

ORSAM WATER BULLETIN

Weekly Bulletin by ORSAM Water Research Programme

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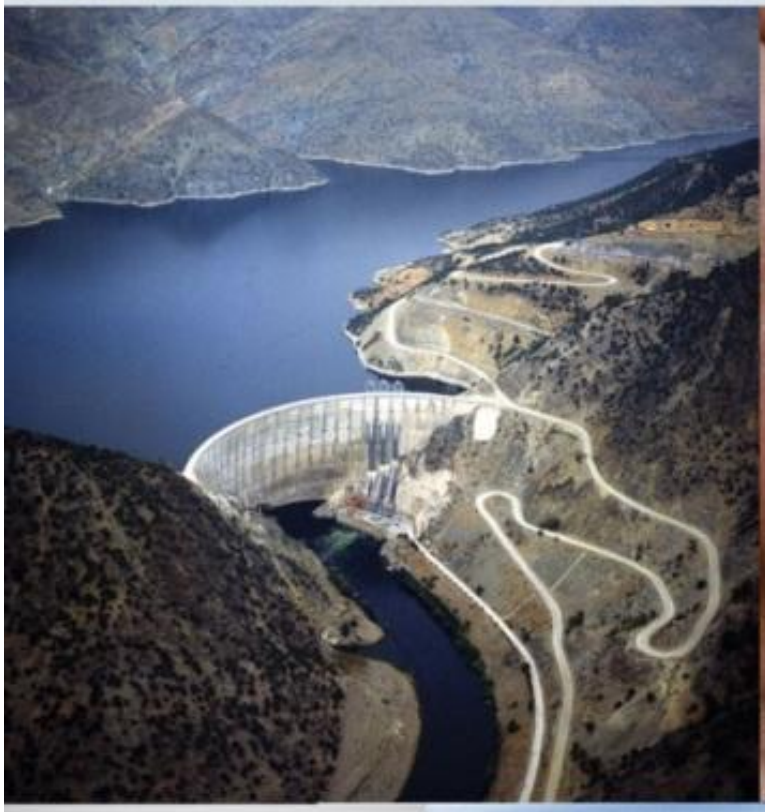



Issue 47

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Mithat Paşa Caddesi 46/4 Kızılay-Ankara TURKEY
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❖ Iraq to Harvest More Than 2 Million Tons of Wheat in 2011-12

Iraq will harvest at least 2 million metric tons of wheat in 2011-12 compared with 1.74 million tons in the previous growing season, due to earlier rains, Deputy Agriculture Minister Mehdi al-Qaisi said.

The country aims to grow more than 3 million tons of wheat a year by 2016, with the help of imported rotary sprinklers, he said in an interview today in Baghdad. Late rains crimped grain production last year, and Iraq is developing new varieties of wheat and rice that are more resistant to drought and salinity, al-Qaisi said.

Iraq is one of the world's top importers of rice and wheat, purchased by the government to supply a food rationing program held over from the Saddam Hussein era that ended in 2003. Soil salinity, poor irrigation and a severe drought in the last three years have combined to make it a buyer on world markets. Iraq consumes about 4.5 million tons of wheat a year, according to government data.

Reduced flows in the Tigris and Euphrates rivers have added to the hardships, and al-Qaisi said Turkey doesn't allow enough water to enter Iraq, its downstream neighbor.

"The released quantity of water is still limited," he said.

The Agriculture Ministry is importing irrigation sprinklers and plans to spend 170 billion dinars ($142 million) on the units in the two years ending 2011. Iraqi farmers have traditionally relied on flood-based irrigation to grow crops.

"In this season, rainfalls are expected to be higher than last year," Iman Shallal, head of the Transportation Ministry's water and agriculture meteorology department, said in an interview yesterday. "The first rainfall was recorded in September, while in the last year it started in November"

"Iraq to Harvest More Than 2 Million Tons of Wheat in 2011-12", Khalid Al-Ansary, 27/10/2011, online at:
http://www.bloomberg.com/news/2011-10-27/iraq-to-harvest-more-than-2-million-tons-of-wheat-in-2011-12.html

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❖ A water crisis awaits Iraq

A crisis awaits Iraq following Turkey's extensive dam building project, claims Azzam Alwash, the director of one of the country's largest non-governmental environmental organisations, Nature Iraq. Yet little attention is being give to his proposed methods to avert catastrophe.

By 2050, Iraq is predicted to receive only 25% of its former water supply due to the ambitious Anatolia project being embarked on by Turkey. This project includes the building of 22 dams and 19 power plants in the southeast. Historically, Iraq once received between 60 billion to 90 billion cubic meters of water from the Tigris and Euphrates. This is expected to drop to less than 25 billion cubic meters in less than 40 years' time.

The outdated agricultural programme which employs Sumerian Flood Irrigation methods in the basin will also deteriorate the water's quality; filling it with pesticides and nutrients from fertilizers that render it unusable.

'Currently, the world is pushing for building of dams to harvest water and to produce hydroelectric power in a stage when we are all worried about CO2 production. Few people are pointing to the bad consequences on biodiversity that the dams have,' said Mr Alwash.

'The outdated sumerian flood irrigation methods used by Syria and Turkey will deteriorate the quality of water reaching Iraq with drainage water from irrigated fields upstream being fed back into the Tigris and Euphrates rivers. The drainage water is not only highly saline, but is also loaded with pesticides and nutrients from fertilizers. This result of the reduced water quality is the slow death of agriculture in the land where it was developed in southern Iraq.'

For Mr Alwash the solution is simple but requires vision and cooperation between the countries that share the basin of these two great rivers.

One is to coordinate the policies of release of water from dams and the other, which is even more important according to Mr Alwash, is to improve and modernize irrigation methods to eliminate wastage of water and over use.

'This can be done for the price of a hundred F16 and tanks that are useless in a world where cooperation is the name of the game for survival. What I advocate is for Iraq to use its wasted flared gas and energy reserves to be the manufacturer of subsidized drip irrigation pipes and drip heads that can be distributed to farmers in Turkey, Iraq, Iran and Syria.

This is not for the purpose of making more water available per se, but also to reduce salinization and loss of productivity of farming lands.

Obviously the implementation of such a plan requires trust and cooperative approach. This is not possible under the current political conditions but that does not mean we should stop.'

The Anatolia Project has already been met with widespread controversy. In 2009 the Ilisu dam lost European support from Austria, Germany and Switzerland who had initially pledged $630 million towards the $1.68 billion dam build.

"A water crisis awaits Iraq", Rachael Cloughton , The Foreign Desk, 26/10/2011, online at: http://blogs.independent.co.uk/2011/10/26/a-water-crisis-awaits-iraq/

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❖ The Syria Imperative

The Assad regime in Syria is facing increased scrutiny for its handling of demonstrators. The Syrian opposition has asked for arms and NATO intervention similar to what was witnessed in Libya. Washington Hawks such as former presidential candidate and U.S. Senator John McCain have called for military intervention in Syria to "protect civilians." The call for the use of military force to "protect".

Given the demonstrated lack of regard for human life and the aversion to justice (Iraq, Palestine, Lebanon, Afghanistan, Pakistan, etc.), what lies behind the imperative to intervene in Syria?

The protest movements in Syria started in Daraa -- dubbed the epicenter of the anti-Assad protests. Daraa, traditionally supportive of Syria's ruling Baath Party, suffered from reduced water supply triggering massive protests against the local administration and the regime for failing to deal with the acute water scarcity in the region. Water.

Therein lies the crucial motivation behind the support, agitation, and arming of Syrians against their government by those who endorse "humanitarian wars'. It would be naÃ¯ve to believe that the "humanitarian' interest in Syria comes on the heels of the uprisings in the region given that water has been and continues to be a critical determinant of state security and foreign policy between Israel and Syria (as well as Lebanon) dating back decades.

It was the 1967 war which resulted in the exponential expansion of Israeli water sources including the control of the Golan Heights (also referred to as the Syrian Golan). For decades, Syrian Golan and the return of its control to Syria has posed a major obstacle to the Israeli-Syrian peace negotiations. Israel's water demands make it virtually impossible to accommodate this process. In fact, even with full control of the Golan, Israel's water crisis in 2000 were so acute that it prompted Israel to turn to Turkey for water purchase.

In addition, Syria's presence in Lebanon since the outbreak of the Lebanese civil war in 1975 played a crucial role in hindering Israel's never-ending water demands. Although the 1955 Johnston Plan (under the auspices of the Eisenhower administration) proposed diverting water from Lebanon's Litani River into Lake Kinneret, it was not officially formulated, though it remained an attractive prospect. In 1982, Israeli forces established the frontline of their security zone in Lebanon along the Litani. Numerous reports alleged that Israel was diverting large quantities of Litani water.

Syria's presence in Lebanon and the 1991 Lebanese-Syrian Treaty of Brotherhood, Cooperation and Coordination, was a challenge to Israel and its diversion of water. When Syria replaced Israel as the dominant power in southern Lebanon in May 2000, Israeli fears grew that Syrian success in controlling the Golan and by extension, Lake Kinneret, would have a devastating effect on Israel.

Perhaps this helps explain the fact that on September 13, 2001, while the United States was recovering from the shock of 9/11, the influential and powerful JINSA (Jewish Institute for National Security Affairs) had a statement available as to how the U.S. should proceed. As part of its

recommendations, it pointed the finger at not only at Afghanistan and Iraq, but also presented Iran, Pakistan, Syria, Sudan, the Palestinian Authority, Libya, Algeria (and eventually Saudi Arabia and Egypt) as danger spots. Shortly thereafter, in May 2002, the "Axis of Evil" was expanded to include Syria.

The next logical step was for the United States to pass and implement the Syrian Accountability Act and the Lebanon Sovereignty Restoration Act which in addition to sanctions, called for the withdrawal of Syrian troops from Lebanon. The troops remained until April 2005. They were forced to leave a few short months after the assassination of Prime Minsiter, Rafik Hariri when Syria was accused of involvement in the murder. Clearly, Syria was not the beneficiary of the assassination.

Without a Syrian presence, Lebanon was made more vulnerable, facilitating the 2006 Israeli attack and invasion of water-rich Southern Lebanon.

While Israel lost the public opinion war in Lebanon and Syria remained intact amidst the accusations and chaos, it became necessary to once again put Syria in the spotlight. In 2007, Syria stood accused of having a nuclear bomb program. As a member of the NPT, rather than reporting such suspicions (unfounded) to the IAEA, Israel, with a green light from the United States, bombed a factory which it alleged was involved in nuclear weapons activities.

Israel's attack on Syria on 6 September 2007, remained secret until it was revealed by the former prime minister (1996-1999) and the then opposition leader, Binyamin Netanyahu -- the current Prime Minister of Israel.

Netanyahu took office in March 2009. In April 2009, a U.S. funded London-based satellite channel, Barada TV , started broadcasting anti-regime propaganda into Syria. Barada TV's chief editor, Malik al-Abdeh, is a cofounder of the Syrian exile group *Movement for Justice and Development* headed by Anas al-Abdah. It is crucial to note that the pro-Israel Dennis Ross, a former fellow at the AIPAC created *Washington Institute for Near East Affairs*, who is currently a senior advisor to Barack Obama, was present in a 2008 meeting with Anas al-Abdah (see here). Although the meeting took place in early 2008, the theme of the meeting was: "Syria in-transition".

Prophecy or planning, doubtless, there are many Syrians who do have grievances against their government and demand more rights. In this sense, their cause is no different than the many protests we witness on a daily basis around the world -- including the United States. What is tragic about the Syrian situation, is that the imperative for intervention in Syria is not based on a genuine desire to help the people. The peoples' grievances is being used as a means to arm them, have them killed, and create the need for an intervention in order to promote Israeli interests.

The Syria imperative is Israel's gain paid for with the blood of the Syrian people.

"The Syria Imperative", 29/10/2011, online at: http://www.opednews.com/articles/The-Syria-Imperative-by-Soraya-Sepahpour-U-111027-666.html

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❖ Bafa hopping on the clear waters

Some people mentioned the polluted lake ut Bafa, but I never saw the kind of pollution they were talking about. Seeing so many water birds means that there are also likely a lot of fish in the lake; meanwhile, the clear water and the lack of industry in the area made it all look quite nice and clean to me,It was as if I had arrived at a tropical paradise, although I could be wrong.

