hot water use contributes £228 to the average annual combined energy bill. It's clear that we are all using more water-consuming appliances regularly, especially showers, but that doesn't mean we're powerless to control our water use."

The research was carried out in partnership with Defra, Procter and Gamble, Thames Water, Consumer Council for Water and SaveWaterSaveMoney.

"Daily showers account for biggest water use in UK homes, figures show", 04/07/2013, online at: http://www.guardian.co.uk/environment/2013/jul/04/daily-showers-water-use-uk-homes

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Solution the state of the second supply as water wells dry up, warns top environment expert

Lester Brown says grain harvests are already shrinking as US, India and China come close to 'peak water'

Wells are drying up and underwater tables falling so fast in the Middle East and parts of India, China and the US that <u>food</u> supplies are seriously threatened, one of the world's leading resource analysts has warned.

In a major new essay <u>Lester Brown</u>, head of the <u>Earth Policy Institute</u> in Washington, claims that <u>18</u> countries, together containing half the world's people, are now overpumping their underground water tables to the point – known as "peak <u>water</u>" – where they are not replenishing and where harvests are getting smaller each year.

The situation is most serious in the Middle East. According to Brown: "Among the countries whose water supply has peaked and begun to decline are Saudi Arabia, Syria, Iraq and Yemen. By 2016 <u>Saudi Arabia projects</u> it will be importing some 15m tonnes of wheat, rice, corn and barley to feed its population of 30 million people. It is the first country to publicly project how aquifer depletion will shrink its grain harvest.

"The world is seeing the collision between population growth and water supply at the regional level. For the first time in history, grain production is dropping in a geographic region with nothing in sight to arrest the decline. Because of the failure of governments in the region to mesh population and water policies, each day now brings 10,000 more people to feed and less irrigation water with which to feed them."

Brown warns that Syria's grain production peaked in 2002 and since then has dropped 30%; Iraq has dropped its grain production 33% since 2004; and production in Iran dropped 10% between 2007 and 2012 as its irrigation wells started to go dry.

"Iran is already in deep trouble. It is feeling the effects of shrinking water supplies from overpumping. Yemen is <u>fast becoming a hydrological basket case</u>. Grain production has fallen there by half over the last 35 years. By 2015 irrigated fields will be a rarity and the country will be importing virtually all of its grain."

There is also concern about falling water tables in China, India and the US, the world's three largest food-producing countries. "In India, 175 million people are being fed with grain produced by overpumping, in China 130 million. In the United States the irrigated area is shrinking in leading farm states with rapid population growth, such as California and Texas, as aquifers are depleted and irrigation water is diverted to cities."

Falling water tables are already adversely affecting harvest prospects in China, which rivals the US as the world's largest grain producer, says Brown. "The <u>water table under the North China Plain</u>, an area that produces more than half of the country's wheat and a third of its maize is falling fast.



Overpumping has largely depleted the shallow aquifer, forcing well drillers to turn to the region's deep aquifer, which is not replenishable."

The situation in India may be even worse, given that <u>well drillers are now using modified oil-drilling</u> technology to reach water half a mile or more deep. "The harvest has been expanding rapidly in recent years, but only because of massive overpumping from the water table. The margin between food consumption and survival is precarious in India, whose population is growing by 18 million per year and where irrigation depends almost entirely on underground water. Farmers have drilled some 21m irrigation wells and are pumping vast amounts of underground water, and water tables are declining at an accelerating rate in Punjab, Haryana, Rajasthan, Gujarat and Tamil Nadu."

In the US, farmers are overpumping in the <u>Western Great Plains</u>, including in several leading grainproducing states such as Texas, Oklahoma, Kansas and Nebraska. Irrigated agriculture has thrived in these states, but the water is drawn from the <u>Ogallala aquifer</u>, a huge underground water body that stretches from Nebraska southwards to the Texas Panhandle. "It is, unfortunately, a fossil aquifer, one that does not recharge. Once it is depleted, the wells go dry and farmers either go back to dryland <u>farming</u> or abandon farming altogether, depending on local conditions," says Brown.

