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* Maritsa River Floods

The Maritsa River, to which respectively Bulgaria, Turkey and Greece are riparians, is used by the people living in the Maritsa basin for domestic, irrigation, industrial, energy generation and urban sanitation purposes. Although environmental problems such as water and soil pollution constantly or accidentally take place in the basin, and local drought is seen during summer months; the actual major problem is flooding[1].

There are rich historical records related to floods taking place in Maritsa River Basin. In historical records, it was found out that a great flood took place in 1897, and catastrophic floods took place in 1940 and 1964. Within the last two decades, coastal levees have been constructed by Turkey and Greece. Especially when the flow rate of the river exceeds 2.500 m3 /sec, floods take place in both sides either because of overflow or because of the destruction of levees. There is no accurate flood maps as the river is transboundary, and also because of the lack of proper practices. While a flow bigger than 2.500m3/ sec between the years 1985-1995 took place only once, such a big flow took place for 7 times between the years 1996-2007, in flood maps that were created upon observations of floods dated 20th February 2005, 6th March 2005 and 24th March 2005. Going back to very old times, a flow bigger than 2.500 m3 /sec was observed for 12 times between 1844 and 1995 [2]. The flood, which took place on March 2006, was the most destructive flood of the last 40 years; and a state of emergency was declared in Greece, especially in Turkey, Edirne, and in Bulgaria[3]. Each year, millions of Euros are spent to directly and indirectly ameliorate the negative effects of floods, which have taken place once or twice within the last decade, and which have major economic and environmental effects[4].

More than 15 large dams were built for flood control purpose within the borders of Bulgaria, in Maritsa River Basin, between 1950 and 1970. The total capacity of dam reservoirs is 2.810 million m3, and total drainage area is 12.800 km². The size of the whole basin of Maritsa river within the borders of Bulgaria is 36.169 km2, and 37,5% of the overall flow is under the control of dams. Today, there are 21 major hydroelectric dams on Maritsa river, within the borders of Bulgaria. While three of them are located on Arda River, these dams play major roles in management of floods [5].

One of the reasons of the visible increase in floods could be the climate change. It can be difficult to find out the progressive changes related to climate change. The rising global temperature accelerates hydrological cycle. The surface flow originates in the difference between surface flow, rainfall and evaporation. However, the precise effect of this difference is not certain. The climate change is also a compound, but other compounds should not be ignored[6]. The causes of major changes, taking place in water flows, cannot be completely eliminated. As of 1994, the management of dams in Bulgaria passed from public to private sector. This difference of management is shown as a reason for the increase in flow.

The Turkish and Greek authorities stated that these floods took place as a result of the fact that Bulgaria mismanaged the dams, the three dams on Arda river in particular; and they accused Bulgaria. The Bulgarian authorities denied these accusations and attributed the floods to meteorological conditions and deficient technical structures. Besides, Bulgaria asserted to the Turkish and Greek authorities that they lowered water-carrying capacity of the river because of the Maritsa channel they built on the Greece-Turkey border[7].



The flood, which took place in Turkey and Greece in 2005, had a flow rate of 2.900 m³/sec. This flow rate, which was greater than 2.500 m³/sec exceeded and destroyed levees. Total amount of water, which led to this flood, is approximately 32 million cubic meters. Based on the observations of recent years, similar flow rates were seen. Another solution to get rid of floods is to properly manage dams. The amount of water, which leads to floods, is 1.2% of storage capacity in large dams[8].

According to the news as of yesterday, Tundzha river overflows; while the level of water in Maritsa river continues to rise. When water flow reached the level of 200 cubic meters per second, Kanuni and Fatih bridges pver the Tundzha river and many regions submerged. While the water flow in Tundzha river decreased in the last 24 hours, Maritsa river started to rise with the water coming from Arda river. Some villages were started to be evacuated against the flood risk. Upon the fact that Arda and Tundzha rivers also joined, the flow rate of the Maritsa river reached 910 cubic meters/second, and the rise in Maritsa river continues. The rainfall going on for three days, and Bulgaria's discharging water from the dams are shown as the reason of the rise in Maritsa river. On Maritsa basin, where the flood problem became chronic, Turkey is negatively affected in terms of both environment and economy. The call of Turkey and Greece, which were damaged by the flood, for a joint meeting on this issue is constantly refused by Bulgaria[9].

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[5] Angelidis, Kotsikas ve Kotsovinos, ibid, s.4; Skias ve Kallioras, ibid, p.2.

- [6] Angelidis, Kotsikas ve Kotsovinos, s.5.
- [7] Skias, Kallioras, p.5.
- [8] Angelidis, Kotsikas ve Kotsovinos, p.7.

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Iraq: A country in shambles

Despite promises made for improvements, Iraq's economy and infrastructure are still a disaster.

Baghdad, Iraq - As a daily drumbeat of violence continues to reverberate across Iraq, people here continue to struggle to find some sense of normality, a task made increasingly difficult due to ongoing violence and the lack of both water and electricity.

During the build-up to the US-led invasion of Iraq, the Bush administration promised the war would bring Iraqis a better life, and vast improvements in their infrastructure, which had been severely debilitated by nearly 13 years of strangling economic sanctions.

More jobs, improved water availability, more reliable electricity supplies, and major rehabilitation of the medical infrastructure were promised.

But now that the US military has ended its formal military occupation of Iraq, nearly eight years of war has left the promises as little more than a mirage.

Ongoing water shortages

Hashim Hassan is the Deputy Director of the Baghdad Water Authority (BWA), and he admits to an ongoing shortage of clean drinking water for Baghdad's seven million residents.

"We produce 2.5 million cubic litres daily, so there is a shortage of 1m cubic litres every day," Hassan explained to Al Jazeera. "We've added projects to increase water availability, and we are hoping to stop the ongoing shortage by the end of 2012."

According to Hassan, 80 per cent of the Baghdad's piping network needs rehabilitation - work currently underway - in addition to positioning 100 compact units around the city, which would increase clean water availability until larger plants can come fully online.

Several water treatment plants are already being extended, including one that would increase the capacity of a wastewater treatment facility in Sadr City, a sprawling slum of roughly three million people.

Hassan said that health committees and the Ministry of Environment carry out tests, and along with BWA testing, 1,000 water samples are checked daily, "less than one per cent of the samples fail" he said. The "acceptable threshold" is five per cent.

Bechtel, a multi-billion dollar US-based global engineering and construction company - whose board members have <u>close ties</u> to the former Bush administration - received \$2.3bn of Iraqi reconstruction funds and US taxpayer money, but left the country without completing many of the tasks it set out to.

Bechtel's contract for Iraq had included reconstruction of water treatment systems, electricity plants, sewage systems, airports and roads.



Managers at water departments around Iraq say that the only repairs they managed during the US occupation were through UN offices and humanitarian aid organisations. The ministry provided them with very little chlorine for water treatment. "New projects" were no more than simple maintenance operations that did little to halt collapsing infrastructure.

Bechtel was among the first companies, along with Halliburton (where former US Vice-President Dick Cheney once worked), to have received fixed-fee contracts drawn to guarantee profit.

Ahmed al-Ani who works with a major Iraqi construction contracting company told Al Jazeera the model Bechtel adopted was certain to fail.

"They charged huge sums of money for the contracts they signed, then they sold them to smaller companies who resold them again to small inexperienced Iraqi contractors," Ani said. "These inexperienced contractors then had to execute the works badly because of the very low prices they get, and the lack of experience."

According to a March 2011 report by the UN's Inter-Agency Information and Analysis Unit, one in five Iraqi households use an unsafe source of drinking water, and another 16 per cent report daily supply problems.

The situation is even worse in rural areas, where only 43 per cent have access to safe drinking water, and water available for agriculture is usually scarce and of very poor quality. These facts have led more Iraqis than ever to leave rural communities in search of water and work in the cities, further compounding already existing problems there.

The UN report states: "Quality of water used for drinking and agriculture is poor, violating Iraq National Standards and WHO guidelines. Leaking sewage pipes and septic tanks contaminate the drinking water network with wastewater. Eighty per cent of households do not treat water before drinking. Furthermore, just 18 per cent of wastewater is treated, with the rest released directly into waterways."

And this is exactly what many Iraqis experience first-hand.

"Sometimes we turn on the tap and nothing comes," explained Baghdad resident Ali Abdullah. "Other times the colour is brown, or yellow, or sometimes even smells of benzene."

Electricity and sewage

Street side electricity generators are now a common sight around Iraq's capital city, where the average home receives between four and eight hours of electricity each day. Some areas, such as Sadr City, receive an average of less than five hours a day, with some portions of the area receiving a mere hour to two a day - and sometimes none at all.

Many people opt to simply pay private vendors for electricity from the generators, whose owners run lines to their respective clients.



Nabil Toufiq is a generator operator who serves 220 homes for 12 hours each day.

"We buy our diesel on the black market, not from the government," he told Al Jazeera. "We expect this business to continue forever because government corruption prevents them from fixing our problems."