There is plenty to see and do in Kapıkırı in the southwestern province of Muğla but one of my highlights was a trip to the islands of Lake Bafa. The only thing you have to do is find a boat. Since there are quite a few fishermen in the village, it is not difficult to find a vessel, and plenty of fishermen are willing to bring you to the islands on Lake Bafa. The best place to get information is the local tea garden, so that was where I went. I entered the café, went to the balcony, sat down and ordered tea.

Next to me, a couple of men were in a heated discussion. They were talking about a new tractor that one of them wanted to buy. The farmer wanted to buy a Turkish brand but another man was convinced that a foreign brand was much better. I interrupted their discussion by offering them tea. After a little chat, I asked them if they knew a fisherman who could show me a couple of islands. "You definitely have to go with Mehmet," one of the men told me. "He is not only a great fisherman, he also knows quite a lot about the history here. Generally, he visits this cafe after checking on his fishing nets. Wait a bit and I am sure he will come."

Spending the day at teahouse

I am always a little skeptical about "waiting a bit" because this has often entailed spending a whole day in, let's say, a teahouse. This time, however, it turned out that the guy was right. Within 20 minutes, Mehmet arrived, so I got another tea while I explained to him where I wanted to go to. It was no problem for Mehmet, so we agreed that he would fetch me at around three.

From the village, it was a short walk to the place where his boat was. I looked at the water and was in shock; it was so dirty. Mehmet explained to me that that always happened during this time of the year due to a certain wind. It was not actually pollution, but a weed which dies, leaving behind a mess.

"You won't see anymore once we're on our way," he said. As we set off on our trip, the sun was shining and there was a nice little breeze that made the temperature bearable. It did not take more than 30 minutes before we arrived at the first island. It was obvious that this island had been occupied in the past because wherever I looked, I could see the remains of walls and buildings.

The tour on the island

Our tour of the island, however, alarmed the birds. As soon as we came too close, they quickly flew away, alarming other birds who also decided that they did not want to meet the people on the water in a thing that made a horrible noise. The few trees that I could see looked like Pammukale, the travertine fountains in the southwestern province of Denizli, as they were all covered in limestone. At

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this time of the day, the trees were shining in the sun but there were only a couple of hours until evening. The trees gave me a surreal feeling as if a modern sculptor had tried to copy nature but used the wrong material. It was strange but also fascinating at the same time. And all I actually saw was a thick layer of bird droppings. At the other side of the island there was something that resembled a pier. Not much was left of it but a bit further I could see a gate that was obviously once one of the entrances to the little island.

We sailed on and I saw two more islands before we reached our final destination.

It was as if I had arrived at a tropical paradise. There was a "bembeyaz" (brilliant white – I really love this word in Turkish) beach, not more then four meters wide, that connected the island with the mainland. The beach was a mixture of sand and very small shell particles. It sounded as if I was walking on freshly fried potato chips and it made a nice crispy sound. Actually, it was unsurprising that there were so many little shells because Lake Bafa used to be a bay in the past. The water was very clear and I could see some fish swimming in between the aquatic plants. I regret not taking my snorkeling gear with me, as it would have been refreshing to swim a bit.

Before I set off to Lake Bafa, some people mentioned the polluted lake but I never saw the kind of pollution they were talking about. Seeing so many water birds means that there are also likely a lot of fish in the lake; meanwhile, the clear water and the lack of industry in the area made it all look quite nice and clean to me, although I could be wrong. Still, I have seen worse places in Turkey.

On the island I saw the remains of a Byzantine castle rising up about 25 meters above me. I climbed up the hill trying to find an entrance. I was lucky, it did not take too long before I found myself in something that once was a castle. The view was mind-blowing; the beautiful lake was in the foreground and behind it were the Beşparmak Mountains. Some parts of the defensive castle walls were still in good condition. I imagined an archer on the lookout for the enemy, waiting for hours, days, maybe months. Today the ruler of the Bafa Lake area had arrived on the island. That was a bad sign. The enemy had advanced up to the shores of the lake. There was one big advantage, the islands were difficult to attack by the enemy who did not have boats to cross the lake and attack the islands. This time it looked like the enemy came badly prepared but maybe another time they would not be so lucky.

I went back to Mehmet. He was lying quite comfortably in his boat. There was no archer or king for him; instead, it was just another sunny day on Lake Bafa.

"Bafa hopping on the clear waters", Wilco Van Herpen, 25/10/2011, online at:
http://www.hurriyetdailynews.com/n.php?n=bafa-hopping-on-the-clear-waters-2011-10-25

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❖ Speaker addresses water issues in Middle East

The acute problems and hardships facing today's young people and the future of the planet will soon require immediate attention, according to Wynn Walker, senior associate dean of civil engineering.

Referring to the lack of water and resources worldwide, Walker gave a speech Tuesday evening to students and faculty. He entitled the speech "Water: The Fickle Finger of Fate in the Middle East," which was part of the International Research Lecture Series hosted by USU.

Walker said the 1968-1971 television show "Laugh-In" featured hosts Dan Rowan and Dick Martin presenting the "Flying Fickle Finger of Fate" award to anything strange or capricious in the news, he said.

"As I got to thinking about water resources in the Middle East, if that show was going on today, I think (water resources) would probably deserve this Fickle Finger of Fate award," Walker said.

No access to water, greenhouse gases that induce widespread climate changes and impact the global hydraulic cycle, and increasing populations that threaten global food security — since water supplies may not be sufficient for both food production and other uses — are the three reasons Walker said lack of adequate water is a problem.

"They say there are 2 million people a year dying of water-born disease effects," Walker said. "National Geographic, about a year and a half ago, said probably 15-20,000 children die each day due to polluted water and the aftereffects. So this is a serious issue."

Highlighting USU's participation in the most recently completed project in the Middle East, the Iraq Agricultural Extension Revitalization (IAER) project, Walker said over a period of four years $12.5 million of aid was given by a consortium of U.S. universities with specific tasks.

USU's task was to help advance the science of irrigation engineering and irrigation system design and evaluation, something that Walker said is necessary for other countries to have access to water.

The IAER, he said, conducted more than 35 seminars, including field demonstrations in the Middle East to help educate others about proper irrigation techniques. Through that, he said, students and staff grew more aware and appreciative of diversity and experience.

He said the group found that, "in a business-as-usual scenario, where we don't try do anything — just keep going along — there's not enough water to meet the expected increases in population to serve their drinking needs."

He also said there are shortages of water people need for healthy crop production.

"People are going to have to choose between whether they eat and whether they drink," Walker said. "You can find many examples all over the world where getting any kind of water is serious and time consuming and occupies a great deal more effort than it should."

The World Food Summit of 1996 defined food security as existing when "all people, at all times have access to sufficient safe (and) nutritious food to maintain a healthy and active life."

Walker said he believes this may be linked to success in water management, which maximizes food production.

In order to provide other countries with complete food security, more food with less water will be needed, he said. Already, he said, the world is far behind and needs a more holistic view on water.

Because there is less arable land and a lot more food production, the solution to maintaining and obtaining water resources must come through maintaining, managing and sustaining water through irrigation, Walker said, which he attributed to the success of further developed countries.

USU played an important role, he said, in educating Middle Eastern peoples about water issues through its experience with the IAER, and there are many more opportunities to do good, especially for the upcoming generation.

"You'd better pay attention, because the problems you're going to face will be acute, and the world may go on without you," he said. But he added later, "You're starting off toward some super big problems, but with a real jump on what you know. A lot of you young people go out and say, 'You know, I don't think that I know anything.' What you're going to find out really fast is that you know a bunch."

DeeVon Bailey, associate vice president for International Research, said the lecture series particularly focuses on USU's international activity in particular segments of the world. Latin America, Africa and the Middle East are all regions that have been previously discussed, and USU's involvement in other countries will continue to be recognized in the future.

"Speaker addresses water issues in Middle East", Arianna Rees, 25/10/2011, online at: http://www.usustatesman.com/speaker-addresses-water-issues-in-middle-east-1.2659782#.Tqzxz3IR-uI

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❖ The risks arising from Asia's water stress

The fastest-growing economies in the region are all in or near water-stressed conditions, with huge implications for economic growth and inter-riparian relations.

Water, the most vital of all resources, has emerged as a key issue that would determine if Asia is headed toward cooperation or competition. After all, the driest continent in the world is not Africa but Asia, where availability of freshwater is not even half the global annual average of 6,380 cubic metres per inhabitant.

When the estimated reserves of rivers, lakes, and aquifers are added up, Asia has less than one-tenth of the waters of South America, Australia and New Zealand, not even one-fourth of North America, almost one-third of Europe, and moderately less than Africa per inhabitant. Yet the world's fastest-growing demand for water for food and industrial production and for municipal supply is in Asia, which now serves as the locomotive of the world economy.

Today, the fastest-growing Asian economies are all at or near water-stressed conditions, including China, India, South Korea, Vietnam, and Indonesia. But just three or four decades ago, these economies were relatively free of water stress. Now if we look three or four decades ahead, it is clear that the water situation will only exacerbate, carrying major implications for rapid economic growth and inter-riparian relations.

Water, the new arena of conflict

Yet Asia continues to draw on tomorrow's water to meet today's needs. Worse still, Asia has one of the lowest levels of water efficiency and productivity in the world. Against this background, it is no exaggeration to say that the water crisis threatens Asia's economic and political rise and its environmental sustainability. For investors, it carries risks that potentially are as damaging as non-performing loans, real estate bubbles, and political corruption. Water has also emerged as a source of increasing competition and discord within and between nations, spurring new tensions over shared basin resources and local resistance to governmental or corporate decisions to set up water-intensive industries.

These developments raise the question whether the risks of water conflict are higher in Asia than elsewhere in the world. With Asia becoming the scene of increasingly fierce intrastate and interstate water competition, the answer clearly is yes. Water is a new arena in the Asian Great Game.

In fact, water wars — in a political, diplomatic, or economic sense — are already being waged between riparian neighbours in several Asian regions, fuelling a cycle of bitter recrimination and fostering mistrust that impedes broader regional cooperation and integration. Without any shots being fired, rising costs continue to be exacted. The resources of transnational rivers, aquifers, and lakes have become the target of rival appropriation plans.

Grand projects; crisis factors

With a river or groundwater basin often becoming tied with a nation's identity, ownership and control over its resources is considered crucial to national interests. That has helped give rise to grand but environmentally questionable ideas — from China's Great Western Route to divert river waters from the Tibetan Plateau to its parched north and South Korea's politically divisive four-rivers project, to India's now-stalled proposal to link up its important rivers and Jordan's plan to save the dying Dead Sea by bringing water from the Red Sea through a 178-kilometre-long canal, which is also to serve as a source for desalinated drinking water.

Several factors have contributed to the Asian water crisis, which is leading to river and aquifer degradation. One key factor responsible for the water crisis is that Asia is not only the largest and most-populous continent but also the fastest-developing continent. How the swift economic rise of Asia has brought water resources under increasing pressure can be seen from the fact that most Asian economies now are water-stressed. The exceptions are few: Bhutan, Burma, Papua New Guinea, Laos, Cambodia, Brunei, and Malaysia.

Unlike fossils fuels, mineral ores, and timber that they import even from distant lands, the Asian economies must make do with their own water resources, a significant share of which is in transnational watercourses.

This fact only serves as a strong incentive for some nations to try and commandeer internationally shared waters before they leave their national borders. Given the critical role of water in economic modernisation, this continent has emerged at the centre of the global water challenges.

Another factor is consumption growth, as a consequence of rising prosperity. The plain fact is that the average Asian is consuming more resources, including water, food, oil, and energy. The consumption growth is best illustrated by the changing diets, especially the greater intake of meat, whose production is notoriously water-intensive.

A third factor is the role of irrigation in accentuating the Asian water stress. Asia more than doubled its total irrigated cropland just between 1960 and 2000. Once a continent of serious food shortages and recurrent famines, Asia opened the path to its dramatic economic rise by emerging as a net food exporter on the back of this unparalleled irrigation expansion.

Asia now boasts the leonine proportion of the world's surface land under irrigation. About 70 per cent of the world's 301 million hectares of land equipped for irrigation is in Asia alone, making it the global irrigation hub. Just three sub-regions of Asia—South Asia, China, and Southeast Asia — by themselves account for about 50 per cent of the world's total irrigated land.