"In Texas, located on the shallow end of the aquifer, the irrigated area peaked in 1975 and has dropped 37% since then. In Oklahoma irrigation peaked in 1982 and has dropped by 25%. In Kansas the peak did not come until 2009, but during the three years since then it has dropped precipitously, falling nearly 30%. Nebraska saw its irrigated area peak in 2007. Since then its grain harvest has shrunk by 15%."

Brown warned that many other countries may be on the verge of declining harvests. "With less water for irrigation, Mexico may be on the verge of a downturn in its grain harvest. Pakistan may also have reached peak water. If so, peak grain may not be far behind."

"Global threat to food supply as water wells dry up, warns top environment expert", 06/07/2013, online at: http://www.guardian.co.uk/global-development/2013/jul/06/food-supply-threat-water-wells-dry-up

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***** World's water-recycling leader has even higher aspirations

Water-constrained Israel hopes to recycle up to 90% of its municipal effluent for irrigation in the next decade - up from about 80% at present - as it continues to take measures to ensure adequate supply in the face of rising demand, resulting in part from an increasing population.

Recycling helps improve Israel's water balance by allowing the replacement of freshwater with treated wastewater for the irrigation of crops, thereby saving limited freshwater resources for domestic use.

Effluent recycling – for which the country has earned international acclaim – is only one prong in Israel's multifaceted water strategy, which also includes desalination of seawater and brackish underground water, as well as efficient use of available resources.

Attaining the 90% effluent recycling aspiration would further enhance Israel's credentials in this arena, says Israeli Water Authority desalination and water technologies division head **Abraham Tenne**, who points out that Spain, the second-ranked country in terms of effluent reclamation, recycles only 17% of its wastewater. Other notable wastewater recycling nations are Australia, Italy and Greece, which recycle 9%, 8% and 5% respectively. The US and Central Europe recycle a paltry 1% each.

Much of the effluent recycling in Israel is undertaken by national water utility Mekorot, which generates 35% of all the retreated effluent and 60% of that used for agricultural purposes. The quality of the reclaimed effluent is among the highest in the world, according to Mekorot water quality engineer Dr **Samir Hatukai**.

The water utility operates six wastewater treat- ment plants with a daily flow of about 400 000 m3 and a yearly capacity of about 190-million cubic metres. The largest facility, the Shafdan, is located in the heavily populated Dan region, which includes the city of Tel Aviv. Serving about two-million people, it treats about 130-million cubic metres of effluent each year.

Secondary effluent from the plant is infiltrated into the fields in Rishon Lezion and Yavne, from where it is recharged into groundwater aquifers without being mixed with drinking water. The effluent undergoes natural physical, biological and chemical processes that improve its quality. "At the completion of this tertiary treatment, the result is very high quality effluent," explains Hatukai.



The reclaimed effluent is transferred to the Negev desert, about 90 km away, where it is used for the irrigation of all types of crops, including citrus, carrots, potatoes, lettuce, wheat and flowers.

The independent recyclers of wastewater include not only big enterprises but also small entities like kibbutzim (agriculture-based collective communities), some of which opt to use the water they reclaim for their own purposes instead of selling it to Mekorot.

One such kibbutz, near Yad Mordechai, has seen its water cost drop from about 2 shekels per cubic metre to under 1 shekel per cubic metre since it decided to build its own wastewater retreatment facility about two years ago.

The plant uses proprietary technology devel- oped by Israeli company Aqwise. Known as the Attached Growth Airlift Reactor, or AGAR, the technology combines a fully open, fully protected biomass carrier with a highly efficient aeration and mixing design. This results in a superior effective surface area for biomass growth and enhanced-oxygen transfer efficiency.

Israel is also making a name for itself as a water desalination country, with the three fully operational seawater desalination plants on the Mediterranean coast supplying 300-million cubic metres a year – or about 20% of the country's drinking-quality water. This number is set to increase to 450-million cubic metres as the Sorek plant, being built by Israel Desalination Enterprises Technologies (IDE), opens later this year. It is envisaged about 600-million cubic metres of desalinated water will be produced each year from 2014, when the Ashdod desalination plant starts operating.