Abu Zahra, a media liaison worker with the office of Shia cleric Muqtada al-Sadr in Sadr City, Baghdad, explained that, in addition to the ongoing lack of electricity, every aspect of the infrastructure in the area needs improvement.

"We are depending on the street generators," Zahra said, before going on to say that roads have been resurfaced, but due to corruption causing corners to be cut, the pavement begins to fracture and break apart within six months, causing the cycle to begin again.

This is readily apparent, as the garbage-strewn roads are bumpy, cracking, with potholes abundant.

Turn off one of the main thorough fares through the area and one quickly finds dirt roads with sewage streaming down the gutters.

Zahra said that one of the hopes of Sadr joining the political fray was that this area of Baghdad would obtain better services - but this has clearly not come to pass.

"Sadr asked the government to give better services and jobs here, but nothing has happened," he said, while children played near raw sewage. "There have been demonstrations here where people carried shovels asking for work, and empty kerosene cans asking for fuel. Meanwhile, we have a totally failed sewage system that needs complete reconstruction."

While water-borne diseases and diarrhoea are common across Baghdad, but they are rampant in Sadr City, where the lack of potable water, coupled with raw sewage flowing through many of the streets, make the spread of disease inevitable.

Toufiq pointed out an issue that does not bode well for the future - and likely aptly describes the root of Iraq's myriad problems.

"Many people make a living from the system being broken," he said. "From the government, to me, to the gas sellers."

Broken economy

According to the UNDP, Iraq has a poverty rate of 23 per cent, which means roughly six million Iraqis are plagued by poverty and hunger, despite the recent increase in Iraq's oil exports. Iraq's Ministry of Planning has also announced that the country needed some \$6.8bn to reduce the level of poverty in the country.

Zahra concurs.



"No-one in my family has a job," he said. "And in my sister's house, they are seven adults, and only two of them work."

Inside a busy market, Hassan Jaibur, a medical assistant who cannot find work in his field, is instead selling fruit.

"The situation is bad and getting worse," he said. "Prices continue to rise, and there are no real jobs. All we can do is live today."

Jaibur said he and his family are living on the fruit he sells, but he has a sick child and any profits he earns all go to medication.

"All of my relatives and friends are in a similar situation," he added. "Most of them try to find work as day labourers."

Gheda Karam sells dates and fruits. Her husband was paralysed during the Iraq-Iran war, and the benefits they get from the government for his disability are not enough.

"My family is suffering too much," she told Al Jazeera. "Even yesterday we did not eat dinner. We are 20 of us in an old house, and I'm the only one with work."

She paused to cry, then wiped away the tears.

"My children see things in the market they want to eat or drink, but we can afford none of it, and I am in debt to the fruit sellers. God help us."

The state of the economy in Iraq is a disaster. Yet this irony is highlighted by the fact that Iraq has proven oil reserves third only behind Saudi Arabia and Iran - hence one would expect it to be one of the wealthiest countries in the world.

But nowhere is the lack of economic growth more evident than in Baghdad. According to the Central Bank of Iraq, unemployment and "under-employment" are both at 46 per cent, although many in Iraq feel this is a generously low estimate.

Iraq continues to have a cash economy; meaning there are no credit cards, almost no checking accounts, no transfer of electronic funds, and only a few ATMs.

Iraq lacks a functioning postal service, has no public transportation, nor a national airline - and most goods sold in Iraq are imported.

Only in the autonomous Kurdish region in northern Iraq is there rapid development and an effectively functioning government.

Iraq is ranked the eighth most corrupt country in the world, according to Transparency International. That means Iraq is tied with Haiti, and just barely less corrupt than Afghanistan.



One of Iraq's ministers recently took a forced resignation because he signed a billion-dollar contract with a bankrupt German company, along with a shell company in Canada, which had no assets or operations, only an address.

Lack of security

Recent spates of coordinated bombings that have killed more than 100 Iraqis and wounded more than 200 in the past few weeks are evidence of Iraq's current security situation.

Despite Iraq's own forces numbering 280,000 soldiers with 645,000 police and border guards, for a total of nearly one million men, and a capital city clogged with checkpoints, security remains elusive.

As Prime Minister Nour al-Maliki said recently, there can be no security without political stability. Given that his critics accuse al-Maliki of upsetting the delicate political balance within the Iraqi government by ordering the arrest of Vice President Tareq al-Hashimi, his words ring truer than ever.

Despite most of the daily violence in Iraq having long since fallen from the headlines, reports are constant and blood continues to flow.

Reported attacks around the country on January 3 included a roadside bomb killing an Iraqi soldier near Mosul, a sticky bomb seriously wounding a Pershmerga guard in Kirkuk, gunmen killing a Sahwa militia member and his wife in Muqdadiya, and a roadside bomb which wounded three civilians in Baghdad - to name but a few.

When most Iraqis are asked what their main concern is, "security" tends to be the first answer, then followed by electricity, water, jobs, and healthcare. Yet security is the foundation upon which the rest of the infrastructure can be built, so ongoing attacks across Iraq, and the chaos they bring, do not bode well for the future.

In December 2011, Iraq signed a deal worth roughly \$3bn to buy 18 more F-16 fighter jet planes from the United States - a controversial move given that it occurred while Maliki was making moves his critics say were nothing more than consolidating power.

During a December press conference with al-Maliki, President Obama said, "We've got to train [Iraq's] pilots and make sure that they're up and running and that we have an effective Iraqi air force."

Most Iraqis would prefer to have their streets safe, before worrying about their airspace.

And for people like Gheda Karam, whose family is having to skip meals on a regular basis, a government that would spend \$3bn on improving infrastructure and the economy would be preferred over one that buys highly advanced warplanes.

"Iraq: A country in shambles", Dahr Jamail, 09/01/2012, online at: http://www.aljazeera.com/indepth/features/2012/01/20121411519385348.html

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Iran to Build a Dam in Lebanon

In a meeting between Iranian ambassador to Lebanon Ghazanfar Roknabadi and Lebanese Energy and Water Minister Gibran Bassil in Beirut on Monday, the two sides made an agreement for building a dam in north of Lebanon by Iranian companies, the IRNA news agency reported.

The two sides also discussed exchanging experiences in technical and engineering fields, especially in oil, gas and electricity industries.

The Iranian official expressed the country's readiness to carry out oil exploration operations in Lebanon as well as constructing fuel reserve tanks in the city of Tripoli.

According to Roknabadi, 26 MOUs have been inked between the two countries since the official visit of Iranian President Mahmoud Ahmadinejad to Lebanon last year.

The official bilateral trade has continued to expand, increasing from \$78.4 million in 2006 to \$180 million in 2010.

"Iran to Build a Dam in Lebanon", 10/01/2012, online at: <u>http://www.tehrantimes.com/economy-and-business/94413-iran-to-build-dam-in-lebanon</u>

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Iran exporting water, power industry equipments to 6 countries

Iran is currently exporting items and equipments related to water and power industries to South Africa, Armenia, Oman, Nigeria, Syria and Iraq, an Iranian energy official announced.

"Some 40 goods which are strategically important in the power industry are domestically produced and 6 others have been technologically indigenized," Mohsen Marjan-Mehr told the Mehr news agency.

Iran has reached self-sufficiency in producing equipments for the domestic power electricity industry, Iran power generation transmission and distribution management company (TAVANIR) managing director said earlier this month.

"Iran is currently producing 64,000 megawatts of electricity per year. The country stands in the 14th place worldwide in terms of electricity generation," Homayoun Haeri added, the IRNA news agency reported.

The deputy energy minister announced in October 2011 that the value of Iran's electricity exports will reach 1 billion dollars in the current Iranian calendar year which ends on March 19.

"Iran's electricity exports and related technical and engineering services exports will reach \$4 billion this year, of which the country's net electricity exports will be \$1 billion," Mohammad Behzad explained.

"Iran currently exchanges electricity with Turkey, Armenia, Turkmenistan, Azerbaijan, Pakistan, Afghanistan, and Iraq," he added.

"Iran exporting water, power industry equipments to 6 countries", 06/01/2012, online at: http://tehrantimes.com/economy-and-business/94264-iran-exporting-water-power-industry-equipments-to-6-countries

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* Despite rains, Israel still in water crisis

Although Lake Kinneret's (Sea of Galilee) water level rose by 1.5 centimeters following yesterday's rains to at 213.55 meters below sea level Thursday morning, the country is still in a continued state of water crisis, according to the Water Authority.

The water level is still 55 centimeters under the 213-meter red line, and a full 4.75 meters away from full capacity. Only 1 centimeter in the rise between Wednesday and Thursday can even be attributed to rainfall, as the other half-centimeter is a result of a temporary cease in National Water Carrier pumping from the lake, as the system is closed for routine maintenance, according to Water Authority Spokesman Uri Schor.

"We rose one centimeter – that means we need about 475 more such days in order to fill the Kinneret," Schor said.

The Kinneret, he stressed, is only one of three main water sources in Israel – the other two are the mountain and coastal aquifers – and from all of these, the country is lacking about 2 billion cubic meters of water, an amount equivalent to the consumption of all the households in Israel for three years.