It is thus hardly a surprise that Asia leads the world in the total volume of freshwater withdrawn for agriculture. Indeed, almost 74 per cent of the total global freshwater withdrawals for agriculture by volume are made in Asia alone.

Water literally is food in Asia. Yet the growth of rice and wheat output in Asia, after the dramatic increases of the previous quarter century, has actually slowed since the late 1990s, raising concerns

that Asian countries will become major food importers, roiling the international market. The international food market is not large enough to meet major import demands from Asia.

A fourth factor is that the fastest increase in water demand in Asia is now coming not from agriculture but from the industrial sector and urban households, in keeping with the fact that this continent has become the seat of the world's fastest industrialisation and urbanisation.

A final factor linked to Asia's water stress is the large-scale impoundment of water resources through dams, barrages, reservoirs, and other human-made structures without factoring in long-term environmental considerations. Dams, to be sure, bring important benefits. But upstream dams on rivers shared by two or more nations or provinces in an era of growing water stress often carry broader political and social implications, especially because they can affect water quality and quantity downstream. Dams can also alter fluvial ecosystems, damage biodiversity, and promote coastal erosion and saltwater intrusion.

Most number of dams

Asia is not just the global irrigation hub; it is also the world's most dam-dotted continent. China, the world's biggest dam builder, alone has slightly more than half of the approximately 50,000 large dams on the planet. Most of the best dam sites in Asia already have been taken. Yet the numerous new dam projects in Asia show that the damming of rivers is still an important priority for policymakers. Such a focus on dam building has only intensified intrastate and interstate water disputes and tensions in Asia, with implications for regional security and stability.

The countries likely to bear the brunt of upstream diversion of waters are those located farthest downstream on rivers like the Brahmaputra, Mekong, and Tigris-Euphrates: Bangladesh, whose very future is threatened by climate and environmental change; Vietnam, a rice bowl of Asia; and Iraq, still internally torn. Cross-border water appropriations from the Illy River threaten to turn Kazakhstan's Lake Balkhash into another Aral Sea, which is dying.

A way out

So, the big question is: How can Asian nations prevent the sharpening struggle for water resources from becoming a tipping point for overt conflict? To contain the security risks, Asian states must invest more in institutionalised cooperation on transboundary basin resources in order to underpin strategic stability, protect continued economic growth, and promote environmental sustainability.

The harsh truth is that only four of the 57 transnational river basins in Asia have a treaty covering water sharing or other institutionalised cooperation. These are the Mekong, Ganges, Indus and Jordan river basins. The absence of a cooperative arrangement in most Asian transnational basins is making inter-country water competition a major security risk, increasing the likelihood of geopolitical tensions and instabilities.

With its multitude of inter-country basins, Asia cannot continue to prosper without building political and technological partnerships to help stabilise inter-riparian relations, encourage greater water efficiency, promote environmental sustainability, take on practicable conservation strategies, and

invest in clean-water technologies. If Asian states are to address their water challenges, they will need to embrace good practices on the strategic planning and management of water resources.

"The risks arising from Asia's water stress", Brahma Chellaney, 29/10/2011, http://www.thehindu.com/opinion/op-ed/article2577431.ece

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❖ Minister: Israel did not get a drop of water from Egypt

Minister of Water Resources and Irrigation Dr. Hisham Qandeel denied on Friday 28/10/2011 that Israel has got water from Egypt describing as untrue allegations of Israel's being consuming subterranean water from reservoir in Sinai.

Meanwhile, he denied plans by Nile Basin countries to export Nile water to Israel affirming that Nile Basin countries are well-aware of the importance of water for them for development.

Exporting water does not exist on their agenda and those rumors are baseless as international agreements prevent exporting water to non-riparian nations.

For his part, former Irrigation Minister Dr. Mahmoud Abu Zeid denied he wrote in one of his books that the Israeli-Egyptian peace accord stipulates exporting Egyptian water to Israel via Sinai.

"Minister: Israel did not get a drop of water from Egypt", 29/10/2011, online at: http://www.sis.gov.eg/En/Story.aspx?sid=58693

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❖ Egypt: Water challenges forcing a rethink on usage

Global Arab Network - Leaking water pipes, evaporation and a rapidly growing population may be significant concerns for those trying to manage and plan water supplies in Egypt, but compounding such problems - and forcing Egyptians to rethink how they use water - is the threat posed by downstream countries which also want to take more water from the Nile, say observers.

"Egyptians have to adapt to less water every day," said Rida Al Damak, a water expert from Cairo University.

Egypt has a population of about 85 million, and receives an annual Nile water share of 55.5 billion cubic metres, according to experts. Around 85 percent of that water is used in agriculture, but a lot simply leaks away.

According to a 2007 research paper by Fathi Farag, an independent water expert (link in Arabic), Egypt loses two billion cubic metres of water to evaporation, and three billion cubic metres to grass growing on the banks of the Nile and on river islands.

Around 40 percent of the remaining water - used domestically and in industry (2.3 billion cubic metres) - is lost to leaking pipes and drains, while 2.5 billion cubic metres are used to generate electricity, the paper says.

"If you calculate all this amount of lost water, you will discover that Egyptians are left with a fraction of what their country receives every year from the Nile," Farag told IRIN. "This can also show why we should start to worry."

For farmers like Hamdy Abuleinin, who was able to irrigate his 2.1 hectares of rice only after an argument over water with neighbours in Sharqia near Cairo, this year has proved difficult. "Finding water for irrigation is becoming a daily worry for farmers here," he told IRIN.

International threat

A 1959 water-sharing agreement between Egypt and Sudan gives Egypt 55.5 billion cubic metres of Nile water, but according to Maghawri Shehata, an adviser to the irrigation and water resources minister, population pressure means the country is already facing a shortfall of 10-15 billion cubic metres annually, and "plans by upstream countries to redistribute the water will be very harmful to Egypt".

According to the Nile Basin Initiative countries that share the Nile River basin have demanded the revision of colonial-era agreements that allot the bulk of the river's water to Egypt and Sudan and allow Cairo to veto upstream projects.

Egypt does not recognize a recent agreement signed by Burundi, Ethiopia, Kenya, Rwanda, Tanzania and Uganda, that seeks to allow irrigation and hydroelectric projects to go ahead without Cairo's consent. Ethiopia,

for instance, is planning a series of dams along the Nile to generate electricity.

In March, Ethiopia announced the construction of the Renaissance Dam, which aims to be the largest hydroelectric plant in Africa. Experts like Mehari Beyene, writing for the International Rivers network, however, say the dam, which is being constructed near the Sudanese border, has raised concerns about its environmental and human impacts.

Haytham Awad, an irrigation engineering professor from Alexandria University, said Ethiopia's plan to construct dams along the Nile would reduce Egypt's current share by five billion cubic metres annually, but he thought this might be manageable if Egypt could cooperate with Ethiopia and buy some of the electricity generated.

Protests over water shortages in Egypt are nothing new especially in July and August, the hottest summer months. On 11 October a 16-year-old farmer was killed in a dispute over water in the southern governorate of Aswan.

Farmers like Abuleinin worry about the future for his seven children. "Fights over water sometimes become physical as water becomes scarcer and these fights might entail loss of life. But the alternative for us is to starve." (IRIN)

"Egypt: Water challenges forcing a rethink on usage", Reda Darwish, 24/10/2011, online at: http://www.english.globalarabnetwork.com/2011102412199/Related-news-from-Egypt/egypt-water-challenges-forcing-a-rethink-on-usage.html

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❖ Palestine: The environmental impact of Israel's military occupation

Samah Sabawi addresses the Climate Change, Social Change conference, October 1, 2011. Film produced by Jill Hickson and John Reynolds.

[The following talk and PowerPoint slides were presented to the World at a Crossroads: Climate Change, Social Change conference in Melbourne on October 1, 2011. Samah Sabawi is the public advocate for Australians for Palestine. For more material from the conference, **click HERE**.]

By **Samah Sabawi**

Posted October 30, 2011 -- *Links International Journal of Socialist Renewal* -- Thank you for asking me to take part in this conference and to add the voice of my people and their struggle for justice to your voices. There is great strength in solidarity and quite often, once we've peeled the external layers of what makes our individual causes unique, we quickly find that we are all in the same boat and that our fight for justice, equality and respect for the land shares many common threads.

Who we are

Let me start by introducing to you who the Palestinian people are and giving you a brief background to the conflict!

Palestinians are the indigenous inhabitants of the land that was once known as Palestine – and is now called Israel and the Occupied Territories. Palestinians were mostly a population of farmers – *fellaheen* – their view of their identity is therefore defined by their connectedness to the stones, the earth and the trees. They are the descendants of local inhabitants, mainly Christian and Jews who had converted after the Islamic conquest in the 17th century AD.

The average Palestinian tending his/her farm in the hills of Hebron is aware of the history of invaders and occupiers that have passed through their ancient land.

But today, these indigenous farmers of Palestine know that they face a bigger existential threat than ever before. No past occupation has caused as much damage to the soil, no former empire has inflicted this much pain on this ancient landscape. No past invaders' have acted with so much impunity as to uproot thousands of trees, poison water wells and replace agricultural land with so much concrete and barbwire.

Israel's occupation of the West Bank and Gaza is a story about stolen land, exploitation of labour and theft of resources. It is a story about warehousing a people – mostly stateless refugees, in bantustans and behind high walls, forcing them to be a captive consumer market and a source of cheap labour.

This story provides a classic case for exploring the relationship between corporate greed and perpetual conflict.

The Occupied Territories: Captive consumers and cheap labour

The story of occupation began in 1967 when, as a result of the six-day war, Israel occupied Gaza, the West Bank, East Jerusalem, the Golan Heights and parts of Sinai.

The UN Security Council passed Resolution 242, which became the basis for future United Nations policymaking on the Middle East conflict.

The Resolution called for "withdrawal of Israeli armed forces from territories occupied in the recent conflict".

Until this day Israel continues to hold on to most of this land, which is now referred to as the Occupied Territories.

It is important to understand that immediately after the six-day war Israel found itself standing at a crossroads. It had two obvious choices: annex Gaza and the West Bank and create one geopolitical and economic unit, which is what many today refer to as the one-state solution.

But Israel knew this would mean integrating the Palestinian people into Israeli society and giving them equal citizenship rights. That option would have meant altering Israel's carefully created demographic balance as the indigenous Palestinian population would have made up half of the total population of the state of Israel – a state that defines itself by its Jewish ethnicity. The second option was for Israel to comply with international law and withdraw from the territories occupied and later have two political and economic units, two states, one Palestinian and one Israeli, living side by side. Israel was not interested back then in that option – as it is still not interested in it today.

What Israel wanted was the land and the resources, but without having to give any rights to the indigenous people who come with that land. So it decided on a third option: (limited) economic integration and practical elimination of the Green Line. The assumption here was that close economic dependency would prevent Palestinians from contesting Israeli occupation by force.

The result was that during more than 44 years of occupation the Israelis have confiscated a considerable proportion of the Occupied Territories pushing the Palestinians into smaller and more confined bantustans while implementing a policy of colonisation and exploitation of labour and resources.

Today inside the Occupied Territories there are almost 4 million Palestinians in total. All of them remain stateless and without any citizenship of any nation.

More than 1.5 million of them are refugees who have lost their homes inside Israel's 1948 borders and have been denied the right to return.

There are also more than one and a half million Palestinians who remained inside Israel's 1948 borders and who have become citizens of the state of Israel. They make up 20% of the population in Israel. They have the right to vote, but are treated as second-class citizens with more than 20 laws that specifically target and discriminate against them.

More than half of the West Bank which forms most of what is to be the future Palestine state has been annexed by Israel for its ever expanding Jewish only colonies, industrial zones, Israeli-only roads, checkpoints and security buffer zones.

To foster a Palestinian economic dependency, since 1967 Israel isolated the West Bank and Gaza strip from the rest of the world. Palestinians in the Occupied Territories were only allowed to trade with Israel (and only in a limited amount of agricultural goods with Jordan).

Israel monopolised the Palestinian captive consumer market, flooding it with Israeli goods and products, and at the same time through various tariffs and regulations, restricted the entry of Palestinian products into Israel.

Palestinians were forced to work in Israel as cheap labour and were not afforded many of the workers' rights afforded to Israeli workers doing the same job.