IDE built Israel's first desalination plant, at Ashkelon, between 2003 and 2005 and later built the Hadera plant. The country's fourth plant, Palmachim, is run by the Via Maris consortium.

Mekorot is also involved in the desalination of both seawater and brackish water (its sudsidiary, Mekorot Development Enterprise, is building the Ashdod plant) and currently operates 32 plants that provide about 42-million cubic metres of potable water a year. Other players are also involved, ranging from small kibbutzim to bigger entities.

Mekorot is intent on remaining in the desalination arena for the long haul and will continue to invest in research and development of new technologies for maximum use of the country's water resources, avers Hatukai.


However, desalination plants are intense users of energy – another resource Israel needs to conserve. According to Tenne, 3.5 kWh of electricity is required to produce a cubic metre of water. Against this background, the Israeli government is mulling the building of solar plants in the desert south to power the Mediterranean coast seawater desalination plants. Wind farms are also being considered.

Tenne remarks that Israel is leaving no stone unturned in ensuring an adequate water supply for its estimated eight-million people, noting that water – or the lack of it – is already threatening to be a source of conflict, an apparent reference to the war of words that has erupted between Ethiopia and Egypt over a massive dam the former plans to build on the Nile river.

Egypt contends that the proposed \$4.7-billion Great Renaissance hydroelectric project would jeopardise a water supply vital for its 84-million people, who live mostly in the Nile valley and delta. Egyptian President **Mohamed Morsi** warned last month that while the Arab nation did not want war, it would keep "all options open". Ethiopia is adamant that it will forge ahead with the project, come hell or high water.

It is perhaps with the possible dire consequences of an inadequate water supply that the Israeli authorities have worked diligently over the last few decades to ensure that the country has enough water for its own consumption as well as for export to neighbouring Jordan and Palestinian territory.

As part of its commitment to supplying high-quality water, Mekorot built the central filtration plant at the Eshkol site. "The plant, the largest of its kind in Israel and the fourth-largest in the world, places the State of Israel at the forefront of the Western world in the treatment of drinking water," says Hatukai.

Besides effluent reclamation and desalination, an adequate water supply has been achieved through water saving education campaigns and the use of technologies such as drip irrigation, which, according to Tenne, has seen agricultural production double for every cubic metre of water used during the last 20 years.

One of the key players on the drip irrigation front – both in Israel and abroad – is Netafim, which, since its founding as a kibbutz-owned company more than 40 years ago, has expanded to include 16 factories in several countries, including South Africa, and is represented in 110 countries, according to chief sustainability officer **Naty Barak**.



He quips that drip irrigation entails "irrigating crops, rather than wetting the soil", which results in substantial water savings. As 70% of the world's freshwater is used by the farming sector, Barak calculates that a 15% saving in water used for agricultural purposes – through technologies like drip irrigation – would more than double the resources available for domestic use.

Barak says drip irrigation has turned wastelands such as Israel's Arava desert, which receives a measly 20 mm of rainfall each year, into valuable farmland. The Arava currently accounts for 65% of Israel's vegetable exports.

"World's water-recycling leader has even higher aspirations", 05/07/2013, online at: <u>http://www.engineeringnews.co.za/article/israel-2013-06-25</u>

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Reportage] The revival of South Korea's era of dam building

The golden era of dam building in South Korea is being revived. Across the country, there are 14 regions that are planning to construct dams or are already in the process of building one. According to the "2012-2020 Long-term Master Plan for Dam Construction" presented by the Ministry of Land, Infrastructure and Transport (MLIT) at the end of last year, 6 dams with reservoir capacities of 100 million cubic tons will be constructed, which include 4 multipurpose dams and 2 flood control dams. 8 dams with the reservoir capacity less than 2000 tons will also be constructed.