"We are expecting a bit more rain, but the rain is not as strong as we hoped it would be," Schor said, noting that the winter season is already over halfway over. "We must continue to conserve water and to use water with maximum efficiency."

"Despite rains, Israel still in water crisis", 12/01/2012, online at: http://www.jpost.com/Headlines/Article.aspx?id=253401

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Greywater could be solution for Israel's water shortage'

Federation of Israeli Chambers of Commerce campaigns for greywater recycling bill, says it could resolve Israel's water shortage

The Federation of Israeli Chambers of Commerce urged the Knesset to embrace greywater recycling as a way to resolve <u>Israel</u>'s water shortage.

Greywater is wastewater generated from domestic activities such as laundry, dishwashing and bathing. Recycled greywater is used mainly for urban and agricultural irrigation.

The Federation is currently campaigning for the greywater recycling bill, which is currently being prepared for its first Knesset reading.

Paul Steiner of the FICC said that the problem now is that the lack of proper regulation has lead to piracy in the field. According to Steiner, there are currently 12 greywater recycling facilities in Israel that are operating sans regulation, making them ill-equipped to properly recycle the water.

"In light of the water authority's grim prediction of an eight consecutive drought and our geographically-characteristic <u>desertification</u>, greywater recycling legislation must be advanced immediately, as it is in many other western countries," he said.

The FICC suggests that greywater recycling in the private sector alone could save the water market about 150 million cubic meters a year – the same as the amount of water Israel's two future desalination facilities will recycle

Advancements in the water recycling industry will also help the job sector, as it stands to create some 1,500 new jobs. The FICC said that the sector also has substantial export potential, which can reach \$100 million within five years.

The Federation said that the current legislation on greywater misses out on 94% of the sector's recycling potential, since it bars recycling apparatuses in business or private homes.

"If Israel is heading towards desertification, then installing a greywater recycling apparatus in every home in Israel could solve Israel's future water problems," Steiner said.

"Greywater could be solution for Israel's water shortage", 12/01/2012, online at: http://www.ynetnews.com/articles/0,7340,L-4173484,00.html

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Cabinet again rejects Dead Sea bill

For second time, cabinet rejects bill that would provide for the comprehensive rehabilitation of the Dead Sea region.

Talkbacks (3)

The cabinet rejected a bill for the second time that would provide for the comprehensive rehabilitation of the Dead Sea region, during a meeting on Monday.

"The Israeli government continues to stand by the side of the factories and to thwart any move that could save the Dead Sea and return it to its original owners – the public," said Adam Teva V'Din executive director, Amit Bracha, in a statement released by his office.

The bill, drafted by Adam Teva V'Din (Israel Union for Environmental Defense) and put forward by MK Dov Henin (Hadash), advocated a comprehensive Dead Sea rehabilitation plan, to help curb sinking water levels in the northern basin, preserve area resources and revamp the management structure overseeing mineral extraction.

After being defeated in a cabinet vote about a monthand- a-half ago, the issue came up for a second vote today, in which Environmental Protection Minister Gilad Erdan was the sole supporter, with four objectors, according to his office. The vote occurred on Monday, as the regular Sunday cabinet meeting stretched into the following day.

According to Erdan's office, Minister-without-Portfolio Bennie Begin (Likud) declared during the cabinet discussion that the current state of the Dead Sea is not a "catastrophe" and that the region's sinkholes have transformed the area into a tourism mecca.

Erdan responded that if Israel continues with its current practices, not only the Dead Sea, but also Lake Kinneret, will disappear as tourist attractions. He will be submitting an appeal to the government about the decision, his office said.

The rejection comes a week after the cabinet's approval of an agreement made between Israel Chemicals branch Dead Sea Works and the Finance Ministry, which stipulated that a full salt harvest occur with 80 percent financing on the part of the company. This agreement also raised royalties owed to the government from 5% to 10%, an amount that environmental advocates criticized as trivial and damaging to public interests.

"There is no doubt that the conduct of the Treasury last week proves that Dead Sea Works must thank Steinitz for continuing to protect them and to go against public interest," Bracha said.

In a letter to the ministers, Bracha reminded them that last week's agreement only applies to salt removal from the southern basin and royalty rates the government receives from the company. He stressed that the agreement does not include a complete rehabilitation of the entire Dead Sea and protection of its natural resources.



Meanwhile, the ministers also received last night an online petition signed by over 15,000 people in support of the more comprehensive Dead Sea bill, jointly issued by activist group Avaaz, Adam Teva V'Din and environmental group Friends of the Earth Middle East.

Bracha added: "The government torpedoed today a step that would save the Dead Sea and return it from the hands of captains of industry to the hands of the public."

"Cabinet again rejects Dead Sea bill", Sharon Udasin, Jerusalem Post, 13/01/2012, online at: <u>http://mideastenvironment.apps01.yorku.ca/?p=4096</u>

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* Thirst for water a sinking point at Israel-Palestine talks [RTCC]

Talks this week between Israeli and Palestinian officials end a 16-month long stalemate between the two parties. These stalled in 2010 after Israel refused to renew a partial freeze on Jewish settlements in the occupied West Bank, but as talks begin looking to renew the process, water scarcity could prove to be another sticking point.

Israel and the West Bank are served by the Jordan River, along with Syria, Jordan and Lebanon, ensuring water scarcity is a highly contentious political issue in the area. Nowhere is this felt more than in the Israeli-Palestine conflict.

Both sides rely heavily on two aquifers for their water supply, much of which lies underground the West Bank, and is used for drinking as well as agriculture.

Research indicates that global warming will cause the region to become <u>even more arid</u>, placing extra pressure on water resources and increasing the chances of massive forest fires similar to the ones that engulfed Carmel in 2010.

Israel uses more water per capita than any other country in the region, and its government has long recognised the dangers of running out of water. In 2002 the country's Ministry of Foreign Affairs labelled it a 'chronic problem'.

Under the 1993 Oslo Accord, Israel recognised the water rights of Palestinians, although this did not always directly translate into policy.

While Israel extracts large amounts of water from the underground aquifers, Palestinians face bureaucratic restrictions and delays on their own projects – leaving many thousands in the West Bank unconnected to a water network.

Palestinians say that the occupation by Israel has meant they are denied of their water rights, living on 50 litres of water a day, while Israeli settlers enjoy 280 litres.

In 2009 Amnesty International <u>accused Israel</u> of maintaining control over shared water resources and denying Palestinians the right to access adequate water – a conclusion Israeli officials labelled "simply preposterous".

Regional expert Dr Polly Pallister-Wilkins, a fellow at the School of Oriental and African Studies, told RTCC this disagreement was a source of longstanding disagreement between both parties.

"The average Israeli lives on three times the amount of water of the average Palestinian, with the average Palestinian consuming less water than recommended by the World Health Organisation," she said.

"Water is already an issue preventing the end to the Occupation as Israel will wish to maintain its control of water as a material resource from which it materially benefits.



"The Palestine national movement as a whole is unlikely to see water scarcity as an issue over which to come together and negotiate. The question they will ask is why there is a water scarcity in the first place?"

Environmental NGO Friends of the Earth Middle East (FoEME) however, believe that the shared threat of water security could be a way of bringing countries in the region together rather than further exacerbating conflict.

Since 2001, their "<u>Good Water Neighbours</u>" project – aimed at raising awareness of shared water problems – has brought together 29 cross-border communities.

Speaking to Al Jazeera last July Nader Al-Khateeb, Palestine director of FoEME said it was a "shame that water is being used as a form of collective punishment when it could be used to build trust".

This sentiment was echoed by the Israeli Minister for Environment Gilad Erdan in December when speaking at the Ashdod Sustainability Conference he said: "There is need for cooperation and joint work on environmental issues. When our water sources are contaminated, your water resources are contaminated, and vice versa.

"I believe that the issue of water needs to stay out of the conflict; water can, and should, be the basis for cooperation."

Water scarcity could also be the foundation for more conflict, increasing the pressure on negotiators at both the Israeli-Palestinian talks and at the UN climate discussions to work on long-term solutions to prevent resource wars becoming commonplace.

"Thirst for water a sinking point at Israel-Palestine talks [RTCC]", 03/01/2012, online at: http://mideastenvironment.apps01.yorku.ca/?p=4076

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* Water Pollution in Israel Threatens People, Animals, Plants

Water pollution in Israeli lakes, streams and groundwater aquifers is reaching alarming levels. Although the country has regulations in place to prevent discharges, including a comprehensive Water Law, contamination is commonplace. And now scientists are finding that water quality problems threaten both wildlife and human health.

The lutra, a cousin of the otter found in lakes and rivers throughout Northern Israel, is in danger of extinction. Hunting is one of the threats to this fish-eating swamp dweller. Guest workers, mostly from Thailand, have been responsible for a great deal of <u>lutra poaching</u>. Arriving from areas in Southeast Asia where unrestricted wildlife trapping is the norm, these workers often clash with Israel's stricter protections.