Israel also strangled the Palestinian economy by placing restrictions on investment in agricultural and industrial production. For Palestinians who wished to build a factory or import equipment, a permit from the Israeli military governor was needed but was rarely attained.

Desperate for work Palestinians were willing to work on Israeli settlements and industrial zones in poor conditions, in low-paying jobs, most of them earning 30-50% less than Israelis working in the same occupation and sector.

The Occupied Territories became home to large Israeli industrial zones with corporations eager to escape Israel's environmental regulations by taking advantage of the occupied territories and further making use of its captive and desperate Palestinian workers there.

Industrial zones: An assault on the environment

Although building and running Israeli industrial zones in the Occupied Territories is considered illegal under international law, still many Israeli businesses are lured there in order to qualify for the generous tax reductions offered by the government. An extra bonus for these businesses is the fact that once they set up in the Occupied Territories, they don't have to deal with the strict environmental and labour regulations that are imposed inside of Israel's 1948 borders. This is one reason why they tend to house a large number of industries that deal with toxic materials and harmful waste. Currently, it is estimated that there are more than 18 industrial zones in the Occupied Territories.

In the absence of proper checks to ensure Palestinian workers' rights, these industries exploit Palestinian workers, paying them less than one-quarter that of what Israeli workers are paid. Even though Palestinian workers are made to pay for membership in the Histadrut (General Federation of Laborers in Israel) they are **not** entitled to become members and are not represented in labour disputes.

A report from *Palestine Monitor*, entitled Israel's Toxic Chemical Factories giving Cancer to West Bank Residents, offers a good example of the history and operation of some of these zones. This

photo is of the Nitzanei Shalom (buds of peace) industrial zone, which sits between the West Bank town of Tulkarem and the border with Israel.

The land on which the industrial zone is built was expropriated by the Israeli army in the 1980s and has now become a site for dangerous chemical factories deemed illegal in Israel. One of these factories, according to the report, is Geshuri Industries, which produces pesticides, insecticides and fertilisers.

Geshuri Industries was relocated from its original site in an Israeli town called Kfar Saba after it was declared a health hazard, forcing it to close down in 1982. The owner avoided Israel's strict environmental laws by moving the factory to Nitzanei Shalom in the Palestinian Occupied West Bank.

Once it was moved into the settlement in the West Bank, as is the case with all such factories, it fell under the jurisdiction of the Israeli Civil Administration – this is an area where the Palestinian Authority has no mandate.

Farming land that surrounds such factories are often victim to the chemical waste causing trees to lose their leaves and destroying the fertile nature of the soil. In this particular case, some vegetables still grow not far from the factory in the toxic ground and are actually sold in Palestinian markets in nearby towns.

The *Palestine Monitor* reports that the Geshuri factory operates for 11 months of the year. During this time, the winds blow the toxic fumes into the Palestinian areas. During the period when the wind changes direction and blows into Israel, the factory.

Israel Bypass Road Network

The settlements and their factories have also brought about a network of roads, the Israel Bypass Road Network (BRN). Palestinians are prohibited from using these roads. The BRN runs through some of the most fertile Palestinian land. According to this report by the Applied Research Institute Jerusalem (ARIJ), the BRN network has confiscated so far 110 kilometres of land from its Palestinian owners and farmers, further annexing up to 2% of the West Bank.

The Bypass Road Network is approximately 800 kilometres long with an average width of 20 meters. There are also buffers that are on average 120 meters wide that surround the roads. This land of course is inaccessible to the Palestinian farmers and therefore cannot be used for any agricultural or development initiatives.

The apartheid wall

Another feature of Israeli occupation is the construction of the apartheid wall. The wall is a combination of towering concrete, electric fences, ditches and barbed wire.

The wall is not built on the 1967 Green Line. In fact, almost 90% of the wall is built on Palestinian land, snaking its way through the West Bank. The wall's construction has had a devastating impact

on the environment, with the use of heavy machinery and millions of tons of concrete with all of the associated environmental concerns regarding carbon emissions and water consumption/contamination. Perhaps the worst of its impact has been the extensive destruction of natural habitats and agricultural land.

At a UN meeting in 2004 on the impact of the wall's construction George Khoury of the UNDP stated that more than 100,000 trees had been uprooted and 36,000 metres of irrigation works had been destroyed. "There is a close correlation to the destruction of natural resources and the walls construction", Khoury said at the meeting. The ARIJ supported this analysis, quoting a World Bank report that some 170 square kilometres of fertile agricultural land had been affected by the wall -- amounting to more than10% of the total cultivated land of the West Bank with an average economic value of $38 million. That totals around 8% of annual Palestinian agricultural productivity.

The wall's construction has isolated many wells and springs. Fifty-eight different water sources have been isolated by the wall, robbing Palestinian communities and farmers of 67.3 MCM of water per year. As a result, many farming families and communities are unable to survive and to maintain their lands.

Another negative impact is the wall's interference with the natural drainage systems in the West Bank, where the wall wraps itself entirely around Palestinian towns -- as was the case with the city of Qalqilia.

Qalqilia is completely surrounded by the apartheid wall. In times of high rainfall this has caused flooding and substantial environmental and agricultural damage.

In February 2009, due to a prolonged period of heavy rainfall and the obstruction the wall created for natural drainage, 150 dunums planted with vegetables and 15 dunums of citrus tree orchards were flooded and the crops destroyed. The flooding also severely damaged many greenhouses and chicken coops.

Theft of water

Since Israel's 1967 occupation of the West Bank and Gaza, it has forcibly controlled all the water resources in those areas. In fact, one of the first military orders of the occupation was the confiscation of almost all West Bank wells.

Since then, drilling for new wells has been banned and quotas have been imposed on the existing ones. Water that was allocated to the Palestinians was capped at 1967 levels despite the growth in population over the years. It is reported that Israel uses 73% of the West Bank's water, it diverts an additional10% of it to the illegal Jewish-only settlements and it sells to the Palestinians the remaining 17%, of what in fact is their own water.

The water allocated to the Palestinians translates to 83 cubic metres of water per Palestinian per year, compared to 333 cubic metres per Israeli per year. In other words, each Israeli consumes as much water as four Palestinians.

In the Gaza Strip, where the population relies predominately on ground wells, water is increasingly infiltrated by salty sea water because of Israel over-pumping the groundwater. This theft is considered illegal under international law.

As a result, Gaza is facing a severe water crisis and UN scientists have warned that Gaza will have no drinkable water within 15 years.

Here is an excerpt from Amnesty International's recent report on water in Israel and Palestine, *Thirsting for Justice*:

The inequality is even more pronounced between Palestinian communities and unlawful Israeli settlements, established in the OPT in violation of international law. Swimming pools, well-watered lawns and large irrigated farms in Israeli settlements in the OPT stand in stark contrast next to Palestinian villages whose inhabitants struggle even to meet their essential domestic water needs. In parts of the West Bank, Israeli settlers use up to 20 times more water per capita than neighboring Palestinian communities, who survive on barely 20 liters of water per capita a day – the minimum amount recommended by the WHO for emergency situations response.

Five-star occupation

It has often been said that this is a five-star occupation, in which Israel stands to gain everything and loses nothing.

A Palestinian Authority ministry and national research institute released a joint study that estimates that the Israeli occupation has cost the Palestinian economy around $7 billion in 2010 and that without Israel's control of resources and access to Palestinian territories, the economy "would run a 'healthy' fiscal surplus, ending its dependence on donors' aid".

The research estimated that Israel's ban on Palestinian access to the Jordan River, Dead Sea and groundwater aquifers in the West Bank cost Palestinians $1.9 billion in lost agriculture revenues, $1.2 billion in mineral resources and $143 million in Dead Sea tourism. The study also found that Israel's blockade of the Gaza Strip cost the Palestinian economy $1.9 billion, and restrictions on water another $1.9 billion.

But perhaps most telling was the study's finding that Israel earns around $900 million per year through control of West Bank mining and quarrying and $150 million from commercial Dead Sea products.

My friends, this is a very profitable occupation! It is one that feeds corporate ambitions at the expense of land and people.

Conclusion

Throughout its 44 years of occupation, Israel has shown a total disregard for the indigenous people, the earth and the environment. There was no way I could capture in 20 minutes the many issues related to Israel and the environmental impact of its occupation and military actions.

I would have needed an entire day to discuss the effect of its three weeks of bombardment of Gaza and its use of white phosphorous on the soil, the water and people. I would have needed hours to talk about the effect of its bombardment of the Gaza power plant and the sewage floods that resulted from that. More time needs to be given to discuss the effect of Israel's nuclear plant on residents nearby and the dramatic rise in cancer cases. But with what little time I have left I would like to highlight the need to stop Israel's aggression on the land, the people and the environment.

In 2005, Palestinian civil society called upon international civil society organisations and people of conscience all over the world to impose broad boycotts and implement divestment initiatives against Israel, similar to those applied to South Africa in the apartheid era, as a non-violent tool to hold Israel accountable for its violations of Palestinian rights and freedom. I hope that you consider heeding their call!

I am thankful that I had the chance to be the voice of my people in this conference and I hope that what little information I have given today will help shed some light on the truly ugly face of war and occupation.

Thank you!

"Palestine: The environmental impact of Israel's military occupation", 30/10/2011, online at: http://links.org.au/node/2574

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❖ Israel: The Cost of Adaptation to Climate Change

On 1-2 November, the EU Delegation to Israel, the Israeli Ministry of Environmental Protection, and Haifa University – The Natural Resource & Environmental Research Center will be holding a 2-day conference on climate change.

The first day will be devoted to the local Israeli views on climate change. It will shed light on past, present and future aspects of climate change, and provide an overview of climate negotiations from Rio to Durban. The economics of climate change will also be discussed from a US perspective.

The second day will be devoted to the many facets of EU-Israel cooperation on climate change – from the 7th Framework Programme research projects, through the policy discussions and exchanges of experience occurring in the various EuroMediterranean and European Neighbourhood Policy, Programmes to the concrete projects, being implemented on the ground. The workshop will conclude with a roundtable discussion of climate change research gaps, which will bring together the Heads of the Climate Change Information Centre, Ministries and the Head of Unit on Climate Change at the European Commission.

For more info:

http://nrerc.haifa.ac.il/images/stories/pdf/programme1-2nov%20eng.pdf

ENPI info centre

"Israel: The Cost of Adaptation to Climate Change – Workshop [1-2.11.11]", 25/10/2011, online at: http://mideastenvironment.apps01.yorku.ca/?p=3530

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❖ Cabinet approves creation of green-growth plan

Government task force given six months to give course of action for transitioning to a green economy. Talkbacks (4)

The cabinet approved the future institution of a national plan toward promoting green growth on Sunday, pursuant to Israel's responsibilities as an Organization for Economic Cooperation and Development (OECD) member state, the Prime Minister's Office reported later that day.

The plan, which was suggested by the Environmental Protection and Industry, Trade and Labor ministers, will create a framework for green growth in the years 2012-20, and will recommend a specific course of action for Israel's transition to a green economy, according to an Environment Ministry statement.

A government task force will have six months – until May 2012 – to submit a detailed plan, whose implementation the two ministries expect will generate billions of shekels for the Israeli economy, as well as save additional billions that are currently being invested in combating environmental and health hazards, the statement said.

Some stipulations within the plan will include mapping out and removing environmentally harmful subsidies, accelerating green innovation, developing the cleantech industry, encouraging cleaner production and promoting green industrial zones, according to the Environment Ministry.

Part of the government's decision to begin formulating a plan stems from a June 2009 OECD Declaration on Green Growth, the Prime Minister's Office said.

Signed by all 30 then-members, as well as Israel and three other non-members at the time, the declaration tasked the OECD with harnessing a green growth strategy that combined economic, environmental, technological, financial and developmental elements, according to the OEC website.

The Israeli cabinet, the Prime Minister's Office explained, defines green growth as "socioeconomic growth and development that does not harm the environment, promotes the efficient, cost-effective and lasting use of natural resources and promotes the creation of 'green' jobs while maximizing opportunities for using clean growth engines."

Pleased with the cabinet's decision, the Environmental Protection Ministry said it viewed the move as a positive step in the growth of Israeli industry toward meeting new international standards and maintaining competitiveness in the global market.