It has been 40 years since the construction of the Soyang River Dam, which was Asia's largest multipurpose and rock-fill dam in 1973. According to MLIT data, there are currently 18,000 dams in South Korea, including multipurpose, flood-control and irrigation dams. There are also 1,200 large-scale dams taller than 15 meters. The density of dams per unit area has already reached the world's highest.

The golden era of the dam building revived after the Four Major Rivers Project was pushed ahead by the Lee Myung-bak administration (2008-2013). The MLIT (known as the Ministry of Land, Transport and Maritime Affairs at the time) announced the "Long-term Master Plan for Dam Construction", despite the opposition from the Ministry of Environment in the Strategy Environment Assessment (SEA). The long-term plan, which included construction plans for 14 new dams, was announced two days before the presidential election.

Choi Seok-beom, an engineer who has participated in the planning and supervision of dam construction projects, remarked "There was a public consensus that constructing large-scale dams was no longer necessary after the negative effects of Dong Gang Dam and Hantan River Dam came back into the spotlight. But right now, the golden era of dam building has suddenly been revived." The new multipurpose dams that are being planned are large-scale with a vast area of submerging zones and considerable environmental effects. In the SEA, the Ministry of Environment demanded a reevaluation of the dam construction plans. This was because 1.3 billion tons of water resources that were secured for the Four Major Rivers Project had not been utilized properly. They also lacked financial support and risked damaging the environment.

From April 30 to May 2, a Hankyoreh reporter visited three locations that have been designated for dam constructions, including the Jangpa Stream, Daeseo Stream and Odae Stream. The reporters found out that in some of the designated areas, construction plans were being carried out unilaterally



without notifying the local residents. Some local residents were planning a "holdout" to receive compensation and there were local conflicts in Yeongyang, North Gyeongsang Province.

"It's the first time I've heard of a dam being built."

"A dam in the Odae Stream? It's the first time I've heard of it,"said Kim Yeong-su with a puzzled look on his face. He is 69 years old and runs a shop in Jeongseon, Gangwon Province. His shop is located in front of the Baekseok Waterfall and has a magnificent view of the water falling from the 119m-high cliff. Although it was early May, the stream flowed vigorously and birds were singing all around. Gariwang Mountain, which was made inaccessible to people during the Joseon Dynasty to preserve its great ecological environment, and Odae-san National Park are also close by. Ko, who is 33 years old and has been living in the area for 10 years, also showed a doubtful look. Sookam Village head Kwon Hyun-suk was the only person aware of the dam construction plan and he had heard about it through rumors. He was determined to strongly oppose it along with the local residents if construction actually begins. It was clear that it was only the government that was in control of the construction, not the local residents.

The exact location of a new Odae Stream dam has not been decided yet. There are only rumors and assumptions. But wherever the dam is built, one definite fact is that the local areas will be affected by the vast submerging zones and roads that are cut off.

A Hankyoreh reporter visited the Jangjeon Valley, after passing through the deep gorges that flow along Route 59. In January, local newspaper Kangwon Ilbo reported that the Jangjeon Valley was designated for the construction of Jangjeon Dam. It is a strong candidate for the flood-controlling dam in the Odae Stream. Lim Se-sik, 48 years old, who runs real estate agency in a nearby village, agreed to the construction plan. He commented, "The Four Major Rivers Project used up 20 trillion won (about US\$17.4 billion) in taxpayer money. There would have been a justifiable reason for it, wouldn't there? When the new dam construction plan is confirmed, I will leave the village." Hwang In-cheol, the team manager of Green Korea United, who accompanied the Hankyoreh reporter, asserted that constructing new dams would not be able to reduce flood damage. He explained, "There is a SEA report on the Odae Stream Dam by the Ministry of Environment. It points out that building a dam near the national park is not advisable and that the Ministry of Land, Infrastructure and Transport has failed to provide the justification for building a flood-control dam, as



well as the specific details on the flood damage in downstream areas. Put simply, it's tough to say why a dam is needed here."