However, the more pervasive danger for the lutra is polluted water flowing through its habitat. In a recent study published in the Israeli journal *Ecology & Environment*, scientists reported that low water quality and lack of flow in the Jordan River has nearly wiped out the lutra south of Lake Kinneret (the Sea of Galilee). The population north of the lake is relatively stable, but its disappearance in other areas has shocked ecologists.

Additionally, industrial waste from factories in the Rotem Plain has been leaching into groundwater near <u>Ein Bokek Nature Reserve</u> for almost two decades. Ein Bokek is one of the most important reserves in Israel, hosting a myriad species of animals and plants.

Environmentalists filed a lawsuit shortly after the pollution was discovered. The Water Tribunal in Haifa eventually mediated a settlement agreement between NGOs, industrial facilities and the water company. Pursuant to that plan, the water company would pump out contaminated water and the Dead Sea Works would decontaminate it.

Despite this comprehensive treatment plan, however, Nature and Parks Authority ecologists Michael Blecher and Orna Blecher recently reported that the over all number of plant species in Ein Bokek is declining. They were particularly concerned about the disappearance of *doellia bovei*, a rare plant threatened with extinction.

Tests conducted by the Geological Survey of Israel determined that salinity levels are six times greater than before the industrial waste was discovered. But the companies and the Water Authority maintain they have executed their responsibilities as stipulated in the Water Tribunal agreement.

Finally, Israeli scientists recently presented findings that <u>link pollution with autism</u>. Diagnoses of the disorder have risen sharply in recent years. Scientists now believe that exposure to toxins such as lead, mercury and pesticides could account for 25 percent of that increase.

These pollutants are particularly dangerous for young children due to the way they alter brain development. According to Dr. Tamar Berman of Israel's Health Ministry, two percent of drinking water samples exceed the maximum allowable levels of lead. Even this modest exceedance is dangerous due to lead's serious impact on child development.



How has Israel's water policy failed to prevent these problems? Lack of enforcement, sluggish political will and information gaps are the main culprits.

The country's Clean Air Act came into effect last year. What about revamping the Water Law? Passed in 1959, this legislation needs to be updated to include proper contaminant classification, water quality guidelines that protect human health and the environment, and effective enforcement provisions. Such improvements could also reign in unchecked agricultural runoff and preserve the quality of Israel's aquifers, which have suffered considerably in the last 50 years.

As for the embattled lutra, relief may be coming soon. The Environment Ministry has promised to release 1 billion cubic feet of water to restore the Jordan River in 2013. This influx of fresh water will help dilute sewage flows. Although environmentalists claim the amount falls short of a full restoration, it's a good start. And it's a step toward cleaner habitat for the lutra and other wildlife.

"Water Pollution in Israel Threatens People, Animals, Plants", 08/01/2011, online at: http://www.greenprophet.com/2012/01/water-pollution-in-israel-threatens-people-animals-plants/

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***** Water minister suggests increasing water tariffs

AMMAN — Minister of Water and Irrigation Mousa Jamani on Thursday said he supports increasing water tariffs and returning to quarterly water bills.

During a visit to Irbid Governorate, he explained that the increase in the bill will be proportionate to water consumption and will not impact the low-income bracket whose consumption does not exceed 18 cubic metres.

The increase will affect those whose water consumption exceeds 30 cubic metres during the designated period, the minister said, noting that the Cabinet is the party with the jurisdiction to approve the increase and the billing system.

"Water minister suggests increasing water tariffs", Jordan Times, 13/01/2012, online at: <u>http://mideastenvironment.apps01.yorku.ca/?p=4101</u>

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Negev Bedouin town left without water after repeated theft of central pump

Residents of a Bedouin town in the Negev are complaining that the region's water company has only been supplying them with water one to two hours a day for the past two weeks.

Alsanaa Mar'i, a resident of Lakiya, said that water comes only at night, forcing residents to hoard water for use during the day.

The water company, Neveh Midbar, said the erratic water supply is due to the repeated theft of infrastructures, including the main pump.

The water company said it is working on a solution, but denied that the town's water had been cut off for lengthy periods of time.

Mar'i, who said he was told about the theft of the town's central pump, added that it had been decided not to purchase another pump.

If that was indeed the case, he said, the police were at fault for not providing proper guarding of the pump.

Officials at Neveh Midbar said Lakiya has suffered from serious problems of water theft and the theft of supply infrastructures.

They added that residents of Lakiya have often failed to pay their bills.

The Mekorot water utility refused to pay for the replacement of some parts after the central pump and other parts were stolen, repaired and then stolen again.

The company said when the Water Authority allows it to repair the central pump, it will also put in place a sophisticated security system that will include physical barriers and electronic warning systems.

"Negev Bedouin town left without water after repeated theft of central pump", 09/01/2011, online at: <u>http://www.haaretz.com/print-edition/news/negev-bedouin-town-left-without-water-after-repeated-theft-of-central-pump-1.406219</u>

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Strael, UK sign strategic water deal

British Water, MATIMOP ink landmark water agreement meant to facilitate cooperation on global water tenders; increase bilateral technologies' access

The Israeli Center for Research and Development MATIMOP has signed a strategic cooperation agreement with the UK's water industry trade association British Water.

According to a report in Israel NewTech, the agreement aims to increase the British water market's access to advanced <u>Israeli</u> technologies in the field, as well as facilitate British-Israeli cooperation on global <u>water</u> tenders.

MATIMOP's Director of European Cooperations Israel Shamay called the deal an "exceptional achievement": "The agreements of the Chief Scientist implemented by MATIMOP are usually facilitated by government agencies that fund R&D projects. In this case we're talking about an agreement that was signed with the UK water supply chain association, an entity that proactively initiates projects in Britain, as well as provides solutions outside Britain, and that's the difference," he explains.

According to the report, the agreement was some time in the making, with the initial idea presented in 2009's WATEC expo. Israel's Economic Attaché in London Noah Shani and Oded Distel, who serves as head of the "Invest in Israel" program, were closely involved in negotiating the deal.

"We thought that the right way to implement the cooperation would be to outline a formal framework in which The Israeli Industry Center for R&D represents Israeli industry seeking cooperation, and British Water represents the supply chain to British water companies, which function regionally in the UK," Shamay said.

"The British water industry has been privatized under Thatcher, and as private companies, they are always looking for ways to improve efficiency and be more competitive, where technology becomes a key facilitator," he added.

The agreement will both advance Israeli technologies throughout the UK vis-à-vis water utilities, as well as leverage British contacts in third party countries in order to increase the cooperation between British and Israeli companies competing in international tenders.

"Efficient water technologies are needed around the world, not just in Britain and the assumption is that at least in some of the cases British companies have better access to these types of tenders then Israeli companies do. Therefore, another part of the cooperation defines submitting joint proposals together to international tenders," Shamay said.

"The objective is always to create added business value for Israeli industry through our innovation and technology, and this agreement expands opportunities for Israel water industry," he concludes.

"Israel, UK sign strategic water deal", 09/01/2012, online at: <u>http://www.ynetnews.com/articles/0,7340,L-4172307,00.html</u>

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✤ Israel's desertification to expand by 2020'

Report by Climate Change Information Center predicts next decade in Israel will be hotter and drier

A recent report complied by environmental experts at the requests of the Environmental Protection Ministry predicts a tough decade for <u>Israel</u> climate-wise, Ynet learned on Monday.

The report was penned by the Climate Change Information Center at Haifa University and is the result of a joint effort by seven steering committees, comprised of over 100 scientists, public servants and environmental experts. The findings are meant to become the basis for a national climate-change readiness plan.

The report analyzed seven major fields expected to be affected by climate changes: Domestic climate, <u>public health</u>, the water economy, eco-construction, <u>wildlife</u> diversification, the economy and Geostrategy.

The report concluded that over the next 10 years, the average annual temperatures in Israel will rise by 0.5-0.3 degrees Celsius, while the average annual precipitates will fall 1.1%-3.7%. The frequency of heat-waves, <u>forest fires</u> and floods is also expected to rise, resulting in property and ecological damage, the report said.

The report notes that the exact impact these changes will have on wildlife diversification is unknown, but the expert believe that the coming climate changes will affect the migration patterns of birds in the area.

"Global climate is changes and that's a fact. We're all experiencing heat-waves, floods and less rainfall. these phenomena are not expected to disappear and Israel must take part in the global effort adopt new behavioral patters that will lessen environmental impacts," Environmental Protection Minister Gilad Erdan said.

"Israel's desertification to expand by 2020", 10/01/2011, online at: <u>http://www.ynetnews.com/articles/0,7340,L-4173422,00.html</u>

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***** Wastewater reuse relieves agricultural irrigation drought in Israel

BE'ER SHEVA, ISRAEL, Jan. 10, 2012 – Israel still remains one the world leaders in wastewater recycling and a collaboration between local farmers has demonstrated why the country will continue to lead with this application.

A co-operation of 34 farming settlements recently pooled their resources together to construct an effluent reuse system next to a wastewater treatment plant. Previously, the quality of reclaimed water from the facility was not suitable for "unlimited irrigation" purposes.