"Economic growth is an important thing, but is not the essence of everything," Environmental Protection Minister Gilad Erdan said in a statement. "What interests us is the quality of life of the country's citizens, and economic growth that destroys and depletes natural resources does not improve quality of life. Therefore, it is necessary to advance green growth, taking into consideration public health and the environment. Everyone will benefit from this green growth: the market and the environment."

"Cabinet approves creation of green-growth plan" , Sharon Udasin, Jerusalem Post, 25/10/2011, online at: http://mideastenvironment.apps01.yorku.ca/?p=3536

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❖ You Choose: The Future of 7 Billion

Demographers predict the 7 billionth child will likely be born on October 31st in India or China. No one really knows, of course, but the odds are in favor of the birth happening in one of those two countries, which between them have 2.5 billion people, or 1/3rd of all humanity.

What will the future look like for this child, who we will call "*7B*"?

You may recall there was much attention given to "Baby Six Billion" in 1999, when Kofi Annan, UN Secretary-General, posed for a photo op with Baby Six; today that child lives in poverty in Bosnia. Will *7B* escape Baby Six's fate? The global population is expected to reach 9 billion by 2050. The challenges will come from all directions and the pressure is on the world to effectively address the issues. There are two scenarios to consider: business as usual or a sustainable and just future.
If we take a business as usual stance, we had better hope that technology saves us. For if we don't invest in education and family planning programs, and continue polluting and plundering the planet for finite resources, a few decades from now the world of *7B* will not fare so well.
Or we could choose to implement sustainable policies and lifestyle changes that can create a better world for the planet and *7B*'s generation.
Here are some key areas and how our choices in the coming decades will affect the next generation.

BIODIVERSITY:

- ***Business as Usual***

Life on earth is currently undergoing a sixth mass extinction event. If global warming continues as expected, it is estimated that almost a third of all flora and fauna species worldwide could become extinct. By 2080, more than 80% of genetic diversity within species may disappear in certain groups of organisms, according to researchers in the the journal *Nature Climate Change*.

Our system of endless economic growth based on overexploitation of natural resources is taking a heavy toll. According to scientists at England's Royal Society, "...environmental change has always been prevalent, and has helped shape biodiversity patterns of today. In contrast, never before has a

single species driven such profound changes to the habitats, composition and climate of the planet." Today, more species disappearing at a rapid rate which could have many unintended consequences for the planet.

- ***The Sustainable Path***

Let's consider just one part of the ecosystem – forests – which, if protected, can help humankind cope with climate change and other negative environmental impacts. Forests house up to 90 per cent of known terrestrial species. The UN Environment Programme reported that reducing deforestation rates by 50% by 2050 and then maintaining them there until 2100 would avoid emitting the equivalent of 12% of the emissions needed to keep atmospheric CO2 concentrations below 450ppm.

Trees absorb carbon dioxide and are vital carbon sinks. Curbing deforestation and planting more trees are a highly cost-effective way to reduce emissions. In addition to the impacts on climate change, forests help to conserve soil and water, control avalanches, prevent desertification, protect coastal areas and stabilize sand dunes. Saving forests are a winning solution to many of our problems – if we ramp up protection and planting, we will have a more sustainable environment for *7B*.

FOOD SECURITY:

- ***Business as Usual***

Global food prices are increasing, commodity prices are rising, a growing middle-class is eating a more meat-based diet, and worldwide, almost one billion people suffer from hunger. How will the global food outlook appear for *7B* in a decade or two when today chaotic climate is taking a toll on agriculture, more farmers are leaving their fields for cities, the costs of inputs keep rising, and multinationals and governments are grabbing up prime remaining agricultural land?

Climate change alone will hit agriculture hard; every one-degree Centigrade increase in temperature will reduce grain yields by 10 percent. It will be crucial that food production increase significantly to meet the future demands of an increasing and more affluent global population. In Africa, where food production per capita has been on the decline, at least twice as much food must be produced by 2050 to avoid widespread starvation in a population expected to hit 1.8 billion.

- ***The Sustainable Path***

Food insecurity can be reduced by investing in programs supporting women farmers, who make up the majority of smallholder farmers in many developing countries. By investing in women farmers we can improve food security and strengthen economic conditions. Secretary of State Clinton spoke earlier this year on why investing in resources for women in agriculture makes sense: "*... the incomes of women farmers would increase, which means more financial security for their families and more money circulating in local economies, which in turn will help other businesses grow. Furthermore, because women tend to devote more of their money to the health, education, and nutrition of their children, a rise in their incomes pays off over generations.*"

Projects that incorporate holistic approaches and work *with* communities, especially women, rather than traditional top-down ways, will have the most success in dealing with food security and also poverty. Part of women's empowerment includes reproductive health, and when families choose to have smaller families, the land can support them, and fewer people will feel forced to move to urban slums to find livelihoods.

WATER:

- ***Business as Usual***

According to the U.S. Agency for International Development, by 2025, of the expected global population of 8 billion people, one third - 2.4 billion people, spread over 40 countries - will live in countries facing absolute water scarcity, contributing to political, social and economic instability in the developing world.

As the climate changes, certain regions will be facing more frequent and prolonged periods of droughts. Water sharing will become a driving issue between countries that currently do not have the best of relations (think Pakistan and India) and could lead to regional destabilization. Water is already a critical issue in unstable countries like Yemen, where experts have warned that it could be

the first country to run out of water. Yemen's current population of 24 million people is expected to double in 20 years.

- ***The Sustainable Path***

Demand for fresh water is only going to increase and smart approaches are needed to manage this most vital of resources.

First and foremost is shifting away from water intensive crops to water efficient crops wherever possible. Grow rice where it is mean to be grown, such as in southeast Asia, not arid California. Public policies should support efficiency improvements and water conservation to reduce water use.

Conservation can be achieved with improved irrigation efficiency via drip irrigation. Under drip irrigation practices, water goes directly to a crop's root system in small doses, thereby keeping evaporation losses low. Furthermore, Lester Brown, president of Earth Policy Institute, states that drip irrigation can reduce water costs, raise yields and substantially raise incomes of small farmers.

Yet another practice is treating and reusing urban wastewater , or "brown water," for farming. Israel probably has the most ambitious brown-water program of any country – 92 percent of the wastewater in Israel is treated and around 75 percent is used for agricultural irrigation.

WOMEN'S RIGHTS:

- ***Business as Usual***

Today there are 215 million women who wish to avoid getting pregnant but lack the means of accessing or affording contraceptives. These women and their families represent roughly 1 billion of the earth's poorest residents. If the world continues to ignore this need, populations will grow, women and children will suffer and be marginalized, the environment will be increasingly degraded, and socio-economic development will be stagnated.

If we don't commit to policies that support women, expect to see continued disempowerment in terms of land rights, poverty, lower female literacy, higher rates of fertility in poor and marginalized communities and countries, more women dying in childbirth and more unwanted/unplanned pregnancies.

- ***The Sustainable Path***

Investing in women and girls, especially women's education and health, can significantly slow population growth and improve lives. Additionally, investing in programs to alleviate poverty, when combined with empowering women to make their own choices in family planning, will help stabilize population growth, which has often contributed to rapid improvements in per capita economic conditions and overall quality of life. And it will reduce detrimental impacts on the ecosystem.

Joel Cohen of Rockefeller and Columbia Universities recently wrote that providing modern family planning methods to those who need it would cost about $6.7 billion a year. That might sound like a lot, but it's all in your perspective; according to Cohen, Americans will spend $6.9 billion on Halloween this year. And hedge fund managers make almost $1 billion annually. Priorities, right? Explain that to *7B*...

7B and Beyond

Assuming current generations — especially in the "developed" countries — don't change how we live and consume for the better, then *7B*'s generation will pay a high price for our inaction.

The hope for *7B*'s future will be found in diverse sectors and initiatives, from clean energy to managing unsustainable economic growth to reducing global ecological footprints. Yet ultimately recognizing the importance of empowering women — through better health care and access to family planning services, reproductive freedom, education, improved economic opportunities, and supporting gender equality — is key. A little investment in these areas will go a long way.

Business as usual won't get us anywhere. It is time to get serious about changing the direction of our society for the better and protecting communities and the environment. We have been complacent far too long and the future of 7 billion is at stake.

What kind of world will 7B inherit? You choose.

"You Choose: The Future of 7 Billion", 27/10/2011, online at: http://www.baycitizen.org/blogs/citizen/you-choose-future-7-billion-1/

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❖ Water pipes take Lod neighborhood out of the Third World

Samech Het neighborhood gets connected to municipal water system after suffering substandard water and sewer infrastructure; such cases occur when homes are built without permits.

The Arab Samech Het neighborhood in Lod reminds a visitor more of a developing country than a district in a city a short ride from Tel Aviv. But things have been looking up: Samech Het's homes have just been connected to the municipal water system.

Residents now have running water regularly, though they have to pay the municipality's water company that was set up three years ago for the privilege.

"Previously, there was just one pipe here that didn't supply enough for everyone, and pumps that we installed ourselves," said the chairman of the Samech Het neighborhood committee, Juman Shaban. "Sometimes there was no water at all. When they also arrange sewers for us, I'll throw a celebration."

The experience in Lod, a mixed city of Jewish and Arab residents, reflects a substandard water and sewer infrastructure in many places throughout Israel, especially in Arab neighborhoods where homes have been put up without building permits. In these cases, the houses were not connected to the municipal infrastructure.

In Lod, the problem affects several large neighborhoods that are home to tens of thousands of people. The whole town has suffered from feckless government for years.

"When we started to operate, it turned out that 40 percent [of the water] was being wasted," said Moshe Ashkenazi, the CEO of the municipal water company. He said his staff does not know where all the wasted water is going, but the wastage has been reduced to 20 percent and will be curbed further. Many people in Lod have been illegally tapping into water lines.

Referring to Arab neighborhoods with many illegally built homes, Ashkenazi said "our approach is that if they're not going to demolish these homes, we have to provide them with basic services." After suffering severe financial woes, the Lod water company was allocated a special budget by the national Water Authority to upgrade the city's water grid.

New water lines have been installed throughout the city, mainly in Arab neighborhoods, and illegal tap-ins have been dismantled. In some places, old pipes were discovered that no one knew existed.

The improvements sometimes have to accommodate the existing reality. In one Arab neighborhood, for example, the water company encountered homes that were built illegally on top of a sewer line. The authorities decided they had no choice but to install a new parallel sewer line that could be properly maintained.

At another location, a school agreed to dig up and remove a sewer line from its grounds after the water company offered to build a new sports field. Ashkenazi said the entire sewer network in the

Samech Het neighborhood will be completed shortly, which will also end the life of an unauthorized sewer pipe that has been spewing effluent into a nearby stream.

"Water pipes take Lod neighborhood out of the Third World", Zafrir Rinat, 26/10/2011, online at: http://www.haaretz.com/print-edition/news/water-pipes-take-lod-neighborhood-out-of-the-third-world-1.392012

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❖ China Takes a Loss to Get Ahead in the Business of Fresh Water

TIANJIN, China — Towering over the Bohai Sea shoreline on this city's outskirts, the Beijiang Power and Desalination Plant is a 26-billion-renminbi technical marvel: an ultrahigh-temperature, coal-fired generator with state-of-the-art pollution controls, mated to advanced Israeli equipment that uses its leftover heat to distill seawater into fresh water.

There is but one wrinkle in the $4 billion plant: The desalted water costs twice as much to produce as it sells for. Nevertheless, the owner of the complex, a government-run conglomerate called S.D.I.C., is moving to quadruple the plant's desalinating capacity, making it China's largest.

"Someone has to lose money," Guo Qigang, the plant's general manager, said in a recent interview. "We're a state-owned corporation, and it's our social responsibility."

In some places, this would be economic lunacy. In China, it is economic strategy.

As it did with solar panels and wind turbines, the government has set its mind on becoming a force in yet another budding environment-related industry: supplying the world with fresh water.

The Beijiang project, southeast of Beijing, will strengthen Chinese expertise in desalination, fine-tune the economics, help build an industrial base and, along the way, lessen a chronic water shortage in Tianjin. That money also leaks away like water — at least for now — is not a prime concern.

"The policy drivers are more important than the economic drivers," said Olivia Jensen, an expert on Chinese water policy and a director at Infrastructure Economics, a Singapore-based consultancy. "If the central government says desalination is going to be a focus area and money should go into desalination technology, then it will."