The Odae Stream is not the only place with a local conflict caused by vague plans to build dams. There were also signs of a "holdout" phenomenon, which is usually only seen in areas that are slated for redevelopment. On May 1, Park Jong-eup, 66, told of his story in Yeongdeok, where the construction of Dalsan Dam is in progress. In 2011, Park delivered some trees on his truck to the new neighbor who had moved to Yeongdeok from an area close to the Bohyeon Dam in Yeongcheon. He received 100,000 won for doing the favor. However, the local people criticized the new neighbor for planning to gain more compensation money, which was apparently the reason that he needed to plant the trees. Also considering the fact that he had just come from Yeongcheon, the area where the Bohyeon Dam is being built, the local residents suspected the new neighbor to be a speculator who purchases land in regions that are designated for dam constructions.

On the same day, another resident assumed to be a speculator was working on a grape vine in the field in front of his house. It was 2 years ago that he moved to the new house by the road. He said the reason he moved close to the road was that he wanted to receive more compensation money. He added, "More compensation money? Sure, everyone wants to get more compensation. They just don't show it, even though they all think the same thing. We were told that a new housing site would be made for us, so I will move there." To the question on if the reason for constructing Dalsan Dam was to provide water resources for the industrial Complex that will be built in Pohang City, he replied, "Apparently the Korea Water Resources Corporation said that only the water that is left over from Yeongdeok would be given to Pohang,"

Choi Gwang-hae, 44, is currently youth association head in Dalsan Township. He frowned when the reporter mentioned the man living in the house with the grape vine. Choi commented, "No one knows him and we don't communicate with him." He then showed the petition signed by 700 Yeongdeok County residents who opposed the construction of the Dalsan Dam. He added that Dalsan has been inhabited by the same families for three generations, which makes it easy to notice when someone new moves in. According to the preliminary feasibility study in March 2011, the Korean Federation for Environmental Movement predicted that the Dalsan Dam, which will be a large-scale dam that is 582 meters wide and 51.5 meters high, would lose 1.7 billion won annually.



If a dam is built, 56 houses will be submerged

In the afternoon of May 30, the war clouds hung over Subi Township in Yeongyang County. The flags along the bridge and heated rhetoric on the placard showed the conflict within the community. Subi township was designated as the spot where Yeongyang Dam would be constructed. The dam will be 480 meters wide and 70 meters tall. It will have the reservoir capacity of 5700 tons and once built, 56 houses will be submerged. Lee Sang-cheol, 61, head of the residents group that opposes the dam, cannot forget what happened on February 26. It was the day that the service employees subcontracted by the Korea Water Resources Corporation (K-water) came to the village with equipment to conduct a feasibility study.

Lee remarked, "The dog started barking at dawn, so I went outside. Although the officials state that only some young people oppose the construction, many elderly women and men also oppose it. They lied down in front of the car and stopped them."

The local residents on the opposition side placed a container in front of the bridge that marks an entrance to the village. In groups of three, residents take turn guarding the bridge in 24 hour shifts. Recently, there has been an increasing number of local residents opposing the dam after a current affairs program was broadcasted, which exposed a corruption scandal involving Kwon Young-taek, the county mayor of Yeongyang who was in charge of the construction plans for the Yeongyang Dam.

Lee Sang-chil, 54 years old, represents the local residents who approve of the dam construction. He does not like the fact that residents of such a small village are arguing with each other. He explained, "Mostly, people who have a small amount of land oppose the dam construction. People in the countryside are not concerned about the country's lack of water resources or about climate change. They just want to live comfortably. If we live on like this, the land value will only be 50,000 to 60,000 won per *pyeong* (3.3 m^3). If the area is flooded, K-water will pay us more. Farming gets us nowhere. I will move into the new housing site that will be built by the district and cultivate specialty crops in a greenhouse."

In the preliminary feasibility study, K-water predicted that compensation money for the submerged areas will amount to 40 billion won (about US\$34.8 million). Also, once the construction plan is confirmed, Yeongyang will create a new housing site for the local residents with 34.5 billion won, which the district will receive as a maintenance expense.