A MODOtec filtration system, including downstream Ultraviolet Technology treatment, with a capacity of $60,000 \text{ m}^3/\text{day}$, was selected. A total of 90% of the produced effluent will be piped for agricultural irrigation and the remaining 10% used for irrigation of Be'er Sheva's municipal parks.

Wastewater effluent reuse is becoming a common strategy in the region, especially for agricultural irrigation purposes, which have exhausted many groundwater supplies in the region.

Since 2000, the use of treated wastewater for irrigation by Israel's agricultural sector increased from 17% of water consumed by the sector to more than 50%. Regulation has been a key driver, with stringent regulations to upgrade effluent standards set in motion in 2000 by Israel's parliament.

In January 2010, the government approved regulations that would upgrade the 1992 minimal standard of 20 ppm biological oxygen demand (BOD) and 30 ppm total suspended solids (TSS) to 10 ppm BOD and 10 ppm TSS.

Estimates from the World Bank show that currently more than 40 million m³ of municipal wastewater is recycled daily and is expected to increase to approximately 55 million m³ by 2015.

Growth is likely to be centred around the <u>Middle East region</u>, which lacks natural sustainable potable water supplies and relies upon desalination for its drinking water needs.

Oman is playing host to a large scale water reuse project that will see thousands of kilometers of pipeline laid to connect homes to a new network. Haya Water's project aims to connect over 30,000 homes, office and commercial buildings to the <u>water reuse</u> network. This will be supplied by a 80,000 m³ capacity wastewater treatment plant, using Membrane Bioreactor technology (MBR).

"Wastewater reuse relieves agricultural irrigation drought in Israel", 10/01/2012, online at: <u>http://www.waterworld.com/index/display/article-display/6668138230/articles/waterworld/world-regions/middle-east/2012/01/Wastewater-reuse-relieves-agricultural-irrigation-drought-in-Israel.html</u>

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Once Derided as an Expensive Folly, China's Three Gorges Dam Goes From Strength to Strength

China's Three Gorges Dam Project was launched in 1993 with a \$27.69 billion budget. While the Three Gorges construction finished in late 2008, its final six additional turbines in the underground power plant only started generating electricity last year.

Located on the middle reaches of the Yangtze River in Hubei Province, the Three Gorges Dam is now the world's largest water control and hydropower project, consisting of a 7,661 foot-long, 594 foot -high dam, a five-tier ship lock, with 26 hydropower turbo-generators generating 20,300 megawatts. Only Brazil's Itaipu dam produces more electricity.

In addition to generating electricity, the Three Gorges Dam controls floods by storing excess water and helps to regulate the Yangtze 's shipping capacity.

When the Three Gorges Dam project was first unveiled, environmentalists worldwide were aghast and predicted dire environmental consequences. Belatedly replying to such criticism, last year the Chinese Academy of Social Sciences' Social Sciences Academic Press published its "Green Book of Climate Change: Annual Report on Actions to Address Climate Change (2011)," stating that research has determined that the radius around the dam within which environmental conditions have been impacted by the development is less than 12 ½ miles. The study reported that no direct link had been determined between the dam and regional severe droughts and floods in recent years, with the report instead suggested that the extreme weather conditions were caused by abnormal atmospheric circulation and air temperature resulting primarily from changes in ocean temperature and snow conditions on the Qinghai-Tibet Plateau.

The results of the study were the first to be released publicly since controversy over the dam grew in 2011. The 2011 regional drought was the worst in five decades, and as water levels in the Yangtze and the bodies of water linked to plummeted the Three Gorges Dam came under greater scrutiny as Chinese authorities ordered the release of five billion cubic meters of water from the facility to alleviate downriver drought.

Obliquely acknowledging however that in fact the Three Gorges Dam might have some environmental climactic impact the report recommended that, "the authorities strengthen monitoring, evaluation and research of the climate condition in regions around the dam."

But having seen off those pesky environmentalists, China's state-owned Three Gorges Corp., the operator of the Three Gorges Dam, is on a foreign investment spending spree, with the global recession providing fire sale prices.



Since China's entry into the World Trade Organization in 2001, the country's outbound direct investment (ODI) has been on the rise, especially after the outbreak of the global economic crisis in 2008. In 2010 China's ODI was \$68.81 billion, absorbing 5.2 percent of global capital flows, with China's ODI funding exceeding the ODI of both Japan and the United Kingdom for the first time, becoming the fifth largest ODI capital flow in the world. As regards the global economic recession, China Chamber of International Commerce deputy secretary general Lin Shunjie noted simply, "The debt woes indeed provide Chinese companies with good business opportunities."

And what assets has China's Three Gorges Corp. set its eyes upon? Last week Three Gorges Corp. won a public offering bid to buy a 21.35 percent state-owned stake in the Portuguese utility Energias de Portugal (Electricity of Portugal, EDP), beating out Germany's E.ON and Brazil's Eletrobras and Cemig utilities.

The cost?

A mere \$3.42 billion. The deal has wide ranging implications, as it marks the first time that a large Chinese firm has bought into the privatization of Eurozone countries amid the continent's worsening debt crisis. Sweetening its offer, China Three Gorges Corp. in addition to its bid presented an investment plan of an extra \$2.54 billion to finance the Portuguese utility and the possibility of an additional \$2.54 billion.

And how does the Portuguese government view the Chinese offer? In announcing the sale Portuguese Secretary of State for the Treasury and Finance Maria Luis Albuquerque, announced that the offer made by Three Gorges Corp. was "the strongest in overall terms" of the four bids received, remarking, "When assessed in overall terms, the offer from Three Gorges Corp. is the best in financial terms and it is also a very strong offer in other aspects."

Three Gorges Corp. CEO Cao Guangjing said after hearing the news that the decision was "very wise and fair. I am very happy... the Portuguese government's decision is good for the future of EDP and for better relations between our two countries."

The fact that Lisbon would favor a Chinese entity over its fellow EU member Germany, the continent's economic powerhouse and Brazilian firms, from a country with which Portugal has longstanding ties going back centuries is hardly insignificant, but the cash on the table was ultimately the deciding factor over all else.

And more such deals may be in the works, as according to Lison's Publico newspaper, the Portuguese government has encouraged Chinese interest in the Banco Comercial Portugues,



the nation's largest private bank, which has already made first contacts with Chinese banks.

Chairman Mao Tse Tung once proclaimed, "The East is red." Now apparently, so is a part of the Iberian peninsula.

"Once Derided as an Expensive Folly, China's Three Gorges Dam Goes From Strength to Strength", John Daly, 09/01/2012, online at: <u>http://oilprice.com/Alternative-Energy/Hydroelectric-Energy/Once-Derided-as-an-Expensive-Folly-Chinas-Three-Gorges-Dam-Goes-From-Strength-to-Strength.html</u>

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Desalination/power to attract \$20bn investment in Qatar

DOHA, Qatar, Jan. 10, 2012 -- Ahead of the FIFA 2022 World Cup the first Middle East host Qatar is expected to spend \$20 billion on power generation and water desalination over the next decade.

A report by Beltone Financial cited in the Gulf Times said that the country has already invested \$10 billion on water desalination and power generation in the last decade alone.

On water supply and demand the report said they grew at double digit rates over the past decade, with capacity growing at a compounded annual growth rate (CAGR) of 15%, while demand grew at a CAGR of 15.1% between 2004 and 2008.

Water demand meanwhile was forecast to continue growing at 11% year-on-year for the next five to seven years and Qatar's total <u>water desalination</u> capacity now stands at 327 million imperial gallons per day (1.5 million m³ approx.)

Hosting the 2022 World Cup will mean that significant investments will be made in <u>Qatar's</u> <u>infrastructure</u>, including transportation, networks, roads, hotels, airport and other facilities.

Furthermore, a "Master Plan" is being developed by the country for its groundwater, surface water, wastewater and treated <u>wastewater effluent reuse</u>. Towards the end of last year public works authority Ashghal appointed MWH to develop an Integrated Drainage Master Plan for Qatar. This is part of the Qatar National Vision 2030 and Qatar Master Plan currently being developed by the Municipality for Municipal Planning.

The plan will study the whole water cycle in Qatar and link with the <u>water master plan of Kahramaa</u>, responsible for the distribution of clean potable water in Qatar. A 24 month period has been slated for the master plan study to be completed

"Desalination/power to attract \$20bn investment in Qatar", 10/01/2012, online at: <u>http://www.waterworld.com/index/display/article-display/1793753027/articles/waterworld/world-regions/middle-east/2012/01/Desalination-power-to-attract-20bn-investment-in-Qatar.html</u>

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Call for action on global groundwater crisis

International water scientists have today issued a call for action over the growing threat to the world's groundwater supplies from over-extraction and pollution.

Water supplies will begin running out in critical regions where they support cities, industries and food production by 2030 unless urgent steps are taken to better manage the resource, they cautioned.

"The world has experienced a boom in groundwater use, more than doubling the rate of extraction between 1960 and 2000 – with usage continuing to soar up to the present," says Professor Craig Simmons, Director of Australia's National Centre for Groundwater Research and Training (NCGRT) and member of the UNESCO's global groundwater governance program.