The government has, and it is. At the government's order, China is rapidly becoming one of the world's biggest growth markets for desalted water. The latest goal is to quadruple production by 2020, from the current 680,000 cubic meters, or 180 million gallons, a day to as many as three million cubic meters, about 800 million gallons, equivalent to nearly a dozen more 200,000-ton-a-day plants like the one being expanded in Beijiang.

China's latest five-year plan for the sector is expected to order the establishment of a national desalination industry, according to Guo Yozhi, who heads the China Desalination Association. Institutes in at least six Chinese cities are researching developments in membranes, the technology at the core of the most sophisticated and cost-effective desalination techniques.

The National Development and Reform Commission, China's top-level state planning agency, is drafting plans to give preferential treatment to domestic companies that build desalting equipment or patent desalting technologies. There is talk of tax breaks and low-interest loans to encourage domestic production.

In an interview, Mr. Guo called the government role in desalination "symbolic," saying that direct government investment in seawater projects does not exceed 10 percent of their cost. By comparison, he said, big water ventures like the massive South-North Water Diversion Project, which will divert water from the Yangtze River in the south to the thirsty north, are completely government-financed.

Still, the government's plans could mean an investment of as much as 200 billion renminbi, or about $31 billion, by state-owned companies, government agencies and private partners.

Beijiang's desalination complex, built by S.D.I.C. at the behest of the Development and Reform Commission as a concept project, was almost wholly made in Israel, shipped to Tianjin and bolted together. Nationally, less than 60 percent of desalination equipment and technology is domestic.

China's goal is to raise that to 90 percent by 2020, said Jennie Peng, an analyst and water industry specialist at the Beijing office of Frost & Sullivan, a consulting company based in San Antonio.

There are plenty of reasons for China to want a homegrown desalination industry, not the least of which is homegrown fresh water. Demand for water here is expected to grow 63 percent by 2030 — gallon for gallon, more than anywhere else on earth, according to the Asia Water Project, a business information organization.

Northern China has long been short of water, and fast-expanding cities like Beijing and Tianjin already have turned to extensive recycling and conservation programs to meet the need.

In Tianjin, deemed a model city for water conservation, 90 percent of water used in industry is recycled; 60 percent of farm irrigation systems use water-saving technologies; 148 miles of water-recycling pipes snake beneath the city. Apartments in one 10-square-mile area of town feature two taps, one for drinking water and one for recycled water suitable for other uses.

The Beijiang plant, one of two, supplies an expanding suburb with 10,000 tons of desalted water daily, with plans to someday pump 180,000 tons. A second 100,000-ton facility supplies a vast ethylene production plant outside of town.

The Beijiang plant has faced some hiccups. The mineral-free distilled water scrubs rust from city pipes en route to taps, turning the water brown. Some residents are suspicious of the water, saying its purity means it lacks nutrients. The plant is addressing both complaints by adding minerals to the water.

But some say slaking China's thirst may be a beneficial sideline to larger aims. The global market for desalination technology will more than quadruple by 2020 to about $50 billion a year, the research firm SBI Energy predicted last month, and growing water shortages worldwide appear to ensure further growth.

Beyond that, the increasingly sophisticated membrane technologies that filter salt from seawater can be applied to sewage treatment, pollution control and a legion of other cutting-edge uses. Far

outpaced now by foreign membrane producers, which command at least 85 percent of the market, China is set on developing its own advanced technologies.

Some experts say that is where the government's interest mostly lies. "What this is about is developing China's membrane industry, more than it is local use," said Ms. Jensen, the Singapore analyst. "This is an export industry fundamentally, not one to make a green China."

Whatever the motivation, China is already racing toward meeting its targets.

Just as foreign companies rushed to China to secure a place in its budding wind-energy market, the list of foreign companies that have plunged into China's desalination industry is long: Hyflux of Singapore, Toray of Japan, Befesa of Spain, Brack of Israel and ERI of the United States, among others.

And just as foreigners shifted solar-energy research and production to China, desalination companies are leaving their home bases as well. The Norwegian company Aqualyng is a partner with the Beijing city government on a desalination plant in Tangshan, a coastal city about 135 miles east of Beijing, and is studying moving its manufacturing facilities from Europe to China.

ERI, which is based in San Francisco and claims to have the desalination industry's most advanced technology, is moving research facilities to China and is considering moving manufacturing as well at some later date.

Most of the foreign companies have partnered with state-owned corporations, for help in securing business and for political protection in a country where the rule of law and protection of intellectual property are in a state of flux. And although some foreign investors in technology-laden projects like wind energy and high-speed rail later claimed their Chinese partners appropriated their technologies, the heads of ERI and Aqualyng say they can become researchers and manufacturers in China without losing control of their products.

The chairman of Aqualyng's board, Bernt Osthus, said in an interview that the company's partnership with the Beijing government had been "close to an ideal partner," with the Norwegians controlling the technology and the Chinese providing money and local know-how.

He added, however, that the company was considering a joint research venture with a Chinese partner.

"By reducing our ownership in our equipment and taking on a state-owned Chinese partner and moving production from Europe to China, the technology effectively becomes Chinese," he said. "I'm still the owner. I'm still owning my piece of the pie. I'm just increasing the size of the pie."

And a big pie it is.

"There are large-scale desalination projects centralized all up and down the east coast of China," ERI's chief executive officer, Thomas S. Rooney Jr., said in an interview. "Our company has the

most advanced technology in the entire desalination industry. And one of the beautiful things about China is that they like to adopt the most advanced technologies."

"You can either fight them or join them, and our philosophy is that China likely is going to be the next big desalination market," he added. "I would rather develop technology for China in China and take a more open approach than play the secrets game."

"China Takes a Loss to Get Ahead in the Business of Fresh Water", Michael Wines, 25/10/2011, online at: http://www.nytimes.com/2011/10/26/world/asia/china-takes-loss-to-get-ahead-in-desalination-industry.html?pagewanted=1&_r=1

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❖ Water and Bangkok, or making the impossible possible

Bangkok Mayor Sukhumbhand Paribatra said that on Wednesday it will become clear whether the Thai capital will be able to withstand the onslaught of water from the country's flooded Northern provinces. Prime Minister Yinglak Chinnavat warned earlier that the issue with the outflow of river water may be compounded by the high sea tide at the end of the week.

It's difficult to imagine that enormous modern capital of nine million people under a meter and a half of water in the 21st century. But at the same time, we can say that we're entering an era in which everything is possible - Western civilization simply does not want to believe in this. This civilization is highly rational, it believes in progress and the omnipotence of intelligent people. From its perspective, all troubles come about as a result of poor decisions.

Too much water

I left Bangkok two weeks ago. I knew that Syvarnabhumi Airport was open for flights (the old Don Mueang Airport to the north is now flooded), and the highway leading to it is elevated 20 meters above the ground. However, there was a stretch of about a kilometer on the street leading from the embankment of Chao Phraya to the overpass that could have been flooded, but I was lucky on that day.

Being in South-East Asia, you understand that in addition to being a symbol of technological progress in various small areas, it is also a place of routine floods. Could the entire country turn into a lake? Something similar happened in neighboring Myanmar (Burma) in May 2008 when it was hit by Cyclone Nargis. The losses were estimated at 23,000 people, which included those who were swept off by a raging flow of water and hit their heads on trees (especially children and the elderly), and also those who were left with nothing to eat or drink, strange though it may sound.

In general, the strangest thing about floods in this part of the world is that they make it very difficult to supply people with clean water. Your house is flooded; garbage from a village or city is floating around, as well as crocodiles that escaped from some farm in Phatthaya, snakes that were washed out of their holes and the contents of urban sewage facilities.

I flew to Thailand from the Philippines, and two days later the old downtown area of Manila where I had been staying was hit by a strong typhoon, and suddenly found itself under half a meter of water. A sea wave four meters high rushed over the concrete breakwater of the embankment, but could not go back. It became a city without cars, with flooded power transmission lines and other impossible things, if only for two days. At any rate, I have escaped from floods twice, and this has given me something to consider about finding a pattern in these events.

Punishment from above

For centuries, people in Asian countries have drawn a connection between divine retribution and mistakes by the authorities. The special, collective character of Asian societies and their rigidly centralized power have emerged from the permanent need to create and maintain irrigation systems

(which involve an enormous number of people with shovels), to stock rice reserves because floods may destroy the fields, and so on. The authorities were perceived as an intermediary between the elements and society, and for this reason were given a sacred status.

Incidentally, many in Burma considered Cyclone Nargis to be punishment for the military regime in that country - in 2008 it was defending itself from the attacks of the George W. Bush Administration with particular ferocity, and prevented U.S. and other Western warships from coming near its shores. Meanwhile, these warships could have aided them like they did after the tsunami in Japan this year and in Indonesia in 2004. Now the regime is reforming itself with amazing speed and the floods in Burma are generally within the norm, although they are nearly as destructive as in Thailand.

But why would Thailand be subjected to divine punishment? Is it because of the elections in July, three weeks before the start of the rainy season? In theory, the punishment should have been administered earlier, during the rule of the former government that was trying to establish a dictatorship of the urban middle class over society as a whole. The current authorities have been subjected to a trial that is practically impossible to sustain because it could not have been predicted. But political changes still take place in these situations.

For Europeans or Americans, who subconsciously believe in progress and that any natural disaster can be prevented by not making mistakes, it may be difficult to accept that sometimes floods or tsunami just happen. People in the West are highly prone to the Stalinist mentality in which every disaster has its given name, patronymic and family name. The popular concept that global warming and climate change have been caused by human activities, and can therefore be corrected by humans, may or may not be correct, but it is absolutely Western.

Weather and superpowers

Climate change has taken place in the past as well, and it has led to shifts in global politics. Russian historian Ivan Mozheiko points out in his lectures and books that before Genghis Khan came onto the scene, the weather in the steppes had been fair for several decades, as a result of which verdant pastures appeared, and people and cattle thrived. What came next is well-known: Genghis Khan's campaigns and the downfall of the then superpowers...

Vitaly Melyantsev said in his lectures at Moscow State University that many historians have suggested explanations for answering the question of how the then modern and powerful Chinese Empire, the world leader at that time, declined into a systemic crisis for two hundred years, starting in the 18th and 19th centuries. They argue that all this was caused not by the conservative policy of the ruling Manchurian dynasty, but by climate change, the collapse of agriculture and the ensuing impoverishment of peasants.

Lots of impossible things happen in politics too, not only in the climate. Thus, in the first half of the 1930s it was hard to believe that WWII could be possible. Nobody had any reason to start it. It is difficult to believe that today, in our enlightened century, after the regimes of Ataturk, Nasser or Mubarak, millions upon millions of people in the Muslim world could turn from the epoch of education to wild Wahhabism.

But we have witnessed elections in Tunisia, as well as wars and revolutions in Egypt and Libya with a clear radical - rather than the expected democratic - tinge. And further, there were the Saudi and Iranian nuclear bombs and various other things that seemed to be the main threat after the 9/11 attacks but have somehow become less frightening. So today everything is possible, at least in theory.

People are conservative by nature, and progress is a relative term. But this is helpful, at least with regard to Thailand. A nation that was built on rivers, boats and river bed piles is now displaying an unprecedented ability to adapt itself, even in that bastion of modernity, Bangkok. It is enough to mention the concrete semi-circular dams by the entrances to shops that are instantly erected, and will come down just as fast when the water subsides.

The views expressed in this article are the author's and may not necessarily represent those of RIA Novosti.

"Water and Bangkok, or making the impossible possible", 26/10/2011, online at: http://en.ria.ru/analysis/20111026/168147855.html

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❖ Research and Markets: Water and Wastewater Infrastructure Market in Middle East and North African Countries

Research and Markets (http://www.researchandmarkets.com/research/1724d9/water_and_wastewat) has announced the addition of Frost & Sullivan's new report "Water and Wastewater Infrastructure Market in Middle East and North African Countries" to their offering.