As the controversy over dam construction continues to exist, the Ministry of Land, Infrastructure and Transport has taken a step back, stating that the construction plans have not been finalized. An official of the Ministry of Land, Infrastructure and Transport commented on condition of anonymity, "There is still a remaining 70% of evaluation to be done. There are undecided and unconfirmed aspects about the plan." The "Long-term Master Plan for Dam Construction" was announced only two days before last December's presidential elections. Some people believed that the Lee Myung-bak administration, which was favorable towards the Four Major Rivers Project and dam construction, was trying to push the project ahead before the end of his term. However, as Park Geun-hye's government initiated a re-evaluation of the Four Major Rivers Project, the mood has started to change.

MLIT announced that although it may change some part of the "Long-term Master Plan for Dam Construction" later on, it will still proceed with a feasibility study in order to gain a public consensus. However, although the Ministry of Environment clearly demonstrated its opposing view on dam construction through the SEA, the Ministry of Land, Infrastructure and Transport was apparently planning to carry out the construction anyhow. In response to the questions about this situation, an employee commented, "The Ministry of Land, Infrastructure and Transport decides on the feasibility of the construction. We evaluate whether the opinion of the Ministry of Environment is valid or not." Also to the questions regarding whether the Ministry was secretly planning a large-scale engineering construction without the public consent or not, an employee replied, "It is a regulation of the K-water to propose a long-term dam construction plan every 10 years. We have to make new plans about dams."

Has a "dam renaissance" begun?

The Yeongyang Dam, which is still a controversial issue, may act as a "litmus test" for dam construction projects in the future. Whether the Yeongyang Dam is actually built will depend on the Ministry of Environment, which holds authority over the construction process. On May 24, Lee Chan-hee, who is Director General of Green Environment Policy Office, said in a phone interview, "There are no changes to the fact that the Ministry of Environment opposes dam construction. The problems with the opposing local residents haven't been solved yet and the reasons for requiring water resources are not clear. Even if the construction plans go through an Environmental Effects



Evaluation, our views will not change." In response, MLIT is planning to reevaluate the current construction plans, and reevaluate the whole project from the start.

The social conflict on the issue of dam construction is intesnifying, just like the past. Residents' expectations to receive more compensation money and the desires to host a national project in a poor region have divided opinions among the angry local residents, who will be forced to leave their homes.

"[Reportage] The revival of South Korea's era of dam building", 06/07/2013, online at: http://english.hani.co.kr/arti/english_edition/e_national/594647.html

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* Maoists fuelling anti-dam protests in Northeast: BJP

The **BJP** today alleged that Maoists were fuelling anti-dam protests across the country, mainly in the Northeast.

"Maoists have a big role in all anti-dam protests in <u>India</u>, especially in the Northeast," BJP national security cell convenor P Chandrasekhar Rao told reporters here.

<u>Assam</u> and other states in the region are witnessing a series of protests, at times violent, against construction of dams. In Assam, the protests are being led by Krishak Mukti Sangram Samiti (KMSS), he said.

Rao alleged that Maoists, along with other extremist groups, are getting all the illegal arms through Myanmar border.

"Initially it was <u>Bangladesh</u>, but now Myanmar from where 90 per cent of the illegal weapons come to the region. It's also a threat to the entire country. Illegal arms available here are the major cause for the insecurity of the common people," he added.

To address these issues, BJP would come out with a "North East Security Policy. We will formulate the policy and forward it to our central committee for inclusion in the manifesto for the 2014 election," he said.

The BJP leader also accused the UPA government of not doing sufficiently to stop anti-social activities of the surrendered militants.

"A review should be done on the ceasefire groups so that their activities can be monitored. Due to lack of proper rehabilitation system, most of the surrendered militants and members of the ceasefire groups are involved in anti-social activities," he said.

"Maoists fuelling anti-dam protests in Northeast: BJP", 05/07/2013, online at: <u>http://www.business-</u> standard.com/article/pti-stories/maoists-fuelling-anti-dam-protests-in-northeast-bjp-113070500977_1.html

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