A recent satellite study has revealed falling groundwater tables in the United States, North Africa, India, the Middle East and China, where expanding agriculture and cities have increased water demand.

"Groundwater currently makes up about 97 per cent of all the available fresh water on the planet and presently accounts for about 40 per cent of our total water supply. It provides drinking water to cities, is needed to grow much of our food and sustains many industries – yet almost everywhere, there is clear evidence that water tables are falling," Professor Simmons says. "This means humanity is extracting groundwater much faster than it is naturally replaced."

"Not many people think of groundwater as a key driver of the global economy – yet it is. If it becomes depleted, entire industries may be forced to shut down or move. Whole regions could face acute water scarcity."

The groundwater crisis is driven by a competition for increasingly scarce water supplies between the megacities, the energy sector, manufacturing and farming. It has been hastened by an era of cheap pumps and relatively cheap energy, making it easy to extract.

"Over-extraction also has serious implications for the environment, especially when the climate is warming – as falling water tables can lead to emptying lakes and rivers and dying landscapes as the water they depended on is withdrawn," Professor Simmons says.

"The blunt fact is that most countries and local regions did not know the size of their water resources when then began extracting them, nor how long it took to recharge. In some cases this can take centuries or even millennia. As a result they are now extracting their water unsustainably."

Water is emerging as potentially one of the main limits to Chinese economic growth: groundwater supplies 40% of China's food and 70% of its drinking water – yet water levels in aquifers in some regions are sinking by a metre or more a year. 660 Chinese cities have polluted supplies or are water insecure.



In the Middle East, depleted aquifers have been a major driver of the relocation of agriculture to Africa and the so-called 'land-grab' by wealthy countries. In India the number of wells grew from less than one million in 1960 to 19 million by 2000. Water tables in the key foodbowl are sinking beyond the reach of many farmers' pumps.

"The crisis in global groundwater is chiefly one of poor governance, exacerbated by a lack of knowledge of the size and condition of the resource, rates of recharge, lack of transparent policy, lack of ownership, lack of price signals to users and a lack of political will to do anything," says Professor Simmons. "It's fixable – but it will take a lot of hard work and good science to do so."

"Until recently this problem was on the world's back-burner – but it is rapidly moving to the forefront. Groundwater science has improved dramatically in the last decade, giving us the ability to measure and manage the resource – but governance has yet to catch up. Unless it does, we can expect serious problems in the future."

Even advanced nations such as the United States face a crisis in their use of groundwater, says Law Professor Robert Glennon of the University of Arizona.

"Groundwater now comprises one-quarter of the US supply and more than half of all Americans rely on groundwater for drinking. Unconstrained drilling of new wells, as many as 800,000 per year, has put incredible strain on aquifers around the US," he says.

"Plummeting groundwater tables have caused earth subsidence, fissures, and saltwater intrusion. It took millennia for this water to accumulate in aquifers, but humans are pumping it out in mere decades."

The environmental costs of unsustainable groundwater pumping are staggering, says Glennon. Rivers and springs have dried up or been reduced to a trickle. In Arizona, pumping turned a healthy river, the Santa Cruz, into a desiccated sandbox. Even in humid regions, water bodies have suffered. In the Midwest, wells dug to produce spring water for the bottled water industry have compromised blue-ribbon trout streams. And in Florida, scores of lakes have dried up from intense well-field pumping.

The lack of sensible regulation has created incentives for unlimited access to a finite resource, according to Glennon. "An aquifer is like a milkshake glass and each well is the equivalent of a straw in the glass. What most countries permit is a limitless number of straws in the glass. This is a recipe for disaster," he says.

"Call for action on global groundwater crisis", 09/01/2012, online at: <u>http://sl.farmonline.com.au/news/nationalrural/agribusiness-and-general/general/call-for-action-on-global-groundwater-crisis/2413618.aspx?storypage=1</u>

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Waging legal battle against Tipaimukh Dam

There are many examples how construction of dams on rivers has affected adversely the environment in the long run. Aswan Dam in Egypt (completed in 1970) has developed major agricultural and environmental problems. The increased use of artificial fertilisers in farmland below the dam has caused chemical pollution which the traditional river silt did not. Irrigation control has also caused some farmland to be damaged by water logging and increased salinity, a problem complicated by the reduced flow of the river, which allows salt water to encroach further into the delta. The Aswan Dam tends to increase the salinity of the Mediterranean Sea, and this affects the Mediterranean's outflow current into the Atlantic Ocean. This current can be traced thousands of kilometres into the Atlantic. Due to the Aswan Dam inhibiting the natural fluctuations in water height, i.e. floods, the bilharzia disease has flourished causing great expense to the Egyptian economy and people. The battle with the disease continues.

In China, Three Gorges Dam on Yangtze River (scheduled to be fully commissioned in 2009 after 16 years of work) is the world's biggest hydro- power project and some environmental experts say that the Three Gorges Dam is "a model for disaster" and around the world, large dams are causing social and environmental devastation while better alternatives are being ignored.

The foregoing discussion reveals that the construction of the proposed Tipaimukh Dam on Barak River would be a "dangerous death trap" for Bangladesh. If India fails to cooperate with Bangladesh to resolve the dispute regarding the Tipaimukh Dam peacefully, in that case, Bangladesh should take this matter before the International Court of Justice without any hesitation.

Under International Law, India has no right to divert unilaterally the flow of the transboundary Barak River by constructing the proposed Dam at Manipur State. In accordance with the provisions of the United Nations Convention on the law of International Watercourses 1997, India is under an obligation to provide data and information on the condition of the watercourse, exchange information and consult with Bangladesh, if necessary negotiate on the possible effect of the planned Tipaimukh Dam on the condition of the water of trans-boundary river Barak (Article - 11). Bangladesh has signed and ratified this Convention and therefore can bring India before the International Court opposing projects like Tipaimukh to be built unilaterally by India. The 1997 convention emphasises comprehensive cooperation for equitable utilisation of the watercourses, no-harm to any watercourse stares and adequate protection of international watercourses.

In addition, India is also under an international obligation to give adequate notice to Bangladesh regarding the proposed dam which would have significant adverse impact in



Bangladesh. This notice must provide sufficient technical information to enable Bangladesh to determine whether her interest will be adversely affected. Prior notification is an international obligation regardless of whether there is a special agreement between India & Bangladesh. India has not yet given any notice to Bangladesh with sufficient technical information regarding the proposed Tipaimukh Dam to enable Bangladesh to determine whether her interest will be adversely affected. By signing an agreement on 22nd September 2011 without giving any notification to Bangladesh to construct the Tipaimukh Dam on Barak River, India has clearly violated the provisions of international law.

In accordance with the provisions of the 1996 thirty-year Ganges Water Sharing Treaty India is under an international obligation to be guided by the principles of equity, fairness and no harm to Bangladesh before the construction of any dam on the trans-boundary Barak River. India has failed to fulfil her commitment under this treaty by failing to share information with Bangladesh regarding the proposed Tipaimukh Dam.

Under customary international law, Bangladesh has a legal right to forward this matter before the International Court of Justice if India continues to refuse to settle this dispute peacefully and amicably through bi-lateral agreement. In settling this dispute, under Article 38 of the Statute of the International Court of Justice, the court is empowered to consider the 1996 thirty-year Ganges Water Sharing Treaty for assessing the validity of the proposed construction of Tipaimukh or any other structure on shared rivers between Bangladesh and India.

The International Court of Justice would be entitled to consider the provisions of international conventions, whether general or particular, establishing rules expressly recognised by the contesting states; international custom, as evidence of a general practice accepted as law; the general principles of law recognized by civilized nations; and subject to the provisions of Article 59, judicial decisions and the teachings of the most highly qualified publicists of the various nations, as subsidiary means for the determination of rules of law with a view to settle the dispute between Bangladesh & India regarding the proposed Tipaimukh Dam.

Bangladesh can also apply for an order from the International Court of Justice against India for cessation of the wrongful conduct of India, guarantee by Indian Government for non-repetition of wrongful act, satisfaction (apology, exemplary damages), restitution and compensation from the Indian Government.

We should not forget the outcome of bitter experience of the impacts of Farakka barrage. Before erecting this barrage, India gave us a false hope that it would be beneficial for Bangladesh. In reality, over the past 40 years we have experienced how adversely Farakka barrage has affected every aspect of our environment, economy and people of Bangladesh. If



India sticks to its original plan of constructing a Barrage at Fulertol or elsewhere to divert the water stored in the Tipaimukh, the impact would be a reminiscent of the Farakka Debacle. At the national & international level, Bangladesh should not be worried to exercise her legal rights freely and independently to express her views to protect her won national interest. Our foreign policy should not be submissive to India which would only give India an opportunity to construct the dam unilaterally. Bangladesh always supports very strongly to resolve any dispute including Tipaimukh Dam with India peacefully. However, we cannot allow India to take the advantage of our good wishes by ignoring our legal rights. We cannot allow India to contrast the proposed Tipaimukh Dam unilaterally which would become another "model of disaster" and a "permanent death trap" for Bangladesh.