The $9.00-billion Water and Wastewater Infrastructure Market in the Middle East and North Africa to Be Worth Twice as Much in 2015, at $18.85 Billion

Recycle and Reuse Systems and Wastewater Collection and Disposal Networks to Generate the Most Revenues

The Middle East and North Africa (MENA) is one of the most water-stressed regions in the world, with half of the population having inadequate access to water. Worldwide, the average water availability per person is close to 7,000 cubic metres per person per year; in the MENA region, it is about 1,200 cubic metres. With the population expected to grow from nearly 300 million in 2008 to almost 500 million in 2025, the already dismal per capita availability of water is expected to halve by 2050. This shrinking of freshwater sources has thrown open opportunities for developers of water and wastewater treatment, recycle and reuse, as well as the distribution and sewage collection networks. The MENA region has already witnessed huge investments in the water and wastewater infrastructure market in recent years and is a pioneer in desalination, says the analyst of this research. Wastewater treatment and desalination plants in the region are witnessing a big boom due to a 6 per cent average annual increase in demand for water.

Participants will have to clear several hurdles before they can make the most of the immense potential of the market. They have to combat the lack of skilled manpower, high costs of water treatment and delivery, poor water distribution coverage and inefficient water management, which costs each economy approximately 1 per cent to 3 per cent of its gross domestic product (GDP).

Read more inside Water and Wastewater Infrastructure Market in Middle East and North African Countries

For more information visit
http://www.researchandmarkets.com/research/1724d9/water_and_wastewat

"Research and Markets: Water and Wastewater Infrastructure Market in Middle East and North African Countries", 29/10/2011, online at: http://www.benzinga.com/pressreleases/11/10/b2042756/research-and-markets-water-and-wastewater-infrastructure-market-in-midd

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❖ China, Laos vow to enhance security cooperation on Mekong River

BEIJING, Oct. 30 (Xinhua) -- Chinese Defense Minister Liang Guanglie met in Beijing Sunday with Laotian Deputy Prime Minister and Minister of Defense Douangchay Phichit, saying that the two countries will enhance their cooperation in law enforcement and security on the Mekong River.

Two Chinese cargo ships, the "Hua Ping" and "Yu Xing 8", were attacked by armed people on the Mekong River on Oct. 5. Thirteen Chinese sailors were killed in the incident, in the "Golden Triangle" area where the borders of Myanmar, Thailand and Laos meet.

Liang expressed gratitude for Laos' support in helping stranded Chinese ships and crewmen return to China safely.

China, Laos, Myanmar and Thailand will hold a meeting in Beijing on Monday to discuss establishing a joint law enforcement and security mechanism between the four countries, in a bid to maintain order on the Mekong River.

"The meeting is very important," said Liang, adding he believed that, through the joint efforts of the four nations, the meeting would surely achieve positive results.

Liang said that bilateral military relations had yielded many satisfying outcomes in recent years. He hoped the two countries' armed forces can continue to lift their relations to a new level.

The armed forces of Laos and China share a deep traditional friendship, said Douangchay. He thanked China for its long-term support for his country and its army building.

He agreed that the Laotian government is willing to work with China to enhance law enforcement and security along the Mekong.

"China, Laos vow to enhance security cooperation on Mekong River", 30/10/2011, online at: http://news.xinhuanet.com/english2010/china/2011-10/30/c_131220606.htm

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❖ British Council, Rolls-Royce join forces to create 'The Big Science Challenge'

The British Council and Rolls-Royce have teamed up to launch 'The Big Science Challenge', a competition aimed at secondary schools across the UAE, Bahrain, Qatar, Kuwait, Iraq, Oman , Jordan and the United Kingdom. The competition will run from now until 3 February 2012.

'The Big Science Challenge' invites students aged 11 - 16 in the Middle East and UK to research and design an original, innovative solution to a problem concerning water, either locally, nationally or globally. Entries will be judged at a national level by a panel of experts.

The winning teams from each Middle East country will be awarded a visit to London for a week-long programme of cultural exchange and educational activities.

In addition, students will get a unique insight into real-life research and engineering processes during a visit to one of the biggest Rolls-Royce centres in the UK.

Students from one winning school in the UK will also win a five-day visit to Dubai to experience life in one of the most dynamic, iconic Middle Eastern cities.

The Ministry of Education in Kuwait expressed its strong support for the initiative.

Over 3000 schools are being invited to participate across the Middle East and UK. All entrants will be encouraged to collaborate with students in other participating countries to share ideas and exchange information, emulating how international scientific co-operation and discovery works in practice.

Patrick Brazier, Middle East and North Africa Regional Director, British Council, said, "The British Council is delighted to be working with Rolls-Royce, one of the world's most respected and innovative companies. As a pioneer in the field of research and development, we feel that Rolls-Royce is an ideal company for a young aspiring scientist."

"Water is the focus of the initiative as it is a critical resource for everyone around the world and today's young people - the scientists of the future - have a big role to play in its preservation. The Big Science Challenge will bring young people from the Middle East and the UK together to address real challenges facing our global society and develop the skills they need for work in a global economy," added Brazier.

Rob Watson, Middle East Regional Director for Rolls-Royce, said, "We are pleased to be working with the British Council, a name long associated with cultural exchange and engagement with youth,

offering opportunity for growth and development."

He added, "By focusing on one of the world's biggest issues 'The Big Science Challenge' gives young people a true taste of what real scientists are working on and allows them to put their own scientific research and technological skills into practice. With most of the region's population under the age of 30, it is imperative that we do what we can to support public programmes for training and skills development. There is a shortage of engineers and it is important to address this for the next generation through the region's youth."

"British Council, Rolls-Royce join forces to create 'The Big Science Challenge'", 30/10/2011, online at: http://www.ameinfo.com/279750.html

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❖ Ethiopia's Hydroelectric Program - Boon or Folly?

Developing countries worldwide view the construction of power facilities as integral to their economic development to lift their populations out of poverty. Ethiopia has now embarked on massive hydroelectric schemes currently involving the construction of two large dams, but the Ethiopian government's obdurate refusal to consider the potential environmental and political impacts of its efforts to become the "energy hub" of East Africa have generated rising concerns not only in Ethiopia but neighboring nations depending on the country's water flows.

Two projects have elicited local, regional and international concerns. The first is the 1,870 megawatt $2.2 billion Gilgel Gibe III dam on the Omo River, which threatens the unique ecology of Lake Turkana on the Kenyan-Ethiopian border, a UNESCO World Heritage Site.

The second is the projected 5,000 megawatt $5 billion Grand Ethiopian Renaissance Dam, formerly known as the Millennium Dam, on the Blue Nile, which the Ethiopian government is pressing forward despite rising concern in downstream states Sudan and Egypt about the potential impact of the facilities on the lower Nile's water flows.

In its rush to construction, in 2009 Addis Ababa issued an environmental impact assessment (EIA) statement for Gilgel Gibe III on the long-term consequences of the dams' construction, but only two years after construction began. The resultant report was regarded as so flawed that the World Bank, European Investment Bank, and the African Development Bank abandoned the project.

Ethiopia more recently has not even bothered to issue an EIA evaluation report for the proposed Grand Ethiopian Renaissance Dam, despite the fact that such evaluations are critical for assessing the potential impact of the hydroelectric cascades and remain an essential element in securing international funding.

Italy's Salini Costruttori was awarded no-bid contracts to build both the Gilgel Gibe III and the Grand Ethiopian Renaissance Dam and a Chinese state-owned bank has approved funding for Gilgel Gibe III despite the project being dogged by controversy from the outset. A 2009 independent feasibility study submitted to the African Development Bank questioned the structural stability of the dam, saying that the risk of a catastrophic failure was "not insignificant."

Last July the UN's World Heritage Committee said that the Gilgel Gibe III dam, Ethiopia's largest investment project, would endanger the existence of Lake Turkana, which receives up to 90 percent of its water from the Omo River, by lowering its water level by up to sixty feet, affecting more than 300,000 people downstream from the facility as well as increasing salinity and wreaking havoc on the lake's unique flora and fauna. In 1997 the Omo River basin and Lake Turkana received UNESCO World Heritage Site listings. The UN's Committee on the Elimination of Racial Discrimination has also urged Ethiopia to suspend the project, fearing its impact on local communities. Experts fear that the the Gilgel Gibe III dam could suffer 50-75 percent leakage of waters from its reservoir due to multiple fractures in the basalt rock at the planned reservoir site and note that the area is also seismically active. Nevertheless, the project is moving forward.

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Ethiopian Prime Minister Meles Zenawi is brazening out public criticism, promising to complete Gilgel Gibe III the facility "at any cost," complaining that his critics "don't want to see developed Africa; they want us to remain undeveloped and backward to serve their tourists as a museum." Upping the ante, three months ago Ethiopia announced that it would build four additional dams on the Blue Nile that will work in conjunction with the Gilgel Gibe III and Grand Ethiopian Renaissance Dam to generate more than 15,000 megawatts of electricity and last month Ethiopia's Ministry of Water and Energy announced that Gilgel Gibe III facility is now 46 percent complete.

If Gilgel Gibe III threatens the Omo River and Lake Turkana and Ethiopian and Kenyan water flows, it is the $5 billion Grand Ethiopian Renaissance Dam, whose cornerstone was laid last March, that could unsettle Ethiopia's relations with its downstream neighbors down to the Mediterranean, Egypt most of all.

Egypt relies on the Nile for most of its water supply and Ethiopia's Lake Tana is the source of the Blue Nile, which contributes 86 percent of the water arriving at Egypt's Aswan High Dam. The White Nile's main source is Lake Victoria, whose shoreline is shared by Uganda, Tanzania and Kenya and which joins the Blue Nile south of Khartoum.

Nile water access issues are rooted in history, as 82 years ago Britain as East Africa's dominant colonial power effectively handed Egypt the lion's share of Nilotic waters in a 1929 accord. Under terms of the agreement Egypt had and currently maintains its historic right to three-quarters of the Nile's water, 55.5 billion cubic meters that it annually diverts of the Nile's total flow of roughly 84 billion cubic meters. Under the 1929 agreement Sudan, before South Sudan became independent in July, was apportioned a further 11 percent of the Nile's waters, leaving the other littoral states to share the remainder. Under terms of the accord Egypt has persistently vetoed neighboring countries' rights to build dams or irrigation projects upstream which might affect the river's flow.

In 1959, when Egypt and Sudan were independent but all Nile upstream states except Ethiopia were still colonies, Egypt and Sudan signed a bilateral convention that essentially reaffirmed the 1929 accord and left only 10 percent of the Nile's water to the seven upstream countries, arguing that upstream nations had significant rainfall, unlike Egypt or Sudan. Instability, poor governance, lack of finances and the availability of other water sources left the issue largely dormant until the 1990s, when Nilotic governments seriously started to consider using their Nile Basin waters to generate energy and irrigate crops.

In the 1999 Nile Basin Initiative (NBI) emerged as a basin-wide program between Egypt, Sudan, Ethiopia, Uganda, Kenya, Tanzania, Burundi, Rwanda and the Democratic Republic of Congo to modify the terms of the 1929 agreement, but it has thus far failed to achieve any significant progress.

Given the lack of NBI progress, on 14 May 2010 Ethiopia, Tanzania, Uganda, and Rwanda signed a new water-sharing proposal, the "River Nile Basin Cooperative Framework," also known as the Entebbe Agreement, which both Egypt and Sudan rejected. Until recently Cairo continued to demand a veto power over any projects implemented upstream in southern Nile nations and pushed international donors such as the World Bank, NBI's main fiscal backer, to cut funding to the renegade Entebbe Agreement signatories.

As an indication of how seriously the Egyptian government took the Entebbe Agreement, the same month that it was signed responsibility for the Nile basin dispute was removed from Egypt's Water and Foreign Affairs Ministries and given to Egypt's intelligence and security chief Omar Suleiman, who in February handed over power to the military after Mubarak resigned. Scrambling to utilize its Nilotic waters more efficiently, Egypt has succeeded over the last several decades in increasing its arable land by 25 percent only through extensive and expensive canal systems and increasing use of expensive imported fertilizers, which any diminution of flow would threaten.

As for Egyptian concerns about the Grand Ethiopian Renaissance Dam diverting downstream flows, they are well aware of such issues, as it took 12 years beginning in 1964 to fill the Aswan High Dam's Lake Nasser reservoir with 11 cubic kilometers of waters, which now drive 12 turbines generating 2,100 megawatts, less than half the power output of the proposed Grand Ethiopian Renaissance Dam.