If India fails to cooperate with Bangladesh to resolve this dispute peacefully, then both the ruling party and the party in opposition should stand in the same platform for the sake of national interest to form a strong uniform consensus to refrain India from erecting the Tipaimukh Dam. If this diplomatic approach fails, then as a last resort, Bangladesh should not hesitate to wage an international legal war against India and bring her before the International Court of justice with a view to compel her to ensure that she would respect the principles of equity, fairness and no harm policy to Bangladesh before constructing the proposed Tipaimukh Dam on the Barak River.

"Waging legal battle against Tipaimukh Dam",09/01/2012, online at: <u>http://www.thefinancialexpress-bd.com/more.php?news_id=93125&date=2012-01-09</u>

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Indian Wastewater Treatment Market Over USD1.2 Billion and Growing

The Indian water and wastewater treatment equipment market is dynamic and continues to provide a plethora of opportunities for equipment manufacturers. The market generated revenues of more than USD1.2 billion in 2010 and is expected to show a double digit compound annual growth rate (CAGR) up top 2017. Industrial and economic growth, water scarcity, increasing legislation and increasing pressure on the existing treatment plants are the key drivers in this market.

The market is highly fragmented with over 200 companies participating in the market in 2010. The larger water companies, including Veolia, GE Water and Best Water Group, have formed partnerships, adding further competitiveness to the marketplace.

IVRCL Limited, Ramki Enviro Engineers, Ion Exchange India and Degremont are some of the key participants in the market.

A report by Verify Markets captures the growth opportunities in the Indian water and <u>wastewater</u> <u>treatment</u> equipment market from 2010 to 2017, with 2010 as the base year. It captures key drivers, challenges and revenue forecasts for the municipal and <u>industrial</u> water and <u>wastewater treatment</u> equipment market in India. Additionally, the report captures market share analysis, percentage split by <u>treatment</u> type, key market trends, end-user trends, key competitive trends and quotes from key industry participants.

"Indian Wastewater Treatment Market Over USD1.2 Billion and Growing", 30/12/2011, online at: <u>http://www.waterlink-international.com/news/id2214-</u> Indian_Wastewater_Treatment_Market_Over_USD_Billion_and_Growing.html?utm_source=Newsletter&utm_medium= email&utm_campaign=20120111+-+WL

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Saving Dying Dead Sea Through Water Conveyance Could Destroy Major Archaeological Sites

A proposed project to transfer Red Sea waters into the Dead Sea through tunnels or buried pipelines to control the fast-shrinking lake could pose a threat to major archaeological sites, a new World Bank report reveals.

The World Bank-led "Red Sea - Dead Sea Water Conveyance Study Program," involving Jordan, <u>Israel</u> and the Palestinian Authority to analyze the probable impact of the project on the environment and society, has identified several archaeological sites within Arabah in the Jordan Rift Valley that could be destroyed in the due course of constructions associated with the project.

"A conveyance project would pose environmental and social impacts, mostly during construction," according to the recent update on the study program.

The Dead Sea is the lowest spot on Earth and its famously buoyant water is ten times more saline than the ocean. It borders Jordan to the east and <u>Israel</u> and West Bank to the west. The high levels of salinity in this "salt lake" do not let marine life flourish in it.

Research has shown that Dead Sea water level has fallen over 25 meters in less than 50 years. It continues to shrink rapidly at a rate of one meter every year and may disappear before the end of this century. The water conveyance project aims at restoring the lake that's also a tourist paradise.

Though the feasibility study of transferring water from the Red Sea to the Dead Sea as a means to arrest the rapidly declining water level of the Dead Sea has not come to a concrete conclusion, the World Bank drew a few preliminary conclusions about the project last month concerning the potential impact on the mixing of the Red Sea and Dead Sea waters.

"Mixing sea water and/or desalination brine with the Dead Sea water entails risks, and especially when the amounts exceed 300 million cubic meters per year."

The declining water level of the Dead Sea has many intangible consequences than previously thought, for the site holds immense historic, cultural, economic and environmental importance. Researchers say some of these consequences may become irreversible.

Diversion of water of the Jordan River, the major source of water for Dead Sea, in the recent decades has led to shrinkage of the "salt sea." To avoid potential hazards from the conveyance project, the study program also suggests some alternatives to save the Dead Sea.

"This sea water conveyance from the Red Sea is the identified option to address the problem under the Study Program, but there are many other options examined under the Study of Alternatives, including the option to restore the Jordan River and of course the option to take no action. The Study Program has most definitely not assumed that the best solution to the Dead Sea problems is the conveyance of sea water from the Red Sea."

"Saving Dying Dead Sea Through Water Conveyance Could Destroy Major Archaeological Sites", 11/01/2012, online at: http://www.ibtimes.com/articles/280068/20120111/saving-dying-dead-sea-through-water-conveyance.htm

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Demand to call off water summit

BANGALORE: Peoples' Campaign for Right to Water, Karnataka, opposed the Bangalore Water Summit that is scheduled to be held in the city between February 1 and 3.

Addressing a press meet here on Monday, Prabhakaran, convener, Peoples' Campaign for Right to Water said, "The summit has to be cancelled as it misleads people claiming that the ongoing privatisation is not privatisation in real. It promotes commodification of water, as the model for the state without even stating that the underlying theme is to generate profits from water."

Alleging that some senior bureaucrats were working towards evolving a variety of dubious policies to promote water privatisation, Kodihalli Chandrashekar, president of Karnataka Rajya Raitha Sangha, and Dalit Sangarsha Samithi activist N Venkatesh urged the government to cancel the event.

Members of the Peoples' Campaign for Right to Water demanded the government to dissociate itself from the summit, failing which they will stage protests.

"Demand to call off water summit",09/01/2012, online at: <u>http://ibnlive.in.com/news/demand-to-call-off-water-summit/219402-60-119.html</u>

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***** Water supplies may run out by 2030

SYDNEY: Water supplies will begin running out in critical regions where they support cities, industries and food production -- including in India, China and the Middle East -- by 2030 due to over-extraction of groundwater, a scientist has warned.

"The world has experienced a boom in groundwater use, more than doubling the rate of extraction between 1960 and 2000 -- with usage continuing to soar up to the present," says Craig Simmons, director of the <u>National Centre for Groundwater Research</u> and Training (NCGRT).

A recent satellite study has revealed falling groundwater tables in the US, India, China, Middle East and North Africa, where expanding agriculture and cities have increased water demand.

"Groundwater currently makes up about 97 percent of all the available fresh water on the planet and presently accounts for about 40 percent of our total water supply," says Simmons, also a member of Unesco's global groundwater governance programme, according to a NCGRT statement.

"Not many people think of groundwater as a key driver of the global economy -- yet it is. If it becomes depleted, entire industries may be forced to shut down or move. Whole regions could face acute water scarcity."

"Over-extraction also has serious implications for the environment, especially when the climate is warming -- as falling water tables can lead to emptying lakes and rivers and dying landscapes as the water they depended on is withdrawn," Simmons says.

In the Middle East, depleted aquifers have been a major driver of the relocation of agriculture to Africa and the so-called 'land grab' by wealthy countries.

Even advanced nations such as the United States face a crisis in their use of groundwater, says Robert Glennon, law professor at the <u>University of Arizona</u>.

"Groundwater now comprises one-quarter of the US supply and more than half of all Americans rely on groundwater for drinking. Unconstrained drilling of new wells, as many as 800,000 per year, has put incredible strain on aquifers around the US," he says.

"Water supplies may run out by 2030", 11/01/2012, online at: <u>http://articles.economictimes.indiatimes.com/2012-01-11/news/30616263_1_groundwater-tables-water-demand-water-supplies</u>

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Africa's largest dam to lift Ethiopia out of poverty

ADDIS ABABA — In the western fringe of Ethiopia on the banks of the Blue Nile river, the nation's Prime Minister Meles Zenawi thundered that the country would overcome all obstacles to complete Africa's largest hydropower plant.

"No matter how poor we are, in the Ethiopian traditions of resolve, the Ethiopian people will pay any sacrifice," he said. "I have no doubt they will, with one voice, say: 'Build the Dam!""

The government portrays the dam as a 5,900-foot long, 475-foot high beacon of progress that will banish the country's reputation for famine and dependency. The \$4.8 billion Grand Ethiopian Renaissance Dam will lift the country out of poverty, the government argues, by electrifying the country's industrialization and making Ethiopia a regional power-hub – and all without a drop of the aid Ethiopia is synonymous in the West for.

But critics worry that the country may have taken self-sufficiency and ambition a bit too far in the way it pushed ahead with its largest-ever project unilaterally and with little transparent planning.

Secrecy has shrouded the 5,250-megawatt plant, nearly 20 miles from the Sudanese border. Although the site was identified in 1964, the decision to go ahead with what had been known as Project X became public less than a month before construction began on April 2.

Its unveiling shocked a host of interested parties.

At a launch in Addis Ababa, the Egyptian embassy's spokesman was astonished to learn a reservoir more than twice the size of Singapore would be created by a barrage Cairo had not been consulted on. Over four-fifths of the water for the Nile, Egypt's lifeblood, comes from Ethiopia's highlands, leading to historic tensions over usage.