Far from addressing Egyptian environmental concerns, the Ethiopian government has not even bothered to issue an EIA for the Grand Ethiopian Renaissance Dam, which some hydrological specialists predict that in filling its reservoir will cause a 25 percent annual reduction in river flow to Egypt, as the Grand Ethiopian Renaissance Dam reservoir's volume would be about equivalent to the annual flow of the Nile at the Sudanese-Egyptian border, roughly 65.5 billion cubic meters.

The "Arab Spring" that overthrew the regime of Egyptian President Hosni Mubarak in February has resulted in Egypt's interim government showing new signs of flexibility on Nile water issues. Last month Egyptian Interim Prime Minister Essam Sharaf met with Zenawi in Cairo and agreed to set up a technical team to study the impact of the Grand Ethiopian Renaissance Dam while Zernawi, on an obvious charm offensive to secure international financial backing, agreed to host Egyptian and Sudanese officials to prove that the Grand Ethiopian Renaissance Dam will not be used to irrigate any of the large corporate farms the Ethiopian government has leased to foreign investors in recent years, but instead be used solely to generate electricity, adding that his government will delay ratifying the 2010 Entebbe Agreement. Several months ago Ethiopia said it would be forced to finance the Grand Ethiopian Renaissance Dam itself and from the sale of government bonds because Egypt was pressuring donor countries and international lenders not to fund its dam projects.

And both structures are largely about electricity exports. If completed, Gilgel Gibe III alone will double Ethiopia's hydroelectric total installed capacity from its 2007 level of 814 megawatts. In April Zenawi announced that Ethiopia plans to produce as much as 8,000 megawatts of additional electricity from hydropower sources by 2016 as various projects come online.

While Ethiopia reportedly has "initial agreements" to export electricity to Sudan, Dijibouti, and Kenya, critics of the hydroelectric projects emphasize that the majority of Africans are not connected to the power grid, and that Ethiopia will be generating far more electricity than it or its neighbors can currently utilize.

The projected future environmental water stresses of the Nile basin's population make for grim reading. Washington DC's Population Reference Bureau has developed some unsettling statistics for countries along the Nile, estimating that Egypt's population of 80 million is expected to reach 122 million by 2050. During the same period Ethiopia's 83 million population will soar to 150 million

and in Uganda, with one of the highest birthrates in the world, the population is expected to more than triple from its current level of 32 million to 97 million.

While East Africa's efforts to improve their standards of living with increased electricity resources, it is questionable whether a massive commitment to hydroelectric power is the only option. The surging demographics of the region combined with the potential environmental impacts of massive hydroelectric projects along the world's longest river, combined with Ethiopia's refusal to provide EIAs should give all international investors pause before underwriting such massive undertakings. The waters of the Nile are finite and will soon support a population greater than the United States, and water diversions for such projects can only increase national and regional tensions.

It is good that Egypt is now willing to talk, but even more important that Ethiopia be willing to listen. If the international community wishes to support Ethiopia's efforts to become East Africa's energy "hub," then it should request transparency about the environmental consequences of such extravagant hydrological projects and their impact not only in Ethiopia but their neighbors along the shared river basins which geography has bequeathed them.

"Ethiopia's Hydroelectric Program - Boon or Folly?", John Daly, 24/10/2011, online at: http://oilprice.com/Alternative-Energy/Hydroelectric-Energy/Ethiopia-s-Hydroelectric-Program-Boon-or-Folly.html

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❖ Kenya: 'Environmental degradation intensifies hunger in Nile Basin region'

Nairobi, Kenya - Rapid population growth and natural resource degradation in the Nile River Basin pose the risk of intensified hunger and poverty in the region, the UN food agency said Thursday, indicating that they require better, more forward-looking development planning to prevent that from happening. The warning came as the UN Food and Agriculture Organization (FAO) presented governments in the region with the results of a decade-long project financed by the Italian government that aims to put critical information and planning tools into the hands of development authorities and natural resource mangers so they can start turning the situation around. FAO's 'Information Products for Nile Basin Water Resource Management' project has established modern hydrological monitoring and reporting systems across the Nile Basin, helped government authorities harmonize data-gathering and produced a series of comprehensive surveys of water use and agricultural production. 'Up until now, there has been very little systemic study of how the Nile's waters are used — or could be used — to grow food and key pieces of information that would allow for what we call 'sound water accounting' have been missing,' said Pasquale Steduto, head of FAO's Water Development and Management Unit.

'The data this project has acquired and the information products it has produced will fill these gaps and let the governments of the region make the most of the Nile's resources,' he said.

The population in the Nile basin — currently around 200 million people — is expected to increase from between 61 to 82 per cent by 2030, according to an FAO report on the project presented at a meeting of governments in Kigali Thursday.

At the same time, 'environmental degradation, drought, weak institutions, low financial capacity, inadequate infrastructure and social instability conspire to perpetuate poverty in the region,' it noted.

Some of the 11 countries that share the Nile — Burundi, DR Congo, Egypt, Eritrea, Ethiopia, Kenya, Rwanda, South Sudan, Sudan, Tanzania and Uganda — are among the poorest in the world.

Although the waters of the Nile have great potential as a lever of social and economic development, high demographic growth rates and accelerating pressures on land and water resources 'narrow the window of opportunity for reversing the negative trends in the region,' according to the FAO study.

Reducing the pressures on the Nile will require increasing the efficiency and productivity of water use along the entire food production chain, from farm to fork, building farming systems that are more resilient to climate change and enhancing trade in agricultural commodities among the countries that share the basin, said Steduto.

Agriculture already uses more than 80 per cent of renewable water resources in the Nile basin, FAO's work shows and the potential for increasing water supply, say by draining wetlands or reducing evaporation in resources, is extremely limited.

'Nile water allocation has therefore become a near zero-sum game,' said Steduto, explaining the rationale behind the FAO-Italy project.

'So it becomes very, very important that water authorities have detailed information for good water accounting and planning tools that let them weigh the costs and benefits of their policies and their resource management choices.'

The 'Information Products for Nile Basin Water Resource Management' project has consolidated spatial information on water and agriculture in the region; a forecast of the region's future food requirements; a survey of the types of farming systems practiced along the Nile and; an analysis of possible future scenarios for water management and agriculture development.

Additionally, 18 technical manuals on water measurement techniques and technologies were developed and disseminated. Hundreds of staff in water management and agriculture agencies received training, including in negotiation skills.

A wealth of Geographic Information System (GIS) data on water, land and agriculture was acquired. Better data permitted the creation of the Nile Decision Support Tool (Nile-DST) — software that models the entire Nile system and allows planners to assess the trade-offs and consequences of different possible development scenarios.

At the same time, according to Steduto, the project has strengthened a shared vision of natural resource management and sustainable developments among the governments of the Nile, adding 'Only through a joint effort of the riparian countries can a sustainable future be designed and built.'

The US$ 5 million Information Products for Nile Basin Water Resource Management project was financed by the government of Italy as the last of three projects it funded in the region for a total investment of US$ 16 million.

“Kenya: 'Environmental degradation intensifies hunger in Nile Basin region”, 28/10/2011, online at: http://www.afriquejet.com/environmental-degradation-2011102826232.html

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❖ The 3rd Nile Basin Development Forum closes in Kigali

KIGALI, Rwanda – The President of the Senate of the Republic of Rwanda, H.E. Jean Damascene Ntawukuriryayo has emphasized the need to overcome fragmentation that exists at various levels of climate change management.

He explained that in Africa there are many initiatives that are engaged in climate change matters, including the East African Community through the Lake Victoria Basin Commission, Inter Governmental Authority on Development, and the United Nations Environmental Programme. "There is need for synergistic interventions that optimize and ensure beneficial use of the available resources," H.E. Jean Damascene Ntawukuriryayo added.

Speaking as Guest of Honor during the 3rd Nile Basin Development Forum in Kigali, Rwanda on 26th October, 2011 organized under the theme 'Climate Change and its implications for Sustainable Development and Cooperation in the Nile Basin – Threats and Opportunities to Nile Basin Cooperation' he said, "It is essential that policies, strategies, institutional and legal frameworks be developed, coordinated and harmonized at the global and regional level".

Hon. Charity Kaluki Ngilu, Kenya's Minister for Water and Irrigation and Chairperson of the Nile Council of Ministers in charge of Water Affairs, told participants that "the Nile Basin region is faced with a declining level of Lake Victoria. For us to guarantee water security for our citizens, I would encourage the Nile Basin Member States that are yet to sign the River Nile Cooperative Framework Agreement to do so." She added that "Water security for Sudan and Egypt is not a matter for debate, but a right. To secure this right it is important the River Nile Cooperative Framework Agreement is ratified by all the Nile Basin States."

Earlier, Dr. Wael Khairy, Executive Director of the Nile Basin Initiative, noted that achieving sustainable socio-economic development and management of the Nile Basin presents a great challenge, which calls for joint regional action as well as explicit political-will and financial commitment from all Nile Riparian States and development partners. He said the "Nile Basin can be resilient to climate change if, and only if, our Riparian States work together as one body"

The 3rd Nile Basin Development Forum was closed today 28th October, 2011 by the Host, Hon. Ambassador Stanislus Kamanzi, Minister of Natural Resources of the Republic of Rwanda.

He noted that participants have ably deliberated on the challenges, existing opportunities and the ever growing threats of climate change to development agendas, not only in NBI but in the whole of Africa.

"We received captivating key note speeches, deliberated on core issues and what can be done in Governance, Finance, Food and Energy Security in enabling us adapt to climate change", he added.

Participants from the Nile Basin countries namely, Burundi, DR Congo Egypt, Eritrea, Ethiopia, Kenya, Rwanda, South Sudan, The Sudan, Tanzania, and Uganda issued a 'Kigali Declaration' in which they called for cooperation among their respective countries in preserving and managing the Nile Basin environment by giving due attention to its water and land resources, wetlands and biodiversity and by addressing the impacts of climate change.

They also highlighted the need to support the empowerment of the Nile Basin Initiative to take more rigorous and effective steps towards implementing pertinent climate change adaptation measures, thereby contributing

to the efficient water management and optimal use of the resources as well as poverty eradication leading to promotion of economic integration in the Nile Basin.

Participants further called for strengthening participatory and integrated approaches in planning and decision making, including the meaningful participation of the civil society and non-governmental organizations in our efforts on responding to climate change at national and regional levels.

During the Forum, NBI launched some of its key products relevant to the subject of climate change. These include the second release of the Nile-Decision Support System (Nile-DSS), which is a world class analytical tool for NBI Member States and NBI as an institution that supports rational decisions and promotes sustainable outcomes. It provides a trans-boundary framework for sharing knowledge, understanding river system behavior, as well as designing and evaluating alternative development scenarios, investment projects, and management strategies.

The first ever River Nile State of Basin report, which is currently under preparation, will be introduced. Among other things, this report provides access to accurate, credible and timely information to help in raising awareness and increasing understanding and appreciation about the natural environment, the people, communities and economic development of the basin.

The Nile Basin Sustainability Framework, a suite of policies, strategies and guidelines through which the NBI will ensure that its activities are sustainable. It will also be used ensure that the development and management of the Nile Basin water resources undertaken by NBI Member States with facilitation of the NBI are in accordance with the principles of integrated water resources.

The Nile Information System (Nile-IS), a web-based knowledge management tool that allows for easy storage, searching, organizing, retrieval, analyzing as well as disseminating and exchanging information collected from NBI programs and projects.

A number of FAO-Nile Information Products prepared between 1996 and 2008. These products are 'policy neutral' instruments for examining a linked future between the land and water in the Nile Basin– and exploring the issues related to the people that depend on the continued access to land and cycle of nutrients and water. They are tools for understanding the impacts of rising demand for food and water against a variable hydrological regime.

More than 200 participants from within and outside the Nile Basin countries, including Ministers in charge of Water Affairs and Members of Parliament in the Nile Basin countries, environmentalists, water managers, researchers, River Basin Organizations, International and Regional organizations, civil society, private sector, media, diplomatic missions and development partners attended the 3rd NBDF organized by the Nile Basin Initiative in collaboration with the Ministry of Natural Resources of Rwanda.

The 4th Nile Basin Development Forum will take place in Nairobi Kenya in 2013

"The 3rd Nile Basin Development Forum closes in Kigali", 29/10/2011, online at: http://www.capitaleritrea.com/press-release/the-3rd-nile-basin-development-forum-closes-in-kigali/

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