Also uninformed was the Eastern Africa Power Pool, which was just putting the finishing touches on a regional integration study that leans heavily on exported Ethiopian hydropower. "We look forward to getting more information so we can factor it into our master plan," Jasper Oduor, its Executive Secretary, said.

Similarly, the unilateral move was a blow to the Nile Basin Initiative, which is supposed to establish cooperative management of the river, and Norwegian consultants whose ongoing studies on a potential cascade of Blue Nile dams were rendered obsolete by the announcement.

The covert approach may have had the twin purposes of minimizing foreign opposition to the scheme while maximizing the impact of its announcement on Ethiopians – if so, it seems to be working.

Since Meles' speech, the public has been bombarded with advertisements, posters, reports, and speeches about the dam, as the state sells bonds to partially fund it. Most of a patriotic citizenry, who



consider Egypt's domination of the Nile an acute injustice, approve of the scheme – even opposition politicians.

"We need this resource to lift people out of the abject poverty we have been wallowing in for centuries," former member of parliament Temesgen Zewdie says. "There's no question it's an idea the Ethiopian people support."

The popular cause combined with the ruling party's extensive influence – around 1 in every 17 Ethiopians is a member – has made for a highly-effective fundraising campaign. Often following a collective decision at staff meetings, public and private sector workers have bought bonds, taking the total raised to 7 billion Ethiopian birr (\$408 million) in September, according to Bereket Simon, a longstanding ally of Meles and co-head of a GERD Public Mobilization Council.

Some, such as former president and leading opponent of the government Negasso Gidada, say the hype and pressure of the campaign makes it very difficult for people to opt out. However, the attitude of a lady selling a handful of vegetables on the streets of one of Addis Ababa's most dilapidated districts is typical: "I would give more money if could afford to." So far, she has donated 30 birr (equivalent to \$1.73).

The populist approach may alarm Western liberals, but unity in pursuit of national goals is key to Meles' "developmental state."

The bond-buying will also foster a savings culture, Bereket hopes. At less than 10 percent of gross domestic product, national savings are under half the rate that funded the investment of much-admired Asian tigers.

So far, no friction with the two downstream nations, Sudan and Egypt, has resulted. A joint committee between the three countries has been set up to study the dam, which Ethiopia insists will benefit all by generating electricity for the region and reducing evaporation due to its deep, elevated reservoir. Indeed, such are the mutual gains, Sudan and Egypt should rightfully cover half the costs of the project, Meles believes. Despite the cordiality, given the political instability in Khartoum and Cairo, relations could rapidly deteriorate.

The Grand Ethiopian Renaissance Dam also has its detractors and dangers.

The Economist claims a flaw is that export deals have not been struck. However, links with Djibouti, Sudan, and Kenya are complete or underway, and the dam's scheduled 2017 completion date gives the power pool time to advance regional integration.

Also of concern is whether the government will conduct thorough technical studies and environment and social impact assessments. Institutions like the World Bank require them. But government supporters consider these types of activities unacceptable conditions imposed by a hypocritical, carbon-emitting West – not responsible due diligence. Unconditional Chinese funds are much-preferred.



Although the desire to be unshackled is admirable, the impatience could be costly. At the GERD site buzzing with construction activity in late June -3 months into the project - an Italian engineer explained his team were surveying the rock edifices the dam will bind to. Yes, it was possible they would be found unsuitable, he casually admitted.

For International Rivers, which works "to stop destructive dams," the project is following worst international practice. "No-bid contract, an air of secrecy, and repression of debate. Such a flawed planning process could doom the project from the start," says its Africa campaigner Lori Pottinger.

There's also concern about how the country will pay for the dam given it will cost around 70 percent of this year's government budget. Optimists such as Ernst and Young's Zemedeneh Negatu say continued double-digit economic growth will make it affordable. Private banks, which have been forced to lend to the government for development projects, will be an important source of funds.

But the former World Bank country director Ken Ohashi says a need for foreign loans to finance Ethiopia's ambitious infrastructure projects could lead to debt problems. To the guffaws of a parliament containing one opposition member, Meles dismissed the concerns as the parting shot of a disgruntled neo-liberal.

"Africa's largest dam to lift Ethiopia out of poverty", 12/01/2012, online at: <u>http://somalilandpress.com/africas-largest-dam-to-lift-ethiopia-out-of-poverty-26001</u>

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***** Dar, Cairo in talks over Nile waters

Dar es Salaam. Tanzania and Egypt have jointly called for a meeting of Nile Basin Initiative (NBI) member countries to discuss and find solutions to impending problems. The meeting will focus on finding out how each country could benefit from the resources without jeopardising interests of other members.

This was discussed at the State House on Wednesday during a visit by Egyptian Foreign Affairs minister Mohamed Tamel Amr. The talks between the two were also attended by the minister for Foreign Affairs and International Cooperation, Mr Bernard Membe.

They said that there should be an amicable agreement on the proper use of the Nile water by all member states.

For his part, President Kikwete told Mr Amr of his personal efforts to lure heads of some NBI member countries to attend the planned meeting in person.

However, the agreement on when or where the meeting would be held has not been reached yet. Minister Amr told his host that it was important that NBI member states agree on modalities for the use of River Nile waters.

"River Nile and its water should be something that brings us together, rather than separating us," he said.

The two leaders also agreed on the need to improve investment between their two countries, especially in agriculture and proper water management.

"There are many areas where we can work together and one of the areas is agriculture where Egypt has made strides, especially in vegetable and fruit farming. The country also has better water use technology that boosts agriculture as well," said President Kikwete.

Giving a personal testimony, President Kikwete said when he visited the country he saw how little water could be used in modern agriculture even in the desert.

He added: "Egypt also has extensive experience in the use of ground water... we can also cooperate in that area."

"Dar, Cairo in talks over Nile waters", 13/01/2012, online at: <u>http://thecitizen.co.tz/news/49-general-elections-news/18799-dar-cairo-in-talks-over-nile-waters.html</u>

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***** Ethiopia, Sudan and Egypt begin studying Nile dam impact

January 11, 2012 (ADDIS ABABA) - A joint tripartite technical committee set up by <u>Ethiopia</u>, <u>Egypt</u> and Sudan has began assessing the possible impacts of the massive hydro-power dam project Ethiopia intends to build in the Blue <u>Nile River</u>.

The aim is also to further create better understanding between the countries and allow them to engage in continued cooperation serving their interests.

The three-party committee which embraces four international professionals and six experts drawn from the three countries has held its first meeting in Addis Ababa and will have its second gathering in Sudan.

Last year, Ethiopia launched the construction of a \$4.8 billion dam project on the Blue Nile River near the Sudanese border raising angry protests from downstream countries of Sudan and Egypt that had historically had control over most of the Nile's water resources under a colonial era treaty.

The Horn of Africa country is a source to over 80% of the Nile's water and argues that it has right to execute development projects.

Ethiopian experts say the construction of the Ethiopian Grand Renaissance Dam will not harm Egypt and Sudan who, they say, will benefit from the electricity it generates. The dam will also regulate the water flow, controls over flooding that risks their dams.

President Hosni Mubarek who led former Egyptian régime before he ousted in popular protests last year, had warned Ethiopia against building any dams on the Blue Nile raising diplomatic tensions. However since his down fall there is a new momentum in relationships and cooperation between Cairo and Addis Ababa.

In October last year the Nile Basin Discourse, a civil society network within the Nile Basin region, lauded the countries for opening a new chapter in relations to settle their long-standing dispute over the Nile's water.

"Ethiopia, Sudan and Egypt begin studying Nile dam impact", 11/01/2012, online at: http://www.sudantribune.com/Ethiopia-Sudan-and-Egypt-begin,41257

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• Egyptian foreign minister tours Nile basin countries

Cairo - Egyptian Foreign Minister Mohamed Kamel Amr left Cairo on Monday for a tour of six Nile Basin countries, for economic and political talks including the question of the distribution of water from the Nile River.

Amr begins the trip in Kenya, then will head to Tanzania, Rwanda, the Democratic Republic of the Congo, South Sudan and Sudan.

Amr is expected to meet with senior officials to seek consensus among the basin countries sharing the Nile, as Egypt hopes to improve relations with these countries following the ouster of president Hosny Mubarak last year.

Relations became strained in mid-2010 when Ethiopia and Nile Basin countries Uganda, Rwanda, Tanzania, Kenya and Burundi signed a treaty aimed at increasing their share of water from the Nile River for irrigation and hydropower <u>projects</u>.

The Nile Basin Initiative was to replace a 1929 agreement that allocates the majority of the Nile River's water to Egypt and Sudan.

Water is a matter of national security for Egypt, for which the country depends mainly on the Nile.

"Egyptian foreign minister tours Nile basin countries", 09/01/2012, online at:

http://www.monstersandcritics.com/news/middleeast/news/article_1684602.php/Egyptian-foreign-minister-tours-Nile-basin-countries

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